

Doctoral Thesis Summary

Government Institutions and Economic Development in Tokugawa Japan: A Tale of Systems Competition

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Introduction

The Japanese government system during the Tokugawa period (1600-1867) is an important subject of study in economic history. The Tokugawa shogunate is of interest in that, a) it coincides with the lead-up to and start of the Industrial Revolution in Europe, and b) Japan was considered by visitors to be a relatively advanced country at the start of the Tokugawa shogunate, and would later become the first non-western country to industrialise. Another reason to study the Tokugawa shogunate is that its government institutions were quite different from both those in use in Europe at the time, as well as those of the pre- and post-Tokugawa Japanese regimes. In contrast to those government systems, the Tokugawa system included strict controls on both occupational mobility and international contact. There are therefore compelling questions on how to view the role of the Tokugawa regime: Was it a hinder to economic development? Did it help create the circumstances for later industrialisation? These questions will be approached from the perspective of institutions.

This summary is organised as follows: first the theoretical framework will be set out, followed by a description of how Japan fits within this framework. Then the results of two empirical studies will be given, one on the cost of samurai employment, and one on the development of the precious metals industry as the main export industry. I will finish with a conclusion.

Theoretical framework

My thesis discusses the topic of Tokugawa period economic development in the context of government institutions. The word 'government' in this case is used in the broad sense of "the system by which a state or community is governed"¹. This definition includes pre-modern regimes. It is more general than only modern governments typified by an extensive system of laws, regulation, specialised organisations and personnel, and an advanced system of taxation. The second definition to make clear is that of institutions. In the words of Douglass North, institutions are "humanly devised constraints that shape human interaction."² The right institutional environment is crucial for economic development. As Oliver Williamson³ suggested, possibly the single most important aspect of the institutional environment

¹ "Oxford English Dictionary," accessed December 3, 2017, <http://www.oed.com/>.

² Douglass C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge university press, 1990), 3.

³ Oliver E. Williamson, "Transaction Cost Economics: How It Works; Where It Is Headed," *De Economist* 146, no. 1 (1998): 23–58.

is the guarantee of property rights. The most basic argument is that uncertainty in property rights lowers the expected future value of savings and returns from investments. This creates a disincentive to spend money and energy to, for example, develop a business, as well as to improve and innovate.

Most theories involving property rights have some form of state at its centre. In most empirical cases, property rights are ultimately guaranteed by the state. This is one of the reasons why the functioning of the state is of economic importance. In addition, states are in a unique position to affect institutional change, since they can create new institutions and have the legal power to force others to respect these institutions.⁴ Beyond property rights, Acemoğlu and Robinson⁵ describe the most successful states as having an ‘inclusive’ type of government, meaning they take into account the wishes and needs of a broad section of society. This not only leads to governments that provide better circumstances for its citizens, it also leads to more citizen support for the government, making it more capable.

My institutional analysis is based on the model devised by Oliver Williamson⁶ to build a hierarchy of the units of social analysis: 4: Resource allocation (market outcomes); 3: Governance (economic actors); 2: Institutions (formal rules); 1: Culture (informal rules); 0: Geographic endowments. The higher levels are based on the levels below them, and the higher the level the more frequently it changes. I have added one level, geographic endowments, below Williamson’s existing four. My thesis focuses on institutions as well as governance, and treats the lower levels of culture and geography as exogenous factors.

While Williamson’s hierarchy is useful for determining the scope of a study, dynamic effects between Williamson’s levels are better captured by a different concept: Systems Competition. Systems are here defined as collections of complementary institutions, such as political (e.g. government type, military organisation, tax system), economic (property rights, trade policy, market regulation) and social institutions (occupational mobility, education system). Hans-Werner Sinn⁷ has used the term Systems Competition in the context of the Cold War, as well as in the current practice of a ‘race to the bottom’ for lower tax levels and less regulation in order to capture factors of production. In the Cold War the systems were the coalitions of capitalist and socialist states. Their competition was over political, military and economic dominance.

