

Ideology and Economic Change: The Contrasting Paths to the Modern Economy in late 19th Century China and Japan*

Debin Ma
All Souls College, Oxford University

Jared Rubin
Chapman University

March 2023

Incomplete sketch; please do not cite without permission

Submitted for discussion only at New Economic History of China Conference
Northwestern University, Evanston.

Abstract

This paper revisits the old thesis of the contrasting paths of modernization between Japan and China. It develops a new analytical framework regarding the role of ideology and ideological change—Meiji Japan’s decisive turn towards the West pitted against Qing China’s lethargic response to Western imperialism—as the key driver behind these contrasting paths. Our model and historical narrative highlights the contrast between Tokugawa Japan’s feudal, decentralized political regime and Qing China’s centralized bureaucratic system as a key determinant driving the differential patterns of ideological realignment. Meanwhile, we argue that the 1894-95 Japanese naval victory over China could not be justified under the prevailing Imperial Chinese ideology and thus served as the catalyst for China’s subsequent ideological transformation, which occurred via borrowing Japan’s successful Meiji reforms of both institutions and ideology. Our analytical framework, developed from a comparative historical narrative, sheds new insights on the importance of ideology and ideological change—as distinguished from culture and institutions—for our understanding of political and economic change.

Keywords: ideology, ideological change, China, Japan, economic development, economic divergence, Meiji Reform, centralization, decentralization

* We thank seminar attendees at Aix Marseille Université, Humboldt University Berlin, University of Manchester, Paris School of Economics, Quantitative History Workshop (Hong Kong), Science Po, Toulouse School of Economics, University of Halle, Utrecht University, Virginia Tech, and Yale Law School for helpful comments. We benefit greatly from discussion with and comments from Lars Borner, Kyoji Fukao, Joel Mokyr, Nuno Palma, Jean-Laurent Rosenthal, Tuan-Hwee Sng, Weiwen Yin and Taisu Zhang. All errors are our own.

1. Introduction

Any keen observer of Japan and China will be struck by the contrasts in their national memories of mid-19th century Western imperialism. In Japan, the arrival of the American Commodore Perry and the Black Ship is now widely viewed as the critical and beneficent moment of national awakening which opened Japan's path to modernity. On the other hand, the mid-19th century Opium Wars are regarded—at least according to official propaganda—as a moment of national humiliation that every Chinese patriot strives to memorialize. What do these contrasts in national memories say about the divergent paths of modernization and economic performance between the two countries since the mid-19th century?

Outside of the West, much of the 19th century economic divergence is rooted in differential responses to the Western challenge (Brandt, Ma, and Rawski 2014; Koyama and Rubin 2022, ch. 10). In this paper, we claim that ideological re-alignment with the West is one key to understanding historical and modern economic divergence. When confronted with similar threats of Western imperialism, why did fundamental economic changes come to China three decades after the Meiji Restoration in Japan in 1868? How do we explain China's delayed response and economic development, especially relative to Japan? Was this Japan-China divergence explained by initial conditions, natural resources, human capital, cultural attitudes, institutions, and/or historical legacy?

There has been a long-standing debate on the fundamental causes of economic growth. According to the Solow-Swan model (Solow 1956; Swan 1956), countries that were behind the technological frontier could catch up by adopting technology, investing in capital, and employing underutilized labor. While this theory has significant explanatory power—indeed, it provides much insight into the catch-up growth that happened in Meiji Japan—it has a harder time accounting for failures to catch-up and non-adoption of technology. Political economists have addressed this issue. A common view in the literature of technology non-adoption is that vested interests block adoption (Acemoglu and Robinson 2006, 2012; Chaudhry and Garner 2006, 2007; Coşgel, Miceli, and Rubin 2012). Such arguments are institutional in nature: institutions provide the “rules of the game” (North 1990), which provide scope for some players to block innovations that are harmful to themselves but benefit society.

Following in North's footsteps, several scholars have since argued that a society's formal institutions are the fundamental cause of growth (e.g., Rodrik, Subramanian, and Trebbi 2004; Acemoglu, Johnson and Robinson 2005; North, Wallis, and Weingast 2009; Acemoglu and Robinson 2012). There are in fact many cases in which formal institutions appear primal; for instance, Acemoglu,

Johnson and Robinson (2005) provide the striking example of North and South Korea, with identical cultures but contrasting political and economic institutions. Arguments focusing on formal institutions tend to dismiss culture and ideology as primary factors in economic development or catch-up (e.g., Acemoglu, Johnson and Robinson 2005, pp. 424-50). We argue that this dismissal is unfortunate, as it neglects several salient features of the complex process of economic catch-up from the Non-Western world, which was characterized by changing ideology, legitimacy, and political propaganda. For instance, it is hard to explain the viability of the North Korean regime on the basis of vested interest of rulers and bureaucrats alone; the compliance or even “support” of the masses who endured the worst of the humanitarian disasters were critical to its survival. The same could be said of the Mao era in China’s Communist period. It is even more difficult to justify the bold economic reforms promoted by Deng Xiaoping in the late 1970s, whose ultimate objectives were to preserve and strengthen the same Communist regime. The vested interest argument has been seriously challenged by scholars such as Dani Rodrik, who argues that the so-called vested interest is partly defined by culture and identity (Rodrik 2014, also see Vries 2021, p. 82-3).

Our paper focuses on a specific case study to show that institutions alone have a difficult time accounting for *both* the initial responses of China and Japan to Western imperialism and the turnabout in the Chinese response that occurred decades after Japan’s Meiji reforms. The historical literature suggests that there was one common, crucial element that preceded massive institutional and technological change in late-19th and early-20th century Japan and China: *ideological change*. During the Meiji Reforms, Japan adopted more than just Western industrial technology but a comprehensive Westernization project which included culture, education, and even Western hairstyles and clothes. Not all of these, as they later found out, were complementary or necessary to successfully adopting Western economic and technological developments (e.g., dress). Ultimately, complete Westernization was not viable, as Western ideology had to be indigenized in the Japanese context. Nonetheless, the Japanese response formed a contrast to the Qing reform policies under the so-called Tongzhi Restoration (1862-74) which were fundamentally conservative as captured in the well-known dictum of the period: “Chinese learning as the basis; Western learning for practical use” (Wright 1957, p. 1).

This paper provides a framework for understanding the conditions under which ideological change occurs and why it may not occur even when change brings about economic rents. We begin in the next section by defining ideology as distinct from culture. Specifically, we focus on two features of ideology: it can be used to legitimate political authority and its efficacy is affected by outside events (i.e., ideologies can be undermined when they are too inconsistent with the real world). With the Japan-

China context in mind, we proceed to model the interaction between institutions (specifically, the level of political centralization in a society) and ideological change.

The model yields two intuitive results that we apply to the late-19th century economic divergence between China and Japan. First, ideological change is less likely to occur when there is more “cultural distance” between the prevailing ideology and the ideology that may potentially be adopted. The primary intuition underlying this result is that ideological adoption requires “reverse engineering”: one may see the outcomes that the ideology produces but not know which elements are key for the outcome and which are simply vestigial appendages (e.g., rational education was important for the Second Industrial Revolution, Western dress was unimportant, and Christianity was likely, if anything, a hindrance (Squicciarini 2020)).² Hence, the closer are the two ideologies, the more likely it is that the reverse engineering will succeed, and the associated benefits will be reaped.

Second, more centralized states will be less likely to adopt new ideologies because of its relatively rigid and hierarchical chain of command that tends towards the status quo. The intuition is that because decentralized authorities face more competitions and are likely to be more responsive to exogenous shocks to coordinate collective action from the bottom up. Given that cognitive dissonance with the prevailing ideology is more likely to be triggered by the onset of salient signals such as military defeat by external rivals, ideological change is also more likely to occur with decentralized authorities.³ Moreover, when major ideological change necessitates a regime change, we argue existing decentralized political institutions are more likely to lead to peaceful transfers of power.

These theoretical insights provide a new interpretation for why Japan and China responded differently to Western imperialism in the late 19th century. We provide several historical details which yield the following interpretation. Even though China and Japan were both significantly culturally distant from the West, one key initial difference was that Tokugawa Japanese political institutions were much more decentralized than those in China. For reasons laid out above, this meant that Japan (or, at least, segments of Japan) was more likely to adopt Western ideology. Once this occurred, it lowered the cultural distance for China to follow suit, since it could “reverse engineer” what Japan had done, and Japan was culturally much closer to China than the West. However, such ideological change did

² An analogy can be drawn with the linkage between resource endowments and technology and that of cultural endowments and ideology.

³ This insight is similar to the one found in Giuliano and Nunn (2021), although for different reasons. They find that cultural persistence is more likely to arise in stable environments because those cultural attributes are more likely to be suited for the environment. Our insight with respect to ideology does not have to do with the relative “fitness” of the ideology, but the capacity of authorities to employ it to justify their rule and their failure to respond to negative shocks.

not happen immediately in China. This changed after the 1894-95 Japanese naval victory over China. This was a type of exogenous event that could not be justified under the prevailing Chinese ideology. Our model thus suggests that such an event should have served as a catalyst for ideological transformations in China which would include borrowing Japan's successful Meiji reform of both institutions and ideology. A major contribution of our paper is to trace the origin of institutional difference between Japan and China – decentralized versus centralized – to Japan's unique trajectory of copying the Chinese imperial system from the 7th century onward.

This paper is structured as follows. In the next section, we proceed to define ideology, highlight its key attributes with respect to our framework, and lay out how its conceptualization is distinct from that of the literature on culture. We then lay out important stylized facts regarding the economic, political, and ideological divergence that occurred between Japan and China in the late 19th and early 20th centuries. These historical facts help motivate our model of ideological change, which we present in the subsequent section. In section 5, we provide a new historical interpretation on the deeper historical origin of the institutional differences between China and Japan on the eve of mid-19th century Western imperialism and provide a theory of regime change in times of transition. The final section concludes.

2. Conceptualizing Ideology

This paper argues that ideological change played a key role in the diverging economic and political paths taken by China and Japan in the late 19th and early 20th centuries. Why might this have been the case? Was ideological change in fact a necessary prerequisite to reforms which placed these economies on the path to modern growth?

Addressing these questions first requires a theory of ideology and ideological change. We build on the literature which views ideology as a key component in the mental models shared by individuals holding the ideology (Mann 1986; Denzau and North 1994; North 2005; Rodrik 2014; Mokyr 2016; Greif and Mokyr 2017; Iyigun, Seror, and Rubin 2021; Ma 2022). Specifically, we define ideology as *the cognitive basis through which one perceives the mapping of inputs to outputs*. That is, one's ideology shapes how they perceive reality. We follow the seminal work of Denzau and North (1994) in viewing ideologies as the *shared framework of mental models* which groups of individuals possess that provide both an interpretation of the environment and a prescription as to how that environment should be structured. Various ideological characteristics cover all aspects of one's life. For instance, they

determine what one believes will be the outcome of prayer, what one perceives will be the outcome of hard work, and how one perceives the outcome of government actions.

