Peasants, Landlords, and Risk

Moritaro Yamada on the Duality of the Japanese Capitalism*

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Abstract

Analysis of the Japanese Capitalism by Moritaro Yamada, a representative Marxian economist in Japan in the 1930s, characterized the Japanese economy at that time with a distinctive viewpoint. It first described the Japanese economy as a two-sector economy that contained the capital stock and the consumer goods sectors. Second, it pointed out the duality composed of the modern sector whose productivity was relatively high and the traditional sector whose productivity was relatively low. Third, it argued that the paternalistic risk-bearing mechanism work in the traditional sector. Fourth, it discussed that while the stability of the society and the continued stagnancy of productivity had coexisted, the structure was then disintegrating. When he presented the picture, economics did not have analytical tools for the two-sector economy, duality, risk sharing, and dynamic transition in the growth path. This paper places his argument on the duality and risk sharing in an analytical framework and rephrases its implications.

Keywords: Dual structure; risk sharing; peasant economy; tenancy contract; Japan.
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Introduction

Until the 1980s, the Marxian schools had been a significant group of economic faculties of most major universities in Japan. Back in the 1950s and 1960s, they almost dominated academic economics. It was a trait from the heyday of the Marxian economics in Japan in the 1920s and 1930s. Among them, a representative scholar was Moritaro Yamada. Yamada (1934a) was his masterpiece that characterized distinctive facets of the Japanese economy. As discussed in the following sections, four primary elements constituted his description.

First, Yamada (1934a) attempted to understand the Japanese economy by the structure composed of the capital stock sector and the consumer goods sector. The postwar Japanese economics inherited the intuition. Uzawa (1961) was, for instance, a representative one among their works.

Second, Yamada (1934a) pointed out the dual structure of the Japanese economy. Yamada observed the Japanese economy as the one consisting of the modern sector whose productivity was relatively higher and the traditional/informal sector whose productivity was relatively lower. Such a perspective of emerging economies only developed and prevailed from Lewis (1954) followed by Ranis and Fei (1961), Fei and Ranis (1963, 1964), and Harris and Todaro (1970) in the mainstream economics and was unprecedented in the 1930s.

Third, Yamada (1934a) pointed out risk-sharing mechanisms in the authoritarian traditional/informal sector of the Japanese economy. Since the 1990s, the risk sharing in the informal sector has been analytically discussed (Besley (1995) and Townsend (1995, 2016)), but it was not widely acknowledged in the 1930s.

Fourth, based on the risk sharing mechanism in the traditional/informal sector, the social stability and the productivity stagnancy had complemented each other in Japan from the 1870s to 1910s, but the social stability was challenged from the 1920s. Symptoms of structural changes in the growth trajectory of the Japanese economy became discernible.

Extraction of these elements from the text of Yamada (1934a), in fact, is to be established in the following sections. Mainstream economics at that time did not provide analytical framework to describe the growth of a two-sector economy, the interaction between the formal and informal sectors, and the risk sharing mechanism. Did he neither. Accordingly, the text of his description on those essential concepts sometimes is evasive and leaves ambiguity, in particular. regarding the risk sharing in the informal sector. The logic to describe the concepts is hardly tractable.

This paper aims to clean up his argument and to place the duality and the risk sharing mechanism in the informal sector he discussed in a clear analytical framework. Yamada (1934a) considered the characteristics he found such as the duality and the risk sharing mechanism in the informal sector as specific to Japan and constituted the "Japanese type" of the capitalism in comparison with the UK, France, and Germany (Yamada (1977[1934]b), pp. 57–59). In reality, the estimated weight of the informal sector of the Japanese output around the 2000s is relatively low even among advanced economies and close to that the US (Schneider (2005) and Schneider, Buehn and Montenegro (2010)). The duality and the risk sharing in the informal sector were not Japan-specific but have been pervasive among emerging economies.

On the one hand, emerging economies have shown complementarity between the agricultural sector and the manufacturing sector in their economic growth (de Souza (2015)). A rising economy tends to see a growing agricultural sector than otherwise. On the other hand, Loayza and Rigolini (2011) found a clear tendency that a greater portion of the traditional/informal sector implies a lower growth in the long term but provides a risk-sharing mechanism in the short term. Theoretically, Busato and Chiarini (2004) showed that the labor allocation within the informal sector works as an insurance mechanism and Shapiro (2014) confirmed that an economy with a larger share of the self-employed could recover from a recession more quickly than otherwise. Today's advanced economies shared the same challenge in one or two centuries ago, and Japan Yamada (1934a) focused on was among them. Looking back on the observations by economists in the period and re-framing their argument would bring about some lessons to better understand challenges facing emerging economies today.

We organize the rest of the paper as follows. Section 1 briefly reviews historical contexts in which Yamada (1934a) was written. Section 2 first places his argument in the framework suggested by Lewis (1954), following Yasuba (1975) and then extend the framework by introducing the risk attitude of agents. Section 3 attempts to match the texts in Yamada (1934a) with our framework.