In early modern Europe there was clear Systems Competition between states. One very salient example is the conquest of European countries by France under Napoleon, and the subsequent changes

⁴ R. C. O. Matthews, “The Economics of Institutions and the Sources of Growth,” *The Economic Journal* 96, no. 384 (1986): 903–18.

⁵ Daron Acemoğlu and James A. Robinson, “Paths to Inclusive Political Institutions,” in *Economic History of Warfare and State Formation*, ed. Jari Eloranta et al. (Springer Singapore, 2016), 3–50.

⁶ Williamson, “Transaction Cost Economics”; Oliver E. Williamson, “The New Institutional Economics: Taking Stock, Looking Ahead,” *Journal of Economic Literature* 38, no. 3 (2000): 595–613.

⁷ Hans-Werner Sinn, “The Limits to Competition between Economic Regimes,” *Empirica* 17, no. 1 (March 1990): 3–14; Hans-Werner Sinn, *The New Systems Competition* (John Wiley & Sons, 2008).

made to the local institutions, thereby spreading the system of Revolutionary France.⁸ Another example is the Glorious Revolution in England, when the Dutch William of Orange ascended to the English throne and partly introduced changes to in particular financial institutions.⁹ These are examples of institutional change through regime change, however societies can also change their institutions within the same regime. The mutual influencing between European states is a function of a kind of ‘macro-system’ that existed in Europe at the time. It has been described by Eric Jones¹⁰ as the European ‘States System’, an interconnected web of culturally related countries that compete with each other, yet prevent any one country from becoming dominant. One potential advantage of being part of the European States System is that it is an environment of high competition, leading to relatively fast convergence on the most successful institutions (dependent on underlying conditions of geography and culture). Wallerstein¹¹ has introduced the term ‘world-system’ for the interconnected and economically integrated states of Europe. He contrasts this with economically as well as politically centralised systems, such as the Ming empire. According to Wallerstein’s analysis the World System started in Early Modern Europe and later grew to include most countries of the world. Wallerstein sees the core (mostly western) countries of this World System, as strong states that are in a position to accrue most of the benefits of this economic system.

The Tokugawa System

Tokugawa Japan started out with a very different situation from early modern European states. It was more geographically isolated, and arguably more culturally isolated as well. During Japan’s Warring States period it can be considered to have had its own high-competition ‘States System’. Local lords (daimyo) competed for power, and made institutional innovations, leading to centralisation of power and larger armies.¹² A pattern emerges where the peripheral regions of Japan, e.g. Shikoku, copied institutions from the central area.¹³ These are similar development as could be seen in early modern Europe.

Once the country was unified and brought under the control of the Tokugawa regime, Japan became a more centralised ‘Empire System’. In the Empire System the power is centralised and there is no internal competition. External competition with other states or empires remains a factor however.

⁸ Eric Jones, *The European Miracle: Environments, Economies and Geopolitics in the History of Europe and Asia*, 3rd ed. (Cambridge University Press, 2003), 102.

⁹ Douglass C. North and Barry R. Weingast, “Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England,” *The Journal of Economic History* 49, no. 04 (1989): 803–832.

¹⁰ Jones, *The European Miracle*, chap. 6.

¹¹ Immanuel Wallerstein, “The Modern World-System I: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century, with a New Prologue,” ([1974] 2011) Univ of California Press.

¹² Michael P. Birt, “Samurai in Passage: The Transformation of the Sixteenth-Century Kanto,” *Journal of Japanese Studies* 11, no. 2 (1985): 369–399.

¹³ Marius B. Jansen, “Tosa in the Sixteenth Century: The 100 Article Code of Chōsokabe Motochika,” *Oriens Extremus* 10 (1963): 83–108.