Ideology interacts with institutions and in many cases is a key component of institutions.⁴ In line with Denzau and North (1994, p. 4), our framework asserts that mental models are the internal representations that individual cognitive systems create to interpret the environment, while institutions are the external (to the mind) mechanisms individuals create to structure and order the environment. Our framework goes a step further by arguing that while there is no one-to-one mapping between ideology and institutions, ideology constitutes the “brain”: the motivation, justification, or in some cases both the origin and purpose of institutions. More importantly, more than culture, ideology not only directly impacts current policies but also shapes potential responses to future policies in the event of new information and shocks.

The mechanics through which ideological change occurs imply an important distinction between ideology and culture, at least in the context of our model. Ideology tends to be *top-down* and can be augmented by elites. Ideology is often institutionalized via canonical texts and organizations (e.g., schools, churches, political parties) and can directly impact policy. In this sense, ideology evolves over time as part of the historical process. Meanwhile, ideology also gives a certain interpretation of the past and how societies choose which kinds of historical memories to preserve and how (e.g., the example of Chinese and Japanese memories of mid-19th century Western imperialism noted at the opening of the paper). More generally, this implies that political ideology responds to the actions of political elites, religious ideology can change due to the actions of religious elites, and economic ideology is likewise susceptible to elite influence. The announcements of elites can therefore serve as a coordinating mechanism around which subjects share an ideology. We argue that economic change or modernization often requires ideological change much more than cultural change. In fact, ideological change can induce corresponding cultural change.

This conception of ideology affects how one should model ideology and the process through which ideology can change (or remain stagnant). Importantly, it calls for a type of model that is distinct from the way that culture is modelled and perceived by cultural anthropologists (Cavalli-Sforza and Feldman 1981; Boyd and Richerson 1985; Henrich 2015) and economists (Bisin and Verdier 2001, 2011). This literature largely views culture as being transmitted through a “bottom-up” process, either

⁴ A growing literature suggests that *culture* and institutions also interact in ways similar to those we describe above (Greif 1994, 2006; Bisin and Verdier 2017; Acemoglu and Robinson 2021; Giuliano and Nunn 2021; Bénabou, Ticchi, and Vindigni 2022; Bisin et al. 2022). As noted, however, we view ideology and culture to be related, but distinct, concepts.

via parents (vertical transmission), peers (horizontal transmission), or other adults such as teachers (oblique transmission). Culture is much slower to change than ideology, often taking multiple generations to change even as world events change. Indeed, this is a reason why cultural transmission often takes center stage in theories of persistence (Nunn 2014; Voth 2021; Cirone and Pepinsky 2022; Acharya, Blackwell, and Sen 2023; Lowes 2023). Culture can persist even when the world changes, meaning that economic and political outcomes persist although they are no longer optimal. Both culture and ideology contain the society-specific cognitive shortcuts that help people cope with a complex world. A key distinction between the two, in our conception at least, is that ideology can be affected in the short run by elites, whereas cultural values may not. That is, ideology—more closely aligned with ruling regimes—is more malleable than culture. Hence, a model of ideological change should have different fundamentals from those of cultural transmission. Whereas the former can be augmented by the *decisions* of elites, the only conscious decision-makers in the latter are parents.

Another feature of ideology that distinguishes it from culture is that it is susceptible to change in response to outside (exogenous) events or information. Events in the outside world can occur that are inconsistent with one's ideology. Such events can change how one perceives reality. Hence, when these events happen—and if one is aware of these events—it may affect how one perceives the mapping of inputs to outputs (Rodrik 2014, p. 194). As Greif and Mokyr (2016, p. 31) put it, the cognitive rules that form ideologies “tend to become unstable ... when new evidence emerges that is viewed as incontrovertible yet is inconsistent with accepted cognitive rules.” In times of crisis, an “ideological entrepreneur” can use such inconsistencies to promote a new ideology that benefits their own ends (Denzau and North 1994, p. 25; Rodrik 2014, p. 203-04; Becker et al. 2020).

Of course, it may be in the political authority's interest for its subjects to *not* update their ideology. When this is the case, the authority may try to *justify* new information under the old ideological paradigm. This can be an effective strategy because people tend to downplay information that is not consistent with their ideological beliefs (Rodrik 2014, p. 193). Indeed, as Greif and Mokyr (2016) argue, cognitive rules need not be correct (in the sense that they accurately reflect the outside world), but they must be self-enforcing. For the political authority, this means that ideology can be used as a “shield” to protect them from bad shocks. This capacity to justify events is a central element of any ideology; according to Denzau and North (1994, p. 12) “we have religions, superstitions, and other belief structures to account for many aspects of the environment for which we do not possess or acquire the information to arrive at something like a scientific consensus.”

So long as the shock is justifiable under the prevailing ideology, the ideology can serve as a mechanism to mitigate the *perception* of how bad the shock is. This is why viewing ideology as a mapping from inputs to outputs is useful. A successful ideology (from the perspective of the authority) will be able to account for a wide number of inputs and yield similar outputs in terms of the way the world is perceived. The extent to which authorities are successful in justifying negative shocks in the context of the prevailing ideology depends in part on the type of outside information that individuals receive. Information that is difficult to verify can more easily be justified than information that is incontrovertible (Akerlof and Machaillat 2018; Hong, Slingerland, and Henrich 2022).

A key reason that ideology is malleable and can be used to justify widely varying empirical realities is that individuals with different learning experiences (both cultural and environmental) will have different theories (i.e., models, ideologies) to interpret their environment (Denzau and North 1994; Greif and Mokyr 2016). Moreover, the information feedback from their choices is not sufficient to lead to convergence of competing interpretations of reality. In consequence, as Frank Hahn (cited in Denzau and North 1994, p. 4) pointed out, “there is a continuum of theories that agents can hold and act on without ever encountering events which lead them to change their theories.” In such cases, multiple equilibria will result. To understand decision making under such conditions of uncertainty, we must understand the relationships of the mental models that individuals construct to make sense out of the world around them, the ideologies that evolve from such constructions, and the institutions that develop in a society to order them.

Ideological change therefore carries risks and uncertainties. Given that ideologies provide the mental map from inputs to outputs, it will be impossible for a society to wholesale adopt a new ideology. The best they can do is to “reverse engineer” a foreign ideology from what is observable in the society from which the ideology is borrowed. This is one reason why Japan and China present fascinating cases of conscious absorption (or lack thereof) of Western ideology. We do not view ideologies as being adoptable outright. That is, when a political authority attempts to promote a new, foreign ideology, it will *by definition* be a hybrid of the prevailing ideology and the new ideology. The prevailing ideology provides a causal mapping for humans in a complex world; this ideology cannot simply be removed to be replaced by a completely new ideology. In fact, if the new ideology is successfully implemented, it will be implemented “through the lens” of the old ideology. In the cases of concern in this paper, Japanese or Chinese adoption of Western ideologies would, by definition, be done through a Japanese or Chinese ideological lens. Such a hybrid ideology would likely be recognizable to a Westerner, though also clearly distinct. As emphasized by Denzau and North, there

is a certain plasticity in ideology that allows ideological change to take place in a certain direction to justify a new regime or reform.⁵

This also means that the “cultural distance” between the borrowing and adopting society determines the likelihood that adoption efforts will be successful. This is partly because like culture, much of ideological learning or upgrading requires tacit knowledge. It is much harder to adopt an ideology that is fundamentally foreign. Individuals will have little, if any, direct experience with a foreign ideology, making it difficult to even know what the potential outcomes are (Denzau and North 1994, p. 10). There are simply too many differences between distant ideologies to cleanly identify which ones are important for making the ideology “work” during the process of reverse engineering. On the other hand, a “culturally close” ideology is more likely to be adopted successfully since there are fewer elements to reverse engineer.

In some ways, the relationship between ideology and culture bears certain analogy to the relationship between technology and resource endowments in the induced innovation literature. Here, ideology represents some form of technology or blueprint – about how the world should be and how rules should be formed – whereas culture represents what the world is and its existing resources. Just like Western technology needs to be adapted Asian resource endowments, Western ideology needs to be absorbed in an East Asian context. Successful adoption of Western ideology can thus lead to higher returns to Western production methods, which may themselves begin to induce cultural change and favour the building up of certain types of human capital (e.g., mechanical skills, abstract thinking) (Rodrik 2014, p. 204-05; Iyigun, Rubin, and Seror 2021; Ma 2022).

Our distinction is therefore a corrective to works that place strong emphasis on institutions alone, such as private property rights, democracy, rule of law, or inclusive institution. In our framework, institutions are just as embedded in culture as in ideology. Behind the origin and change of institutions is an underlying ideology. In fact, it is even possible that ideology itself represents a form of knowledge, defining the boundary of the institutional possibility frontier. Institutions may partly evolve spontaneously but do so in the context of one (or many) ideologies. While we critique the overly optimistic and simplistic argument of a universal institution rule (e.g., the Washington Consensus) to economic development, we are more optimistic on the aspect of economic change than the broad cultural argument. Instead of advocating deep or broad cultural changes which are time-resistant, we

⁵ An important element of the relative success of modernization in East Asia may precisely this process of indigenization of Western ideology, a process largely absent in Western colonies where Western ideology was often imposed top-down without engaging with the native culture and ideology.

show that economic change can happen in concurrence with ideological change imposed from the top-down, except that such top-down change also elicits “relevant” (not complete) cultural change. In that regard, in the remainder of this paper we show that the onset of Western ideologies in the mid-19th century opened a vast frontier of new institutional possibilities for East Asia, an area that had been isolated from this new knowledge.

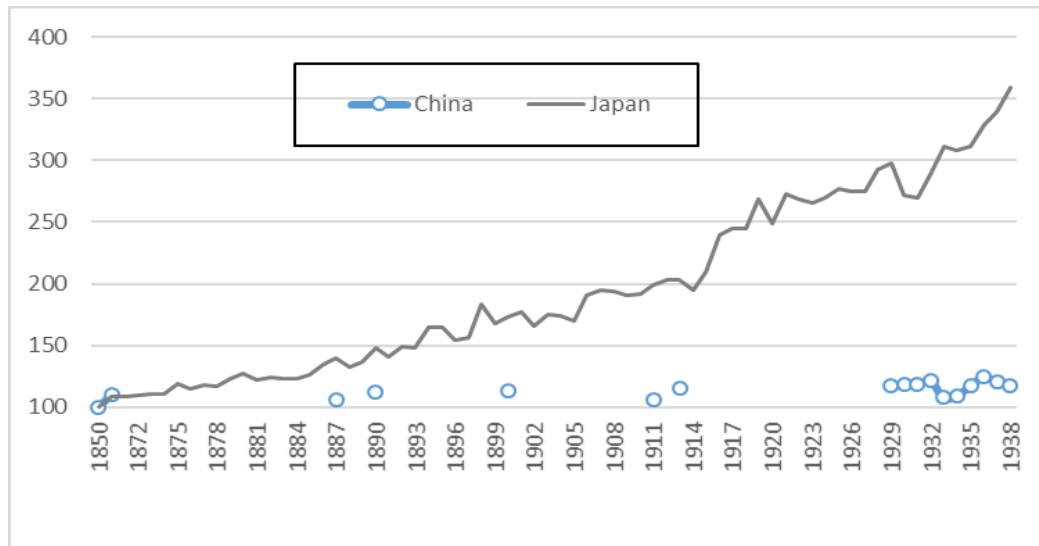
3. Paradigms on the Origin of Modern Divergence within East Asia

We lay out some of the key stylized facts regarding the economic and political divergence between China and Japan in the modern era. In particular, we ask the question why there was nearly a two-to-three-decade lag (and often longer) of Chinese reform after Japan. Was it due to initial conditions or simply policy differences? These facts help motivate the model and point us to highlight the salience of certain institutional and ideological features over others. We will return to the history of this period after laying out the key insights and predictions of the model.

