

ABSTRACT

The Late Qing's Artificial Equilibrium

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Attempting to explain the deteriorating state of the Chinese economy at the end of the Qing dynasty, Mark Elvin, in his 1970 book, *History of the Chinese Past*, developed the idea of a high-level equilibrium trap. Using this trap, Elvin's theory explains what happened when a quickly growing population came into conflict with a finite amount of arable land and an elite class that refused to innovate. However, what if the same logical reasoning that lead Elvin to this trap, was the same reasoning that hid the faltering state of the Chinese economy from inattentive Qing officials? I argue that the stagnant growth of the Chinese economy originated from an artificial equilibrium caused by a false perception on the state of the laborer class, which subsequently allowed for the class as a whole to deteriorate without ever being noticed.

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THE LATE QING'S ARTIFICIAL EQUILIBRIUM

A Thesis Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the Requirements for the

Honors Program

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Waco, Texas

May, 2017

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CHAPTER ONE

Introduction

The collapse of the Chinese Imperial model after four millennia of history and tradition was unprecedented. Never before had a nation existed for so long, grown so large, and, yet, remained so pure to its historical roots. Nevertheless, as the last dynasty drew to a close, both the Chinese people and the Western world were forced to answer the question: what is to be done with China? The Chinese people were forced to find their own path; the West, which had recently attached itself financially to the nation, was forced to watch. In the midst of China searching for its new political identity in the twentieth century, it faced a stagnant economy and a revolting labor class. Evidence of this faltering economy is highlighted in Mark Elvin's influential book, *History of the Chinese Past*, which argues that as the steadily increasing Chinese population came into conflict with a finite amount of cultivatable land, social surplus began to shrink, innovation lagged, and the Chinese economy slowed to a stop. While Elvin's theory has held the general consensus in academia for the past half-century regarding how China found itself in a failing economy, an additional aspect to the question at hand seems to have been omitted by both Elvin and the rest of the literature about this topic. Popular areas of study in this line of research have been how the Chinese economy got to where it did and what the economic state of the agrarian Chinese laborer looked like within the late Qing and early twentieth century. What still remains absent from the literature is an analytical comparison between the state of the late-Qing and the mid-twentieth century

laborer, and what economic, social, and philosophical changes, if any, occurred to the laborer within this time that might have incited revolt.

The importance of the state of the Chinese laborer during this period cannot be overstressed. Faced with an exponentially growing agrarian population in the seventeenth, eighteenth, and nineteenth century, the laborer stood as the backbone to China's economy. Roughly a century later in 1933, China still only possessed an industrial sector with an output totaling 3.4 percent of the nation's total domestic product.¹ Throughout both of these times, it was the agrarian labor class, more than anything else, that sustained the economy.

Yet, despite the class's significance in the Chinese narrative, a noticeable disparity began to emerge between the merchant and laborer class at the close of the nineteenth century. Jonathan Spence, a prominent twenty-first century historian and author of *The Search for Modern China*, recounts the progression of laborer protests and the Chinese Communist Party (CCP) that formed in response to the success and growth of a new merchant elite that arose in China during this period. It is in observation of this rise and traction of the labor movements in twentieth century China that my question emerges.

By looking at the data Kang Chao, a Chinese economic historian writing roughly two decades after Elvin and author of *Man and land in Chinese History: An Economic Analysis*, provides on the economic state of the nineteenth century Chinese laborer, a flaw begins to emerge in Elvin's thesis. While Elvin argues that the Chinese economy only began to stagnate at the end of the nineteenth century, Chao provides evidence that

¹Harold M. Tanner, *China A History Volume 2: From the Great Qing Empire through the People's Republic of China* (Indianapolis: Hackett Publishing Company, 2010), 128.

the average Chinese laborer lived on mere subsistence wages almost a full century prior to this stagnation. While Chao's data may have spurred the tension between the two authors' results, never once did Chao move to address it.

I argue in this paper that the reason for why both the Qing Government and Elvin failed to observe the repugnant state of the Chinese laborer—existent a full century before the economy as a whole began to stagnate—was the exact cause for the labor class revolution that began in the twentieth century. In short, both the Qing Government at the time and the economic historians writing a full century later fell prey to the “drunkard's search.”² Due to the sinocentric proclivity of the Chinese people to place nation before the individual, the state of the Chinese laborer was never considered so long as the nation as a whole was successful. Moreover, even if the distressed laborer in the nineteenth century wished to voice their concerns, a lack of social capital and political medium obstructed him from ever being heard. It was not until Western powers broke into China at the close of the nineteenth century that the nation's traditional sinocentric ideology began to be replaced by one that put the worker, not the nation, on its highest pedestal. Finally being given voice, the twentieth century laborer was able to respond in a social revolution never before seen in Chinese history.

My contribution to this literature is a more nuanced view of the late Qing dynasty laborer class that moves beyond the myopic views of present writers who solely focus on numerical data in their analyses. Contrary to the status quo, I engage in a quantitative analysis of the state of the Chinese laborer in unison with a qualitative analysis of the

²Abraham Kaplan, *The Conduct of Inquiry: Methodology for Behavioral Science* (London: Transaction Publishers, 1964). The “Principle of the drunkard's search” is a form of observation bias analyzed in behavioral economics that occurs when an individual looking for something only searches in the place easiest to look.

political and scholastic shifts of the period that, when taken together, provide a more holistic understanding of the period in question.

By necessity, I bind this study of the late-Qing labor market in several regards. First, I restrict the majority of my historical analysis to extend back only so far as the beginning of the Song dynasty (960-1279), with the majority of my study taking place in the Ming (1368-1644) and Qing (1644-1912) dynasties. While this may appear an excessively broad area of study, when put into context of the four millennia history of China, it becomes necessary to section off the nation's history into smaller dynastic groups sharing similar social and political trends—the group I bring under analysis being the final set ranging from the Song to the Qing dynasty. Second, I narrow this focus of study even further to strictly the Qing dynasty and the period following its collapse when I begin my analysis of the state of the Chinese laborer. Lastly, I confine the end of my study to develop only so far as the beginning of the 1930s. Following this period, the history of China progressed too quickly and with too many variables to continue my argument beyond this point.

CHAPTER TWO

Ideas of the Past

The origin of China's economic stagnation leaving the Qing dynasty has been a topic of debate between economic historians for the past century. Due to the expansive size of the nation, variance between independent provinces, and, by any standards, a tumultuous previous two centuries, the literature and arguments produced about this topic have been as wide ranging and contentious as the history they intend to explain. In the four sections of this chapter, I will present and offer potential boundaries and limitations to the four main theories about this period—these being China's inadequate capital, political obstacles, limited economies of scale, and market inefficiencies—with a special emphasis on the currently accepted view explaining China's stagnant growth in the late Qing dynasty.

2.1 Ragnar Nurske's Inadequate Capital Argument

The first theory attempting to explain the lack of Chinese economic or technological growth in the eighteenth and nineteenth centuries comes from Ragnar Nurske's *Problems of Capital Formation in Underdeveloped Countries*.¹ Nurske attributes the lack of growth during this time period to an overall lack of capital that made it impossible for the Chinese market to flourish. This lack of capital shows itself in two coexisting and interlinking cycles. The first consumer market cycle: a lack of capital

¹Ragnar Nurske, *Problems of Capital Formation in Underdeveloped Countries* (Oxford: 1953).

leads to low productivity, hence to low income, hence an inability for individuals to save, and so back to a further lack of capital. The second and corresponding cycle linked by low productivity leads to low mass buying power, hence a low inducement to invest, hence a further lack of capital, and so back to further low productivity. A model of this can be seen below in Figure 1:

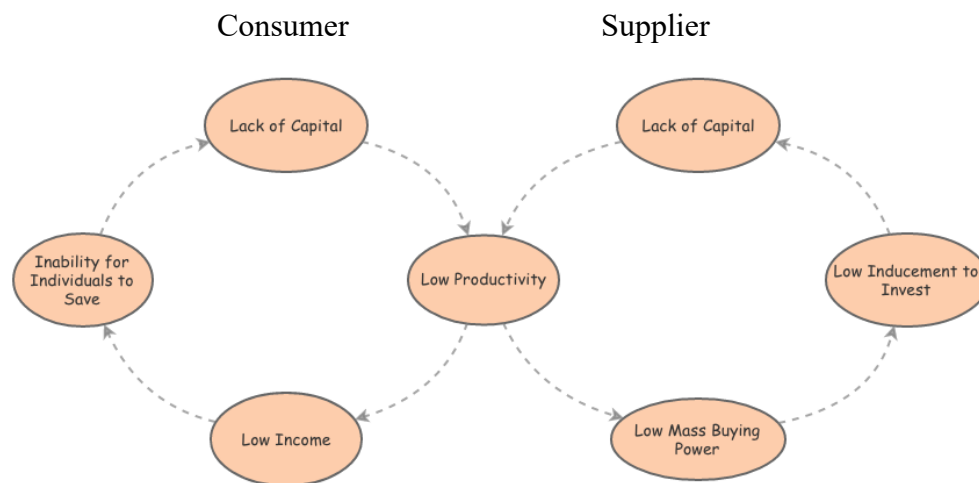


Figure 1: Ragnar Nurske's Two Cycles of Low Productivity

While an effective theory for some stymied economies, Nurske's theory does not necessarily fit the Chinese case. One example of a large market for mass consumed goods, as well as a large concentration of capital in merchant's hands, is Yeh Meng-chu's account of the Shanghai cotton cloth markets in the seventeenth century:

Our county used to produce three grades... The broadest and finest of them was called 'standard cloth'... All three qualities went to Shensi, Shansi and the border areas. Rather narrower and longer than standard cloth was the kind called 'midloom'... The price was the same as that of standard cloth. Under the preceding [Ming] dynasty a thriving business was carried on in standard cloth. The wealthy merchants who came to purchase it each possessed a capital of many tens of thousands of ounces of silver. The richest may have had several hundreds

of thousands, the poorest perhaps ten thousand...Few merchants bought midloom, and those that did had a limited supply of capital. Under the present [Qing] dynasty few of the great merchants who dealt in standard cloth have continued to come. Recently none of them has brought more than ten thousand ounces, and some have brought as little as two or three thousand...The trade in midloom has, on the contrary, prospered. Those who used to deal in standard cloth have now turned to midloom.²

This report shows a clear responsiveness of industry to the ebb and flow of market forces, changing from standard cloth in the Ming to midloom cloth in the Qing. Additionally, the overall size of this industry must be noted. Not only did some of the cloth merchants possess great capital, some possessing tens of thousands of ounces of silver, but the city of Shanghai also stood as only one of many important Kiangnan cotton centers.³ By European standards of this time, the cotton industry in Shanghai would have been considered a flourishing international export industry.

The cotton industry was not by any means the largest form of Chinese industry in relation to capital either. Hsieh Ch'ao-chih, writing in the later Ming dynasty, reports of how salt merchants commonly possessed between hundreds of thousands to more than a million ounces of silver:

The great traders of Hsin-an [Hui-chou] make fish and salt their business. Some of them have stored away up to a million strings of cash. Others who have but two or three hundred thousand are only middle-grade merchants.^{4&5}

²Yeh Meng-chu, *Yueh-shih pien (A survey of the Age)* (MS, Shanghai: late seventeenth century), in *Shang-hai chang-ku ts'ungshu*, VII 5a-6a.

³Mark Elvin, *The Pattern of the Chinese Past* (Stamford: Stamford University Press, 1973), 287.

⁴Fujii Hiroshi, 'Shin-an Shōnin no kenkyū' (A Study of the Merchants of Hsin-an) *Tōyō gakuho* XXXVI.i-iv (1953-4): ii, 33.

⁵While varying over time due to inflation, in simplest terms one string of cash equaled 1,000 copper pieces or 1 silver tael.

Not only were the salt merchants of the Ming dynasty wealthy, but so were also those of the eighteenth century Co-Hong foreign trade monopolies—some of whom possessed several million ounces of silver.⁶

As further qualitative evidence of the overall size and scope of Chinese markets during this time period, below stands a passage taken from an early seventeenth century censor relating to the customs houses in southern China:

Throughout the prefectures, the departments and the counties of Kiangnan there are waterways everywhere. Everywhere there are local specialties. Everywhere there is trading. At the present time there are controls on all this. At the river ports of every county and prefecture even such commonplace articles as rice, salt, chickens and pigs, and even such coarse ones as firewood, coals, vegetables and fruits are all affected. Every commodity is subject to a tax. Every person is subject to a tax.⁷

This censor not only speaks to the prominence of markets during this period, but also shows how highly productive specialization within independent communities began to arise as well. This high level of productivity directly contrasts Nurske's second circle, thereby further limiting his argument. Moreover, as the size and permanence of these markets became established, so did a static degree of taxation. One would think if Nurske's theory was correct, individuals would not have the additional capital necessary to invest in industry after paying a static tax. Nor would such thriving and large-scale markets be able to exist due to individual proprietor's lack of capital.

Final evidence for an expanding Chinese market system during this period, at least in the most advanced parts of China, is illustrated in Figure 2. This figure indicates the exponential growth in Chinese markets in Shanghai County from 1470 to 1910.

⁶Ibid., iii, 76.

⁷Sakuma Shigeo, 'Mindai ni okeru shōzei to zaiseru to no kenkyūi' (The Business Tax and Financial Administration in the Ming Period), *Shigaku zasshi* LXV.i and ii (1956): ii, 23.

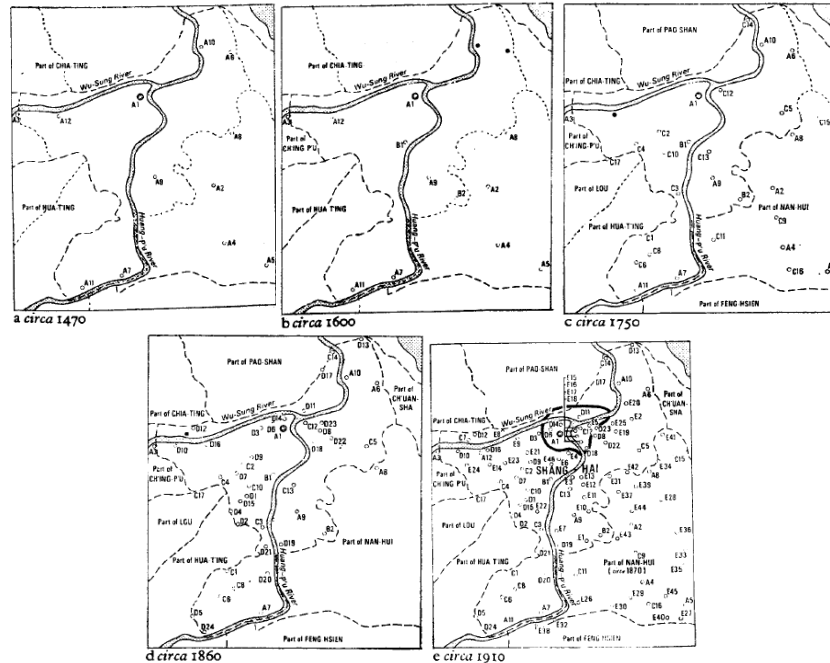


Figure 2: The Growth of Market Towns in Shanghai County, 1470-1910⁸

The size and wealth of the Chinese cotton and salt markets were representative of growth in a number of Chinese markets. Therefore, it is hard to believe the lack of innovation and growth seen in the mid- and late-Qing dynasty was caused by a subsequent lack of capital. While Nurske presents a compelling theory of how economic stagnation can occur in developing countries, it would appear in the case of China that this theory is not applicable.

2.2 Political Obstacles to Growth

A second—and perhaps more compelling—theory for the lack of growth in eighteenth century China is that political obstacles such as government regulation and corruption inhibited growth. One might argue that due to the rapacity of the government,

⁸Elvin, *The Pattern of The Chinese Past*, 271-272.

individuals would spend long periods of time—time they could have spent working—attempting to circumnavigate taxes and regulations through legal, illegal, or dishonest means. They could do so legally by dispersing their wealth in a variety of investments, rather than concentrating their wealth in a highly visible fashion, or pursuing a long-term strategy of entering the bureaucracy to mitigate the effects of government encroachment on personal interests. They could do so illegally by avoiding the official market place altogether and strictly trading in the black market—a market that, while possibly beneficial to the individual, ultimately contributed little to national growth. Yet another option open for the well-connected individual would have been rent seeking. If the individual already possessed a certain placement within the government structure, or had a close relative or friend that did, he could have easily used his connections within the government for personal gain by obtaining government contracts or special favors. No matter the case, one might argue the ingenuity that could have contributed to national interests, was rather, incentivized during this time period to turn towards benefiting the individual at the cost of the nation.