Examples of archetypical Empire Systems are the Chinese empire under various dynasties, or the Ottoman Empire. Japan's geographical location as an island empire meant that external threats were less severe, but also that there were fewer opportunities for external expansion, at least over land. As a result there was less natural external competition in Japan than in the typical empire. Therefore, I consider it a distinct type of Empire System, an *Island Empire*

The Tokugawa system was aimed in a significant degree toward stability and limiting competition on many levels. It had inherited some of these institutions from its predecessors Oda Nobunaga and Toyotomi Hideyoshi. These two unifiers formed a transitional phase between the high competition States System and the Empire System. The Tokugawa regime built on decisions by Nobunaga and Hideyoshi and formalised certain cultural elements already present. Social classes were strictly separated into four occupation groups. Domain lords (daimyo) were kept under control through hostage-taking and a forced and expensive court system. Samurai remained under pay of their lord, despite a shortage of work for them. And finally the international policy gradually shifted from controlled interaction in the 17th century, to a system of seclusion by the 19th century, reinforcing the relative geographical isolation of Japan with institutions, creating a true Island Empire.

On the positive side, the peace and order that prevailed during much of the Tokugawa period created an environment where economic development could and did take place. In addition, local communities played a crucial role in the running of the state at the lowest level, enabling a very light administrative burden on the higher levels. The agency given to the villagers and townspeople to organise their own community within the larger whole, possibly contributes to some form of an 'inclusive state' à la Acemoğlu and Robinson's¹⁴, be it one not based on political power. On the other hand, during the Tokugawa period Japan's technology deficit with the western world grew. This can be seen in military technology - or in mining, as described in the empirical study chapter on that topic. Recent international GDP per capita comparison figures¹⁵ show, however, that Japan continued to develop and even caught up on many European countries outside the North Sea area.

During this time government finances did start to suffer, partly because of the high cost of the Tokugawa regime's control system. By estimating new estimates of combined shogunate and han tax levels, I show that the tax burden imposed by the Tokugawa government - in % of GDP as well as in days of urban unskilled labour - was comparable to those of European countries. This contrasts with for instance China and the Ottoman Empire, which had lower tax burdens. Eventually external intrusion caused unrest and internal competition sprang up, leading to the end of the Tokugawa regime. Japan became more internationally involved during the Meiji period, and Japan became part of the expanding World System.

¹⁴ Acemoğlu and Robinson, "Paths to Inclusive Political Institutions."

¹⁵ Kyoji Fukao, Naofumi Nakamura, and Masaki Nakabayashi, eds. "Kinsei: 16 Seikimatsu Kara 19 Seiki Zenhan" (Early Modern Period: End of the 16th Century to the First Half of the 19th Century). *Iwanami Kōza Nihon Keizai No Rekishi* 2. (2017) Tokyo: Iwanami Shoten, p. 285.

Empirical study 1: Ruling Class Rents

In this empirical study I attempted to estimate the financial costs of the continued employment of samurai. This was part of the Tokugawa system of limiting internal competition by keeping the warrior class occupied. I perceive part of the stipends paid to samurai, those that did not lead to the production of government goods and services, as ‘ruling class rents’. In other words, these are income transfers from tax payers to the ruling class. Tokugawa period ruling class rents could not be calculated directly, as an expense breakdown at the national level is not available for that period. Instead, I used the cost of providing government services during the Meiji period, and compared that to government revenues during the Tokugawa period. For a complete figure of Meiji government expenditure I also estimated government capital depreciation, which resulted in a new and improved estimate of government output for 1890. The Meiji expenses were adjusted to match the spending categories of the Tokugawa government, for instance by eliminating spending on military investments, railways and schooling. The resulting amount was then converted to Tokugawa price levels. The excess revenue that the Tokugawa government took in, over the cost of government production (estimated based on the Meiji expenditure), represents the inefficiencies that were present in the Tokugawa period but not the Meiji. This in turn gives us the income transfers to the samurai class.

The end result is a new estimate for the income transfers, and a first systematic estimate for the financial costs of the Tokugawa institutions. According to my estimate, the ruling class rents accounted for roughly a quarter of government spending in 1850. These rents took on several different forms. There were the samurai bureaucrats who worked short, possibly unproductive hours for a full compensation. Samurai of high rank could in addition live an expensive lifestyle.