3.1 The Initial Conditions Paradigm

We begin with an aggregate economic indicator (GDP per capita). Figure 1 plots Chinese and Japanese real per capita GDP using their respective growth rates projected from a common base of 100 around 1850. The figure reveals a sluggish performance of Qing and Republican China relative to Japan’s transformation. Although indexing the level of the per capita GDP of two economies at 1850 at 100 seems arbitrary at first sight, Figure 1 actually turns out to be consistent with a comprehensive study based on the reconstruction of the 1930s benchmark Purchasing Power Parity estimates. Their estimate places Japanese per capita GDP level at about three times of that of the Chinese level during the 1930s, a ratio of difference that broadly matches that in Figure 1 (Fukao, Ma, and Yuan 2007).

Figure 1: Index of Chinese and Japanese real per capita GDP (1850 = 100)



Data source: Maddison Project database at:

<https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2018?lang=en>; data re-indexed at 100 in 1850.

Our implicit estimate of a common starting point between these two countries in 1850 on the eve of their forced opening by Western imperialism has been contested. In fact, recent GDP estimates make a claim for a so-called Little Divergence within Asia; i.e., that between Japan and China before the mid-19th century (Bassino, Broadberry, Fukao, Gupta, & Takashima, 2019). According to Bassino et al. (2019), Japanese per capita GDP in 1990 dollars was 50% greater than that of China in 1850 (904 vs. 600). However, these estimates are difficult to reconcile with the growth rates backward projection method using the 1930s purchasing power parity benchmark in Figure 1, which rested on much firmer statistical and methodological grounds (Fukao, Ma, and Yuan 2007). Moreover, even if they were correct, the duration of their so-called “Little Divergence” seems too short—it only emerged for a couple of benchmark period in the early 1800s. Its magnitude also seems too small: Japan’s per capita income being 40-50% higher than China could still be smaller than interregional differences within China, an empire that more than ten times larger than Japan (Bassino et al. 2019). Meanwhile, there is other systematic evidence that points to much lower levels of Japanese living standards on the eve of its mid-19th century modernization.⁶

⁶ For some recent works pointing to low real wages in Tokugawa Japan, see Kumon (2022). Baten et al (2010) show that Japanese male heights in the 19th century were probably among the shortest in the world but rose rapidly during the Meiji era of modernization.

In an additional contribution to the Little Divergence argument, Sng and Moriguchi (2014) argue for the importance of state capacity, showing significant differences in tax revenue as a share of GDP in Tokugawa Japan and in Qing China. Their data reveal that while Chinese state's annual revenue on the eve of the Opium War (1839–1842) was at maximum equivalent to 2% of its national income, the comparable number for the Tokugawa shogunate was more than 15% (Sng and Moriguchi 2014, p. 441). They go on to show that while the average tax rate for Tokugawa shogunate was 34%, the lords of Aizu and Choshu taxed their peasants within their own daimyo at 50–55% between 1637 and 1764 and 40% in 1840. They do acknowledge that these official tax rates overstate the actual tax rates because of the way they were formulated (Sng and Moriguchi 2014, p. 458-9). Another systematic attempt by Nakabayashi (2021, pp. 86-88) provides an effective tax revenue as a share of total output from as high as 30% in the 17th century to 15-20% in the early 19th century. However, as noted by Peer Vries's (2021) recent review, tax revenue at this level seems implausibly high for a pre-modern agrarian economy. Indeed, they would be higher than most of the advanced European states at the time and even most of Meiji and the modern Japanese era (pp. 134-5).

There are a few possible explanations for the upward bias. The first is that these rates were more likely agricultural rents rather than state revenue (Vries 2021, p. 134). If these were simply rates or agricultural rents, they were not net revenues that actually reached the coffers of the Japanese authorities. Second, the Tokugawa taxes included local taxes which were not captured in Qing China, which only included central revenues. Going beyond state revenue, Sng and Moriguchi (2014) and Koyama et al. (2018) highlighted how the difference in geographic sizes between China and Japan impacted state capacity, administrative and legal governance, the monetary system, and provision of public goods. We will discuss the issue of size and governance later, but there is a long-standing argument in the literature that certain initial conditions ranging from human capital, social capital, political and economic organization, or even cultural attitudes predisposed pre-modern Japan to a much smoother transition to modern economic growth.

Perhaps most curious is that Tokugawa Japan's seemingly high tax rate had long been bemoaned as a symbol of a highly extractive state where multiple lordship squeezed the peasantry. In this regard, Qing China's relatively light (at least nominally) taxation seemed to confirm her proclaimed "benevolent" nature of Confucian rule. Indeed, pessimistic assessment of the misery in the Tokugawa era is captured by Herbert Norman's seminal work written in the 1940s on the abject state of the Tokugawa situation: "As the Tokugawa regime passed the two-century mark in its history, it was faced with the problems of the gravest nature. Natural calamities such as earthquakes, flood, famine and fire

ravaged the country throughout its later years. Agrarian conditions were so wretched that a poor crop inevitably brought famine in its wake. The year 1833 was memorable for the calamities which befell the country. Years of famine followed one after the other, and it is recorded that in 1837 hundreds of corpses were left unburied in the streets of Nagoya” (Norman 1946, p. 33). Norman went on to observe that “the Modern observer of the Far East was apt to forget that in the middle of the 19th century Japan was as weak as contemporary Burma or Siam, facing the most powerful nations of the West without allies, without a fleet or a modern army, with no monies in its treasury, its industry still handicrafts, its trade negligible, its poverty profound,...” (p. 46).

It is interesting that this earlier generations of scholars—writing before the onset of China’s current economic boom—had to explain China’s historical economic stagnation, often due to the prevalence of nepotism, corruption, and other elements of Chinese social structure and behavior that prevented a dynamic response of the sort attained during Japan’s Meiji era (1868-1912). But China’s recent reversal of fortune seems to have generated a tide of scholarship that now advances the opposite view, attributing recent Asian prosperity to the same “cultural values” formerly thought to have obstructed economic dynamism or even advanced the view there was little difference in economic structure or per capita income between the most commercialized regions of China and Europe prior to the British industrial revolution and there were no fundamental shortcomings in China’s political, legal, or other institutional traditions. The key argument, most clearly articulated in Pomeranz’ influential book on “The Great Divergence” (2000), is that there was little difference in economic structure or per capita income between the most commercialized regions of China and Europe prior to the British industrial revolution. Pomeranz argues that Britain’s head start in industrialization arose from its domestic supplies of cheap coal and because its colonies provided superior access to land-intensive goods rather than from any advantage linked to political, legal, or other institutional factors.⁷

3.2. The Policy Change Paradigm

While this paper does not aim for a comprehensive assessment of the Great or Little Divergence debate, our China-Japan comparison reveals an important channel of the modern divergence: the policy and regime bifurcation during the second half of the 19th century. We argue that ultimately, East Asia’s Industrial Revolution started with borrowed institutions and ideology. In this regard, we show

⁷ For more, see Brandt et al. (2014).

that rather than resource endowments such as coal, or even the discovery of the New World resources, what impeded China's progress in the globalized world is what some historians of China called the scarcity of "intellectual resources" 思想资源 or what sometimes is referred to as ideology.⁸ However, the scarcity of intellectual resources in mid-19th century Qing China or Tokugawa Japan is of a particular sort, that of confronting a rapidly advancing West being transformed by industrialization. The relative Chinese industrial backwardness could have been overcome through massive borrowing, learning, and importing of Western ideology and institutions, which is partly what Meiji Japan succeeded in doing. These intellectual resources allowed late industrializers to construct an entirely different system of political governance, economic system, and social organization (see Ma 2022, p 17).

While both the facts and the role of initial conditions between China and Japan are far from settled, there is little dispute regarding the fundamental contrasts in the nature and pace of borrowing from the West in the second half of the 19th century. The 1868 Meiji Restoration brought a new group of political leaders that proclaimed Japan was to seek knowledge from around the world. A recent paper by Machikita and Okazaki (2019) revisits the impact of the Meiji reform on Japanese industrialization by using the size and distribution of industrial plants as an indicator. Their analysis reveals a fundamental structural break towards modern industrialization in the two to three decades after the 1870s Meiji reform. In particular, among the reform measures they highlighted are the Family Registration Act of 1871 (which abolished the feudal class system), the dissolution of feudal trade associations (kabu nakama) in 1872/73, the legislation of the National Bank Act in 1872, the establishment of stock exchanges and introduction of incorporation in the late 1870s, and the instigation of land reform and tax reform in the early 1870s.

During the second half of the 19th century, the Qing did not remain entirely passive to Western incursions. They concentrated on modernizing the Chinese military through a series of government financed (or government controlled) Western style, capital-intensive industrial enterprises, under the so-called Self-strengthening movement (1860-1894). Nonetheless, the overall ideological orientation during this period remained conservative, represented, as aptly suggested by the title of Mary Wright's classic book, the last stand of Chinese conservatism. In contrast to the concurrent Meiji reform in Japan, there was no introduction of any reforms that touched the fundamentals of the traditional

⁸ These ideological or intellectual resources represent our ways of understanding, interpreting, and theorizing about the world we live in and the ways we interpret the past, construct the present and imagine the future. They both support and constrain our institutions, policies, and day-to-day decisions. See Ma (2022, p. 17) for a full discussion.

regime: no introduction of a modern constitution or commercial law; no reform in the currency system; and modern banks or modern infrastructure such as railroads were expressly prohibited. The Self-strengtheners displayed either indifference or hostility towards private initiatives in the modern sector, supplied few critical modern public goods, and, in most cases, even opposed private efforts to build public infrastructure such as railroads and inland steam shipping (Brandt, Ma, and Rawski 2014). The nature of reform in this period was summarized later by Liang Qichao—China’s foremost intellectual and reformer of the era—as the phase of “materials things” 器物 (qiwu), as the Qing saw Western superiority only in terms of things such as military technology and equipment.

This phase ended with China’s 1894-96 shocking naval defeat by Japan, a nation long regarded as an inferior rather than an equal. The defeat inflicted a profound mental shock on Chinese elites and the public at large. It led to sudden surge of interest in the Japanese experience. Huang Zunxian, the Qing ambassador to and keen observer of Meiji Japan, wrote a landmark study of Japan’s transformation in 1887. Despite being delivered to the leading bureaucrats of the Self-strengthening movement, Huang’s work circulated privately and drew little attention even when it was printed in 1895. But China’s stunning defeat in 1896 turned this book into an instant best seller, leading one gentry man to lament that had we all paid attention to Huang’s book earlier, China would have been spared over two hundred million silver taels of war reparations—equivalent to around five times of the Qing state’s annual peacetime revenue—extracted by Japan following its military victory (Jin and Liu, 2011 p. 66).