1 Historical contexts

1.1 The Meiji Restoration and industrialization

From 1603 to 1868, Japan was under the shogunate federation. Under the regime, the shogunate assumed the diplomacy and the supreme command as the central government and directly ruled own domains. Lords assumed the sovereignty for domestic affairs over their domains as the local governments. Feudal lords who had emerged in the medieval times from the fourteenth century were reorganized as local hereditary governors under the shogunate federation. While they carried exclusive power to levy tax in their domains, they were not entitled to the property rights of land. Instead, registered farming households were entitled to the property right of the parcel of farmland they cultivated. A registered household was obliged to pay land tax determined by the land surveillance of the shogunate or a lord, depending on jurisdiction of the village. As long as the stipulated land tax was paid, the household's property right was protected by the shogunate court or the lord court against any bystander. The unit household of property right protection was a stem family. That is, an individual household that provided manual labor to cultivate a parcel of farmland was recognized as the property right holder of the parcel. This property right system was completed by the 1670s. In the stage of the early modern times, Japan deviated from the paths of Western nations, in particular, the UK, where ex-feudal lords were recognized as modern property holders and farmers were transformed to tenants or laborers (Nakabayashi and Moriguchi (2017) and Mandai and Nakabayashi (2018)).

Not only the shogunate created a mass small owner farmers and their property rights, but also it heavily regulated the agricultural financial markets and the farmland markets to check concentration of land ownership. First, the shogunate banned outright "perpetual" sell and purchase of a parcel of farmland by the Ban of Perpetual Sell and Purchase of Farmland of 1643. While transfer of property right between fellow farmers within a village was in practice possible, the ban denied, for instance, a possibility that a merchant accumulated to emerge as a significant landlord (Saito (2009)).

A general restriction of transfer of property granted as settlement by the crown was not unique to Japan. For instance, in the age when farmers became property owners in Japan, ex-feudal lords became property owners in the UK. The British crown had banned transfer of land other than inheritance in general, and every single transfer other than inheritance had to be approved by a special act with a concent from the parliament (North and Weingast (1989); Bogart and Richardson (2011); and Bogart (2011)). The Japan's restriction of land transfer was entirely repealed by Premier Ordinance Number 50 of 1872 after the Meiji Restoration of 1868. In the UK, it was gradually removed by the Settled Land Acts of 1882–1925. The restriction in the UK helped solidify an extreme unequal land ownership of Early modern UK and feudal lords, including the crown itself, survive as the most significant landlords in the modern UK. The shogunate of Japan, too, attempted to solidify the egalitarian land ownership it created.

Another regulatory instrument was regulation on foreclosure. There were two kinds of loans with farmland collateral. One was a loan with a "pledge (*schiire*)" of a parcel of farmland. Pledge was a form of collateral under which the land tax of the pledged parcel paid the lender. The other was a loan "secured (*kakiire*)" by a parcel of farmland under which the owner (borrower) paid the land tax of the collateral parcel that secured the loan. The shogunate law categorized the former as a "legal case related to real right (*honkuji*)" and the latter as a "legal case related to financial claim (*kanekuji*)." The shogunate court guaranteed only enforcement of the former category. Regarding the latter, the shogunate court did not guarantee enforcement and often encouraged private settlement (Mandai and Nakabayashi (2018)).

In practice, the village office was the local taxation authority and the court for first instance under the shogunate judicial system. Thus, the village office resolved any dispute first. Then, in the case of pledge contract, if either party filed a complaint at the court of the magistrate (*daikan*) in charge of the county, it was taken and resolved. In a complicated case, the magistrate consulted the Conference Chamber (*Hyojosho*) of the Edo (Tokyo) castle of the shogunate, which was the final court of appeal, about handling the case. Meanwhile, in case of a loan contract "secured (*kakiire*)" by a parcel of farmland, the magistrate usually did not take a complaint and instead encouraged both parties privately settle the dispute. In other words, the shogunate adopted the "judiciary foreclosure" system, and it was applied only to a loan contract "pledged (*shichiire*)" by a parcel of farmland. Also, since the village office was in charge of collecting land tax from registered owners, land tax levied on a parcel of farmland could not be paid by a party who was not registered as a resident of the village. Thus a party who was not registered resident of the village could not be a lender of a loan "pledged (*shiciire*)" contract (Mandai and Nakabayashi (2018)).

In short, the shogunate court protected the claim of lender by enforcing foreclosure and having the lender repossess the pledged parcel only if the contract were concluded between fellow farmers of the same village. The restriction of judicial service provision substantially hindered a geographic integration of agricultural financial markets. Furthermore, observing an increase in foreclosure and gradual concentration of land ownership, the shogunate tightened procedural requirements for enforcement of foreclosure in the early eighteenth century (Mandai and Nakabayashi (2018)).

Also, the shogunate and lords allowed farmers to pay land tax in kind, and the village jointly took liability of land tax payment. That is, if crop of a household fell in short of land tax payment, fellow households of the village were allowed to temporarily assume the land tax payment such that the liability for the land tax was transformed into that for a debt within the village and the failing household circumvented immediate default. Furthermore, in the case of a poor crop of the entire village, the mayor of the village negotiated with the magistrate (*daikan*) in charge of the county for temporary land tax reduction and often the request was approved (Nakabayashi and Moriguchi (2017)).

Also, farming households were shielded from the competition in the outside labor market to some extent. Under the shogunate regime, movement of dependents should be approved by the household head. Suppose that a so wanted to leave his farming family and to join the service sector in Edo. In that case, a letter of movement should be sent from his father at home to his employer in Edo, and the letter ensured his residential registration in Edo. Otherwise such as a case a son ran away from tiring work at home to Edo seeking a more relaxed job in the service sector without a letter of movement from his father, his residence was not registered at Edo. A stay without residential registration or a travel permission was illegal, and a person without residential registration or a travel permission was outside of legal protection as a shogunate subject (Saito and Sato (2012)).