To provide an analogy, Adam Smith argues in *Wealth of Nations*, “it is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest.”⁹ However, if the interests of the butcher, brewer, or baker are redirected to rent seeking and other nonproductive activities, it is reasonable to believe that the consumer would go hungry. The reason for this is the innate personal interest of mankind as argued by Smith. “By pursuing his own interest [the producer]

⁹Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, R. H. Campbell, A. S. Skinner, and W. B. Todd, eds., 2 vols. (Oxford: Clarendon Press, 1976 [1776]), 26-27.

frequently promotes that of the society.”¹⁰ However, a caveat must be added to this. By pursuing his own interests the producer frequently promotes that of the society, *only when the interests of society do not impede on the interests of the producer*. In the case of seventeenth and eighteenth century China, one might argue that through government (the consumer in Smith’s case) rapacity, merchants (Smith’s butchers, brewers, and bakers) were incentivized to do what they must in order to benefit themselves, even at the expense of their nation.

As useful as analogies may be, there is always a point at which they break down, and this analogy, just as any other, must be qualified. Markets in their natural state will almost always have producers and merchants attempting to meet the needs of their consumers. In a statist environment, such as Qing dynasty China, the merchants would still need to meet the basic needs of their consumers to stay afloat—it is the unproductive incentives that would alter market efficiency from the natural state. Rather than focusing solely on customers, merchants would either lose motivation to produce, due to the stymying weight of the government bureaucracy, or spend time rent seeking. Either way the end result would be fewer products, higher prices, and products the government wants rather than the consumer. It is not that poor government actions would suddenly incentivize merchants to act selfishly, or, as stated in the analogy, do what they must. It is that their self-interested incentives would be misdirected. New York University economist, William J. Baumol, argues that there will always be productive, unproductive, and destructive actors within a market. It is the “rules of the game” the government

¹⁰Smith, *Wealth of Nations*, 456.

creates that determine the proportion of productive, unproductive, and destructive entrepreneurs within a society.¹¹

One example of merchant abuse of government regulations can be seen through the transportation of duty-free goods. Soldiers protecting grain transport boats under the Ming government were allowed to carry a limited quantity of duty-free goods in addition to the main cargo—the objective of this was to save the government from having to pay them adequate wages. Under the Qing dynasty this concession increased further. In 1731, Hsieh Ning, governor of Kiangsi, issued a statement:

Each grain ship is entitled to carry a hundred piculs of local products and the head steersman is allowed a further twenty-six piculs. There are seven thousand grain ships in all, and they carry a total of about one million piculs of local products.^{12&13}

This abuse of the duty-free transport system became so excessive that, as in the celebrated case of 1834, a grain ship under the guidance of its official overseer was ordered to “smash through the customs barriers in order to avoid examination.”¹⁴ Ever more so during this period, merchants would work with their overseeing soldiers to bend, and in some cases smash, the laws in order to pull a profit. It is apparent that, to some degree, the most productive merchants were incentivized to use their energy and talent to avoid onerous taxes and regulations, rather than contribute their energies to the national budget and interest.

¹¹William J. Baumol, “Entrepreneurship: Productive, Unproductive, and Destructive,” *Journal of Political Economy* 98, no. 5, Part 1 (1990): 893-921.

¹²Nakahara Teruo, ‘Shindai sōsen ni yoru shōhin ryūtsū ni tsuite’ (The Flow of Commodities on Grain Transport Ships during the Ch’ing Dynasty), *Shigaku kenkyū* LXXII (1959), 69.

¹³A picul is a traditional Asian unit of weight, defined as a shoulder-load or as much as a man can carry on a shoulder-pole.

¹⁴Elvin, *The Pattern of The Chinese Past*, 291.

Yet it would be incorrect to assume that the position of businessmen and bureaucrats were mutually exclusive. When the Grand Canal, China's largest inland waterway, was blocked in 1826, the Qing government hired 46 merchants to transport more than 1.5 million piculs of its annual supply of rice. Of these 46 merchants, 26 were of the gentry or bureaucratic class.¹⁵ Due to the overall expense that went into studying for the imperial examination—an examination system that will be covered further in Chapter 5—it is not difficult to assume that a growing number of examination candidates came from merchant families.

During the nineteenth century, political power of the merchants began to increase. The clearest indicator of this growth in merchant political power was when guilds started to actually become the municipal governments within their various cities. Confederations of guilds were not simply merchant institutions. An 1888 text refers to the “‘gentry and merchants of the Ten Guilds’ in Hung-chiang; and almost all the leading Ch’ung-ch’ing merchants had official titles and degrees.”¹⁶ Figure 3 below illustrates the rapid growth of merchant guilds in Shanghai between 1700 and 1920.

¹⁵Yamaguchi Michiko, ‘Shindai no sōun to senshō’ (The Tribute Grain Transport and the Shipping Merchants under the Ch’ing), *Tōyōshi kenkyū* XVII. Ii (1958), 62.

¹⁶Elvin, *The Pattern of The Chinese Past*, 293.

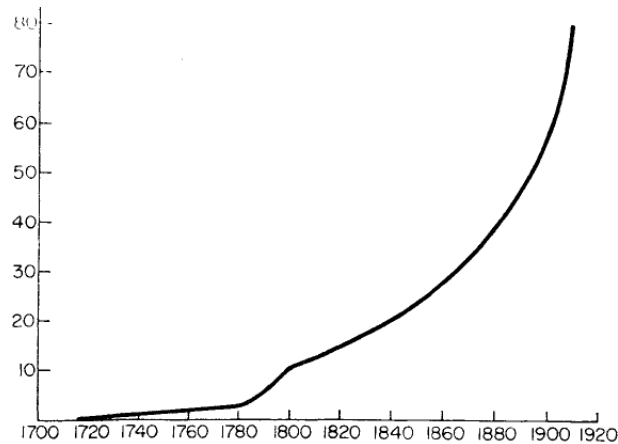


Figure 3: The Growth of Shanghai Guilds Between 1700-1920¹⁷

Arguing that the bureaucrats and merchants were mutually exclusive, with the former imposing harsh and over-extended regulations on the latter, is an overly simplified analysis of the evidence. A more nuanced view acknowledges that there was a symbiosis between the two classes and that it became progressively more difficult to distinguish where one class ended and the other began. If the lack of economic growth during this period truly originated from political obstacles, the question posed is why the merchant—who became increasingly entangled in government power—would impose harmful regulations upon himself. To once more stand as the voice of Smith, why would the butcher, who has since his last mentioning gained all the power of a government regulator, create laws that hinder the performance of his own craft?

The answer to this is the difference between individual, short-term benefit and collective, long-term harm. It is true that an individual incumbent will often support rules that harm new entrants and limit competition. In this way, so long as the incumbent butcher can survive the regulations, he is incentivized to push for higher taxes and more

¹⁷Elvin, *The Pattern of The Chinese Past*, 277.

stringent rules on market entry. When a collective group acts together for gain by preventing others from competing with the group, there is a net loss for consumers and market as a whole. As Baumol theorizes, a population of entrepreneurs primarily consisting of rent seekers—unproductive entrepreneurs—would spell disaster for the respective nation's economy. For this reason, the political obstacles to growth argument does hold weight in the conversation. It will be shown in subsequent chapters, however, that while this argument does maintain a place in the genesis of Qing market disparity, its explanatory power relative to the whole is somewhat limited.

2.3 Short-lived and Small-scale Enterprises

A third theory for why China did not thrive during this time is that China was incapable of creating large-scale private enterprises. Large-scale private enterprise in this instance is a company that is not just large in capital, but one that is also expansive in both its number of partners and its reach in geography. This form of enterprise is uniquely different from previous examples by concentrating strictly on firms with economies of scale and scope. Yeh Meng-chu's account of Shanghai cotton cloth industry, Hsieh Ch'ao-chih account of the Ming's salt industry, and the early seventeenth century censor relating to the customs houses in southern China are just that—industries. These accounts speak toward institutions that allowed for a number of individual proprietors to engage in commerce, creating one large industry. Additionally, the growth in merchant guilds indicates the ability of various merchants—or enterprises—to come together to create confederations. This section is an inquiry into the large-scale private Chinese enterprises of the seventeenth and eighteenth century.

One common argument for why China was incapable of creating large-scale enterprises is that the Chinese people have always found it hard to trust individuals with whom they are either not related, or have not known for a long period. Evidence for this can be observed in China's macro-level isolationist approach to global trade and politics—this isolationism will be touched on further in Chapter 5.

While there is a measure of truth in the argument that a lack of trust limited the scale of enterprise, it must be qualified. The Shanxi merchants stand as one example to the contrary, as a group of individuals who came together by creating a network of branches extending over several counties and yet were known for their trustworthiness and success. Shen Ssu-hsiao gives an account of these merchants in his late sixteenth century *Account of Chin*:

The great merchants of Tse-lu in P'ing-yang are the foremost in the empire... Their economic practices are excellent, and they vie with each other in [good] conduct. When associates combine to trade this is called 'an association'. *One person puts up the capital and the associates jointly use it for commerce*... What is more, the rich do not store their wealth in their houses but entirely disperse it in these associations. If one is estimating a man's fortune, one merely counts how many large and how many small associations he has underwritten; and several hundreds of thousands or millions worth of wealth can be counted on one's fingers.¹⁸

This method of association ultimately culminated in the famous Shanshi banks, which in the late nineteenth century not only expanded across multiple provinces, but multiple nations as well.

Furthermore, the Shanxi banks were by no means the first large-scale enterprise in China. Another entrepreneur with a sizable workforce, Wang Ko, flourished in the time of the Southern Song (AD 1127-1275):

¹⁸Fu I-ling, *Ming Ch'ing shih-tai shang-jen chi shang-yeh tzu-pen* (Merchants and Mercantile Capital in the Ming and Ch'ing Periods) (Peking: 1956), 27-28.

Having heard that it was possible to make a living by smelting and by farming, he crossed the Yangtze and settled in Ma-ti...He ordered one of his sons to raise the charcoal-burners, and the other son to raise the men at the furnaces. The charcoal-burners were all peasants and unwilling to follow him. They scattered as fast as they could. The furnace-workers did follow him, however, most of them being absconded criminals. He mustered his army at night, dividing it into groups under the command of his cronies...*They had altogether over five hundred men.*¹⁹

Setting aside the violence of Wang's enterprise, it is still important to note the number of men working at the furnace that he turned into an army. If this workforce was added to those not counted—those who mined the ore, cut the wood, burned the charcoal, and transported the materials to the furnaces—Wang's number of employees probably numbered several thousand. "Wang Ko was therefore an ironmaster on a scale not to be surpassed until the creation of the Urals iron industry in Russia in the eighteenth century."²⁰ Thus, even during the Southern Song period, large-scale enterprises existed within China.

Chinese enterprises were not just known for being trustworthy and large—some could stand the test of time and far outlive their creators. An eighteenth century cloth merchant, Mr. Wang from Hsin-an, provides such an example:

Mr. Wang from Hsin-an set up the Beneficial and Beautiful wholesaling firm by the Cha'ang Gate of Su-chou city...He calculated that [normally] he sold about a million full lengths each year, making a profit of a hundred cash per length [i.e. a total profit of 100,000 strings of cash]...For ten years he was the richest of all merchants, and his cotton cloth was sold ever more widely throughout the empire...for some *two hundred years* now there has been no place, either north or south, that has failed to consider Beneficial and Beautiful [cloth] to be lovely.²¹

¹⁹Sudō Yoshiyuki, *Sōdai keizai shi kenkyū* (Studies on the Economic History of the Sung Dynasty) (Tokyo: 1962), 542-3.

²⁰Elvin, *The Pattern of The Chinese Past*, 174.

²¹Terada Takanobu, 'So-Shō chihō ni okeru toshi no mengyō shōnin ni tsuite' (on the Cotton Merchants of the Cities in the Su-chou and Sung-chiang Region), *Shirin* XLI.vi (1958), 66-67.

Lasting for over two hundred years, Mr. Wang's Beneficial and Beautiful company is one of countless examples that undermine the theory that Chinese businesses during the Qing were nothing but short-lived and small-scale enterprises.

2.4 Mark Elvin's High-Level Equilibrium Trap

The last theory attempting to explain the lack of growth during this time period comes from Mark Elvin's *The Pattern of The Chinese Past*.²² I have noted from the start, it is not my intention to entirely dispense with Elvin's theory—there is justifiable reason for why Elvin's answer has held the general consensus view of the topic for the past fifty years. However, newly discovered data and a better contextual understanding of the implications of the fall of the Qing dynasty have created holes in Elvin's arguments that I intend to fill. In this section I will provide a summary of Elvin's theory and then move to my criticism in the following chapters of my thesis.

Elvin's argument, while complex in nature, can be separated into three sections. Within the first section, Elvin contends with the growth of China from the Qin dynasty (BC 221-207) to the beginning of the Ming dynasty. While this section proves to be useful as a contextual guide for the growth of China during the Early and Middle Empires, this section can be ignored for our purposes due to the fact that its material takes place outside the scope of this paper.

The second section covers China's medieval economic revolution. The crux of Elvin's argument manifests in the chapters covering revolutions in farming, water transportation, money and credit, market structures, and science and technology. The

²²Elvin, *The Pattern of The Chinese Past*.

Song dynasty's agricultural system proved vitally important for China's later history, as it was during this period that farmers moved away from the objective of self-sufficiency and instead towards crop specialization. As a result, farmers began to only grow crops that performed best in their given area—ultimately leading to a rise in efficiency and output of produce. Thus, by the thirteenth century China most likely possessed the most sophisticated agricultural system in the world—India being the only notable competition.²³

During this period, China's water transportation system began to grow exponentially as well. It was “the golden age of Chinese geography and cartography, which reached...as far west as the Maghreb and the shores of the Atlantic.”²⁴ By Song times, Chinese junks became so sophisticated that it was common for foreign merchants to whenever possible choose to travel on Chinese, rather than Western, ships. Lastly, the greatest economic impetus was given by the creation of river and canal shipping. In 1487, Ch'iu Chün mentioned in a memorial: “Transport by inland waterway is thirty per cent to forty per cent cheaper than transport by land. Sea transport is seventy per cent to eighty per cent cheaper than transport by land.”²⁵ It was this highly developed water transportation infrastructure that allowed farm specialization to further increase.

This period also experienced a growing sophistication of both China's currency and market structures. Nearing the end of the Early and beginning of the Middle Empire—specifically from the Western Chin dynasty (AD 265-311) to the end of the T'ang dynasty (AD 618-909)—China's monetary system was littered with counterfeit

²³Elvin, *The Pattern of The Chinese Past*, 128-129.

²⁴*Ibid.*, 135.

²⁵Hoshi Ayao, *The Ming Tribute Grain System*, trans. Mark Elvin (Ann Arbor: 1969), 33.

currency and inflation. One example taken from the *Sui History* speaks of a sixth century crisis where a shortage of copper led to the proliferation of iron coins:

Iron was cheap and easy to come by, so everybody secretly made money. After 535-45, iron coins therefore piled up everywhere. The prices of goods rose like an arrow. Those who carried out commercial transactions took carloads of money with them. People no longer counted coins but only strings.²⁶

It wasn't until the Song dynasty that a static form of currency began to take hold and a system of credit, or flying cash, was developed. Flying cash allowed for merchants to pay money at the capital "and receive in return a certificate from the government which, when presented at any provincial treasury, entitled the bearer to draw an equivalent sum."²⁷

Moreover, markets began to thrive during this time due to a growing level of urbanization—later growth of the market system can be seen above through Figure 2. The urban population of T'ing-chou in western Fukien grew from 6% of the total population (counting only males) in the late twelfth century to more than 28% of the total population by the middle of the thirteenth century. Nor was this level of urbanization unique to only major cities. Urban inhabitants of Tan-t'u County—which contains the city of Chen-chiang—grew from 24% of the total population to 33% of the total population by the end of the century.²⁸ Looking towards both the sophistication of its currency and its growth in its market population, one would presume China was destined for success during the later half of the millennium.

²⁶E. Balazs, 'Le traité économique du "Souei-chou"', *T'oung pao* XLII (1945), 175.

²⁷Elvin, *The Pattern of The Chinese Past*, 155.

²⁸*Ibid.*, 175.

Lastly, China's technological advances went unrivaled during this period; thereby leading to the world's first mechanized industry. The greatest achievement during this period occurred early in the ninth century. With the creation of woodblock printing—a technique that was put into general use by the tenth century—scientific, historical, and philosophical texts were disseminated to both elite and the commoner alike in a way not rivaled by Europe until the creation of the Gutenberg Printing Press in 1440.²⁹ It is primarily due to this one technological development that China enjoyed sustained development for the next four centuries.