Intellectual historian Ge Zhaoguang marks 1896 as China’s key intellectual turning point. He shows that during the three centuries prior to 1894, Japan translated 129 Chinese works while the Chinese translation of Japanese works only amounted to 12. This trend reversed in the decade after 1896, with 958 Chinese translations of Japanese works but only 16 translations in the other linguistic direction. Indeed, when Japan became the first Asian society to translate Western materials, the shared vocabulary of Chinese characters quickly installed Japan as the natural intermediary in transmitting Western culture to China, especially because of the inflow of a massive numbers of Chinese students and the outflow of Japanese advisors and teachers to China.

Beyond military victories, Meiji Japan offered a remarkable example of a nation with similar (or humbler) cultural heritage that managed to implement a comprehensive and thorough reform agenda when confronted with a common Western threat. Through the successful adoption of the gold standard in 1897 and the recovery of extraterritoriality in 1899, Japan’s Westernizing reform kept Western capital and influence at bay (see Ma 2022 for this narrative and related references).

The Japanese example directly triggered the Hundred Days’ reform in 1898 backed by the young Guangxu emperor (r. 1875-1908). Although centred in Hunan—the heartland of Self-strengthening bureaucrats—the reform’s intellectual leaders came from Guangdong based elites such as Huang Zungxian, Kang Youwei, and Liang Qichao, who had prior exposure to Western influence. Although the reform was quickly crushed by conservatives surrounding the emperor’s aunt, Dowager Empress Cixi, the agenda of the failed Hundred Days reform formed the core of the Qing constitutional movement of 1903-1911, modelled directly on Japan’s Meiji reforms. China’s new reform effort was comprehensive and ambitious. It aimed to prepare China for a constitutional monarchy by drafting a formal Constitution that would establish national, provincial, and local parliaments. Military modernization was also high on the reform agenda. Administrative reforms sought to modernize public finance and adopt a national budget. The reform initiative gave birth to new Ministries of Education, Trade, and Agriculture and encouraged the founding of local chambers of commerce. Policy initiatives aimed at currency reform, the establishment of modern banks, and the expansion of railroads and other public infrastructure. The abolition of the millennia-old Civil Service examination in 1905 opened the door to a modern school system, giving birth to what is today China’s best-known universities.⁹ Table 1 reveals a striking twenty-plus year lag in policy reform between Japan and China.

Table 1: Chinese and Japanese Reforms

| | Japan | China |
|-----------------------------|-------------------------------|-------------------------------|
| Commercial Code | 1881 | 1904 |
| Double Entry Bookkeeping | 1870s | 1890s |
| Modern Banking Act | 1872/1876 | 1904 |
| Patent Law | 1885 | 1944 |
| First Industrial Exhibition | 1877 | 1909 |
| Sale of State Enterprise | 1880s | 1900s |
| First Modern University | 1877 | 1895 |
| Railroad Mileage | 1894: 935km 1931: 14,487km | 1894: 364km 1931: 14,239km |

⁹ See Ma (2022) and Kung (2022) for an overview on the turn of the century breakpoint in education, missionaries, and numbers of treaty ports, which partly became the institutional foundation underpinning the rise of modern industry, banking, public finance, and the monetary regime.

The impact of this policy and regime shift in China was immediate and momentous. Through the compilation of new sectoral statistics on trade, modern industry, and infrastructure, Ma (2021) shows a clear economic take-off around the end of the 19th century, four decades after China opened to Western imperialism but precisely two decades after Japan's Meiji reform. This take-off, triggered by China's shock defeat by Japan during 1894-96, was sustained by subsequent Meiji-style Chinese reforms. It started with labour-intensive sectors, then spilled over into capital-intensive industries, banking, infrastructure, education, and cultural institutions. This sectoral growth was not well-captured in the per capita GDP figures, as revealed in Figure 1, as the modern sectors came about only around the turn of the last century and started from a tiny base dwarfed by the traditional agriculture and handicrafts sectors. For example, modern factories production—which recorded 8% annual growth between 1912-1936—were only 3.4 percent of total GDP as late as the 1930s (Ma 2008).

3.3 The Deep Historical Roots of Modern Divergence

As related above, we argue that both the capacity and willingness to borrow and learn was endogenous to China and Japan's pre-existing political institutions and geo-political position in East Asia. In this regard, China's highly centralized and absolutist political regimes and traditional dominance in a China-centred world order have not only led to a closure of mind to new intellectual resources but also an initial failure to even recognize or perceive impending crisis and threats. Tokugawa Japan's decentralized feudal order and its peripheral and modest size in the China-dominated order may have played a key difference in opening it to a new ideological horizon.

We start our study of the deep roots of this institutional difference by turning to Herbert Norman's work written in the 1940s. While pointing out the abject state of Tokugawa regime and economy on the eve of the mid-19th century Western imperial threat, he highlighted one critical difference that enabled a much more dynamic Japanese response to this threat than its far more powerful neighbor of China: "In China, the ruling bureaucracy was civilian in outlook, recruited through the civil service examination system, chiefly from the gentry class. This scholar-bureaucracy had become the jealous guardian of Confucian orthodoxy, compliance with which was the pass-key into this bureaucracy." (p. 30) It was this mandarin that shrank from undertaking any far-reaching reforms (p. 31).

What Norman highlighted was a crucial political and institutional distinction between China and Japan that had a deep and unique historical origin. China's last dynasty, the Qing (1644-1911), epitomized the Chinese regime of a single unitary emperor ruling over all "under heaven" governed

by directly appointed bureaucrats rotated nationwide. The establishment of a nationwide Civil Service examination system that screened bureaucrats inculcated in Confucian ideology legitimated the imperial rein and monopolized knowledge and information. This system of direct administrative rule phrased as a “prefectural system” 郡县制 in classical Chinese (as opposed to indirect rule in the Chinese phrase of “feudal regime” 封建制) traced its origin back to the first unification under the so-called first emperor of Qin Shihuang (BC 229). The Qin’s conquest of the other Warring-states was accomplished through the successful adoption of this direct administrative rule under the prefectural system which sustained beyond Qin’s first unification following the advice of the first emperor’s chancellor in the Legalist camp. This fateful choice, as scholars later have summarized, subsumed China for nearly two millennia with a regime of uniquely Chinese absolutism in the tripartite structure of a Qin regime/Legalism/Prefecturalism (秦制/法家/郡县). This structure formed a contrast with the Qin’s predecessor, the regime of Zhou/Confucianism/Feudalism (周制/儒家/封建), which was marked by decentralization and indirect rule with the ruler co-existing with various aristocrats and regional, often hereditary, lords.¹⁰ Although the Qin dynasty itself collapsed in a short 15 years, followed by episodes of violent reversions back to feudal decentralization and fragmentation, the essence of the Qin regime survived and won out against all odds (Chen and Ma 2022). Even though Han dynasty – the dynasty that succeeded the short-lived Qin rule – officially sanctioned Confucianism as the orthodox ruling ideology, many would claim that the Chinese rule is fundamentally Legalist by nature and only Confucian in outlook 外儒内法 (Qin Hui 2015). Both the theory and practise of the Qin regime slowly perfected with the rise of the Civil Service system during Sui and Tang dynasties from the 7th century to grow into maturity during the Song dynasty and beyond.

In one of China’s most famous “constitutional” treatises, the great Tang Confucian scholar Liu Zongyuan (773-819 AD) touted the virtues of the prefectural system. Liu’s criteria was simple and pragmatic: the prefectural system was the most effective system against rebellion and instability: “The prefectural system contained gems of impartiality by allowing the worthy rather than the hereditary nobles to govern. One could easily replace a bad prefect or magistrate but not a bad feudal lord. Thus, the founding of the Qin marked the birth of a “public under the heaven” in China. History shows that rebels against crown had come from the masses, the principalities, or the commanderies but none

¹⁰ For a recent exposition on the Qin/Zhou contrast in Chinese political history, see Qin Hui (2015).

from the officials and prefectures.” Liu’s keen observation on the virtues of the prefectural system as a bulwark for political stability and a check against rebellion may have held the secret to China’s imperial longevity. Chinese absolutism strengthened through the subsequent Song, Yuan, Ming and Qing dynasties (Ma 2012).

In this context, it is illuminating to turn to Japan, whose state-building originated by massively and systematically borrowing the Chinese centralized political system and ideology during the Tang dynasty. As pointed out elsewhere, the dominance of the so-called Qin regime in Continental China had much to do with the systematic nomadic invasion and rule from China’s northern frontier outside the Great Wall (Ko et al. 2018; Chen and Ma 2022). Thanks to the Sea of Japan that sheltered it from nomadic invasion, Japan’s ambitious attempts at a Tang Chinese style of political centralization quickly lost momentum and slowly disintegrated into a curious reversion to a Chinese style of Zhou regime marked by decentralization and fragmentation in the subsequent centuries. By the 17th century, the structure of the Tokugawa regime that emerged out of the prior Warring States era seemed like a time warp in the mirror of Chinese dynastic history: a nominal emperor with a ruling general sharing power with multiple and semi-autonomous feudal lords called *hans* and *diamyos*. Despite Japan’s continued borrowing of Chinese ruling ideology in the form of Neo-Confucianism synthesized by the Song scholar Zhuxi, the Tokugawa regime seems to have resurrected China’s abandoned feudal past. China’s refugee scholars who sought refuge in Japan from the fall of Ming noted this curious anomaly, even praising Tokugawa Japan approximating the original ancient Confucian model of governance (Lu, Yuxin 2017).

Our argument here is that it is not so much that Japan’s feudal institutions or Confucian ideology lent themselves more easily to a path of capitalism or modernization – a path that only opened up with the import of Western ideology after the mid-19th century. Rather we argue that Japan’s feudal institution and elite structure increased the likelihood of a smooth regime transition as seen in the relatively bloodless and orderly fall of the Tokugawa regime. Indeed, the success of Meiji rebellion echoed Liu Zhongyuan’s warning about the vulnerability of a feudal decentralized regime to internal rebellion. This relative “backwardness of Japanese institution” seen through Chinese history lens we argue turned out to be a blessing in disguise.

Our argument here supplements but also goes beyond that the thesis advanced by Koyama, Moriguchi, Sng (2018, p. 194) that it was the comparable size of Japan—comparable to one of the eighteen provinces of China or Western European states—that enabled a much lower cost of adopting Western institutions and practices. However, the highly relevant thesis of Koyama et al. does not

substitute the independent and overriding importance of ideology. After all, the unity and size of China itself was a historical process propelled by the rise of bureaucratic centralization, which itself impinged on Jiangsu and Guangdong provinces to engineer an independent response to Western imperialism, as the daimyos of Chosun or Satsuma did almost in defiance of the Bakfu in the mid-19th century.¹¹

4. The Model

In order to conceptualize the determinants of ideological change, we need a model which highlights the key institutional and cultural parameters that may affect whether a society adopts a new ideology. The discussion above leads us to focus on three factors: the level of political centralization, the cultural distance between the prevailing ideology and the one that may be adopted, and the degree to which political authorities face exogenous threats that require resources to address. In what follows, we present a model that is as simple as possible while accounting for these three features.