In summary, while the shogunate regime strictly protected the property right of individual farmers, farmers were strictly regulated and protected against the commodity market risk, the financial market risk, and the natural weather risk. Under the residential registration system, farming household heads also had regulatory advantage to retain dependents as the workforce to meet the labor demand in busy seasons.

This institutional arrangement resulted in a relatively small wealth inequality. Saito (2015) gave an estimate in the case of the State of Choshu, which was governed by Lord Mouri. There, the relative household income distribution ratio between the samurai class, the merchant class, and the farmer class in the 1840s was roughly $1.2 : 1.1 : 1.0$. As a comparative number, the relative household income distribution ratio between the aristocracy and gentry class, the middle class, and the lower class in England as of 1688 was $7.3 : 2.4 : 0.8$ (Saito (2015), pp. 405–411). The samurai class includes all of the lord and the lowest public servants, and thus income inequality within the class was substantial. Thus, let us cite another study. As of the 1886, less than 20 years since the Meiji Restoration of 1868 that removed the shogunate regime, Gini coefficient of income is estimated higher than that of Japan and Germany in the 2000s. However, it was almost the same as that of the US in the 2000s, and much lower than that of England from the seventeenth to eighteenth centuries (Milanovic, Lindert and Williamson (2011) and Moriguchi and Saez (2008)). Contrasting to the early modern UK, actual cultivators in early modern Japan were not impoverished with the property right protected by the shogunate and the tight regulations imposed by the shogunate keeping them from leveraging. Both the Japanese shogunate and the British monarch in early modern times accomplished their aims. The equal land ownership in Japan and the unequal one in the UK were maintained.

In 1868, the imperial court backed by lords in West Japan toppled the shogunate and installed itself as the government, which is called the Meiji Restoration. Premier Ordinance, Number 50 of 1872, repealed the ban of "perpetual" sell and purchase of farmland, and the centralized registration of land ownership was implemented in the year. Next year, the Land Tax Reform Act of 1873 reauthorized property right of registered farmers. Furthermore, the Ordinance of Secured and Pledged Farmland (*Jisho Shichiire Kakiire Kisoku*) of 1873 stipulated that the state court should protect the claims of lenders in both of a loan with a "pledge (*shichiire*) " of a parcel of farmland and a loan "secured (*kakiire*)" and the state court should enforce foreclosure in the both kinds of loans. A loan with a "pledge (*kakiire*)" of a parcel of farmland, under which the lender paid the land tax, could be made by a person whose registered address was the same as the borrower's. Thus, the ordinance technically meant removal of geographical restriction of enforcement of foreclosure by the state court. The state court now enforced foreclosure of collateral farmland regardless of whether the lender's address was in the same village as the borrower's and brought about a boost of geographical expansion and integration of farmland-collateral loan markets (Mandai and Nakabayashi (2018)).

Meanwhile, the National Bank Act of 1872, modeled on the US national bank system, introduced a liberal modern banking system. Through the end of the 1870s, more than 150 local banks were established in all over Japan by local landlords especially in rural regions. Now farmers could leverage their business as much as possible by borrowing more with their farmland as the collateral. Also, the Land Tax Reform Act obliged taxpayers to pay land tax in money, not in kind and did not permit a temporary reduction in the year of a bad crop. The government abolished the joint tax liability at the village level as well. Regulations on movement through residential registration and travel permission were also repealed by the mid-1880s.

Therefore, owner farmers were suddenly given the freedom to access the financial market and were removed of risk sharing mechanism of the shogunate regime. The outcome was straightforward. In the early 1870s, just after the Meiji Restoration, the ratio of tenanted farmland in entire farmland of Japan is estimated to be 27 percent (Furushima (1958), p. 332). The ratio jumped to 45 percent in the 1900s (Sakane (2002), p. 410). The deregulation after the Meiji Restoration prompted small owner farmers to leverage more but removed the shogunate risk bearing mechanism. It converted a mass of independent owner farmers, who often borrowed from local banks owned by landlords, into tenant farmers.

Often owner farmers who fell behind in payments remained in the foreclosed parcel of farmland and continued to cultivate it as a tenant farmer. Thus, the concentration of ownership did not accompany the change in the scale of business, and small farming continued to be dominant.

In other words, the change in the ownership did not lead to a change in agricultural techniques but was related to landlords' bearing risk from the rice market and the financial market, from which the shogunate regime shielded individual small owners. Now, the more significant role in shock absorbing was handed over from the government and village communities to increasing landlords.

A typical example of a more significant role of landlords was temporary rent reduction. While the government never concede for land tax reduction in a severe weather, landlords often accepted temporary rent reduction in a bad crop. Arimoto (2005) argued that it was an efficient risk sharing between the landlord and the tenant to maximize the expected revenue of the landlord. Indeed, in most regions in Japan after the Meiji Restoration, the fixed rent contract with covenant for temporary rent reduction prevailed (Arimoto (2005)). In some regions whose harvests were especially volatile, landlords offered sharecropping. Sharecropping transfers a greater risk from the tenant to the landlord. Thus, a sharecropping contract could be more efficient than a fixed rent contract with temporary reduction, if the tenant was less risk-tolerant or the crop was more volatile (Arimoto, Okazaki and Nakabayashi (2010)).