One would assume that the overall development in agricultural specialization, transportation innovation, currency and market sophistication, and technological creation during this period would have sufficiently prepared China for success in the later part of the second millennium. Conversely, it is because of these early advances that Elvin believed China fell into stagnation nearing the beginning of the seventeenth century.

The third and final section of Elvin's argument is how a migration of the Chinese population altered various province population densities and caused an economic turning point in the fourteenth century. Elvin argues the Chinese frontier ultimately began to "fill up," due to an ever-growing population and an equally growing need for additional resources to sustain the population increase.³⁰ Thus, the Chinese landscape at the beginning of the fifteenth century was left drastically different from that of the thirteenth century.

As lands in the north began to become crowded at the end of the eighth century, a migration to the southern, more fertile lands emerged. The time of this southern

²⁹Ibid., 179.

³⁰Ibid., 204.

migration occurred at the same time as the medieval economic revolution in the West spoken of previously. Likewise, a reverse migration back to northern provinces at the beginning of the fourteenth century occurred at the same time as the growing period of stagnation that had fallen across the nation. A graphic form of this evidence is shown below in Figure 4.

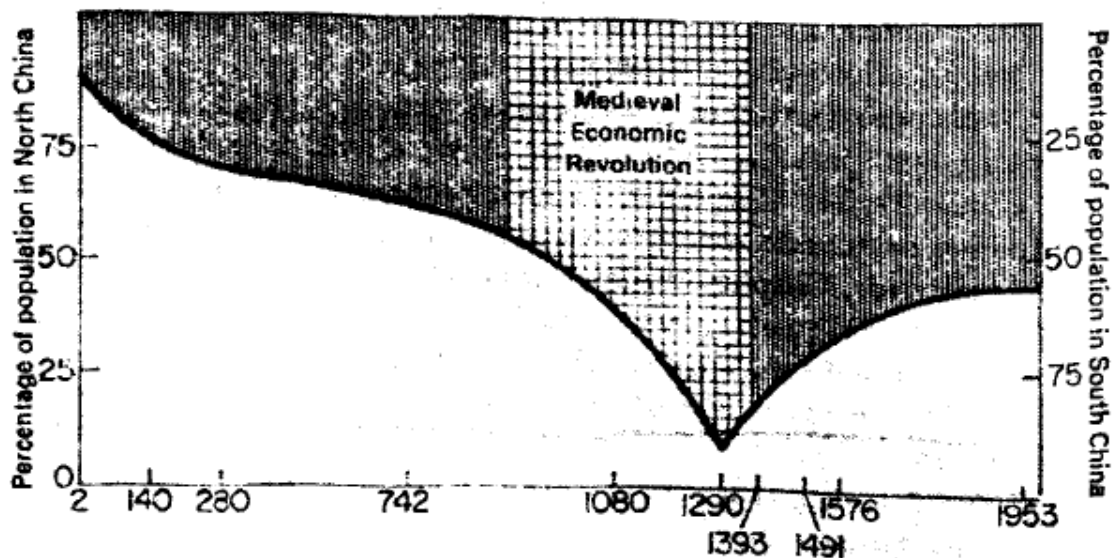


Figure 4: Distribution of Population, AD 2-1953³¹

A qualitative example of this transforming demographic population from north to south can be seen through an early thirteenth century passage from Chang Ju-yu's *Further Bibliographical Inquiries from the Mountain Hall*:

³¹Ibid., 204.

Compared with the twenty-three provinces of the Yuan-feng reign [1078-85], as regards registered population and amount of cultivated land, [southern China] constitutes two-thirds of the empire. With respect to geographical extent and wealth, it constitutes three-quarters. The north-west corner was formerly three-quarters of the empire. Now it is but one-quarter.... Thus, although the population which lives to the south of the Great River and of Chien-ki only occupies a part of all China, yet it has two-thirds of its total wealth.³²

While this growth might have been useful in spurring the wave of technological advances at the beginning of the millennium, the southern lands of China began to reach maximum capacity.

One example of how southern China began to fill up is the interprovincial exchange of rice. In 1288, Kuang-nan-tung exported rice to not only other provinces, but overseas as well:

The officials and commoners of Kuang-chou who purchase rice in the country villages in hundreds, thousands, or even tens of thousands of measures, frequently transport it overseas to Champa [central Vietnam] and other foreign lands...³³

The same location a few centuries later, however, told of a vastly different story. One 1785 government decree states, “The people of Kiangsu and Chekiang regularly rely for rice on Szechwan and Hukwang.”³⁴ An additional early eighteenth century passage observes:

The population of Kwangtung is dense. The rice produced in this province is not sufficient for the people to eat. They always rely upon Kwangsi and Hunan to sell and transport rice for their relief.³⁵

Areas that once boasted of a surplus of produce later had to import supplies in order to survive. The variance between the overpopulated north of the eighth century and the

³²Shiba Yoshinobu, *Sōdai shōgyō shi kenkyū* (Commerce and Society in Sung China) (Tokyo: 1968), 146.

³³Ibid., 163.

³⁴Fujii (1953), i, 26.

³⁵Ibid., i, 25.

beginning-to-be overpopulated south of the fourteenth century is that when the north grew too large for its citizenry people could move south, but when the south grew too large for its citizenry far less migration options existed in moving north. Once this point was reached the expansion of acreage and improved farming practices were only able to keep up with population growth, not surpass it. At this point invention and innovation came to a standstill.³⁶

The last major dynamic that must be understood before Elvin's theory is presented is the change in the Chinese market structures during the seventeenth and eighteenth centuries. As the manorial system of landlords and surfs began to transform into a system of landlords and free working tenants, the relationship between the worker and the market began to change as well. For the most part, workers were no longer confined to employment with one single landlord throughout the entirety of the year. Rather, they became free agents finding multiple venues of work each year. For example, the cotton industry was seasonal. Therefore, income from spinning and weaving constituted only a portion of the total income for the household, leaving their equipment unused for many months in the year. Furthermore, an enormous expansion of reserve productive worker capacity was brought into play.

The availability of seasonal free agent labor to match a rising and falling demand for cotton reduced the pressure to innovate more than it would have if the workers had been full-time. Additionally, when demand for a certain product rose, the enormous reserve capacity of workers could be brought into play by diverting labor from one area of agriculture to another. Likewise, when demand for a certain product fell—along with

³⁶Elvin, *The Pattern of The Chinese Past*, 212.

the corresponding wages for the work—the damage only affected a portion of the total annual income of each worker. Therefore, during the beginning of the seventeenth century an excess capacity of free agent workers was formed which ultimately compensated for any brief surges of demand and cushioned the blow of any periods of stagnation.³⁷

After accounting for this last major development in the seventeenth century, Elvin finally presented his answer with respect to why China suffered from such economic stagnation during the late Qing dynasty. In short, his answer is the emergence of a “high-level equilibrium trap” that developed during this period. Elvin argues that as the steadily increasing Chinese population came into conflict with a finite amount of arable land, the man-to-land ratio began to worsen, and social surpluses began to shrink. The resulting price of labor relative to capital goods fell into decline, thereby removing the need for landowners to innovate new laborsaving technologies. This lack of innovation was further perpetuated by a well-developed water-transportation system, which allowed for goods to be transported from one area to another when demands were not being met in one sector of the nation. The end result, as told by Elvin, was an economy of stagnant innovation and marginal growth.³⁸

In explaining this theory of a high-level equilibrium trap, it must be highlighted that while the workers began to be paid less, so long as the producers met their profit margins the economy was still seen as in equilibrium. In the following chapter I will complete my analysis of Elvin’s equilibrium trap and then challenge this idea of a falsely perceived equilibrium.

³⁷Ibid., 276.

³⁸Ibid., 312-314.

CHAPTER THREE

An Artificial Equilibrium

Forty-plus years of research and advances in economic theory have left Elvin's high-level equilibrium trap slightly outdated. While Elvin's theory has not entirely been disproven, there are several areas of his equilibrium that have come under great contention and revision. The first three sections of this chapter will cover the areas of Elvin's theory that are still held to be true. Following that, sections four through seven will contain a sequential analysis of factors that Elvin failed to address. Finally, in section eight I offer my explanation for why Elvin may have failed to observe a growing level of the Chinese labor class living on subsistence level of income.

3.1 A Sophisticated Metaphysics Impedes Substantive Research

The first area that Elvin's theory correctly takes accounts was the fundamental shift in how the Chinese perceived and approached the world in the fourteenth century. During this period, Buddhism was one of the primary religions of Chinese scholars. A key aspect of Buddhist thought was the "denial of the permanent existence of any forms," and the belief that "things and people [are] mere momentary phenomena in a great flux of cause and effect that, lacking any enduring characteristics, [were] ultimately meaningless." Attacking this belief, Song Neo-Confucians asserted "the reality, the meaningfulness, and the goodness of human life and the nature in which it was

embedded.”¹ The purpose of this assertion was to establish a Chinese social order and morality grounded in philosophy that integrated the material world. For the Neo-Confucians, Nature embodied the principles that a morally correct human society should abide by. Therefore, an understanding of Nature was necessary for humans to progress to sage hood—the ultimate goal of human existence. Furthermore, by Buddhists denying the “permanent existence of any form” and Neo-Confucians arguing for the existing of a “reality,” this ontological debate began to subsume scientific inquiry.

Additionally, this shift in thought began to accrue several of its own difficulties within its philosophical parameters. For example: if society and man were a part of Nature, and Nature was the source of morality, how could the existence of evil be explained? Thus, a dualism began to form within the new philosophical boundaries that could not easily be explained.

Sixteenth century philosopher, Wang Yangming, argued for one logical answer to this question: mans’ own judgment is the source of moral authority. Nature is a derivative of man’s consciousness and reality exists solely within the mind. “‘Outside the mind,’ he said, ‘there are no principles. Outside the mind there are no phenomena.’”² Thus, a shift once more occurred, but this time away from the individual’s ability to master nature and toward the individual’s ability to engage in introspection and subjectivity. “The new emphasis on Mind devalued the philosophical significance of scientific research by draining the reality from the world of sensory experience.”³

¹Mark Elvin, *The Pattern of the Chinese Past* (Stamford: Stamford University Press, 1973), 225.

²Ibid., 226.

³Ibid., 227.

Fang I-chih (1611-1671), one of China's most prominent seventeenth century scientific thinkers and author of the *Brief Record of the Principles of Things* (1664), stands as an example of this new mode of thinking. In his *Record*, Fang left a description for what end he thought scientific investigation should be directed:

When one infers the unknowable, it is by means of an extension of the known that one assimilates it, learning of what is hidden by the expenditure of one's efforts. *The single reality of manifold mystery – this is the profound germinal cause which makes both things and spirit(s) what they are. To seek the origins of the obscure silent response is called 'reaching to the germinal elements'.* Objects of existence have their causes. To investigate them...is called 'substantive research'. It is substantive research which contains concealed within it [the possibility of] reaching to the germinal elements (emphasis added).⁴

Fang believed scientific investigation was a two-step process. The first step, that of "substantive research," was the step most closely associated with how scientists engage in modern day research. However, "Fang himself thought it inadequate on its own and criticized the Jesuits in China as being 'well-versed in substantive research, but inept at reaching the germinal causes'."⁵ The second, and more important, step was to use the "substantive research" to infer general principles. The switch from studying natural laws to general principles, however, could not be done through inductive reasoning. The general principles were inaccessible to rational knowledge and required a "spiritual intelligence."⁶

Even in a vacuum, the scientific consequences of this philosophy can be seen. As a result of a highly developed metaphysics, there was always an explanation for natural phenomenon devoid of rational reasoning. Elvin goes on to argue, "Here then was the

⁴Fang I-chih, *Wu-li Hsiao-shih* (A Brief Record of the Principles of Things) (1664; edition of 1884), *Tzu-hsu* la.

⁵Elvin, *The Pattern of The Chinese Past*, 231.

⁶Fang I-chih (1664), I 4a.

reason China failed to create a modern science of her own accord, and the deepest source of resistance to the assimilation of the spirit of Western science both in the seventeenth century and later.”⁷ Furthermore, because the pursuit of scientific reasoning was replaced by philosophical inquiry, it seems reasonable to draw two further conclusions from this theory: first, any individual who subscribed to this philosophical paradigm would understandably have a reduced desire to engage in technological innovation, and second, by the time China became aware of the need for greater innovation to avoid falling into Elvin’s trap, scientific advancement had been neglected for so long that the intellectual tradition and skills required for innovation were missing.

One example of this second point can be observed in Chinese mathematics. In the late twelfth century Ch’en Fu, a Taoist mathematician residing in southern Shansi, began to develop a new system of algebra. Li Yeh, author of the *Sea Mirror of Circle Measurements* (1248) and the *Amplification of the I-ku-chi of Chiang Chou* (1259), further added to this literature by creating a positional algebra that could maintain up to four unknowns. By the Ming dynasty, however, there was hardly anyone left who could understand the advanced positional algebra of the earlier periods. After that, the pursuit of advanced mathematics seemingly disappeared with the Shansi Taoism tradition, which was around the same time that the Neo-Confucians began to appear in the fourteenth century.⁸

It should be noted, however, that while this argument stands as a compelling justification for why China was unable to innovate in the late Qing, Elvin refrains from using it in his final analysis. He blames the lack of innovation solely on “huge but nearly

⁷Elvin, *The Pattern of The Chinese Past*, 234.

⁸Ibid., 193-194.

static markets [which] created no bottlenecks in the production system that might have prompted creativity. When temporary shortages arose, mercantile versatility, based on cheap transport, was a faster and surer remedy than the contrivance of machines.”⁹

However, while Elvin’s final argument seems to strictly be directed towards the large markets and the versatile transportation network, I will use his substantial work done in the metaphysical shift of the Chinese culture to further my own argument later on in this paper.

3.2 Ester Boserup and Agricultural Advancements

Elvin also took correct notice of a focus on labor-using technology—also known as *intensification of farming*—over labor-saving technology during the mid- and late-Qing. In his last chapter Elvin argues:

[I]n late traditional China economic forces developed in such a way as to make profitable invention more and more difficult. With falling surplus in agriculture, and so falling per capita income and per capita demand, with cheapening labour but increasingly expensive resources and capital, with farming and transport technologies so good that *no simple improvements could be made*, rational strategy for peasant and merchant alike tended in the direction not so much of *labour-saving* machinery as of economizing on resources and fixed capital (emphasis added).¹⁰

This theory can be attributed to Ester Boserup who argues that excessive population growth leads to changes in agricultural technology.¹¹ These two forms of agricultural technology, depicted in Figure 5, are two ways of shifting the production function.

⁹Ibid., 314.

¹⁰Ibid., 314.

¹¹Ester Boserup, *The Conditions of Agricultural Growth: The Economics of Agrarian Change Under Population Pressure*. (Chicago, 1965).

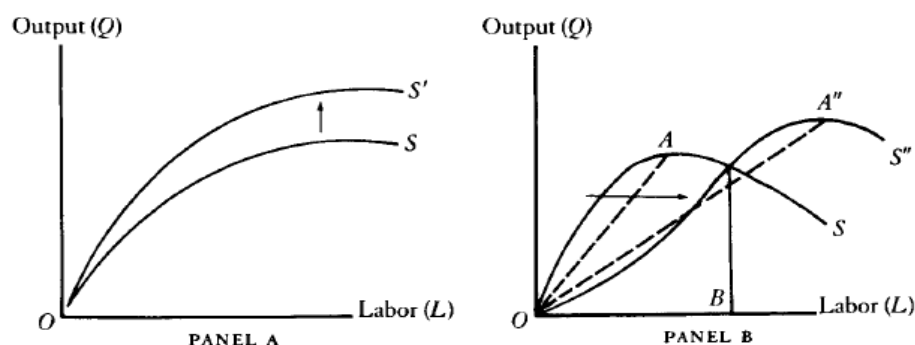


Figure 5: Effects of New Labor-Saving (Panel A) and Labor-Using (Panel B) Technology¹²

In Panels A and B, the horizontal axis measures the quantity of labor L and the vertical axis measures the total output Q produced by labor. In panel A, the production function S shifts upward to S' after a new labor-saving device is introduced into the market. In panel B, the production function S shifts right to S'' as a result of labor-saving technology.

Noted by Boserup, these two types of innovations differ in three ways. First, innovations of labor-saving technology tend to raise the returns per unit of labor, whereas innovations of labor-using technology tend to lower the returns. As shown by Panel B, while reduced returns per unit of labor are seen after a labor-using innovation is adopted, a higher peak output, point A'' , develops when enough labor is finally absorbed.

Second, only after a certain point does using more labor to produce a larger total output offset the disadvantage of reduced returns per unit of labor under intensification of farming. This is shown in point B of panel B. Before B, both the average product and

¹²Kang Chao, *Man and land in Chinese history: an economic analysis*. (Stanford: Stanford University Press, 1986), 21.

total product are lower for S'' than S at any given point of L. After B, total product is higher for S'' than S even though average product remains lower.