We consider a T period game in which each period has two stages. Utility is not intertemporal, so we need only solve for intra-period optimization. The model is not game-theoretic in that there are no strategic considerations. The model simply captures the actions taken by one of $j \in \{1, \dots, N\}$ political authorities to maximize the (perceived) probability that they stay in power when threats to their regime arise. The case where $N = 1$ is *extreme centralization*, and the degree of decentralization is increasing in N . In other words, we model a (much) simplified version of the problem faced by (centralized) Chinese and (decentralized) Japanese authorities at the onset of Western imperialism.

a. Setup

Prior to period 1, there is a prevailing ideology, I^0 . Associated with this ideology are known economic returns $r \in [1, \infty)$. These are known with certainty, as the prevailing ideology has produced returns in the past. In period 1, some exogenous ideology, I^1 , becomes available and can be promoted by the authority. This ideology will be available to adopt in all periods. If the authority adopts the new ideology, the associated economic return is $z \in [1, \infty)$, where z is a random number taken from distribution $f(\cdot)$. That is, there is *uncertainty* about what the returns are to the new ideology. The

¹¹ The relative success of Japan, and later South Korea, Taiwan, Hong Kong and Singapore seemed to show the resilience of smaller polities as the precursors to modernizers. However, they achieved modernization only after significant ideological transformation. The success of the post-1978 reform in China again reveals the importance of ideological change.

uncertainty derives from two sources. One, as noted in Section 2, is that full ideological adoption is never possible. A new ideology is influenced by the prevailing ideology, and it is uncertain how the two ideologies will interact until after adoption has occurred. Second, ideology adoption occurs through “reverse engineering” what is known about the new ideology. This process is rife with uncertainty about what the outcome will be (i.e., what needs to be copied and what does not?). To place structure on the model, we assume that the probability distribution of potential outcomes is knowable, although it may be more appropriate to model this distribution as unknowable, as in Knightian uncertainty (Denzau and North 1994). Denote R as the total level of resources available to the authority (i.e., $R_{j,t} = r$ if the new ideology is not adopted and $R_{j,t} = z$ if the ideology is adopted).

In the first stage of each period, each authority takes one action: whether to adopt and promote the new ideology ($y_{j,t} \in \{0,1\}$, where $y_{j,t} = 1$ indicates adoption).¹² If the authority has promoted the new ideology in the past, that ideology persists for all subsequent periods. As noted in Section 2, this is a key aspect of ideology distinguishing it from culture: ideology is top-down and can be influenced by decisions made by elites.

The variance associated with the new ideology, σ , is a function of the *cultural distance*, $d_{j,t} \in [1, \infty)$, between the cultural context in which the new ideology emerged and the prevailing one. We model $d_{j,t}$ as exogenous. It can decrease over time only if nearby authorities adopt the new ideology, which makes “reverse engineering” of the new ideology more straight-forward. This happened for example when Meiji Japan successfully reverse engineered Western ideology and culture.

Political authorities may also be more adaptable to new ideologies due to factors beyond prevailing cultural factors such as historical tradition of learning, institutions (e.g., political legitimacy or vested interests), or geography (e.g., size of nation or resource endowments). In this paper, we only focus on one key parameter distinguishing China and Japan: the degree of political centralization.

We introduce $\theta_{-j} \in [0,1]$ as a measure of the proportion of political authorities besides j within one country who have adopted the new ideology. That is, for all periods $t = \{2, \dots, T\}$, $d_{j,t} = (1 - \theta_{-j,t-1})d_{j,t-1}$. When there is extreme centralization ($N = 1$), then $\theta_{-j,t-1} = 0$ for all periods, and cultural distance remains the same across all periods. Likewise, if no political authorities adopt the new ideology in period $t - 1$, then $\theta_{-j,t-1} = 0$. As more authorities adopt the new ideology, then $\theta_{-j,t-1}$ increases. When all other authorities in a country have adopted the new ideology, then

¹² Where appropriate, subscript j denotes the authority and t denotes the period.

$\theta_{-j,t-1} = 1$ and cultural distance is $d_{j,t} = 0$. This underscores the idea that one can reverse engineer ideology at low cost from one's fellow citizens.

The key assumption is that $\int_1^\infty zf(z; d_{j,t})dz$ is decreasing in $d_{j,t}$. That is, the weighted value of the distribution of resources associated with the new ideology is decreasing in the cultural distance of the new ideology. The idea is that new ideologies emerging in a cultural context similar to the prevailing ones are easier to “reverse engineer,” and thus there is less variance and higher returns associated with adopting the new ideology. In general, cultural distance can be lowered through learning, translation, or intermediaries. This is less costly when those intermediaries or translatable works have low cultural distance from the culture in question. Meanwhile, distant ideologies are harder to reverse engineer; it may be possible to see outcomes associated with an ideology, but it is less clear how to achieve those outcomes.

In the second stage of each period, the authority faces an exogenous threat (e.g., a foreign invasion or natural disaster). The perceived severity of the threat, $x \in (0,1)$, is the same in each period and is comprised of several parts. Notice the key element is that it is *perception* (i.e., part of the cognitive system imbued with ideology) rather than the actual (exogenous) level of the threat that matters here. The perceived threat can be mitigated (in expectation) via resources (R). Moreover, there is an exogenous component of the perceived threat, $a_j \in (0,1)$, which represents the actual (i.e., not simply perceived) threat, perhaps due to outside forces such as external invasion or natural disaster. This threat may vary between authorities based on their geography, culture, or other elements of their historical past. We assume that a_j is constant over time for each authority j for these reasons.

There is also an interaction between the perceived threat and the chosen ideology. As noted above, threats that are difficult to verify—e.g., falling behind economically—can often be justified under the prevailing ideology. Hence, the prevailing ideology insulates the authority from perceived threats while the new ideology does not. However, larger threats that are more difficult for the authority to hide—e.g., losing a war to a neighboring state—undermine the parts of the prevailing ideology which justified the prevailing political order. In other words, the prevailing ideology enables the *perception* of the threat to be lower than the *actual* level of the threat.

In short, there are three features of interest regarding the severity of the perceived threat: it is mitigated by resources (R), has an exogenous component (a), and the perceived threat is weaker than the actual threat under the old ideology.

We operationalize these assumptions as follows. If the new ideology is not chosen ($y_{j,t} = 0$), then the perceived threat level is $x_{j,t} = \frac{a_j^2}{R_{j,t}}$. Since a_j is less than one, the squared term implies that the threat is minimal under the old ideology when a_j is small, but the threat becomes increasingly more severe as a_j increases. This also underscores the idea that perception of the threat increases less than the magnitude of the actual threat under the old ideology. On the other hand, if the new ideology is chosen ($y_{j,t} = 1$), we set $x_{j,t} = \frac{a_j}{R_{j,t}}$. The logic is similar to the case where $y_{j,t} = 0$, except for the fact that the overall level of the threat changes linearly in the exogenous component of the threat. This attests to the historical evidence, presented in subsequent sections, that once an authority adopts a new ideology, it tends to perceive the threat more keenly than under the old ideology. The following functional form captures these features:

$$x(y_{j,t}) = \frac{a_j^{2-y_{j,t}}}{R_{j,t}}. \quad (1)$$

In sum, in each period the ruler has one decision (whether to adopt and promote the new ideology, if they have not done so in a previous period), and this decision has tradeoffs. In adopting the new ideology, the authority may have access to more resources (although the returns are uncertain), which are used to mitigate the perceived threat but also increases the perceived severity of the threat. The degree to which these tradeoffs have bite is a function of the cultural distance between the new and old ideologies ($d_{j,t}$) and the actual severity of the threat (a_j). Hence, in what follows we analyze comparative statics with respect to these two parameters.

b. Utility

We assume that, above all else, the authority desires to stay in power. This is consistent with a large theoretical literature in political economy which models the actions of rulers (or ruling coalitions) under various circumstances (Levi 1988; Wintrobe 1998; Rubin 2017; Greif and Rubin 2023). Given the above setup, the probability that the authority stays in power is decreasing in the severity of the perceived threat, $x(y_{j,t})$. A straight-forward way to model this is to assume that the authority's expected utility is:

$$E[U(y_{j,t})] = E\left[\frac{1}{x(y_{j,t})}\right] = E\left[\frac{R_{j,t}}{a_j^{2-y_{j,t}}}\right]. \quad (2)$$

In other words, if the authority does not adopt the new ideology, then:

$$E[U(y_{j,t} = 0)] = \frac{r}{a_j^2}, \quad (3)$$

while if the authority adopts the new ideology, then:¹³

$$E[U(y_{j,t} = 1)] = \frac{1}{a_j} \int_1^\infty zf(z; d_{j,t}) dz. \quad (4)$$

c. Solution and Comparative Statics

Consider the decision made in period t by an authority who has never chosen to adopt the new ideology in the past. Given that there are no strategic interactions, the authority's optimal decision is straight-forward to solve in any given period. The authority adopts the new ideology when $E[U(y_{j,t} = 1)] \geq E[U(y_{j,t} = 0)]$.¹⁴ Re-arranging (3) and (4), it is straight-forward to see that the authority chooses $y_{j,t} = 1$ if and only if:

$$\frac{1}{r} \int_1^\infty zf(z; d_{j,t}) dz \geq \frac{1}{a_j}. \quad (5)$$

In other words, the ratio of the expected economic returns from choosing the new ideology relative to not choosing it, $\frac{\int_1^\infty zf(z; d_{j,t}) dz}{r}$, must exceed some value which is a function of the actual severity of the threat (a_j).

The primary comparative statics results follow directly from (5), given the assumption that $\int_1^\infty zf(z; d_{j,t}) dz$ is decreasing in $d_{j,t}$

Proposition 1: The size of the parameter space over which the authority chooses the new ideology ($y_{j,t} = 1$) is decreasing in cultural distance ($d_{j,t}$) and is increasing in the magnitude of the perceived threat (a_j), *ceteris paribus*.

We now consider how centralization affects the adoption decision. Recall that extreme centralization is the case in which $N = 1$. In this case, if the authority chooses $y_{j,t} = 0$ in period 1,

¹³ A different utility specification could have the authority desire to avoid having resources below a certain threshold, denoted \underline{r} , below which utility is 0. In that case, (4) would be re-written as $U(y_{j,t} = 1) = \frac{1}{a} \int_{\underline{r}}^\infty zf(z; d_{j,t}) dz$. The intuition espoused in the model would not change, although it is possible to gain insight regarding how comparative statics are affected by \underline{r} and $f(\cdot)$.

¹⁴ We assume that indifference is broken by adopting the ideology.

they will do so in the remaining periods $\{2, \dots, T\}$ as well. This is because $d_{j,t}$ does not change between periods and the optimization problem is the same in each period.