While allowing landlords to take a greater role in the traditional sector, the government pursued the Westernization and industrialization in the modern urban sector. Separation of the court from the administration in 1875, the Constitution of Empire of Japan of 1889, modeled on Austria, the Civil Code of 1896 and 1898 modeled on France, the Commercial Code of 1899 modeled on Germany completed the judicial system to protect property right and freedom of contract by the standardized measure. The government also introduced modern technologies of manufacturing and mining industries.

The first age of globalization (Mauro, Sussman and Yafeh (2002); Clemens and Williamson (2004); and Ferguson and Schularick (2006)), when leading economies sustained the free trade regime, brought about opportunities to emerging Japan. Among new industries, the silk-reeling industry first and the cotton spinning industry second rose as competitive industries, with the former pushing out the Italian competitors and the latter the British and Indian competitors. The rise of the silk-reeling was especially remarkable. The share of Japanese raw silk in the US market reached 50 percent in the 1890s and 80 percent in the 1920s (Nakabayashi (2006, 2014); Abe (2005); and Dong, Gong, Peng and Zhao (2015)).

The rise of the silk-reeling industry affected the peasant economy as well. While the cotton spinning industry imported raw cotton from India and China, the silk-reeling depended on domestically cropped cocoon as raw material. Cocoon raising, or sericulture that had already prevailed in East Japan drastically expanded from the 1880s and provided small farmers with a source of income growth. Now heads of small owner and tenant farming households were able to protect their dependent family members against possible market shocks.

Both the silk-reeling and the cotton-spinning industries relied on young unmarried females as the labor force. It meant that females shuttled between the two sectors and the dual structure. In the traditional sector, small farming was a dominant mode, and technological improvement was slow. Women were born in the sector. When young, they worked for a silk-reeling or cotton-spinning factory whose labor productivity and hence real wages were rising. When matured, they backed home to marry a farmer (Hunter (2003), pp. 89–143). Therefore, while the modern sector and the traditional sector did not interact for males, they had connections through female labor. The channel worked a downward pressure on wages in the modern sector in the short term. It drove down the opportunity cost of female dependents of farming households and hence enabled the traditional hand-weaving by them competitive. In the long term, however, the growth in the modern textile industry that employed female workforce raised the opportunity cost of female dependents of the farming households in the traditional sector. The drying up slack labor in the traditional sector was a primary reason the hand weaving vanished in the 1920s (Abe (2005); Hashino and Otsuka (2013) and Nakabayashi (2017)).

1.2 Possibility of structural changes in 1920–30s

The structure was challenged in the 1920s and the 1930s in different facets. The First World War was a big push for the Japanese heavy industry and the prevalence of electric power resulted in a further growth in the modern manufacturing because electric motors applied to a broader scope not only of large establishments but also of small factories and workshops than the steam power units. An increase in cheaper electric power also accelerated urbanization and expanded the service sector. This development provided not only females involved in the modern textile industry but also males with more job opportunities in the urban secondary and tertiary sectors. It implied a rise in reservation value of tenant farmers. Thus, tenant farmers grew more demanding, and tenancy disputes were widely observed in the 1920s (Arimoto and Sakane (2008)). If the existence of slack labor in the traditional/informal sector was a factor of the social stability of the dual structure economy, the factor was challenged by a further growth in the modern sector.

When the labor markets were integrated, the financial markets were integrated in the 1920s as well. Local banks had not been directly exposed to competition with major banks until the 1910s. Until the 1920s, the exposure of local banks to the financial markets had been twofold. Regarding the short-term inter-bank markets such as those for discount of commercial bills or overdraft, local banks were connected to the national market and borrowed short from major banks in Tokyo and Osaka (Mitchener and Ohnuki (2009)). Meanwhile, the branch networks of major banks had not yet reached rural markets by the 1920s, and they did not access information about local businesses. Local businesses were embedded in dense personal networks within local communities, and relational banking from local banks were one essential sources of corporate finance to them (Nakamura (2015)). Local banks borrowed short in the national market and lent long by higher interest rates to local businesses. Local banks had earned the spread.

However, major banks rapidly extended their branch networks through the 1920s. The development squeezed the spread between the national market and local markets earned by local banks whose owners. The advantage of major banks to access cheaper money and safer borrower in the national market implied the rise in their share both in the savings account and lending. An outcome was mass bankruptcy of local banks in the financial crisis 1927 and their consolidation by major banks (Okazaki and Sawada (2007)). The local landlords were losing their wealth to bear external shocks for subordinate constituent members such as tenant farmers.

Meanwhile, the great depression in the 1930s from the US resulted in the collapse of the raw silk price and hence that of the cocoon, which severely affected the peasant economy especially in East Japan. Peasant households lost their ability to bear external shocks for dependent family members. Even selling their daughters into prostitutes was not rare and was conceived a serious concern. The devastating effect decimated the trust in the democracy and the market economy. On the one hand, a socialist party, the Social Mass Party that gained seats in the Imperial Diet, the Japanese parliament, after the Universal Manhood Suffrage Act of 1925 increased its seats. On the other hand, imperial army officers affected by the state socialism attempted a coup in 1936, seeking establishment of a command economy. Although the coup was suppressed, the tide changed. Japan invaded China in 1937, the cooperation between the Social Mass Party and the army brought about the National General Mobilization Act of 1938, which virtually suspended the property right and transformed Japan into a command economy, and Japan attacked the US and the UK in 1941 (Okazaki and Okuno-Fujiwara (1999)).