Third, advancements in labor-saving technologies require a long process of smaller innovations and an accumulation of scientific knowledge to be created.

Advancements in labor-using technologies can arise with relative ease through a population boom or a simple rearranging of existing mechanisms. As mentioned before, such innovations are only useful if they are able to pass point B. One example of this is double cropping. If a given farming area's population reaches the extent to which enough labor can be used to plant and harvest a field twice in a growing season, the land will produce double returns due to only a slight increase in population. Furthermore, this gives the areas with denser populations an advantage. While the competitive benefit of a labor-saving innovation is removed as soon as the price of the product falls to a reasonable cost, only specific areas are able to increase its intensification of farming to a large enough extent to make it rational.¹³

As already shown in previous sections, farming technology had reached such a point, and scientific innovation had suffered so much, that by the late Qing "no simple improvements could be made...[Therefore] rational strategy for peasant and merchant alike tended in the direction...of economizing on resources and fixed capital [labor-using technology]." ¹⁴ Elvin blames this lack of labor-saving innovation on a falling surplus in agriculture, falling per capita income and per capita demand, cheapening labor, and increasingly expensive resources and capital. Thus, these collective factors created the huge but nearly static market void of production system bottlenecks reported in 3.1.

¹³Ibid., 21-22.

¹⁴Elvin, *The Pattern of The Chinese Past*, 314.

While nothing in this answer is incorrect, I would be remiss to say Elvin adequately covered this topic in full. Additionally, it is precisely what Elvin has omitted that I believe to be of the greatest importance.

3.3 Elvin's Stationary State

The final aspect of Elvin's high-level equilibrium trap that must be analyzed before I may begin my criticism is his stationary state. Figure 6 presented below is the model given by Elvin to depict the "effects of a discontinuity or quasi-ceiling in late traditional Chinese farm technology."¹⁵

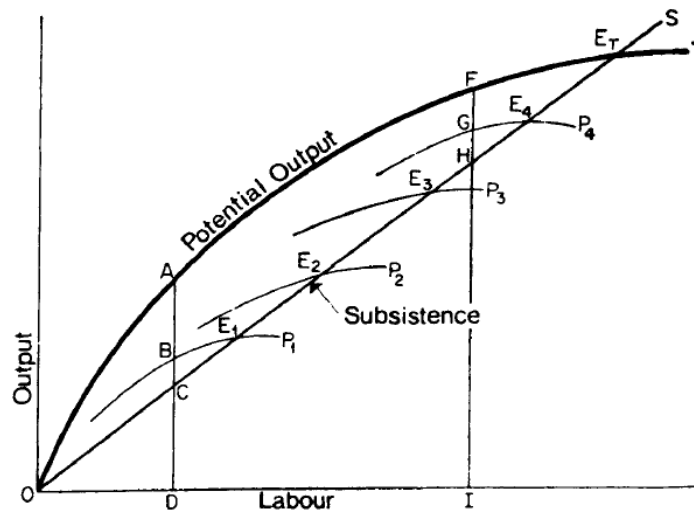


Figure 6: Elvin's High-Level Equilibrium Trap¹⁶

OT represents potential output for a given input of labor. OS represents the proportion of output needed for the subsistence of a given labor-force. Holding land constant, potential

¹⁵Ibid., 313

¹⁶Ibid., 313

surplus (AC and FH) shrinks, first relatively, then absolutely, as labor force grows. Actual surplus (BC and GH) depend on the level of investment and organization of a given producer. P_1, P_2, P_3 , etc. show how at a given level falling returns per man as a labor input create intermediate equilibriums E_1, E_2, E_3 , etc. At E_T further improvements in investment and organization are zero, and the high-level equilibrium trap is created. For Elvin it appears the total quantity of farmland and the state of technology are assumed to be constant at this point.

At point E_T , Elvin's equilibrium point seems to mirror that of Ricardo's stationary state. To simplify this comparison, allow for a short narrative. In earlier times, Chinese landowners could expand industrial production and pay workers at higher wages. But soon, workers began to breed more workers, which ultimately brought wages down due to various constraints. As population rose, the crowds could only be fed by farming more land. The more the land was cultivated, the less productive the land became and the more costly it became to cultivate. As the price of food rose and wages remained low, landowners profited less. When resources become "divided between the farmer and the laborer, the larger the proportion to the latter, the less will remain for the former."¹⁷ Ultimately, starvation flourished after farmers exhausted the land. Ricardo calls this somber plight the "stationary state."

In an agrarian economy, landowners cultivate their land, purchase labor, and pay a wage rate in accordance with the labor's marginal product. General equilibrium is disrupted, however, when the population increases to the point where the marginal product of labor drops below the subsistence level. Thus, the subsistence cost forms a

¹⁷David Ricardo, *The Works and Correspondence*, Piero Sraffa, ed. (Cambridge: Cambridge University Press, 1951-55), vol. I, 35.

wage floor. Just as in Ricardo's stationary state, at point E_T the results of any further investment would be null and every citizen would find himself eating at the subsistence level.

Herein lies the problem. While many Chinese citizens found themselves living at the subsistence level, there were others who did not. Even though landowners began to turn less of a profit, this problem did not progress so far as to lead laborers and landowners alike to live on subsistence.

3.4 Chao's Modern Marginal Analysis

Kang Chao, an economic historian writing twenty years after Elvin, noticed this incorrect placement of point E_T as well. Figure 7 depicts an updated version of Elvin's model with only a slight variation.

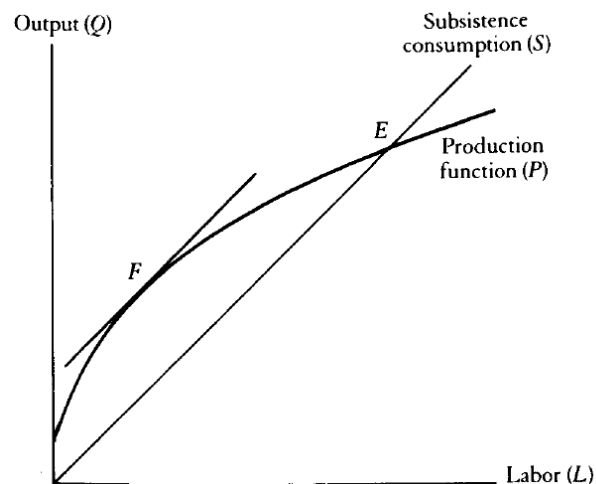


Figure 7: Population and Consumption¹⁸

¹⁸Chao, *Man and Land in Chinese History*, 7.

In the model above all points equal those of Elvin's model ($S = S$, $T = P$, and $E_T = E$). Only one point has been added (F) along with its tangent line to S.

Chao argues, "Point E is not a meaningful concept economically because it is defined by equality between total food supply and total subsistence requirements of food." He claims this equality can only be achieved with the help of a redistribution mechanism so powerful "as to be an impossibility in any society." Not even the Qing's water transportation system could allow for this point to be reached. Theoretically, even with the help of an impossibly strong redistribution mechanism, the nation's population could not sustain itself beyond E, because at that point food supply would fall below average subsistence consumption. There would simply be no food left to distribute.¹⁹

His solution is to argue that the crucial point is F, not E. At point F, the tangent line is parallel to S, indicating that the marginal product of labor is equal to subsistence. "The economic relevance of point F is that production units with hired labor inputs will stop hiring when the marginal product of labor is equal to the subsistence wage level."²⁰ Therefore, if F is taken as the new equilibrium point, the population size associated with it should be called the equilibrium population. Any population growth beyond this point would represent a surplus, meaning the additional people would not be able to produce enough to feed themselves. This surplus population could only survive if there existed a redistribution mechanism that transferred some of the product from those whose marginal product is above the subsistence level to those whose marginal product is below the subsistence level. One example of such a redistribution mechanism would be China's water transportation systems.

¹⁹Ibid., 7.

²⁰Ibid., 7.

An even greater redistribution mechanism was the traditional Chinese family system. In contrast, the European family system functioned as an automatic regulator. “A strong tradition in European society prevented young men from considering marriage before securing steady employment or some other type of assured income.”²¹ Little was there ever a possibility in Europe for a jobless person to depend indefinitely on another family member for subsistence. Therefore, economic conditions acted as a loose regulator. In the Chinese family, however, marriage was not a decision dependent on economic conditions. All the more important, the Chinese family showed an “obsession with having male heirs to carry on the family lineage.” Additionally, the Chinese possessed a duty of obligation to one’s whole family. This led to “the inescapable obligation of a family to support those members who had no income or jobs.”²² Therefore, in contrast to the European family, the Chinese family system tolerated overpopulation.

When landowners stopped hiring workers after the marginal product of labor dropped below the wage floor, families could act as a single production unit and function far below the wage floor; “those with a marginal product below the subsistence consumption level could partake of the total family income with other members.”²³ Therefore, the Chinese toleration of overpopulation allowed for it to push past the point where the marginal product of labor equaled subsistence.

This ability also posed as a long-term danger for factory workers in urban areas. If rural areas began to produce the non-agricultural subsidiary goods that were found

²¹Ibid., 8.

²²Ibid., 8.

²³Ibid., 9.

mainly in urban factory production, rural family units could undercut urban factories by producing goods for less. This would then force the item's price down and force individual factory wages to fall below the subsistence line. It is this danger that section 3.7 will cover.

Elvin's model fails in two severe ways: first, he incorrectly placed the labor-product equilibrium point, and second, he failed to take notice of the value of the Chinese family system and how it allowed for the Chinese society to move past the point of no marginal product return. An additional point that Elvin dramatically undervalues is the impact of China's closed-door policy throughout much of its history. This policy, combined with the Chinese family system's ability to absorb individual family member wages below the subsistence level, ultimately lead to an extensive list of additional problems with Elvin's original theory.

3.5 Absolute Disadvantage in a Closed Economy

Before I continue to diagnose the maladies of Elvin's theory, I must stop to briefly explain the harm caused by China's closed-door policy. China practiced a closed-door policy throughout most of the Ming and Qing dynasties (1400-1859). During these periods, a large portion of the population began to migrate to the newly secured and highly remote lands at a time in which the transportation and communication infrastructure of the state was inefficient and, at best, backwards.²⁴ Moreover, the Chinese state was adamant in its position for the beginning two-thirds of the Qing dynasty that it would not trade with the West. This was taken from the Sinocentric belief

²⁴Guanzhong James Wen, "Why was China Trapped in an Agrarian Society? An Economic Geographical Approach to the Needham Puzzle." *Frontiers of Economics in China* 6, no. 4 (2011): 524.

cultivated in the Song and Ming dynasties that China was the world's central and lording nation where nothing foreigners had to trade was of any worth. From the Song through the mid-Qing dynasty, very few internationally focused interstices occurred in China's isolationism—the largest of which being the opening of the five seaports to foreign trade in 1842 after China lost the first Opium War. However, it was the hope of the Chinese during this time, that regardless of these five cities, China would still remain relatively closed off from the rest of the world.^{25& 26}

While China may not have always engaged in isolationism, the time in which it once more chose to engage in isolationism at the beginning of the Ming dynasty was the exact time in which it mattered most for it to turn toward the global economy. Along with its relapse into isolationism, the beginning of the Ming dynasty was the period that China began to overcrowd.

In a closed, traditional economy overpopulation is an absolute disadvantage. In an open, internationally engaging economy, overpopulation becomes an absolute advantage. If China had remained open as its lands began to overcrowd, it could have begun to specialize and thrive in a global market. This is Ricardo's basic theory of comparative advantage. However, because China remained closed, the economy was not only forced to look inward and trade amongst its own people, but it was also forced to produce all of its necessary goods by itself.

As a result of this isolationism, a zero-sum game was created in which the production of both agricultural and utility/comfort goods had to be produced within

²⁵Ibid., 526.

²⁶Further analysis on the Qing's closed-door policy will take up again in chapter 4.

China. These constraints then forced rural landowners and laborers to move from producing agricultural to subsidiary goods, which I describe in the following section.

3.6 From Rural Agricultural to Rural Subsidiary Goods

Through the introduction of growing constraints, the general equilibrium solution began to alter. Such constraints include, but are not limited to: closed borders to international trade, a growing population in relation to land area, and the natural growth season in agricultural production—which left large amounts of unused labor during the off-seasons. Because urban factories could not absorb this idle labor due to distance, rural subsidiary production was forced to absorb a portion of the excess labor force.

At first, rural family units were simply not able to compete in the market. Economies of scale would strongly favor urban factories for countless reasons: a sufficient division of labor, better equipment, and better-trained workers being only a few. However, as transaction costs lowered and the population rose, “even the rural households could engage in the subsidiary production of goods intended for distant markets.”²⁷

²⁷Chao, *Man and Land in Chinese History*, 14.

Chao provides an example of how rural families allocated their labor in Figure 8.

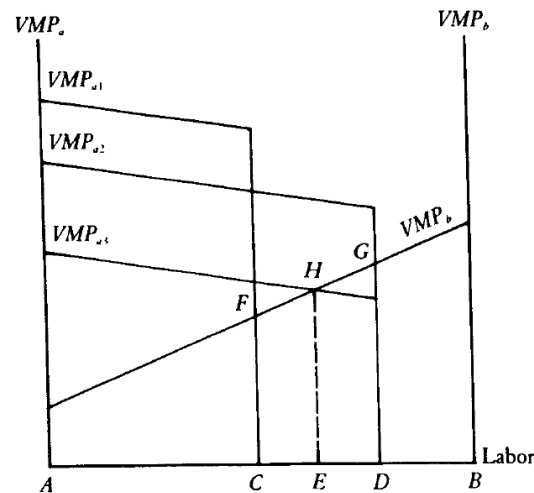


Figure 8: Labor Allocation of a Rural Family²⁸

Imagine a rural family in possession of a piece of land with the total amount of family labor represented by the distance on the horizontal axis between points A and B. Due to farming off-seasons and excess family labor, the family attempts to allocate its total labor between agricultural production (A) and subsidiary production (B). The horizontal distance to A measures the amount of labor allocated to agricultural production, and the horizontal distance to B measures the amount of labor allocated to subsidiary production. The vertical axis on A indicates the marginal product of labor for agricultural production, and the vertical axis on B indicates the marginal product of labor for subsidiary production. VMP_b shows the diminishing returns of subsidiary production as more labor begins to be applied. VMP_{a1} indicates the diminishing returns of agricultural production as more labor is applied. This line becomes vertical at point C representing the end of the

²⁸Ibid., 16.

farming season. Therefore, CB represents the amount of labor available for subsidiary production during the off-season yielding a marginal product of CF.

As population continues to grow, average farm size begins to reduce. This occurrence is shown by the shift of the marginal product curve from VMP_{a1} to VMP_{a2} . In response, large families and densely populated areas are able to respond by extending the cropping season, represented by point D, leaving DB to subsidiary production. However, due to natural constraints, the farming season can only be extended so far. Any population growth after the farming season reaches its natural limit causes a further reduction in farm size. This is seen in the lowering of the marginal product curve to VMP_{a3} . “As the population pressure continues to mount, [subsidiary production] tends to shift further and further to the left, a phenomenon that may be called the domestication and ruralization of nonfarm goods production.”²⁹

As ruralization of non-farm goods begins to occur, rural subsidiary production and urban manufactories begin to differ in only two large respects: first, labor is a fixed input for rural families and a variable input for urban manufactories, second, “with zero opportunity cost for labor it is worthwhile for rural families to carry on subsidiary production at any price level for which the net revenue...is above zero.” In contrast, urban factories “can operate only when the price of the commodity is high enough for them to pay at least a subsistence wage to full-time workers.”³⁰ It is through this method that rural family units began to undercut urban manufactories, as spoken previously of in section 3.4, and protoindustrialization began to occur.

²⁹Ibid., 16-17.

³⁰Ibid., 17-18.

3.7 Protoindustrialization

Protoindustrialization is the economic stage when overpopulation compels rural households to engage in the production of non-agricultural goods for market. In many nations, the effect of protoindustrialization is often minimized by it only occurring in a few rural pockets facing rapid population growth at a time. China proved far different as overpopulation across the nation ran rampant, however. As a result, Chinese protoindustrialization turned from a simple competition between rural and urban markets to a forced ruralization of the market overall.

This slide into ruralization is shown in Figure 9 below.