Consider next a decentralized state, where $N > 1$. If no authority adopts in period 1, then the problem is similar to the one described above for the centralized state, and no authority will adopt in the remaining periods $\{2, \dots, T\}$ since they continue to face the same problem. However, if at least one authority adopts the new ideology—perhaps due to facing a higher level of exogenous threat—the remaining authorities (i.e., those that did not adopt in period 1) will face a new problem in period 2. In this case, $d_{j,2} = (1 - \theta_{-j,1})d_{j,1}$, where $\theta_{-j,1} > 0$ because at least one authority adopted the new ideology. This lowers the value $d_{j,2}$ (relative to $d_{j,1}$) for all the remaining authorities, thereby (by Proposition 1) increasing the size of the parameter space over which they choose the new ideology (i.e., choose $y_{j,2} = 1$). It follows that a steady state is reached when either every authority has chosen the new ideology or there is a period in which none of the remaining authorities choose the new ideology.

This logic provides insight into how centralization affects the *likelihood* of ideological adoption as well as the *speed* at which ideological adoption occurs. If all authorities draw a_j from the same distribution, then it is clear that, conditional on ideological adoption occurring, it happens (weakly) quicker in a centralized society. In such a society, adoption either happens in the first period or not at all. In a decentralized society (i.e., with more than one authority), it is possible that all authorities adopt in the first period, though it is also possible that adoption may occur over several periods, as some authorities adopt, then more adopt due to lower values of $d_{j,t}$, and so on. In the latter case, a cascade of adoption occurs; even one authority adopting in period 1 can trigger others to adopt, which triggers others to adopt, and so on. This is akin to the preference revelation process studied by Granovetter (1978), Kuran (1995), and many others.

On the other hand, it is more likely that at least some authorities (i.e., those with high a_j) adopt the more decentralized the state is. In the first period, this result is trivial; since there are more draws from the same distribution, it is more likely that at least one will be high enough to cross the adoption threshold the more draws there are (i.e., the more decentralized the society is). In subsequent periods, further adoption may occur in a decentralized society, but not in a centralized society. This logic yields the following proposition:

Proposition 2: The size of the parameter space over which at least one authority chooses the new ideology ($y_{j,t} = 1$) is increasing in the number of authorities (i.e., decentralization). However, conditional on ideology adoption occurring, the speed at which adoption happens is increasing in centralization.

As we will discuss in the remainder of the paper, the model helps shed light on the ideological adoption process in (decentralized) Japan and (centralized) China during the late 19th century. We illustrate these adoption processes in Figure 2, which shows the parameter threshold over which adoption occurs in the $d_{j,t} \times a_j$ plane. The dashed line is the threshold between adopting and not adopting Western ideology. Period 1 in this figure represents the mid-19th century—just after the Opium Wars in China and Admiral Perry landed on Japanese shores—in which both countries had a high cultural (and ideological) distance from the West, though on average there were not obvious differences between the two. The key difference between China and Japan is that the latter was decentralized, meaning that there was a wide range of outcomes for Bakufu and various daimyos with respect to the impact of cultural distance. Indeed, it need not be the case that Japan had closer cultural distance to the West than China to explain its earlier adoption. We therefore represent China and various Japanese daimyos along with Bakufu as having the same cultural distance with Western ideology. Given that Japan’s southern coastal daimyos faced greater threat than northern daimyos and were more exposed to the new ideology, we represent them as lined up horizontally in Figure 2. Such dynamics did not exist in China, as all decisions emanated from the center, and the provinces had no independent power even if they might be more exposed to Western imperialism (or other threats). China is labelled by just one dot as the Chinese emperor.¹⁵

In the first period, if at least some Japanese daimyos viewed adoption as optimal (which we show was the case in the next section), then this would have set off dynamics where the actions of these daimyos could impact those lagging daimyos to pull all of Japan closer towards adopting the new ideology. It would have lowered the cultural distance for other Japanese daimyos to adopt, since they would just have to reverse engineer what the adopting daimyo did, not what they viewed to be Western ideology. This is seen in the second period in the figure, where the cultural distance is lowered for all daimyos that did not adopt in the first period. This would have also lowered the cultural distance for

¹⁵ See Hilton Root (2020) for a characterization of the Imperial Chinese regime as a network structure of hub and spokes in contrast to the decentralized but dense network ruling network in Western Europe.

China—they also could have reversed engineered what the adopting daimyos did—but not by as much. This process continued until the T period upon which the coalition of anti-Bakufu daimyos won the Boshin War in 1868 to found a Meiji regime that would eventually establish a centralized regime and adopt Western ideology.

Figure 2: The Ideological Adoption Decision

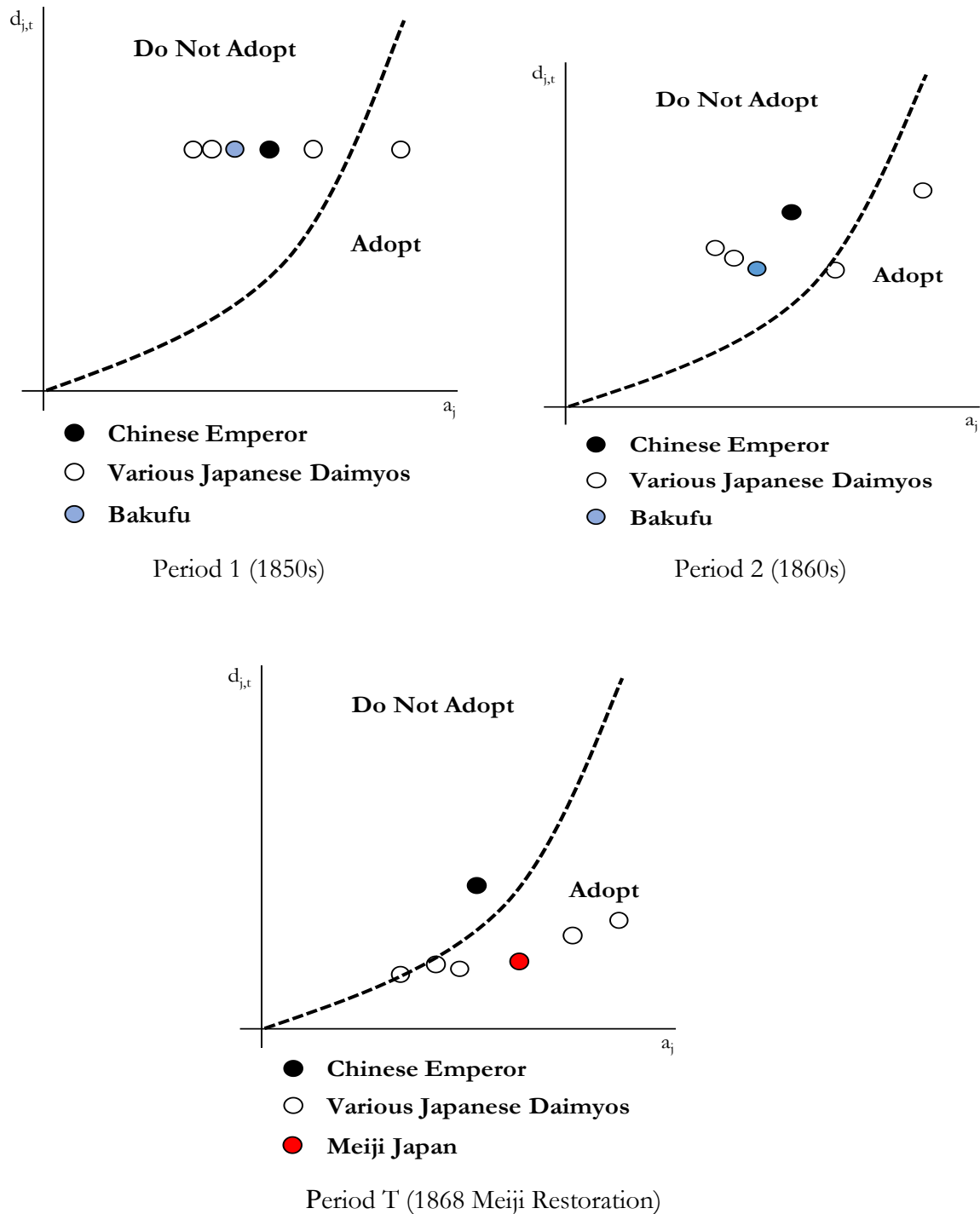
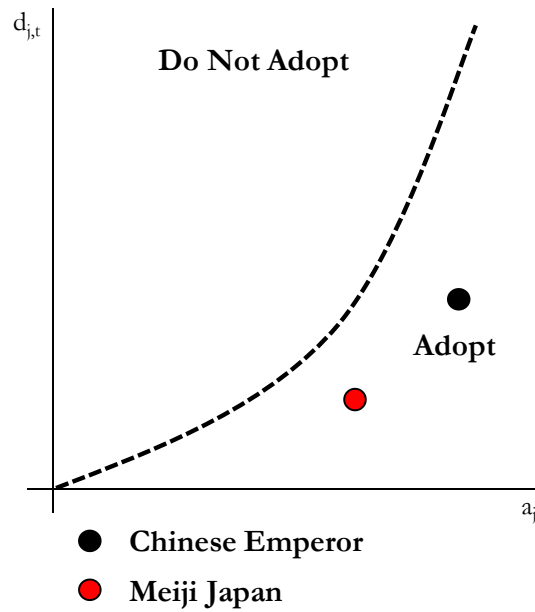


Figure 3 also sheds light on why some degree of adoption eventually occurred in China after 1895. As discussed in the next section, Japan’s successful adoption of Western ideology and economic success culminated in their stunning 1894-95 victory over China. This was a defeat that was impossible to justify under the old Chinese ideology that placed China as the superior economic and military power. In the context of the model, this is tantamount to the perceived threat (a_j) becoming more severe. This shift is reflected in Figure 3, which is the same as period T from Figure 2 with an increase in a_j for China. China had already approached the threshold prior to 1895 due to Japanese adoption, which made Chinese reverse engineering much less costly. It was apparently not enough, however. It was only after China suffered an irrefutable loss that undermined its prevailing ideology that ideological and institutional adoption began to occur. The remainder of this paper substantiates these claims.