Along with the war effort, the government launched the legislation to build a welfare state. After the National Health Insurance Act of 1938 covered self-employed households in the primary sector, it had extended the reach of public healthcare system, and the National Health Insurance Act of 1958 completed the universal healthcare system that provides the same medicines by the same price to any resident in Japan. Different from the German system that splits the healthcare insurance into the private one for high-income households and the public one for low-income households, for instance, the Japanese system is one of the most egalitarian system. Regarding the pension plan, Mariners Insurance Act of 1938 was the first to provide a public pension program to workers in the private sector. The program extended its reach as well, and the National Pension Plan Act of 1959 completed to cover all residents in Japan. Both the National Health Insurance Act of 1958 and the National Pension Plan Act of 1959 were submitted to the Diet by the administration of prime minister Nobusuke Kishi, who served the wartime administration as the minister of commerce and industry and led the command economy. Japan's welfare state has its origin in the disappointment to the market economy in the 1930s.

1.3 Marxian schools in Japan

There were two big groups of Marxian economists in the 1930s. One was the authors of *Nihon Shihonshugi Hattatsushi Koza (Lecture Series on the History of Development of the Japanese Capitalism)* (1932–1934). The group included not only leading Marxian economists such as Moritaro Yamada but also law scholars such as Yoshitaro Hirano and historians such as Shiso Hattori. Thus a particular feature of this group was to focus on the historical and institutional characteristics of the Japanese economy regardless of whether the mainstream economics discussed those points then, the classical economics. This group inherited institutional and historical viewpoints from Marx (1867). Yamada (1934a) was initially published as contributed chapters as the *Lecture Series*.

The publication of the *Lecture Series* provoked a debate on the nature of the Japanese capitalism (Ando (1998)). While the *Lecture* series scholars focused on institutional characteristics rooted in Japan's historical path, the other camp, called the *Rono (Workers and Farmers)* school named from the title of the journal in which they published their views, argued that specific institutions be trivial. A general tendency of this school was that they were strongly influenced by the classical economics although they did conceive it. When obtaining implications from Marx (1867) and applying their understanding on the Japanese reality, they unconsciously purified the text by the screen of classical economics and removed subtle implications regarding incentives and risk sharing that the classical economics did not support. A typical example was Tamizo Kushida, whose work we discuss in section 3. The classical economics did not have the economics of information and risk sharing. Therefore Kushida denied any significance of institutional arrangement to share risk in the traditional/informal sector of the Japanese economy then. It was the focal point in the debate between Yamada and Kushida.

One of the influential Marxian economists in postwar Japan was a descendant of the *Workers and Farmers* school, Kozo Uno, who rewrote Marx (1867) in a much more simpler presentation (Uno (1977, 2016); Sekine (1975, 1995); and Mawatari (1985)). Another postwar influential Marxian economist was Nobuo Okishio (Okishio (1966, 1977, 2001)), one of the founders of analytical Marxian economics. His works pursued to introduce Marxian implications into growth models but risk sharing. While Koichi Futagami, a student of Okishio, introduced to a repeated game setting to the class conflict (Futagami (1992)), he has also mainly worked on growth theory.

In short, the legacy of the *Lecture* school on complex institutional issues of the prewar Japanese economy was not digested by postwar Japanese economists and have mostly been abandoned. An exceptional work was Yasuba (1975), on which we build an extension in section 2.

2 Reframing the argument

2.1 The classical duality model

Lewis (1954), Ranis and Fei (1961), and Fei and Ranis (1963, 1964) argued that an institutional minimum wage set by in the traditional/informal sector that is above the marginal labor productivity of dependents fail to clear the labor market. Using the similar framework, Harris and Todaro (1970) discussed that the politically set minimum wage of the urban/formal sector fails to clear market and the metropolises of emerging economies tend to reserve slack labor. The origin of the both strands of the literature is Lewis (1954). Yasuba (1975) argued that Yamada (1934a) described the structure suggested by Lewis (1954) by a descriptive way.

Let us briefly review the classical duality model by Lewis (1954). Consider an economy where labor is uniform, and production functions in both agricultural and industrial sectors are marginally decreasing in labor. Let L_e denote the endowment of labor in the economy, $Y_a = F_a(\cdot, L)$ the production function in the traditional sector, $Y_m = F_m(\cdot, L)$ the production function in the modern sector, $f_a(L)$ the marginal productivity in the agricultural sector, $L_a = (f_a)^{-1}$ the labor demand function in the agricultural sector, $f_m(L)$ the marginal productivity in the modern sector, $L_m = (f_m)^{-1}$ the labor demand function in the modern sector, $D_L = L_a + L_m$ the total labor demand function in the economy, and w_s the "subsistence" wage.

Suppose that labor supply function is perfectly inelastic such that $S_L = L_e$. Then we have the equilibrium wage w^* that satisfies $D_L = L_e$. Since we assume that labor is uniform in this economy, all population are employed by either the traditional or the industrial sector under w^* if any institutional or legal constraint does not bind. Then, allocation of labor between both sectors is determined such that $f_a = f_m = w^*$.