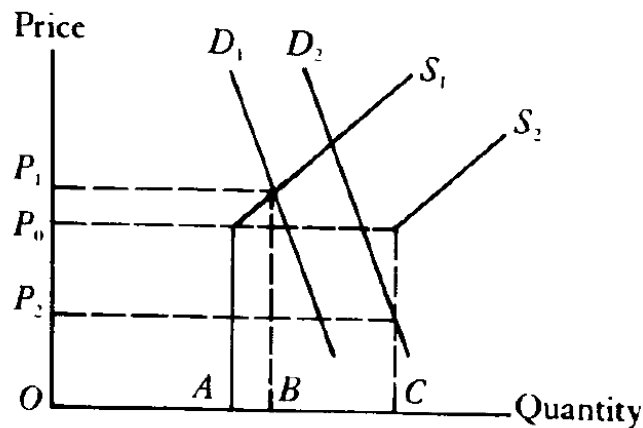


Figure 9: Rural-Urban Production Competition³¹

Curve S_1 represents the combined supply of both rural and urban subsidiary production for a given commodity. Rural subsidiary production provides a nearly fixed amount, OA, and is price inelastic. Supply of urban manufactories begins at $P = P_0$ when factory owners begin to receive a revenue barely capable of paying subsistence wages to its

³¹Ibid., 18.

workers. If the demand is D_1 , the intersection of D_1 and S_1 indicate the equilibrium quantity OB , where the equilibrium price is P_1 . The equilibrium quantity constitutes the output from rural subsidiary production, OA , and urban subsidiary production, AB .

The vertical line below price P_0 is where the strength of the family units lies. As argued in 3.4, because families can work as one single production unit, they are able to work in total far below the standard subsistence wage paid per individual at an urban factory.

As population grows the supply curve shifts right to S_2 — P_0 still remains the minimum price point that allows urban manufacturers to survive. Rural family units then provide an output of OC . Although the demand curve shifts to the right as a result of the population increase, it does so by a smaller distance because per capita income fails to increase by the same rate as population. D_2 now intersects S_2 at its vertical segment indicating the demand is barely strong enough to absorb the output of rural subsidiary production at the price of P_2 . Additionally, P_2 falls below P_0 indicating urban manufactories are no longer able to pay base subsistence wages. Factory production is forced to disappear, leaving only rural subsidiary production to meet the total demand.³²

Essentially, a rising population forces prices to fall below subsistence wages (per capita income is not able to rise at the same rate of population). As prices falls below subsistence wages, production of subsidiary goods are forced to move from the factories to the rural communities.

Thus, the impact of protoindustrialization was two fold: 1) the movement of subsidiary production from urban cities to rural communities, and 2) the destruction of

³²Ibid., 18-19.

any potential technological innovation that could have occurred if the urban markets remained at their previous size.

3.8 An Artificial Equilibrium

Finally, the compounded effect of Elvin's failed observances can be seen. First, Elvin begins by mistakenly placing his equilibrium at the point in which all Chinese citizens would have been eating at the subsistence level—ultimately diminishing the overall value of his original theory. Additionally, by missing the ability of the Chinese family to function as one production unit, Elvin fails to see how much of the Chinese populace could continue to live far below the subsistence level. He then fails to observe how China's closed-door policy created within itself a zero-sum game between agricultural and utility product production. This policy, when combined with China's continuously rising population, forced rural families to engage in non-agricultural subsidiary production. Finally as population rose even further, subsidiary production was forced to almost entirely move into the rural market. This removed any possibility of an urbanized technological revolution in the late Qing.

Elvin attributes the lack of technological innovation during this time to the “rational strategy [of] peasant[s] and merchant[s]” to tend in the direction “not so much of labour-saving machinery as of economizing on resources and fixed capital.”³³ As explained before, the reason they could do this is because of “huge but nearly static markets [which] created no bottlenecks in the production system that might have prompted creativity. When temporary shortages arose, mercantile versatility, based on

³³Elvin, *The Pattern of The Chinese Past*, 314.

cheap transport, was a faster and surer remedy than the contrivance of machines.”³⁴ For Elvin, the shift into labor-using technology was a rational decision due to a large labor force and an advanced transportation system. In reality, there was no decision to be made. Exponentially rising population levels forced protoindustrialization into overdrive. Doing so all but forced rural production, and through this labor-using technology, to grow.

At this point I now adopt Chao’s model, Figure 7, as my chosen representation of the Chinese market in the late Qing dynasty. There is one group of questions, however, that have gone unanswered by both Elvin and Chao and it is to these questions that I now shift the focus of my remaining thesis.

Most assuredly, Chao’s equilibrium point was far closer to a realistic representation of the state of the Chinese market than Elvin’s. But what Chao fails to analyze in detail is who first was affected by falling below the subsistence wage level and why the Chinese ruling class failed to respond once this process began. The focus of Chao’s model now becomes the section of the production function between points F and E in Figure 7.

No additional proof is necessary to assume that those who first fell into the section between points F and E were those of the poorest class. Individuals who first lived under subsistence levels would more than likely have been apart of a family unit and more than likely from a rural farming community. Moreover, if this trend of the most poor falling below the line first continued, a logical progression develops in which the wealthy would only begin to be affected as China slipped closer and closer to point E.

³⁴Ibid., 314.

The question remaining is why it took so long for this progression to be noticed. I contend there was a faulty lens used by both Chinese officials of the day and Chinese historians in the present, that allowed for this failing of the Chinese market to go unseen for so long. In short, my answer is that the first period of the decline from point F to point E went unnoticed by many of the ruling class precisely because of who was being affected.

In the eyes of the landowners, the state of the market was sufficient so long as profit margins were met. In the eyes of the working class, this perceived equilibrium was nonexistent. Viewed from the peasants' perspective, wages continuously declined as the number of workers on one set area of land increased and the demand for work surpassed that of supply, however. For them the problem was apparent, they just didn't have a mechanism to mend it. Thus, the perceived equilibrium by the landowners was that of an artificial kind, a falsely perceived equilibrium that existed for the landowners only so long as their supply of goods could meet the nation's demand.

To China's detriment, landowners came to this realization too late. While their artificial equilibrium had blinded them from the true state of the economy, the state of equilibrium continued to fall further away and to the right of point F, making it all the harder to mend once realized. To quote English economist John Jewkes, "impending breakdowns will conceal themselves up to the last moment and are suddenly revealed only when it is too late for the economic system to turn the corner smoothly."³⁵

Elvin made the mistake of spending the lion's share of his book examining the successful and thriving market system of the Ming and Qing dynasties, while ignoring the

³⁵John Jewkes, *The New Ordeal By Planning: The Experience of the Forties and Sixties* (New York: St. Martin's Press, 1968), 168-169.

state of the Chinese people—this has been noted in chapter 2.4. While Chao succeeded in recording individual statistics of the Chinese people during this time, he failed to extrapolate from them a theory regarding why the progression slid as far as it did.

In the following chapter I will engage in a detailed analysis of the geographic and economic data of the Qing dynasty in order to provide an informed depiction of the state of the Chinese laborer during this time. With this data in hand I will then begin my answer regarding how and why this artificial equilibrium was able to exist for such a long period.

CHAPTER FOUR

A Data Analysis of the Growing Bubble

Now that the basic theory has been laid out for why this disequilibrium was allowed to go unnoticed for as long as it did, this chapter will focus on the data of the theory. By comparing the expansion of cultivatable land in China over the course of the past millennium to the nation's population growth, productivity of the average worker, and standard day-laborer wage rate, inferences can be made pertaining to the state of the Chinese economy nearing the end of the Qing dynasty. The first five sections of this chapter will cover in detail each of these five variables. Section six will then tie these variables together in an attempt to create an effective depiction of the state of the Chinese labor in the late Qing.

4.1 Expansion of Cultivated Land from the Northern Song to the Republic of China

While the literature recording Chinese land data from the beginning of the Northern Song to the present day is vast, expanding and reducing borders over the course of later dynasties, varying measuring units independent to each dynasty, and inconsistent measuring techniques from one dynasty to the next have made recorded land data incomparable without adjustment. One standard measuring unit that crossed dynasties was the unit: *mou* (Chinese acre). One *mou* by present measuring standards is equivalent to 0.164 acres or 666.5 square meters. However, one *mou* in the Northern Song is only 576.6 square meters by present measuring standards. For this reason, the unit *shih mou*

will be used to describe Chinese acreage of the time adjusted to modern day measurement standards.

Beginning in 976, after Emperor T'ai Tsu reunited the nation and founded the Song dynasty, the total cultivated area of land was roughly 255 million *shih mou*. This number is slightly misleading, however, because the land survey in question took place directly after the dynasty was established and before the land that had been laid to waste by the preceding wars had been reclaimed and rehabilitated. Further evidence of this miscount can be seen by the fact that by 1072 the total cultivated area of land had more than doubled to 666 million *shih mou*—a far more reasonable number considering the total cultivated area of land recorded in 146 during the Eastern Han was already 507 million *shih mou*.¹

The next comprehensive land survey took place at the beginning of the Ming in 1393. This record lists the total cultivated area of land as 522 million *shih mou*. The slight drop in total acreage in comparison to the Northern Song can be accounted for by the transitional effect of moving from one dynasty to the next. The second, and last, national land survey during the Ming was in 1581, where 793 million *shih mou* was recorded.²

Also during the Ming, an expansion occurred in the types of agricultural products produced. These new land and water-efficient crops included peanuts, potatoes, sweet potatoes, corn, and cotton. The benefits of these crops were twofold. First, a given area of land was able to produce greater quantities of food, thereby staving off the food

¹Kang Chao, *Man and land in Chinese history: an economic analysis*. (Stanford: Stanford University Press, 1986), 79.

²*Ibid.*, 85.

constraints of a growing populous. Second, as China transitioned from the Ming to the Qing and the Qing's territory began to expand into Mongolia, Xinjiang, Tibet, Taiwan, and the Northeast, the new crops were able to substitute China's traditional crops of rice and wheat, which were not fit to grow in these new locations. As a result, the resiliency of the new crops ultimately led large droves of farmers to migrate from eastern and central China to these new locations and expand the total cultivated land.³

By the mid-nineteenth century, however, the cultivation of China's land began to reach its physical limits. This is seen through the considerable decline and final standstill of cultivated land used for agricultural production between the late eighteenth and early twentieth century. In 1784, the Qing possessed roughly 886 million *shih mou*. In 1812, that number increased to 943 million *shih mou*, and by 1887 the Qing was in possession of nearly 1,154 million *shih mou*. However, by 1930 that number remained nearly constant at 1,143 million *shih mou*.^{4,5, & 6} While the expansion of the nation's land mass and new crops allowed for this cultivation cap to be staved off, it could not entirely be prevented. As a result, it was finally in the late nineteenth century that population, and by proxy the work force population, began to drastically exceed that of the land used for cultivation.

³Guanzhong James Wen, "Why was China Trapped in an Agrarian Society? An Economic Geographical Approach to the Needham Puzzle." *Frontiers of Economics in China* 6, no. 4 (2011): 524.

⁴Chao, *Man and Land in Chinese History*, 87.

⁵All figures adjusted based upon John Bucks' 1930s survey of over 16,000 farming households in which land areas registered to the local governments were found to be only 80 percent of the acreage estimated due to land concealment. As a result, the land acreages during this time period had to be adjusted by a sliding percent providing the figures above.

⁶The marginal decline in cultivated landmass from 1887-1930 should be seen as a result of Bucks' adjustment by a sliding percent in correlation to acreage estimates changing over time due to concealment, rather than a substantial loss of cultivated land mass.

4.2 Expansion of Total Population from the Northern Song to the Late Qing

Similar to land cultivation, population during these periods grew in a cyclical nature revolving around a rising line. Between the Northern Song and the beginning of the Qing, a period of roughly 800 years, China's population slightly more than doubled. In contrast to the land cultivation data, between the middle and end of the Qing dynasty, a period of roughly 100 years, China's population once again nearly doubled. In order to understand how such a drastic increase in a nation's population could occur during such a short period of time in relation to its historical growth rate, the impact of positive checks on a nation's population must be understood.

Positive checks are occurrences such as disease, war, famine, and natural catastrophes that cause premature deaths and return populations to a lower figure. The total impact of positive checks depends on two parameters: first, the speed in which a wartime population loss can be recovered and second, the frequency of large-scale positive checks within a given period. Regarding the first parameter, the speed in which a given number of people can be recovered depends on the base population of the nation. For example, given a base population of 50 million and a 1 percent growth rate, the loss of 25 million people would require 70 years to recover. Given a base population of 400 million with the same growth rate, the loss of 25 million people would only require 6 years to recover. Therefore, the larger the population, the smaller the impact positive checks will have on curtailing a nation's population growth.⁷ Additionally, once a population breaks a certain mark, positive checks will become virtually powerless to halt growth.

⁷Chao, *Man and Land in Chinese History*, 31.

Figure 10 indicates the growth of the Chinese population from the Han dynasty to the last half of the Qing.

Year	High	Low	Year	High	Low
2	59.6		1109	(121.0)	
57		(31.0)	1193	(120.0)	
105	53.2		1381		59.8
156	56.4		1391		60.5
280		16.2	1592	(200.0)	
606	46.0		1657		70.2
705		37.1	1776	268.2	
755	52.9		1800	295.2	
961		(32.0)	1848	426.7	

Figure 10: Official Data and Estimates (Number in Parentheses) of China's Population, AD 2-1848. Numbers in Million⁸

Noticeably, from the Song (1109) to the middle of the Qing (1800), the population grew at a slow, but relatively stable, rate. This slow growth rate was caused by numerous wars and epidemics that occurred on a fairly regular basis. To take one period for example, from 1585 to 1645 two great epidemics were recorded that drastically checked China's growing population. The gazetteer entries of the time refer to these occurrences not as "epidemic[s]," but as "great epidemic[s]." Deaths during this time were "countless" and "beyond reckoning." It is believed that the mortality rates were so high that the population fell thirty-five to forty percent during this period.⁹ If this is true, it would explain why the population only grew from an estimated 200 million in 1592 to 268.2 million by 1776.

As population continued to grow, however, positive checks noticeably began to have less effect. Figure 11 focuses on the rapid population growth during the Qing.

⁸Ibid., 41.

⁹Mark Elvin, *The Pattern of the Chinese Past* (Stamford: Stamford University Press, 1973), 311.

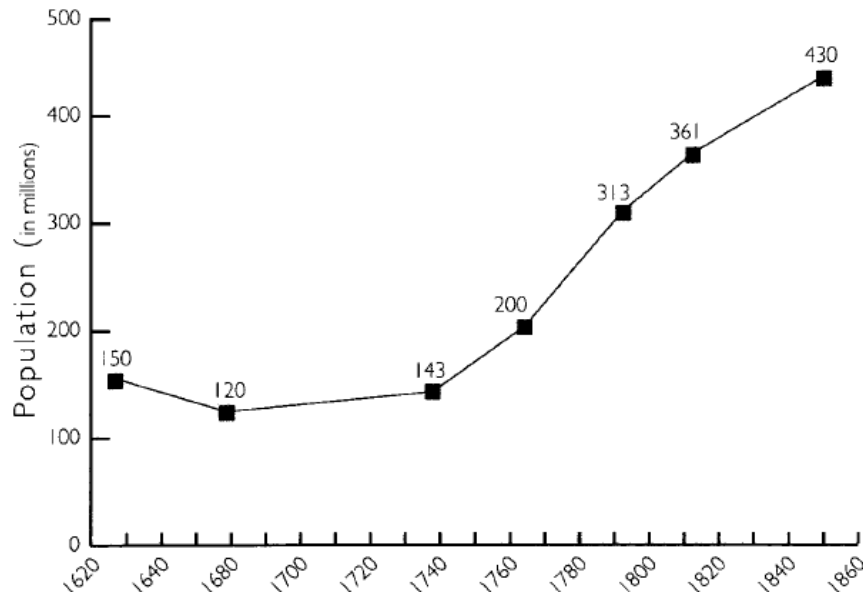


Figure 11: Population Growth in the Qing Dynasty¹⁰

By the mid-Qing, an obvious threshold had been surpassed that made any additional positive checks a mere ripple in the rising tide of the Chinese population.

The Taiping Rebellion is one example in support of the argument that this acceleration was due to some threshold being surpassed, making positive checks to a large degree irrelevant, rather than being due to a long period free from positive checks. While the death toll for the Taiping Rebellion (1850-64) is unknown, a conservative estimate for the number of casualties is over 20 million. This makes the Taiping Rebellion not just the bloodiest civil war in China's history; it makes it one of the deadliest recorded wars in the world.¹¹ Given the respective populations of 295.2 million in 1800 and 426.7 million in 1848, the annual population growth rate was 0.77%. This

¹⁰Harold M. Tanner, *China A History Volume 2: From the Great Qing Empire through the People's Republic of China* (Indianapolis: Hackett Publishing Company, 2010), 63.