Figure 3: The Ideological Adoption Decision, Post-1895



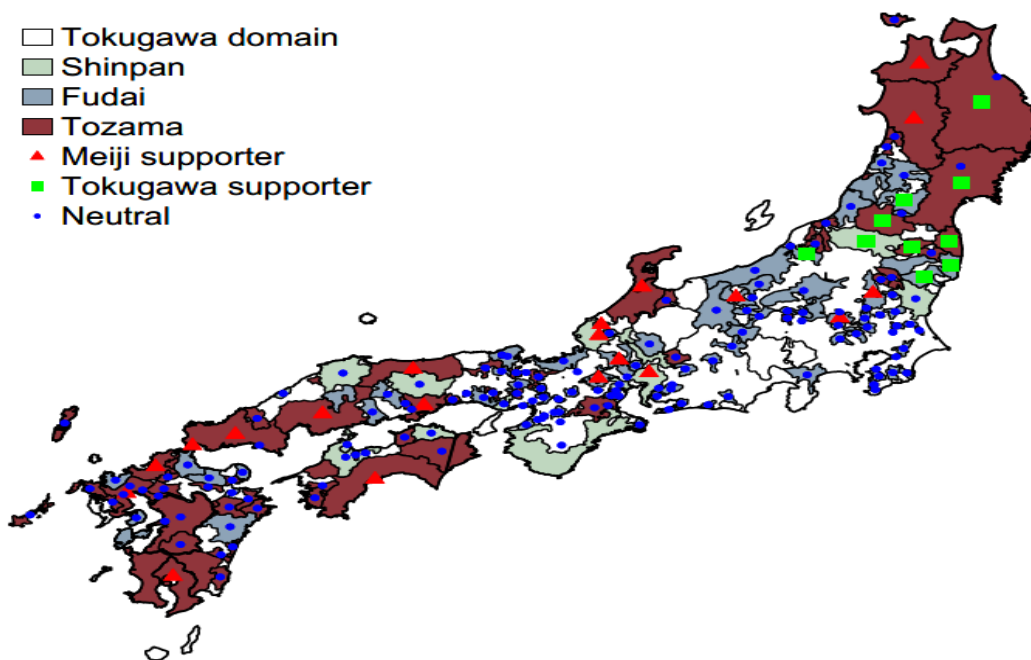
5. Ideological Transformation in Japan and China

We now turn to the empirics of the ideology adoption process in Japan and China. It is important to recognize that the intellectual resource for Japan’s initial response to the Western threat was characteristically Chinese and Confucian. With classical Chinese being the lingua franca for the Japanese elites, Chinese writings and reflections of their initial encounter with the West, especially China’s defeat in the 1840s Opium War, exerted a profound impact on Japan. The well-known admonishing by Chinese writer Wei Yuan concerned the civilizational conflict between the Chinese

(or the Civilized) and the West (or the Barbarians) 华夷. The most profound of Wei Yuan's (魏源) warnings was not just his identification of the West as the new Barbarians but also his bold justification of "Western" learning as learning the Barbarian tools to subdue the barbarians 师夷长技以制夷 (Wei Yuan 1842). The ideas of Wei Yuan exerted a huge impact on Japanese elites—perhaps even greater than on the Chinese, initially—and formed the main ideology of China's Self-strengthening movement in the next three decades. Japan's initial response was fundamentally no different from China until the 1868 Meiji Restoration, which brought a regime change—a change we argue below more likely thanks to decentralized Tokugawa political institutions.

In Tokugawa Japan, the Shogunate was less organized as a modern state than a warrior house. The Shogunate or its liege vassals (hatamoto) only directly ruled one quarter of the territory of Japan, with the remaining three quarters were divided by some 250 daimyos or han (see Figure 4). By contemporary standards, the domains resembled semi-independent sovereign states, with authority to maintain and command an independent standing army (often in the form of samurais), set and collect taxes, appoint local officials, and control borders. To consolidate the Shogunate's rule, daimyos were classified into two major categories based on their historical relations with the Tokugawa Clan. One class of daimyos were called Fudai, or insiders, who were from families that had been loyal vassals of Tokugawa Ieyasu before the Battle of Sekigahara in 1600, i.e., before he rose to national primacy. The other group was the Tozama, or outsiders, which literally means outsiders of questionable loyalty. Their ancestors did not support Tokugawa Ieyasu until 1600, or fought against him in the Great Battle. The Tozama daimyos were discriminated against in their political careers (see Mitchel and Yin 2022). Within this coalition of states was the nominal Japanese emperor installed in Kyoto, who carried no real power but formed the pillar of legitimacy to any rulers who intended to rule, including the Tokugawa Shogunate. This unusual feudal structure was similar to that of China during the Warring States era (roughly 4th to 2nd century BC), where states formed alliances or rivalries yet declared allegiance or claimed legitimacy from the largely defunct Zhou King (Zhao Dingxin 2015).

Figure 4: Daimyo Classification in Tokugawa Japan



Note: Thanks to Mitchel and Yin for helping us with this figure (source to be cited)

Faced with the Western imperial challenge and demand for opening the country, of the 54 daimyos inquired, 34 supported the status quo of closure whereas 16 supported opening in 1853. However, by 1857, 20 of the 34 daimyos that were inquired supported the opening and only seven supported closure, with seven remaining neutral. As shown in Figure 4, two features stand out as dividing the anti-Bakufu and pro-Bakufu alliance, with the former dominated by the Tozama domains largely located in the southern coastal area and the latter dominated by Fudai domains situated in the northern part of Japan. A recent study by Mitchel and Yin (2022) argues that the relative autonomy of the Tozama domains enabled reform measures that brought them greater prosperity than those of Fudai domains. The Tozama-based alliances translated their early exposure to the West and their relative economic expansion into overwhelming military success in the Boshin War against the Shogunate and the pro-Tokugawa domains, many of which were Fudai (Mitchel and Yin 2022). In the 1860s, it was the four relatively powerful Tozama domains from Southwest Japan (Satsuma, Choshu, Tosa, and Hizen) that led a rebellion against the Tokugawa and ended the 260-year rule of the Shogunate.

The military and political alliance of the Meiji (or anti-Tokugawa) rebels rallied around the slogan “Revere the Emperor and expel the barbarians” 尊王攘夷, a term originated during China’s ancient Spring and Autumn era. By invoking the ancient slogan and the long side-lined Japanese emperor, the Southern daimyos’ alliance acquired legitimacy for the anti-Bakufu movement. Initially the anti-Bakufu

rebels were no modernizers or cultural enlightenment thinkers. On the contrary, they were royalists or ultra-nationalists or even xenophobic assassins who were violently opposed to compromise with the West and the opening of the country. Chosu itself became the hotbed of intellectual agitation of extreme emperor-based nationalism driven by lower class samurais. In the 1860s, the rebels forced a weakened and humiliated Tokugawa Shogunate to carry out an extreme anti-West policy of driving out the barbarians against Bakufu's warning on the superior power of the West. In 1862 and 1863, the Chosu and Satsuma daimyos took matters into their own hand by mounting a frontal naval assault on Western ships. It was their utter and humiliating defeat particularly by 1864 that opened their eyes to Western military superiority. From then on, defeat turned into admiration and eventually converted into some kind of alliance between England and these two daimyos (and curiously against the alliance formed between France and the Bakufu forces) (source citation later).

Once in power, the Meiji rebels—based on a coalition of the New Meiji emperor and the oligarchs of southern daimyos—launched a full Westernization project as expressed in the Meiji motto to seek wisdom throughout the world. Ironically, one of the first Meiji reform programs was to establish a centralized administrative system by abolishing the independent domains all in the name of evoking the Chinese ideology of the prefectural system (郡县制/王政复古/废藩置县). Meiji reforms also reaped the benefits of a centralized prefectural system envisaged by Liu Zhongyuan more than a millennium prior. While Tokugawa Japan was characterized by a rigid caste system with little social mobility, restrictive factor and labour markets, a segmented domestic market, and most relevant of all, a much greater degree of fiscal extraction due to its multiple lordship structure, Qing China was far freer, unconstrained or “modern” in all aspects (citation here).

Therefore, the turn from xenophobe to admiration of the West by the Meiji reformers after attaining power was particularly significant. The West-learning movement was marked by the launch of the well-known Iwakura mission (1871-73), which sent out cabinet level ministers to tour the West for two years. The Royalists embraced the West and leapt from 尊王攘夷 (Revere the Emperor and expel the barbarians) to 脱亚入欧 (Leave Asia, Join Europe), a phrase coined by Japan's great enlightenment thinker Fukuzawa Yukichi 福泽谕吉. The West, once labelled as the Barbarian, was then placed at the top of the hierarchy of civilization. The former Royalist's cultural turn to the West illustrates a stark example of ideological change inducing cultural change.

TBD: The case on China.

By the second half of the 19th century, both Qing China and Meiji Japan have recognized need for Western learning. The question is what defines this learning: is it just Western machines, tools, technology, or organization, institution and even ideology and culture. As long as the West was classified as the “Barbarians” as in Wei Yuan’s powerful adage, the boundaries of “Western learning” would be limited to the sphere of technology and machine. China’s phase of reform were defined by Liao Qichao as proceeding from machine to institutions to culture.

Why political decentralization matters for ideological upgrading?

Provincial enlightened elites in China could not turn to their provincial governors for change (as the local samurai could turn to their daimyo), as these governors were pointed by the Emperor.

Compare Taiping Rebellion with Meiji Rebels: Secret Society from the South versus organized feudal domains from the South;

The Rise of Hunan Elites in the suppression of Taiping rebels and their reintegration into the centralized bureaucracy of Qing regime; Self-strengthening movement: reform within the limits of the Qing rule;

The rise of Hunan elites from the Self-strengthening movement power to the Hundred Days Reform of 1898 (started by thousands of elites who passed the highest level Civil Service examination who went to Beijing to make a direct appeal to the emperor in the wake of China’s defeat by Japan. Hunan as China’s Satusma.

The role of ideology on the interpretation on the fall of Qing and the rise of the Warlord era.

6. Conclusion

TBD.

References

- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2005. “Institutions as Fundamental Determinants of Long-Run Growth,” in *Handbook of Economic Growth*, edited by Philippe Aghion and Steven Durlauf, vol. 1A, pp. 385–472. Amsterdam: North-Holland.
- Acemoglu, Daron, and James A. Robinson. 2006. “Economic Backwardness in Political Perspective.” *American Political Science Review* 100(1): 115–131.
- Acemoglu, Daron, and James A. Robinson. 2012. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. Crown: New York.

- Acemoglu, Daron, and James A. Robinson. 2021. “Culture, Institutions and Social Equilibria: A Framework.” NBER Working Paper 28832.
- Acharya, Avidit, Matthew Blackwell, and Maya Sen. 2023. “Historical Persistence.” In (J. Jenkins and J. Rubin, eds.) *The Oxford Handbook of Historical Political Economy*, Oxford: Oxford University Press, forthcoming.
- Akerlof, George A., and Rachel E. Kranton. 2005. “Identity and the Economics of Organizations.” *Journal of Economic Perspectives* 19(1): 9–32.
- Akerlof, George A. and Pascal Michailat. 2018 “Persistence of False Paradigms in Low-power Sciences.” *PNAS* 115(52): 13228–13233.
- Bassino, Jean-Pascal, Stephen Broadberry, Kyoji Fukao, Bishnupriya Gupta, and Masanori Takashima. 2019. “Japan and the Great Divergence, 730–1874.” *Explorations in Economic History* 72: 1–22.
- Baten, Jorg, Debin Ma, Stephen Morgan, Qing Wang. 2010. “Evolution of Living Standards and Human Capital in China in 18-20th Century” *Explorations in Economic History* 47(3): 347-359.
- Becker, Sascha O., Yuan Hsiao, Steven Pfaff, and Jared Rubin. 2020. “Multiplex Network Ties and the Spatial Diffusion of Radical Innovations: Martin Luther's Leadership in the Early Reformation.” *American Sociological Review* 85(5): 857–894.
- Bénabou, Roland, Davide Ticchi, and Andrea Vindigni. 2022. “Forbidden Fruits: The Political Economy of Science, Religion, and Growth.” *Review of Economic Studies* 89(4): 1785–1832.
- Bisin, Alberto and Thierry Verdier. 2001. “The Economics of Cultural Transmission and the Dynamics of Preferences.” *Journal of Economic Theory* 97(2): 298–319.
- Bisin, Alberto and Thierry Verdier. 2011. “The Economics of Cultural Transmission and Socialization.” In (J. Benhabib, A. Bisin and M. Jackson, eds.) *Handbook of Social Economics*, Vol. 1 Elsevier: pp. 339–416.
- Bisin, Alberto and Thierry Verdier. 2017. “On the Joint Evolution of Culture and Institutions.” NBER Working Paper 23375.
- Bisin, Alberto, Jared Rubin, Avner Seror, and Thierry Verdier. 2022. “Culture, Institutions, and the Long Divergence.” NBER Working Paper 28488.
- Boyd, Robert and Peter J. Richerson. 1985. *Culture and the Evolutionary Process*. Chicago: University of Chicago Press.
- Brandt, Loren, Debin Ma, and Thomas G. Rawski. 2014. “From Divergence to Convergence: Reevaluating the History behind China’s Economic Boom.” *Journal of Economic Literature* 52(1): 45–123.
- Cavalli-Sforza, Luigi Luca and Marcus W. Feldman. 1981. *Cultural Transmission and Evolution: A Quantitative Approach*. Princeton, NJ: Princeton University Press.
- Chaudhry, Azam, and Phillip Garner. 2006. “Political Competition between Countries and Economic Growth.” *Review of Development Economics* 10(4): 666–682.
- Chaudhry, Azam, and Phillip Garner. 2007. “Do Governments Suppress Growth? Institutions, Rent-seeking, and Innovation Blocking in a model of Schumpeterian Growth.” *Economics and Politics* 19(1): 35–52.