However, in a developing economy where productivity is quite low, the competitive equilibrium wage w^* satisfying $D_L = L_e$ might be lower than the level that has been recognized as "subsistence" level w_s perceived in the traditional society. In this case, paternalistic community leaders, such as household heads and landlords might offer some subsidy such that their subordinates receive w_s greater than w^* at the exchange of respect from the subordinates. Up to the capacity of the subsidy provided by the authoritarian leaders, the labor supply is restricted, and the market wage in the modern sector $w_m = w_s$ shall be greater than w^*. With the marginally decreasing technology, the modern sector's output becomes lower than the optimal allocation. The labor reserve sustained in the traditional sector only if $w_s > w^*$ is "slack."

Meanwhile, technological improvement in the modern sector might move f_m upward and at some point, f_m might hit w_s. Then, even a marginal rise in $f_m = w_m$ implies a sudden jump of labor supply from the traditional sector because subordinates' reservation wage $w_m + \epsilon$ is greater than w_s and subordinates choose the market rather than the traditional authoritarian communities. Until the slack labor has dried up, the price elasticity of the labor supply appears infinite. This phenomenon was called "unlimited supply of labor" by Lewis (1954). Also, the point where the slack labor dries up and the real wage in the entire economy begins to rise was called the "turning point" by Lewis (1954).

2.2 Yasuba's interpretation

Lewis (1954) and Ranis and Fei (1961), Fei and Ranis (1963, 1964) assumed that a kind of institutional minimum wage in the traditional sector distorted the labor market and feeds the slack labor reserve in the traditional sector. Meanwhile, Harris and Todaro (1970) argued that the political minimum wage in the urban sector generate the slack labor in the urban sector. The slack labor is assumed to receive benefits as the institutional minimum wage in the traditional sector above the modern market wage (Lewis (1954), Fei and Ranis, and Fei and Ranis (1963, 1964)). Alternatively, the slack labor in the urban sector receives benefits as the political minimum wage above the competitive market wage in the modern sector that the market would have attained without the political minimum wage (Harris and Todaro (1970)).

Yasuba (1975) understood that Yamada (1934a) assumed the same similar labor market distortion. At the same time, Yamada (1934a) argued that high tenancy rent in the agricultural sector supported the low wages (w_m) in the modern sector. Yamada (1934a) thought the very labor supply from the agricultural sector to the industrial sector kept wages at a low level, hence labor intensive growth under traditional technology, subduing innovation that could have realized more capital intensive growth (Yamada (1977[1934]b), pp. 33, 46, 88–91, 165, 197–201, 219). Thus, Yamada (1934a) does not seem to assume $\mathrm{E}[w_s] > \mathrm{E}[w_m]$, instead, his description seems to indicate $\mathrm{E}[w_s] \leq \mathrm{E}[w_m]$.

Then a puzzle is how the authoritarian traditional sector could be maintained under the condition $\mathrm{E}[w_s] \leq \mathrm{E}[w_m]$. An interpretation given by Yasuba (1975) is that Yamada (1934a) assumed a strong institutional constraint in the traditional sector that restricted labor mobility under a quite a low w_s from w_m. Presenting such an interpretation, however, Yasuba (1975) rejected such an observation of the prewar Japanese society as unrealistic.

2.3 Introduction of the risk attitude

Regulation on movement through residential registration and travel permission under the shogunate regime intended to help farming households retain workforce. In that sense, $\mathrm{E}[w_s] \leq \mathrm{E}[w_m]$ was within its scope. In reality, however, urbanization progressed through the early modern times and dependents of farming households went back and forth between the secondary and tertiary sectors and the primary sector at home. Instead of preventing their dependents from going the secondary/tertiary sectors, households heads arbitraged between labor markets of the primary sector and the secondary/tertiary sectors such that $\mathrm{E}[w_s] = \mathrm{E}[w_m]$. As described above, a formal approval from the household head was necessary to legally leave home and work in the secondary/tertiary sectors. It implies that a bargaining between the household head and a dependent made part or all of any possible gain from arbitrage between both labor markets belong to the household as a whole. Their kids brought back money the earned in Edo to home rather than consumed for themselves. Indeed, from the eighteenth century, along with urbanization, sectoral wage differentials decreased along with an increase in real wages (Saito (1978)).

Therefore, institutional impedance of arbitrage between the primary and the secondary/tertiary sectors did not work in the late early modern times, even if we assume it had worked before. Furthermore, after the Meiji Restoration, remaining institutional constraints of movement were repealed. Assumption of their effects after the Meiji Restoration is, no need for waiting Yasuba (1975) to argue that Yamada (1934a) assumed it and the assumption was wrong.

Thus, we should not emphasize the distortion due to institutional constraints on arbitrage between labor markets in particular after the Meiji Restoration. Then, a still remaining question is why an authoritarian traditional sector is maintained even if $\mathrm{E}[w_s] \leq \mathrm{E}[w_m]$.

One condition the classical works including Lewis (1954), Ranis and Fei (1961), Fei and Ranis (1963, 1964), Harris and Todaro (1970) and Yasuba (1975) overlooked was the role of risk sharing. They implicitly assumed a utility function $u(w)$ linearly increasing in w such as $u(w) = a + bw$.