¹¹William James Hail, *Tse'ng Kuo-fan and the Taiping Rebellion: With a Short Sketch of His Later Career*, 2nd ed. (New York, 1964), xiii.

means that even if the population by the end of the war was as low as 430 million, despite the enormous reduction of 20 million people, it would only take 5.92 years to fully recover from the total loss of the rebellion. Considering positive checks as large as 20 million in a small period of time are historically rare, and a check to even this degree was hardly enough to hold back China's population growth for little more than a few years, it becomes obvious that China surpassed some threshold during the Qing that allowed for its population to grow unchecked after a certain point. Following this point, one of the only factors able to depress its natural growth rate was the weight of its own population.

Analyzing this data further, it is important to not only study the growth of the total population, but also the growth of the rural to urban population ration. In doing this, three stages of urbanization throughout China's history can be seen, the first two falling under the parameters of this chapter. The first stage occurred between the Han and Song dynasties. The urban percentage of the population in 2 AD was 17.2% or roughly 10 million people. The urban percentage of the population in 1220 was 21% or roughly 25 million people. For context, by the thirteenth century the largest city in Europe was Florence with a population of roughly 90,000 people. At the same time, the capital city of China had reached a population of 2.5 million.¹² This pattern of urban development can be attributed to a rural sector that had not yet become constrained by overpopulation, but still had a large enough rural population to produce enough grain to support a large urban sector.

The second stage occurred between the end of the Song and the middle of the Qing dynasty. From 1220 to 1820, China's urban population ratio dropped from 21% to

¹²Chao, *Man and Land in Chinese History*, 43.

6.9%. With the estimated total population of China in 1820 being 350 million, the urban population of China would be roughly 24 million.¹³ This means China's urban population over the course of 600 years decreased both by percentage and by total population. This data supports the argument made in chapter 3.6 and 3.7. As the man-land ratio began to climb, rural families began to employ more labor-using techniques to utilize the growing labor force and increase their production of non-agricultural subsidiary goods. Furthermore, as population pressures began to increase, there would be less surplus grain to support an urban sector. All of this leads to the conclusion of protoindustrialization during the beginning of the Qing.

4.3 Rise of the Man-Land Ratio

Now that both the total cultivatable land and population numbers have been traced through the progression of China from the Northern Song to the Qing independently, it is important to look at these numbers side by side. Based upon the 666 existing *shih mou* in 1072 and a total population of 121 million in 1109, the per capita acreage during this time was 5.50 *shih mou*. Based upon the 793 existing *shih mou* in 1591 and a total population in 200 million in 1592, the per capita acreage was only 3.96 *shih mou*. In 1784, total *shih mou* was 886 and the population in 1776 was 268 million, leading to a per capita acreage of 3.30 *shih mou*. In 1812, total *shih mou* was 943 and the population in 1800 was 295 million, leading to a per capita acreage of 3.19 *shih mou*. Lastly, in 1887 total *shih mou* was 1,154 and the population in 1848 was 426, leading to a per capita acreage of 2.70

¹³Ibid., 60-62.

shih mou. This number then remains consistent with the per capita acreage in 1936 of approximately 2.8 *shih mou*.¹⁴

Strangely, while per capita *shih mou* was on the continuous decline from the Song to the end of the Qing as total population rose faster than the development of cultivatable land, after cultivatable land plateaued at the end of Qing, per capita *shih mou* remained consistent when recorded nearly half a century later. The most likely reason for this is that somewhere around 3 *shih mou* per capita is the acreage floor necessary to produce a subsistence living for the laborer. Any acreage lower than this would be an unsustainable livelihood, and the worker would be pushed into other areas of production. Therefore, even though population may have continued to rise while cultivatable land remained the same, per capita *shih mou* eventually plateaued.

An additional reason for the reducing per capita acreage rates was that tremendous population pressures and land shortages caused land fragmentation. Taking into account land shortages, the demand for land would far exceed that of the supply, resulting in a sellers market. Because most individuals would only be able to afford to buy small plots of land at a time, sellers were incentivized to break apart their land into smaller parcels that could be sold more easily and at higher prices.

While at first this shortage of land most likely affected only the poorest citizens, by the end of the nineteenth century nearly all landlords owned only a fraction of what they once had. The land distribution in two villages in Sui-an, sampled in 1862 and 1909, depict this reduction. In the 1862 sample, roughly 70% of all households had either no land or less than 3 *shih mou* of land. Only 25% of households had between 3-

¹⁴Ibid., 89.

15 *shih mou* and the final wealthy 5% had no more than 15-40 *shih mou*. No household exceeded 40 *shih mou*. In the 1909 sample, two-thirds of all households had less than 3 *shih mou*, 27% had between 3-15 *shih mou*, and only the final 7% had more than 15 *shih mou*.¹⁵ These figures give credence to Elvin's argument that "by the beginning of the nineteenth century, the Chinese countryside was becoming predominately a world of smallholders, that is to say of peasant owners and of petty landlords who owned on average only a little more land than a well-off peasant."¹⁶

4.4 Productivity of the Worker

When looking at the productivity of the laborer between the Northern Song and the end of the Qing, there are three factors worth noting for the subject of this thesis: rate of innovation, the average multiple-cropping index, and total output of agricultural product. Chapter 3.1 has already laid out one theory regarding why innovation predominately stopped after the fourteenth century, and now data can be provided to support it. While innovations prior to the Song were on the rise, the Song dynasty experienced a level of innovation that has been unparalleled since. Two arguments for why the Song was so uniquely fit for an intensive period of innovation include: first, the Song China population's acceptance and celebration of innovation until the Neo-Confucians at the end of the dynasty and second, the development of labor-using farming techniques that increased production but were not yet constrained by overpopulation.

¹⁵Ibid., 117.

¹⁶Elvin, *The Pattern of The Chinese Past*, ch. 5.

Taking agricultural cultivating implements as one sector of technology growth during this time as an example, a clear rise in the number of implements invented per dynasty can be seen prior to the Song, a peak during the Song, and then a sharp decline following the Song that finally came to a standstill after the eighteenth century. One study identifying the dates of Chinese farm inventions after 221 BC for 68 major farm implements distributed over time go as follows:

Ch'in and Han (221 BC – 220 AD), 13 implements invented
Wei, Chin, Southern and Northern Dynasties (221-580), 10 implements invented
Sui and T'ang (581-906), 3 implements invented
Song (961-1279), 35 implements invented
Yuan (1280-1368), 3 implements invented
Ming (1269-1644), 4 implements invented.¹⁷

The post-Song period represents not only a significant decline in the rate of innovation, but also a dramatic shift towards the use of labor-using over labor-saving technologies. As population grew and constraints rose, the landowner began to worry more about operational cost, rather than operational efficiency, opting to purchase cheaper but more rudimentary tools such as a hoe, rather than more expensive but efficient tools such as a plow.

This shift from labor-saving technology to labor-using technology is indicated in the progression of China's multiple-cropping index—the sum of all cultivated land sown over total cultivated land. Prior to the Song, the average multiple-cropping index was around 0.5. This means only half the land cultivated was used to grow crops, while the other half of cultivated land was in a period of fallowing.¹⁸ The end of the twelfth

¹⁷Chao, *Man and Land in Chinese History*, 195.

¹⁸If the average multiple-cropping index = 1, then the total land used to produce crops in a given growing season equals that of total land cultivated. If the average multiple-cropping index > 1, then the total land used to produce crops in a given growing season is larger than that of total land cultivated. This implies a system of double cropping.

century, however, marked a turning point in Chinese agriculture, where population pressures finally began to force farmers to produce food at a rate larger than what the total cultivated area of land could handle.

The progression of the multiple-cropping index in China from the first century to the twentieth century goes as follows:

1st century – 0.60
3rd century – 0.70
6th century – 0.50
8th century – 0.80
12th century – 1.00
17th century – 1.30
19th century – 1.40¹⁹

Due to population pressures, China went from being forced to utilize all of its cultivated land for production in the twelfth century to an intense system of double cropping by the time of the Qing. The danger of excessive double cropping is over cropping a given area of land to the point that the soil's nutrients begin to diminish and its topsoil begins to erode. When this occurs, the land's total output and quality of product will diminish.

Finally, when looking at the per capita grain output for China's farmland from the eleventh to the twentieth century, per capita grain output at the given time in relation to per capita grain output for the eleventh century goes as follows:

1200 – 100%
1812 – 83%
1882 – 70 %
1949-52 – 64%²⁰

Not only did innovation of labor-saving devices begin to disappear following the Song, but the subsequent replacement of labor-saving with labor-using techniques began to

¹⁹Ibid., 199.

²⁰Ibid., 217.

erode the efficiency of the land as well. Thus, while post twelfth century China experienced an increase in the marginal product of land, it simultaneously experienced a decrease in the marginal product of labor due to both the decline of per capita acreage and per capita grain output. This decline was then reflected in the decline of average wage rates for the laborer class.

4.5 Decline of Wages from the Northern Song to the Late Qing

Before actual wage rates can be analyzed, one final shift in the development of the Chinese agricultural system must be observed: the transition from a sharecropping to a fixed rent system. Beginning in the Han dynasty, the dominating form of tenancy was the sharecropping system. For roughly twenty centuries, the standard distribution of shares under the sharecropping system was fixed at a 50-50 ration between landowner and tenant. In practice, after harvest, the tenant would separate the total product into two equal piles, and the landlord and the tenant would flip a coin to determine who would receive which pile. This ensured that the two portions would be equally divided.²¹

During the Ming and Qing, however, there were fewer instances of share contracts and more instances of fixed-rent contracts. This began to occur during the same time as the adoption of the double cropping system. Under this system, rather than the landowner and the tenant undergoing a discussion at the beginning of the year to determine the product distribution, the landowner would simply charge a fixed quantity of product as payment for both crops and the tenant would retain the remainder. Therefore, the difference between the two systems is that under the first, the landowner is

²¹Ibid., 167.

unsure of how much he will receive at the end of the harvest, as his compensation is directly correlated to the respective output, and under the second, the landowner is exactly sure of how much he will receive at the end of the harvest, as his compensation is set at a fixed-price no matter the respective output.

The reason for this shift in transaction costs is important. Under the sharecropping system, the landowner faces the transaction cost of administration and supervision of his land. Because the landowner's wage is directly tied to the total level of output, they are incentivized to guarantee that the total level of output is as large as possible. As population pressures grew and double cropping emerged, however, the cost of supervising a land crowded with workers for extended cropping seasons began to become exceedingly high. When shifted to the fixed-rate system, the landowner became indifferent to the methods of production used and forced the tenants to bear the entire burden of risk. So long as his fixed quantity of payment was met, it mattered little to the landowner whether the surplus product equaled even that of a subsistence wage per individual worker. Thus, through this transition the landowner became ever more removed from the laborer, and the wage rate of the laborer continued to decrease as a result of declining per capita acreage, per capita grain output, and a distancing of the landowner-laborer relationship.

Looking finally to actual wage rates, it becomes clear that during this period, wages of the standard worker were on a continuous decline. From 1723-1735, average real wages fell between 33 and 220—on average 63—*sheng* (1 liter or .908 quarts)²².

²²In traditional China it was an established custom for employers to provide meals to their workers during employment (e.g. 30 *sheng* is about 42 catties of grain). Wages were recorded in *sheng* as it represents the grain equivalent to the monthly cash wage *wen* or *chien*.

1736-1795 then saw a large drop in wages found between 10 and 86—on average 40—*sheng*. Finally, from 1796-1820 wages once more dropped to between 4 and 35—on average 34—*sheng*.²³ While the hard data ends here, in the following years of the mid-Qing dynasty, landlords began to barely pay the subsistence cost—30 *sheng*—to their workers—this being the subsistence quantity of food a worker could survive on per month. This trend represents a clear indication that an extremely low marginal productivity of labor existed at this time.

4.6 State of the Chinese Economy

Finally, by taking a step back and looking at the state of the Chinese market in the nineteenth century as a whole, a bleak outlook begins to emerge. Total cultivatable land plateaued at 1,154 million *shih mou* by 1887. Total population grew exponentially faster than the geography's capacity to sustain it by the beginning of the eighteenth century. Per capita *shih mou* fell to 2.7 by the end of the nineteenth century, and roughly 75% of the population produced on less than 3 *shih mou*. Innovation practically stopped by the beginning of the eighteenth century. 40% of china's cultivated land was double cropped by the nineteenth century. Cultivated land at the end of the nineteenth century produced roughly 70% of the output it did in the eleventh century. And finally, wage rates hit subsistence by the mid-nineteenth century.

Taking these factors into account, the beginning of Elvin's argument still holds substantial weight. The mid-Qing dynasty represents a time period in which impressive quantitative changes were made with respect to population growth, while very little

²³Chao, *Man and land in Chinese history: an economic analysis*, 219-220.

qualitative changes occurred in the farm economy. The agricultural productivity per acre of land reached its limit due to technology at the time, and the increasing population steadily reduced the surplus product necessary for subsistence living. Thus, the landowners had reached a ceiling of efficiency.²⁴

It is no longer an exaggeration that laborer during the mid-Qing began to suffer due to the economic and population constraints of the time. Referring back to Figure 7, by the mid-nineteenth century, China's population began to drastically slide from point F to point E. With laborers earning subsistence wages as early as 1820 and per capita *shih mou* still on the decline for another half century, the power of the family unit discussed in chapter 3.4 would have been forced to save an increasing percentage of the Chinese populous. But if the plight of the Chinese laborer during this period was so extreme, why did it remain unnoticed?

Two answers to this have already been provided. Section 4.2 indicates, as population pressures expanded, protoindustrialization forced a large proportion of the population into rural environments. This in itself is the first reason regarding why Chinese leaders and historians of the time failed to notice the growing poverty of the laborer class: by basic geography, the two were simply separated from one another. The poorer lived in rural areas and the wealthy remained in the cities.

Second, as mentioned in section 4.5, a transition in the relationship between the landowner and tenant occurred in the Ming and Qing dynasties that further removed the direct relationship between the wealthy and poor. As population grew and transaction costs became too high, the landowners began to switch from a sharecropping system to a

²⁴Elvin, *The Pattern of the Chinese Past*, 311-312.

fixed-rate system that did away with the necessary day-to-day administration and supervision of the latter by the former. Once again, a simple, albeit a far from sufficient, reason for why the population was able to slip slide as far as it did past point F and approach point E is because the two classes simply interacted less with each other during later dynasties.

With the synthesis of the data above now complete, an informed depiction of the *state* of the Chinese laborer at the end of the Qing can finally be imagined. The more important question of *why* this state was allowed to exist for as long as it did—*pace* Elvin and Chao—has yet to be determined, however. Chapter 3 argued that Elvin’s high-level equilibrium trap was incomplete and marginally incorrect due to its strict focus of the Chinese market rather than the state of the Chinese laborer. This chapter argued that while Chao rectified this absence by providing a detailed analysis of the state of the Chinese laborer, and potentially provided two arguments with respect to how this lapse in analysis occurred, the true answer to why this state was allowed to exist for as long as it did still remains hidden. With the data now having told as much of the story as it can, the following chapter and subsequent conclusion will approach this question from a very different angle and finally provide a holistic understanding for how this disparity originated.

CHAPTER FIVE

Transition of the Chinese Spirit

The depiction of the late-Qing economy, diagnosed in section 4.6, makes one argument unmistakably clear: the compound effect of geographic and economic constraints on China at the end of the nineteenth century created an ever-growing number of subsistence wage workers amongst the laborer class. With evidence in hand of the true state of the Chinese laborer, I once again return to the more pressing question asked at the end of chapter 3—why this artificial equilibrium was able to exist for as long as it did. Two arguments have already been proposed: first, protoindustrialization and second, a change in the landowner-tenant relationship. I argue, however, that a comprehensive justification for this bubble cannot be found through a mere quantitative analysis of the Chinese economy alone.

A second, and possibly even more important question falling from the first, is what caused this bubble to collapse? To understand the genesis of this bubble, it now becomes necessary to engage in an analysis of its end. In doing so, this chapter signifies a shift in method from examining quantitative evidence from the Chinese market to a qualitative study of the political and scholastic development of China in the late nineteenth and early twentieth century. By understanding the development of these two factors, an explanation will begin to arise regarding why the Chinese perception and sympathy towards the deteriorating state of the laborer class transitioned from indifference of it to outrage because of it. Section one will be comprised of several

subsections outlining key historical moments in the nineteenth century that arguably caused a substantial shift in the Chinese spirit. Section two will be comprised of several subsections outlining key shifts in the academy and how these shifts created a new type of youth never before seen in China. Section three will then tie these two narratives together into a single argument with respect to how the spirit of the Chinese people dramatically altered from its millennia long tradition of isolationism and sinocentrism in the course of only a few decades.