- Chen, Shuo and Debin Ma. 2022. “States and Wars: China’s Long March towards Unity and its Consequences, 221 BC–1911 AD.” Oxford Economic and Social History Working Papers No. 199.
- Cirone, Alexandra, and Thomas B. Pepinsky. 2022. “Historical Persistence.” *Annual Review of Political Science* 25: 241–259.
- Coşgel, Metin M., Thomas J. Miceli, and Jared Rubin. 2012. “The Political Economy of Mass Printing: Legitimacy, Revolt, and Technology Change in the Ottoman Empire.” *Journal of Comparative Economics* 40(3): 357–371.
- Denzau, Arthur T., and Douglass C. North. 1994. “Shared Mental Models: Ideologies and Institutions.” *Kyklos* 47(1): 3–31.
- Fukao, Kyoji, Debin Ma, and Tangjun Yuan. 2007. “Real GDP in Pre-War East Asia: A 1934–36 Benchmark Purchasing Power Parity Comparison with the US.” *Review of Income and Wealth* 53(3): 503–537.
- Garfias, Francisco, and Emily Sellars. 2023. “State Building in Historical Political Economy.” In (J. Jenkins and J. Rubin, eds.) *The Oxford Handbook of Historical Political Economy*, Oxford: Oxford University Press, forthcoming.
- Giuliano, Paola, and Nathan Nunn. 2021. “Understanding Cultural Persistence and Change.” *Review of Economic Studies* 88(4): 1541–1581.
- Greif, Avner. 1994. “Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individual Societies.” *Journal of Political Economy* 102: 912–950.
- Greif, Avner. 2006. *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade*. New York: Cambridge University Press.
- Greif, Avner, and Joel Mokyr. 2017. “Cognitive Rules, Institutions, and Economic Growth: Douglass North and Beyond.” *Journal of Institutional Economics* 13(1): 25–52.
- Greif, Avner, and Jared Rubin. 2023. “Political Legitimacy in Historical Political Economy.” In (J. Jenkins and J. Rubin, eds.) *The Oxford Handbook of Historical Political Economy*, Oxford: Oxford University Press, forthcoming.
- Hart, H.L.A. 2012 [1961]. *The Concept of Law*. Third Edition. Oxford: Oxford University Press.
- Henrich, Joseph. 2015. *The Secret of Our Success*. Princeton, NJ: Princeton University Press.
- Hong, Kevin, Edward Slingerland and Joseph Henrich. 2022. “Magic and Empiricism in Early Chinese Rainmaking: A Cultural Evolutionary Analysis.” *Current Anthropology*: forthcoming.
- Iyigun, Murat, Jared Rubin, and Avner Seror. 2021. “A Theory of Cultural Revivals.” *European Economic Review* 135: 103734.
- Jin Guantao and Liu Qingfeng. 2011. 开放中的变迁，再论中国社会超稳定结构 (*The Transformation of Chinese Society (1840–1956): The Fate of Its Ultrastable Structure in Modern Times*) Beijing, Falu chubanshe.

- Ko, Chiu Yu, Mark Koyama, and Tuan-Hwee Sng. 2018. “Unified China and Divided Europe.” *International Economic Review* 59(1): 285–327.
- Kumon, Yuzuru. 2022. “The Labor-Intensive Path: Wages, Incomes, and the Work Year in Japan, 1610-1890.” *Journal of Economic History* 82(2): 368–402.
- Kung, James. 2022. “The Economic Impact of the West A Reappraisal.” Chapter 11 in *Cambridge Economic History of China*, vol. II. Cambridge: Cambridge University Press, pp. 354–413.
- Levi, Margaret. 1988. *Of Rule and Revenue*. Berkeley, CA: University of California Press.
- Levi, Margaret and Audrey Sacks. 2009. “Legitimizing Beliefs: Sources and Indicators.” *Regulation & Governance* 3(4): 311–333.
- Levi, Margaret, Audrey Sacks and Tom Tyler. 2009. “Conceptualizing Legitimacy, Measuring Legitimizing Beliefs.” *American Behavioral Scientist* 53(3): 354–375.
- Koyama, Mark, Chiaki Moriguchi, and Tuan-Hwee Sng. 2018. “Geopolitics and Asia’s Little Divergence: State Building in China and Japan after 1850.” *Journal of Economic Behavior & Organization* 155: 178–204.
- Koyama, Mark, and Jared Rubin. 2022. *How the World Became Rich: The Historical Origins of Economic Growth*. Cambridge: Polity Press.
- Lu, Yuxin 吕玉新 2017 *Polity, Civilization and Debates on Ethnicities, History of Thought in Tokugawa Japan* 政体, 文明, 族群之辩 德川日本思想史 Hong Kong: Chinese University of Hong Kong Press.
- Lowes, Sara. 2023. “Culture in Historical Political Economy.” In (J. Jenkins and J. Rubin, eds.) *The Oxford Handbook of Historical Political Economy*, Oxford: Oxford University Press, forthcoming.
- Ma, Chicheng. 2022. “Classicism and Modern Growth: The Shadow of the Sages.” Working paper.
- Ma, Debin. 2012. “Political Institution and Long-run Economic Trajectory: Some Lessons from Two Millennia of Chinese Civilization.” Chapter 4 in Masahiko Aoki, Timur Kuran and Gerard Roland, eds., *Institutions and Comparative Economic Development*, Basingstoke: Palgrave Macmillan, pp. 78–98.
- Ma, Debin. 2022. “Ideology and the Contours of Economic Change in Modern China, 1850-1950.” Chapter 1 in *Cambridge Economic History of China*, vol. II. Cambridge: Cambridge University Press, pp. 15–47.
- Machikita, Tomohiro and Tetsuji Okazaki. 2019. “Transition to a Modern Regime and Change in Plant Lifecycles: A Natural Experiment from Meiji Japan.” Working paper.
- Mann, Michael. 1986. *The Sources of Social Power: A History of Power from the Beginning to A.D. 1760*. Cambridge: Cambridge University Press.
- Mitchell, Austin M. and Weiwen Yin. 2022. “Political Centralization, Career Incentives, and Local Economic Growth in Edo Japan.” *Explorations in Economic History* 85.
- Mokyr, Joel. 2016. *A Culture of Growth: The Origins of the Modern Economy*. Princeton, NJ: Princeton University Press.
- Nakabayashi, Masaki. 2021. “Tokugawa Japan and the Foundations of Modern Economic Growth in Asia.” Chapter 3 in *Cambridge Economic History of the Modern World* Vol. 1 1700-1870, edited by Stephen Broadberry and Kyoji Fukao, Cambridge: Cambridge University Press, pp. 67–96.

- Norman, Herbert. 1946. *Japan's Emergence as a Modern State: Political and Economic Problems of the Meiji Period*. International Secretariat of the Institute of Pacific Relations.
- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. New York: Cambridge University Press.
- North, Douglass C. 2005. *Understanding the Process of Economic Change*. Princeton, NJ: Princeton University Press.
- North, Douglass C., John J. Wallis and Barry R. Weingast. 2009. *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History*. New York: Cambridge University Press.
- Nunn, Nathan. 2014. "Historical Development." *Handbook of Economic Growth* 2: 347–402.
- Pomeranz, Kenneth. 2000. *The Great Divergence*. Princeton, NJ: Princeton University Press.
- Qin, Hui 秦晖 2015, *Out of Empire, a Historical Revisit to the Late Qing and Republican Era 走出帝制：从晚清到民国的历史回望* Beijing: Qunyan Publishers.
- Rodrik, Dani. 2014. "When Ideas Trump Interests: Preferences, Worldviews, and Policy Innovations" *Journal of Economic Perspectives* 28(1): 189–208.
- Rodrik, Dani, Arvind Subramanian, and Francesco Trebbi. 2004. "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development." *Journal of Economic Growth* 9(2): 131–165.
- Root, Hilton. 2020. *Network Origins of the Global Economy: East Vs. West in a Complex Systems Perspective*. New York: Cambridge University Press.
- Rubin, Jared. 2017. *Rulers, Religion, and Riches: Why the West Got Rich and the Middle East Did Not*. New York: Cambridge University Press.
- Sng, Tuan-Hwee, and Chiaki Moriguchi. 2014. "Asia's Little Divergence: State Capacity in China and Japan before 1850." *Journal of Economic Growth* 19(4): 439–470.
- Solow, Robert M. 1956. "A Contribution to the Theory of Economic Growth." *Quarterly Journal of Economics* 70(1): 65–94.
- Squicciarini, Mara. 2020. "Devotion and Development: Religiosity, Education, and Economic Progress in 19th-Century France." *American Economic Review* 110(11): 3454–3491.
- Swan, Trevor W. 1956. "Economic Growth and Capital Accumulation." *Economic Record* 32(2): 334–361.
- Tyler, Tom R. 2006. *Why People Obey the Law*. Princeton, NJ: Princeton University Press.
- Voth, Hans-Joachim. 2021. "Persistence: Myth and Mystery." In (A. Bisin and G. Federico, eds.) *The Handbook of Historical Economics*, London: Elsevier, pp. 243–267.
- Vries, Peer. 2021. *Averting a Great Divergence, State and Economy in Japan 1868-1937*. London: Bloomsbury Academic.
- Wintrobe, Ronald. 1998. *The Political Economy of Dictatorship*. Cambridge: Cambridge University Press.
- Wright, Mary C. 1957. *The Last Stand of Chinese Conservatism: The Tung-Chih Restoration, 1862-1874*. Atheneum.

Zhao, Dingxin. 2015. *The Confucian-Legalist State, a New Theory of Chinese History*. Oxford: Oxford University Press.