However, it has become well known that the traditional/informal sector often provides risk sharing mechanism to constituent members (Besley (1995)). Therefore, based on Holmstrom and Milgrom (1987), let us suppose that subordinate agents in the traditional sector and workers in the modern sector have an absolutely risk-averse utility function approximated by $u(w) = -\exp[-rw]$, where r is a constant while the authoritarian principal is risk-neutral. Then, the subordinate agents' expected utility is defined as $E[u(w)] = -\exp\left[-r\left(E[w] - rV[w]/2\right)\right]$ and the certainty equivalent is $E[w] - rV[w]/2$.

Assume that $E[w_m] = w_m$, $V[w_m] = \sigma_m^2$, $E[w_s] = w_s$, and $V[w_s] = \sigma_s^2$. Then, the incentive compatibility constraint for the subordinate agents to stay with the authoritarian traditional sector rather than to go to the market is,

(1) $$w_s - r\frac{\sigma_s^2}{2} \geq w_m - r\frac{\sigma_m^2}{2} \quad \Leftrightarrow \quad w_m - w_s \leq r\frac{\sigma_m^2 - \sigma_s^2}{2}$$

Thus, as long as the authoritarian principal can somehow bear the risk from market volatility such that $\sigma_s^2 \leq \sigma_m^2$, the risk-neutral principal can earn the risk premium $E[w_m] - E[w_s]$ $(\leq r\left[\sigma_m^2 - \sigma_s^2\right]/2)$ by offering $\mathrm{E}[w_s]$ $(\leq \mathrm{E}[w_m])$, with the agents willingly accepting the offer.

In other words, the traditional sector leaders' opportunity to earn risk premium by segregating two sectors solely depends on their ability to bear the market risk. Once the market volatility goes beyond the ability, the regime would lose legitimacy to be obeyed by the agents, and a structural crisis faces the regime.

3 Understanding the traditional authoritarian sector

3.1 Peasant economy under the tenancy contract

Yamada (1934a) characterized the relationship between the modern sector and the traditional sector by particular rhetoric. Regarding the coexistence between the high rents in the traditional sector and the low wages in the modern sector, he pointed out; "as the process of re-organizing semi-villain peasants and semi-servant wage workers under the capitalism, that is as the process of creating the relationship of dual structure between the high semi-serf rent and the low semi-servant wage"(Yamada (1977[1934]b), p. 32.); "[because] it is able to wearingly use vast semi-servant wage workers flowing out from the semi-serf peasantry, technological progress has been prevented"(Yamada (1977[1934]b), p. 165); "[t]he baseline. Determined by the interaction between the semi-serf peasantry and the capitalism. Determined by the semi-villain rent paid in kind and the semi-servant labor wages"(Yamada (1977[1934]b), p. 197); "interaction between the semi-serf rent collection and the semi-servant labor"(Yamada (1977[1934]b), p. 200); "[A]s the process about the late 1890s and the 1900s, that is, organizing the duality of the high semi-serfdom rent and the low semi-servant"(Yamada (1977[1934]b), p. 219).

Furthermore, regarding the level of rent on rice production, he depicted it as "the category of the rent that never enables generation of profit [of tenants]"(Yamada (1977[1934]b), p. 233). These statements logically mean $\mathrm{E}[w_s] \leq \mathrm{E}[w_m]$ between the modern sector and the traditional sector. However, beyond the logic, this exaggerative rhetoric misled Yasuba (1975) to interpret that Yamada (1934a) assumed coercive relationships between the landlords and tenants.

However, if we take the interpretation as coercive relationships, we cannot understand other texts in Yamada (1934a). Yamada (1934a) conceived that the stable structure of the

Japanese economy was challenged in the 1920s and 30s. In other words, he understood the structure had been stable before the 1920s. The basis of the stability was considered as the "two-story arch of the 'Napoleonic spirit' and the 'patriarchal family'"(Yamada (1977[1934]b), p. 170). The "Napoleonic spirit" is the loyalty of the "middle independent owner farmers" to serve the nation such as infantrymen during the French Revolution (Yamada (1977[1934]b), pp. 55–56). Therefore, Yamada (1934a) considered that small independent owner farmers did have the interest to preserve under the protection by the nation and household heads did have some means to bolster themselves as "patriarchal" household heads.

Therefore, either small independent owner farmers or tenant farmers were not forced to comply with the regime. They were patriotic to the nation and protective to their family. Yasuba (1975) missed the point. Then, even though the expected benefit peasants received was equivalent to or less than the market wage in the growing modern sector ($\mathrm{E}\left[w_s\right] \leq \mathrm{E}\left[w_m\right]$), they been satisfied by the regime and had obtained the room to protect the family. One condition for was additional income from sericulture. "It is evident that by the reorganization of production (modernization of the silk industry) and the industrial policy by the government, the sericulture has become essential means of life for semi-villain peasants"(Yamada (1977[1934]b), p. 56).