5.1 Political Change – China Conforms to the West

5.1.1 Early Relationship with Foreigners

As mentioned in section 3.5, the Chinese state was adamant in its position for the beginning two-thirds of the Qing dynasty that it would not trade with the West. While this statement is true, the legalistic way in which the Chinese interpreted the word “trade” allowed for ambiguity in its definition and implication. Trade, under the Chinese interpretation, resembled a form of bartering or a transfer of goods between parties—this form of transaction was strictly not allowed. A one-way transaction of goods, however, in which the West exchanged massive quantities of silver for Chinese products, was allowed. Under this system, western nations were allowed trading privileges with China, so long as they were content being labeled a “tributary nation.”¹ In sustaining this one-way form of trade with a tributary nation, the Chinese government maintained its

¹Jonathan D. Spence, *The Search for Modern China* (New York: W. W. Norton & Company, 1990), 120.

perceived superiority over foreign nations, while also gaining an outlet to export domestic goods.

This form of trade by no means mirrored any form of a free market. By 1760, all European trade was restricted to the port of Canton and was only allowed to take place during the trading season that occurred every year between October and March.² The “Canton System,” as it was commonly known, confined foreign merchants to the factory quarter outside of Guangzhou and further confined the tradesmen into warehouses based upon their respective country. Standing as the sole trading post between the West and China, it is important to understand just how small this location truly was:

It takes [the tradesmen] 270 steps to cross the land from east to west, and fewer still from north to south. Along the southern edge of their domain, where the Pearl River flows, there is a patch of open ground, and this the Westerners call their “square” or “esplanade.” But 50 paces from the shore rise the solid fronts of the buildings where they live, and these fill almost all the space remaining, save for three narrow streets that intersect them from north to south, closed at night by gates. Here, in 1836, live 307 men...The thirteen rows of buildings, known as “hongs,” or “factories,”...are spacious and airy...Each building is named for the foreign nation that rents most of the space within it. So one finds the Spanish and the Dutch, the Danish and the Swedish hongs, the English, the Austrian Empire’s hong, and, most recently, the American.³

Understandably, foreign merchants chafed at these restrictions. Additionally, merchants were forced to pay various bribes to port officials and to the Hoppo—the Chinese representative of the imperial household—in order to function as tradesmen.

It was also during this time that no form of extraterritoriality was recognized in China for foreign citizens.⁴ Under Qing law, “all aliens who [came] to submit themselves

²Ibid., 121.

³Jonathan D. Spence, *God’s Chinese Son: The Taiping Heavenly Kingdom of Hong Xiuquan* (New York: W. W. Norton & Company, 1996), 4-5.

⁴Harold M. Tanner, *China A History Volume 2: From the Great Qing Empire through the People’s Republic of China* (Indianapolis: Hackett Publishing Company, 2010), 66.

to the government of the empire shall, when they commit offense, be sentenced according to the Chinese Penal Code.”⁵ Two such examples of when the Chinese asserted their right to intervene in all legal matters on Chinese soil were the execution of an Englishmen for killing a Chinese citizen, even after Portuguese authorities had already found the man innocent, and the public execution by strangulation of a Frenchman for killing a Portuguese sailor.⁶

Enumerating in such detail the early treatment of foreigners by the Chinese underlines the true contrast between early-Qing and late-Qing relations with the West. The practices of labeling foreign nations as tributary states and refusing extraterritoriality date back multiple dynasties. These were not simple policies put in place by Qing officials during seventeenth and eighteenth century, but long held traditions and opinions of the place of the western world within the Chinese narrative. Representing more than mere government policies, these practices stood in general as a testament to the Chinese spirit that almost uniformly dated back thousands of years, changing only slightly over time. It is only with this context in mind that the weight of the rapid change in the Chinese spirit in the last few decades of the Qing can truly be understood.

5.1.2 The First and Second Opium Wars

Arguably the first, and most drastic, foreign policy shift of China occurred as a result of the First and Second Opium War. By the 1800s, opium had become China’s largest illegal import—illegal both because of the Chinese policy of international trade

⁵Randle Edwards, “Ch’ing Legal Jurisdiction over Foreigners,” in *Essays on China’s Legal Tradition*, ed. Jewrome Cohen, Randle Edwards, and Fu-mei Chang Chen (Princeton: Princeton University Press, 1980), 222-269.

⁶Spence, *The Search for Modern China*, 126.

and because opium was largely outlawed in China. In 1750, an estimated 600 chests of opium passed from British to Chinese hands, each chest containing between 130 to 160 pounds of opium. By 1800 this number had increased to 4,570 chests, and by 1838 opium imports increased to over 40,000 chests per year. So much Chinese silver went into purchasing Western opium that a scarcity of silver occurred. As the price of silver began to rise, so did its price in relation to copper. While peasants used copper to pay for everyday transactions, taxes had to be paid in silver. Thus, the more opium the Chinese peasants consumed, the more their taxes rose as a result.⁷

Tensions boiled over in 1839 when Chinese officials called for the arrest of Lancelot Dent, a leading British opium trader, and the foreign community refused to relinquish Dent over to Chinese authorities. In response, all Chinese staff were ordered to leave Canton, and all foreign employees were blockaded in their factories. After six weeks the blockade was finally lifted, resulting in the foreign merchants' relinquishment of over 20,000 chests of opium to Chinese officials who subsequently contaminated and buried the drugs.⁸

Following the Dent Blockade, as it would later be known as, China and England stood on the edge of war; all that was needed was the final spark. This spark emerged from a group of drunken British seamen who killed a Chinese villager in Kowloon—famously known as the Kowloon Brawl. When Chinese officials called for the British to turn over the guilty seamen, Charles Elliot, the senior British official, refused.

⁷Ibid., 129 & 149.

⁸Ibid., 152.

Following these events, the Opium War of 1839-1842, a brief war between the two nations that ultimately provided the Chinese government with an understanding of its inferior military. In the face of just a few Chinese ships that constituted the nation's navy, the British sent 16 warships carrying 540 guns, four newly designed armed steamers, 28 transports, and 4,000 troops along the Chinese coast from Canton to Nanjing.⁹ After attacking the former Ming capital of Nanjing, the Chinese quickly sued for peace and the Treaty of Nanjing was signed.

The Treaty of Nanjing had a myriad of severe ramifications on Chinese commerce and society. While England's sole concession in the treaty was the recall of its forces upon China's compliance, China's concessions were far greater. The nation was forced to open five port cities—Xiamen, Fuzhou, Ningbo, Shanghai, and Canton—to British residence “for the purpose of carrying on their mercantile pursuits, without molestation or restraint.” Therefore, all former residence restrictions placed upon merchants in Canton and the new port cities were removed. The British were given Hong Kong in perpetuity and were allowed to rule the island under British law. The Chinese forcibly paid a total of 21 million pounds to the British for wartime damages. Equality between the British and the Chinese in all official correspondence was required, thereby removing England's tributary status. British citizens were given extraterritoriality during their residency in China. Lastly, England was deemed a “most-favored nation.” Thus, “should the Emperor hereafter, from any cause whatever, be pleased to grant additional privileges or immunities to any of the subjects or citizens of such foreign countries, the same

⁹Ibid., 154.

privileges or immunities will be extended to and enjoyed by British subjects.”¹⁰ In less than a decade, foreign involvement in China went from being confined to a single port, to obtaining a level of liberty that no nation had been given in Chinese history.

These concessions were too extreme and counter-cultural, however, for China to give in willingly. By 1856, only one of the five port cities—Shanghai—had cooperated with the Treaty of Nanjing, and England was forced back into war. After Qing officials illegally searched a British ship, the *Arrow*, England took the opportunity and recommenced military actions beginning in Canton. The Second Opium War of 1856 to 1860, also known as the Arrow War, culminated in two treaties. The first treaty, the Treaty of Tianjin of 1858, was ultimately rejected by the Chinese and resulted in an additional two years of war and the burning down of the Yuan Ming Yuan—a national treasure of the Chinese people and the emperor’s summer palace—by the British. The following treaty, the Treaty of Peking, was signed in 1860, granting western missionaries the ability to travel freely throughout all of China, in addition to all previous concessions made in the Treaty of Nanjing.¹¹

Prior to these two treaties, westerners were restricted to only a few designated port cities and were only allowed to visit for a few months out of the year. In addition, westerners were forced to reside under Qing law and were labeled *barbarians* (*yi*, 夷) in all Chinese official documents. These were practices that, even by conservative estimates, date back to the Song dynasty. Yet, in only two decades, England was able to achieve open travel throughout China, extraterritoriality, multiple port cities to function as eastern trading points, and the word 夷 forever banned when referencing the British. Therefore,

¹⁰Ibid., 159-162.

¹¹Ibid., 180-181.

1860 can be labeled a key turning point in Chinese history towards a vastly diverging China.

5.1.3 The Restoration Phase

In the wake of two embarrassing military defeats, China realized it was left with an ultimatum: conform with the West, or be ruled by it. It was with this in mind that Feng Guifen, a *jinshi* degree holder¹² and prominent scholar of the Qing, argued that China must learn to “strengthen itself” (*zhiqiang*, 自强) by “including foreign languages, mathematics, and science in the curriculum.” Because Feng still believed, “the intelligence and wisdom of the Chinese [were] necessarily superior to those of the various barbarians,” his answer was clear: China was meant to learn from, equal, and then finally surpass the West.¹³

By 1862, Prince Gong had opened government-sponsored language schools in Shanghai, Canton, and Fuzhou to teach Chinese nationals English and French. Christian missionaries also began to open missions teaching Christian principles and Western forms of medicine to the youth of China. While it is impossible to quantify the direct impact these new forms of teaching had on the Chinese youth, its results can still be documented by the new and growing divide between the sentiments of the post-1850 Chinese youth and their classical, sinocentric ancestors.

¹²Tanner, *China A History: Volume 2*, 47-48. Adopted from the Ming, there were four levels to the Qing examination system: the county-level examination, which bestowed the status of licentiate (*shengyuan*); the provincial examination, which bestowed the status of “recommended man” (*juren*); the Metropolitan Examination, which bestowed the status of tribute literatus (*gonshi*); and the Palace Examination, which bestowed the status of presented literatus (*jinshi*). “Of the two million men who might compete for the *shengyuan* degree in a given year, perhaps thirty thousand would succeed; of those, fifteen hundred might achieve the status of *juren*, and three hundred would make it to *jinshi*.”

¹³*Ibid.*, 197.

To reassure more conservative Qing officials that Feng's self-strengthening proposal would not taint the Chinese spirit, Confucian scholar-official, Zhang Zhidong, proposed the "essence" and "practical use" (*ti-yong* 體用) principle. Under this method, China could use western weapons (*yong*), while still maintaining its traditional belief of superiority to the West (*ti*). China could develop Western railroads and utilize Western technology (*yong*), while still maintaining its traditional social structure (*ti*).¹⁴ By using this principle, it was hoped that China could maintain its traditional value structure, its essence, while also being absorbing new foreign types of technology. This, as it will be shown, was a failed hypothesis.

The last main transition worth noting during the self-strengthening phase of China was the "Hundred Days' Reforms" of 1898. Amongst countless reforms, one uniquely worth noting was the reform of China's examination system. For centuries the examination system structured around a highly stylized format known as the "eight-legged essay," in which examinees would have to weave together from memory passages from ancient texts into one comprehensive essay. Because one of the only ways to earn a government position in China for centuries was to pass increasingly more competitive levels of the examination period, this resulted in centuries of government officials trained strictly in classical texts. By abolishing the eight-legged essay, and instead requiring the exams to center on questions related to practical government problems, examinees earning a government positions would understandably be of a qualitatively different

¹⁴Ibid., 225.

type.¹⁵ No longer did the Qing focus its primary attention on the texts of the past, but rather, on the practical questions of the future.

5.2 The Chinese Intellectuals – Changing of the Guard

5.2.1 Early Chinese Outliers

Now that the political narrative has been established for the last half of the Qing, it becomes important to track the evolution of the academic narrative over the same course of time. As told before, the political landscape of 1790 China was one of a domineering China and a tributary West. It was quite dangerous during this time for Chinese scholars to openly criticize the policies of ruling Qing officials.

One Chinese outlier and scholar-official that learned this lesson was Hong Liangji. In the 1790s, Hong wrote several essays discussing key issues he believed China faced. In one specific essay, Hong spoke of his worries pertaining to China's "unchecked population growth and the difficulties it would cause as it outraced China's productive capacity." While the essay was not censored, an essay written by Hong in 1799 critiquing the recently deceased Qianlong Emperor earned him a death sentence under the charge of "extreme indecorum." Only through the good graces of the succeeding emperor was Hong's sentenced reduced to exile to a barren, northwestern settlement in China for the rest of his life.¹⁶

¹⁵Ibid., 229.

¹⁶Ibid., 143-144.

5.2.2 Hegel Writes on China

It was also during the early nineteenth century that German philosopher, Georg Wilhelm Friedrich Hegel, began to synthesize the various oriental focused writings of Rousseau, Smith, and Montesquieu into a lecture series on “Oriental Civilizations.” Hegel described China as a nation dominated by its emperors; a place where only one man was free. For Hegel, “freedom was the expression of the self-realization of the ‘World Spirit.’”¹⁷ Because the Chinese “lacked[ed] the great boldness of the Europeans in exploring the seas and instead had stayed tied to the agricultural rhythms of her great plains...Hegel consigned the Chinese permanently to their space outside the development of the World Spirit.”¹⁸

While incorrect in his prediction that China would remain permanently outside the development of the World Spirit, Hegel did correctly articulate a key particular on the individual citizens’ placement in the Chinese world during this period: “men are born only to drag the car of Imperial Power.”¹⁹ At its center, this was the true dichotomy between the West and East—the West celebrates the principles of individuality and liberty, the East celebrates those of community and deference, no matter the burden. “The burden which presses them to the ground, seems to them to be their inevitable destiny.”²⁰ Only through “their being sought out, and their character investigated by others,” Hegel observed, could this cycle ever be broken.²¹ What Hegel did not realize is that at the same moment he was crafting this lecture series in his University of Berlin

¹⁷Ibid., 135.

¹⁸Ibid., 136.

¹⁹G. W. F. Hegel, *Philosophy of Right*, trans. E. S. Haldane and Frances Simon (New York, 1956), 116.

²⁰Ibid., 138.

²¹Ibid., 101.

study, other Western nations were already in the process of seeking out and attempting to break the cycle of the East.

5.2.3 Marx Writes on China

Following in Hegel's footsteps came Karl Marx. The relationship between Marx, author of the *Manifesto of the Communist Party* in 1848, and China is often misunderstood. Despite the lasting impacts Marx's words had on the history of China, Marx's interest in the nation was one of only a small degree. As another philosopher of history, Marx divided world history into various stages determined by the modes of production used at the time—each stage ending in revolution leading to the next. Within this narrative of history is capitalism. While Marx is primarily known for his disposition towards communism, capitalism was an important part of Marx's theory. Only through capitalism would an industrial sector arise that would inevitably overthrow its capitalist masters and create a socialist nation. China, however, was in no interpretable way a capitalistic society, and was, therefore, far from Marx's mind when he attempted to predict the revolutions of the proletariat. Only through the occurrence of the Taiping Rebellion at a very key point in history did Marx begin to turn his eye towards China.

In the introduction to Marx's *Critique of Hegel's Philosophy of Right*, Marx makes the prediction that 1848 would be the year "the German resurrection will be heralded by the crowing of the cock of Gaul," and that a string of proletariat revolutions

would occur throughout the West.²² Marx, however, was proven substantially wrong by history and the world went on without a resounding proletariat revolution.

While the West lacked its predicted revolution, 1848 did signify the beginning of the Taiping Rebellion, and Marx took notice. Marx saw China's fractioned revolutionary forces "gathered together in one formidable revolution," and while he did not know what the result of the Taiping Rebellion would be if successful, he nevertheless predicted it would be a positive in relation to the status quo. Writing with an incredible air of confidence, Marx believed the Qing "dissolution must follow as surely as that of any mummy carefully preserved in a hermetically sealed coffin, whenever it is brought into contact with the open air."²³ Marx went on to believe that, "it may safely be argued that the Chinese revolution will throw the spark into the overloaded mine of the present industrial system and cause the explosion of the long-prepared general crisis, which, spreading abroad, will be closely followed by political revolutions on the continent."²⁴ Thus, in his excitement about the Taiping Rebellion, Marx momentarily shifted from his original position of omitting China in his progression of world history, to seeing it as the ignition point for all Western political revolutions.

This shift was short lived, however. By the beginning of the 1860s the Taiping Rebellion had still yet to succeed in Marx's predicted victory. Yet, while Marx noticeably began to lose interest in the nation after this point, historian, Jonathan Spence,

²²Karl Marx, *Critique of Hegel's 'Philosophy of right.'* trans. Annette Jolin and Joseph O'Malley (Cambridge: Cambridge University Press, 1970), introduction.