Empirical study 2: The Precious Metals Industry

The main goal of this empirical study is to provide a comprehensive account of the production and economic importance of the main export sector in Early Modern Japan - the precious metals mining sector. I have re-estimated Tokugawa period production and export values of silver, copper and gold. The method has been extensive study of available data, interpolation of production estimates, and confrontation of supply and use amounts. The results show that silver production probably peaked around 1630, estimated at over 90 tonnes per year. This level of production is in contrast to much higher trade figures of 140 to 200 tonnes per year suggested by Iwao¹⁶, Kobata¹⁷, Yamamura & Kamiki¹⁸, Shimbo and Hasegawa¹⁹ and others. Since these studies are often quoted, also in recent works such as

¹⁶ Seiichi Iwao, *Sakoku (Closed Country)*, Nihon No Rekishi (History of Japan) 14 (Chūōkōronsha, 1966).

¹⁷ Atsushi Kobata, “The Production and Uses of Gold and Silver in Sixteenth-and Seventeenth-Century Japan,” *The Economic History Review* 18, no. 2 (1965): 245–266.

¹⁸ Kozo Yamamura and Tetsuo Kamiki, “Silver Mines and Sung Coins: A Monetary History of Medieval and Modern Japan in International Perspective,” in *Precious Metals in the Later Medieval and Early Modern Worlds*, ed. J.F. Richards, 1983, 329–62.

¹⁹ Hiroshi Shimbo and Akira Hasegawa, “The Dynamics of Market Economy and Production,” in *Emergence of Economic Society in Japan, 1600-1859*, ed. Akira Hayami, Osamu Saito, and Ronald P. Toby, vol. 1 (Oxford

by Osamu Saito²⁰, it is important to open discussion on this topic. In my opinion the works above likely contain overestimations, due to the use of trade data from unrepresentative years. Trade volumes of each trade carrier (Portuguese, Chinese, Japanese, Dutch etc.) fluctuated wildly during the peak years, and using trade numbers for different carriers from different years can easily inflate the total trade estimate.

My study finds that the peak value of silver production was equal to about 3% of GDP and falling quickly after 1630. Gold and copper reached much lower peaks. Compared to other production regions around the world, in its peak years the Japanese silver and copper mines were among the biggest producers in the world. Silver output was comparable to the main production centres in the Americas, and Japan lead the world in copper output for a time.

Western observers during the Tokugawa and early Meiji period pointed to a seeming cultural preference by Japanese mine operators for manual labour and craftsmanship over labour-saving technologies and new methods, when compared to their Western counterparts. On the institutional front, they pointed to the frequent use of counterproductive short-term and small-scale mining concessions that mine operators worked under. This prevented large investments in mine infrastructure. The Japanese precious metals mining industry was successful for a time, but eventually the physical boundaries of mining based on manual labour were reached in many locations. After the opening up of the country, the mining industry received a boost of new technology, higher demand, more capital, and a different institutional setting.

Conclusion

In the introduction the question was asked whether the Tokugawa government system was a help or a hinder to economic development. The answer is mixed. On the one hand, the Tokugawa regime did impose strict regulations and directed substantial resources toward preserving peace and stability. The resulting isolation made Japan miss out on technological and institutional advances to a great degree, as well as trade opportunities. On the other hand, the Tokugawa regime did provide domestic peace, public order, and other public goods for 200+ years. The administration included professional bureaucrats at the national level and a high level of involvement of commoners at the local level. Previous research suggests these are good circumstances for economic growth.²¹

Finally, I believe that Systems Competition is a useful concept for the analysis of government institutions, also in the pre-modern period. In contrast to the States System (Jones) or world-system (Wallerstein) in Europe, Tokugawa Japan's restrictive institutions made it into an 'Island Empire'. This meant Japan was initially shielded from Systems Competition, until it came to be encompassed in the expanding world-system.

University Press, 2004), 159–91.

²⁰ Osamu Saito, "Japan," in *A History of the Global Economy*, ed. Joerg Baten (Cambridge University Press, 2016), 167–84.

²¹ Acemoğlu and Robinson, "Paths to Inclusive Political Institutions."