²³Dona Torr, *Marx on China, 1853-1860: Articles from the "New York Daily Tribune"* (London, 1951), 1-4.

²⁴*Ibid.*, 7.

provides clear insight that Marx did not entirely give up his hopes for a Chinese revolution:

Sometime in the future, [Marx] reflected, as the reactionaries fled Europe in the face of an enraged proletariat, seeking shelter in what they regarded as a last bastion of conservative power, they might find to their astonishment, written in bold letters upon the Great Wall, the words “Chinese Republic: Liberty, Equality, Fraternity.”²⁵

Just as Hegel was only a few decades early in predicting an influx of westernization in China, Marx was the same in predicting the inevitable rise of the Chinese Republic.

5.2.4 Marxism Enters China

While retribution for the Chinese laborers and better equality amongst the classes was a tenant of most Chinese revolutionaries, the fundamental principle of democratic liberty was still a deeply contentious issue at the end of the nineteenth century. Liang Qichao, another *jinshi* degree holder, represented the more progressive side of the Qing scholar-officials and was a strong proponent of the Hundred Days’ Reforms. Exploring a large range of political options, Liang briefly entertained the idea of “‘the medicine of liberty’ as the cure for the ‘corruption and degeneration’ of China.” However, after weighing the damages amassed through the various French Revolutions, Liang was dissuaded from supporting the Western idea of liberalism. “If we now seek to purchase liberty at the price of infinite suffering, it may not be attained after [countless] years, and even if it is, what will have happened to our ancestral country?”²⁶ Through this fear of Western liberty, both Qing scholar-officials and Chinese revolutionaries alike began the search for an alternative political program for China.

²⁵Spence, *The Search for Modern China*, 184.

²⁶*Ibid.*, 259.

Surprisingly, despite Marx's interest in China within the mid-nineteenth century, the first discussion of Marx in a Chinese publication did not arise until 1899. Following this publication, an 1899 Japanese text, *Modern Socialism*, claiming that Marx had "used profound scholarship and detailed research to discover an economic base," was introduced to China as well. Additionally, the text asserted, "socialism is easily grasped by the working people and receives the thunderous support of the majority."²⁷

The first summary and partial translation of Marx's *Manifesto of the Communist Party* finally appeared in China in 1906, but with striking difference in tone and sentiment. Marx's *Manifesto* famously ends, "The proletarians have nothing to lose but their chains. They have a world to win. WORKING MEN OF ALL COUNTRIES, UNITE!"²⁸ The Chinese translation of this text contained the ending, "Then the world will be for the common people, and the sounds of happiness will reach the deepest springs. Ah! Come! People of every land, how can you not be roused."²⁹ Thus, while the ideas of liberty were associated with the French Revolution, war, and suffering, Marx's socialism became associated with optimism, equality, and the common man.

Despite the final introduction of Marxism into China, there still remained one primary issue with its integration into the Chinese politic. The same problem, Marx observed, that kept him from including China in his stages of history. The Communist Party was meant to stand as the vanguard of the urban proletariat. The proportion of the Chinese population that consisted of the industrial sector—the urban proletariat—was incredibly small. Without an urban proletariat there could be no revolution, and without

²⁷Martin Bernal, *Chinese Socialism to 1907* (Ithaca: Cornell University Press, 1976), 95.

²⁸Karl Marx, Friedrich Engels, and E. J. Hobsbawm, *The Communist Manifesto: A Modern Edition* (London: Verso, 1998), 77.

²⁹Bernal, *Chinese Socialism to 1907*, 117.

revolution, there could be no socialism. This is the issue that Li Dazhao, father of the Marxist Research Society, devoted his career in rectifying.

Establishing the Marxist Research Society in 1918, Li met with students and professors to discuss political developments of the new Chinese government—abdication of the final Chinese emperor, and the end of the Qing itself, occurred February 12, 1912. One such student who attended regularly was Mao Zedong. With ideas developed from Society meetings, Li finally moved China under the shadow of Marxism by redefining China as a “proletarian nation.” Li argued that in recent decades Western imperialist forces exploited the Chinese people in the same fashion individual capitalists exploit their own workers. Therefore, Li concluded “the whole country [had] gradually been transformed into part of the world proletariat.”³⁰ Tangible evidence of this can be seen through the facts that by 1914, foreign investment in China had surpassed 1.6 billion U.S. dollars, a large proportion of Chinese railways were financed by Western nations, and in the preceding century China was forced to make countless concessions to the West.³¹

Li did not stop his comparison of China, the proletarian nation, to the Western proletariat of Marx by proscribing the two group’s level of oppression as equal, however. He argued that because the source of the Chinese oppression derived from an international source rather than from an oppression by one’s own capitalist class, the Chinese proletariat suffered *more* than those of the West:

The contemporary world economy is already moving from capitalism to socialism, and although China itself has not yet undergone a process of capitalist economic development such as occurred in Europe, America, and Japan, the common people [of China] still indirectly suffer from the direct capitalism

³⁰Maurice Meisner, *Li Ta-chao and the Origins of Chinese Marxism* (Cambridge: Harvard University press, 1967), 144.

³¹Spence, *The Search for Modern China*, 282.

oppression in a way that is *even more bitter* than the direct capitalist oppression suffered by the working classes of the various [capitalist] nations (emphasis added).³²

Finally, through the guidance of Li Dazhao, the teachings of Marx and the newly arising social and political spirit of the Chinese people became aligned. It is unsurprising why only a few years later, July 1921, the Hunan delegate at the first plenary meeting of the CCP was Mao Zedong.³³

5.3 *A Break from the Past*

The last half of the nineteenth century brought dramatic and tangible change to China never before seen. The two opium wars forced China to break from its near eight century long isolationism. The following period of self-strengthening integrated Western military teachings, academic institutions, and religious principles into the Chinese life, substantially altering the youth of China's perception of their own social placement in the Chinese nation. For the first time, seen now through the lens of Western Marxism and revolution, the Chinese laborer felt free from the yoke that the Imperial Power placed around their necks. No longer did critical scholars of the government following the example of Hong Liangji face execution or banishment due to controversial opinions. And, while in hindsight it is known this period of relative freedom lasted only a few decades, at the given moment it is understandable how the Chinese laborer for the first time saw the words liberty, equality, and fraternity written across the Great Wall.

³²Meisner, *Li Ta-chao and the Origins of Chinese Marxism*, 152.

³³Spence, *The Search for Modern China*, 322.

The result of this political and academic transition was a labor party that finally spoke for the class that most needed attention. It was not protoindustrialization or a distancing of the landowner-tenant relationship that caused a bubble to occur, but rather, a government institution that repressed criticism and a social culture that put greater emphasis on the nation as a whole than its individual parts. Only after enormous political and social change did the Chinese perception and sympathy towards the deteriorating state of the laborer transition from an indifference of its state to an outrage because of it.

CHAPTER SIX

Conclusion

Finally looking back on the analysis of the last four chapters, a story begins to emerge. Chapter 2 depicts a thriving eighteenth and nineteenth century Qing market that only began to decline at the end of the century. Figure 2 shows the exponential growth of market towns in Shanghai county from 1750 to 1910. Figure 3 and the analysis in section 2.2 detail both the quantitative rise in number of market guilds and the qualitative rise in political position of market guilds within the Qing. It isn't until the end of the Qing, Elvin argues, that a stagnant economy began to arise due to a lack of technological innovation caused by a high-level equilibrium trap.

Chapter 3 then takes up an analysis of Elvin's high-level equilibrium trap and ultimately finds it flawed. Moving past Elvin's incorrect positioning of his equilibrium point in Figure 6 and his failure to recognize the importance of the Chinese family unit depicted in section 3.4, Chao provides a persuasive counter-argument for the lack of technological innovation at the end of the Qing. While Elvin argues that the adoption of labor-using technology at the end of the Qing was due to a rational response in the face of a growing population, Chao argues the Qing simply had no choice but to make this switch. Protoindustrialization forced workers from the cities into rural communities, de-incentivizing urban markets from innovating and requiring rural markets to sustain the growing population of citizens in need of work.

Chapter 3 finally comes to conclusion by laying the groundwork for my artificial equilibrium theory. As Elvin argues, until the end of the nineteenth century, the state of the market, in the eyes of the landowners, was sufficient so long as the merchants' profit margins were met and business as a whole was on the rise. In the eyes of the laborer class, however, this perceived equilibrium was nonexistent. This duality of economic perception is explained by the shifting of a point on the production function of Figure 7 from point F toward point E. Once past point F, a growing number of Chinese citizens began to survive on mere subsistence level wages. However, because the individuals who first fell into the section to the right of point F were those of the poorest class, and those of the wealthy were not be affected until China began to slip dangerously close to point E, this trend was allowed to go mostly unnoticed. For this reason, the wealthy were able to briefly maintain a degree of blissful ignorance with respect to the state of the Chinese economy while a growing level of Chinese laborers began to suffer—thus a bubble emerged.

Chapter 4 then stands as the quantitative backbone supporting this argument. Total cultivatable land plateaued at 1,154 million *shih mou* by 1887. Per capita *shih mou* fell to 2.7 by the end of the Qing, and 75% of the population was forced to individually sustain itself off on less than 3 *shih mou*. Most importantly, average wages dropped to between 4 and 35—on average 34—*sheng* per month by 1820, allowing for only a small majority of laborers to exist above subsistence cost—30 *sheng*. With a laborer class in such desperate straights before even the time of the first Opium War, the question naturally emerges why it wasn't until the end of the century that China began to entertain

policies such as the Hundred Days' Reforms in an attempt to save the finally perceived failing economy.

While Chao is able to provide a detailed analysis of the state of the Chinese laborer during the mid- and late-Qing, it was not his intention to fully answer the question of *why* this was allowed to occur. Answering only in part, Chao concludes this lack of perception most likely occurred due to the affects of protoindustrialization and the change in the landowner-tenant relationship. At the near end of his book, however, he begins to go on a slight tangent from his primary argument and provides a third argument for why he believed this lack of perception occurred:

What these scholars continue to overlook is that, given the Chinese family system, labor was a variable productive factor only before the point where the marginal product of labor was equal to subsistence cost, but became a fixed productive factor after that point. Thus, labor would be used up as a fixed factor. Instead of maximizing net income by equating the marginal product of labor to marginal cost, the family tended to maximize total output until the marginal product of labor became zero. *Therefore*, idle labor would not be observable even after that point, not until the marginal product actually reduced to zero (emphasis added).¹

When Chao makes the final argument, “idle labor would not be observable...until the marginal product actually reduced to zero,” he is not here speaking of point E in Figure 7. Point E represents the point when all labor’s marginal product is reduced to zero. Thus, he seems to be alluding to some ambiguous point between point F and point E when the total idleness of the laborer would finally give warning to the rest of China that something was amiss. Yet in all this argumentation, Chao still ignores the qualitative side of this study. He provides an excellent analysis of the *state* of the Chinese laborer, and even provides a substantial amount of work on *when* this state will be realized, but

¹Kang Chao, *Man and land in Chinese history: an economic analysis* (Stanford: Stanford University Press, 1986), 226.

never touches the question of *why* this was allowed to occur. It is finally at this point that I must break with Chao and continue my analysis alone.

The last three chapters give us a report of the state of the Chinese market, a failure in scholarly literature, and the disparity of the Chinese laborer. Chapter 5 tells us the story of political and academic reform in the Chinese narrative. It tells us the story of a thousand year-long tradition set on repeat that is not finally broken from until the late-Qing. The long chapter of the Chinese Empire ends, the page turns, and the next chapter titled *The Chinese Republic* begins.

Sadly, while a substantial amount of social and political change occurred at the end of the nineteenth and beginning of the twentieth century, a sheer lack of economic change occurred for the Chinese laborer. From 1870 to 1930 the wage system in China changed dramatically—making it hard to draw a continuous line following the rise and fall of wages. There is enough data, however, to provide a clean enough model to compare the two periods. In 1870 the average wage of the Chinese laborer was 34 *sheng*, existing barely over subsistence. By the mid-1930s, per capita GNP in China was only 60 yuan, which, converted to 2010 U.S. dollars, was only \$200-250 per year.² In 2008, the World Bank set the absolute poverty level at living on less than \$1.25 per day.^{3&4} Therefore, living on an average 60 yuan per year in 1930 placed the average laborer in China far below subsistence living wages.

²Loren Brandt, “Reflections on China's Late 19th and Early 20th-century Economy”. *The China Quarterly*, no. 150 (1997), 282.

³World Bank. FAQs: Global Poverty Line Update. 30 Sep. 2015. Web. 7 April. 2017.

⁴While the World Bank raised its absolute poverty level to living below \$1.90 per day in 2015, because the 1930's income was equated to 2010 U.S. currency, I decided to use the earlier level as it provides a more accurate context.

The conclusion of chapter 5 and the data above is clear. By the most optimistic standards, the standard wage rate of the Chinese laborer remained, from 1870 to 1930, the same. By more realistic standards, the standard wage rate of the Chinese laborer between these two periods managed to somehow take an even worse turn than it already had. Total cultivatable land plateaued. Per capita *shih mou* remained static. With nearly all variables remaining constant, the only substantial change that occurred within this period was a substantial shift in social thought.

The 1919 strikes for the May Fourth student activists marked an end to the silence of the laborer class. One specific protest in held in January 1922 provides a clear example to the new temperament of the Chinese laborer:

Nearly 30,000 seamen and dockers struck, immobilizing over 150 ships that were carrying among them 250,000 tons of cargo. By March 1922, when the number of strikers—now joined by sympathetic vegetable sellers, tramway workers, and electricians—had risen to over 120,000, the owners capitulated. The seamen won raises ranging from 15 percent to 30 percent and, along with other material benefits, the recognition of their union's right to exist.⁵

No longer were the Chinese laborers able to stay quiet, and a stream of laborer protests followed in the next three decades.

Directly contrasting eighteenth and early nineteenth century China with late nineteenth and early twentieth century China shows of one clear shift: in the former period laborers lived a meager existence, yet there was no social outcry, in the latter period laborers lived a meager existence, but there was a dramatic social outcry. While a myriad of factors arguably created the poor state of the Chinese laborer: political obstacles depicted in section 2.2 causing a stymied economy, a lack of technological innovation due to a philosophical shift toward Neo-Confucianism mentioned in section

⁵Jonathan D. Spence, *The Search for Modern China* (New York: W. W. Norton & Company, 1990), 322.

3.1, protoindustrialization and overpopulation in section 4.2, a change in the landowner-tenant relationship in section 4.5, and even the new argument present by Chao at the beginning of this chapter, there has still yet remains no answer for *why* this was allowed to perpetuate. Finally, with the historical context provided in chapter 5 in hand, I am prepared to give two answers to this question—answers that, in hindsight, seem relatively simple despite its absence in all literature previously discussed.

This artificial equilibrium was allowed to exist because: 1) nobody was calling out, and 2) nobody was looking. Only at the beginning of the twentieth century did protests finally emerge—a change that only occurred because of the constant hammering of Westernization. Prior to this point, Hegel was correct in his observations of the Chinese people: the burden of the Imperial Power that pressed them to the ground seemed to be their inevitable destiny. It seemed that almost nobody called for help. Then, the other side to the same problem, if people did call for help, nobody was waiting to listen. Elvin himself stands as a phenomenal example to the type of apathetic scholar-official that existed in China during this period. While his study provides a wonderfully detailed analysis of the state of the Chinese market at the end of the Qing, he never once looked into the state of the laborer that sustained the market. Moreover, if a Qing-official did dare to look into the problems of the laborer class before the mid-nineteenth century, such as Hong Liangji did in section 5.2.1, they faced threat of banishment or execution. Thus, until the twentieth century, if a proportion of the population called out in protest, they were for the most part punished. If an official took matters into his own hands, looked into the issues that existed, and criticized the emperor's policy, he was punished as well.

The growing disparity between the laborer and merchant class began in the very beginning of the nineteenth century. However, because of the millennia-long tradition of the Chinese empire to put the nation before its people, both the individual perception of the issue and the government's worry of the issue were almost nonexistent. From 1870 to 1930, almost no change occurred in the economic state of the Chinese laborer. What did change was the laborer's individual perception of their self-worth. Therefore, the twentieth century labor protests did not occur due to a drastic decline in the economic conditions of the laborer—these conditions existed a full century before the match was ever struck. The twentieth century protests about the poor state of the Chinese laborer occurred because of a drastic shift in politics, academics, and social perception on the value of a life in the preceding few decades due to an unprecedented level of Westernization. The Chinese had been sought out; their character investigated; the crow of the Chinese Gallic Rooster heard; and the bold letters of Chinese Republic: Liberty, Equality, and Fraternity, were finally worn on the heart of every Chinese laborer.

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