A more structural condition was the risk-bearing by landlords. Why did small independent owner farmers who had been bequeathed family farmland for generations under the shogunate regime end up falling in tenant status after the Meiji Restoration? Taking an example of a typical peasant management, Yamada (1934a) described "on the one hand, the fixed amount of money 1.632 yen of the land tax (public dues), on the other hand, rice crop in general inevitably affected by the good and bad harvests (288.6 liters of rice in this case) and always fluctuating rice prices (3 yen per 180.4 liters in this case), being captured in this pincer attack, the revenue of independent owner farmers uninterruptedly gyrates. Through the process, ordinary owner farmers chronically drop"(Yamada (1977[1934]b), p. 252). "Note that the impact of fall in the rice price is (in general) further greater to independent owner farmers than to landlords"(Yamada (1977[1934]b), p. 253). The Land Tax Reform Act of 1873 obliged owner farmers to pay land tax in money while the shogunate before the Meiji Restoration allowed them to pay land tax in kind. The reform exposed small owner farmers directly to the commodity market risk, and this had been the primary driver to turn independent owner farmers into tenant farmers after the Meiji Restoration. It was the point emphasized by Yamada (1934a). "Rent paid in rice (rent paid in kind) inevitably re-emerges in the backward Japanese agriculture"(Yamada (1977[1934]b), p. 260).

If tenant households were risk-averse, the regime in the traditional sector need not leave any strictly positive quasi-rent to peasant households in the terms of expected revenue. By transferring the risk from the rice market toward risk-neutral landlords, risk-averse tenant households improved their expected utility. On the side of landlords, as long as incentive compatibility constraint (1) is satisfied, they were allowed to earn risk premium $E\left[w_m - w_s\right]$ under the accordance with tenants, not coercion.

The informal risk sharing mechanism in the traditional sector had peasants willingly support the regime, kept them patriotic to serve the nation, and provided them with some room to bear the risk facing their family members. They had sustained the stability of the society as patriotic citizens and protective household heads.

Lecture Series, led by Moritaro Yamada, caused a debate with the other camp of Marxian economists, *Workers and Farmers* school. The most heated issue was how to understand the peasant economy. The leading scholar, Tamizo Kushida criticized Yamada (1934a), arguing that the difference between the rent paid in money and the rent paid in kind be irrelevant, high rent simply meant the market equilibrium price where the supply of tenants was abundant, and hence there was no reason to focus on the Japanese peasant economy with a specific interest

(Kushida (1931), pp. 71–76). Given the best knowledge filtered by classical economics, which implicitly assumed that both parties were risk-neutral, Kushida's argument should be reasonable.

3.2 Risk bearing by landlords

However, once risk attitude of the poorer party is counted, the difference between rent paid in kind and that in cash is not trivial. When the shogunate allowed owner farmers to pay land tax in kind, owner farmers were shielded from the commodity market risk. After the Meiji Restoration, the government obliged owner farmers to pay land tax in cash, and by doing so, exposed them to the commodity market volatility.

The new owner who repossessed a parcel of collateral farmland became a landlord and ex-owner became a tenant farmer of the parcel once he owned. While the landlord paid land tax in cash, now the tenant farmer was allowed to pay rent in kind to the landlord. Now the landlord took the risk of the commodity market volatility. The landlordism that rapidly expanded only after the Meiji Restoration was a new institutional arrangement of risk sharing that replaced the village-level joint liability of land tax payment and the land tax payment in kind under the shogunate regime, which were removed after the Meiji Restoration.

3.3 Upward and downward pressures

Yamada (1934a) argued that the stable structure of the Japanese economy be faced with a crisis in the 1920s and 30s. However, the characteristics of the "crisis" he conceived are not very clear.

When defining the stability of the Japanese economy before the 1920s, Yamada (1934a) also discussed the significance of the intermediary bodies the modern sector. In the shipping and mining industry, they were informal. In shipping, "between officers and crew," there existed “the ‘relationship between the boss and the henchman”(Yamada (1977[1934]b), p. 183). “In the metal mining industry, workers “joined the ‘relationship of the boss and the henchman’ with senior workers, vowing that he should ‘strive diligently and devotedly’”(Yamada (1977[1934]b), p. 190). In the machinery, Yamada (1934a) emphasized that middle-level managers modeled on the army and the navy disciplined and controlled workers (Yamada (1977[1934]b), pp. 171–182).

In one sense, Yamada (1934a) stressed that middle-level managers were being removed as strikes increased and as part of reform to improve productivity, which he called “rationalization of the Japanese type”(Yamada (1977[1934]b), pp. 209–211). He predicted “objectively inevitability of the progress of the rationalization of the Japanese type and the [formation of the] proletariat”(Yamada (1977[1934]b), p. 213). He seems to have hoped that with tightening labor markets, now segregated workforce was being united as proletariat and finally might trigger a revolution toward a socialist state. This story should be based on an increase in w_m. The pressure toward instability was upward, and the observation seems to be justified for the 1920s.

Meanwhile, the Japanese economy was severely affected by the Great Depression in the 1930s. The effect on the peasant economy was devastating. The impact removed patriarchal household heads of the ability to bear risk of their dependents. It was not rare for peasants to sell their daughters into prostitutes in the 1930s in East Japan. Naturally, fathers who sold their daughters lost their dignity. This downward pressure also destabilized the Japanese socio-economy.

Conclusion

Yamada (1934a) was, by whom either liked it or not, considered to be hardly tractable. We have shown that it is mainly because he struggled with the informal risk- sharing mechanism in the informal sector. Once we count the risk attitudes of subordinate agents in the traditional sector in modern Japan, the entire picture looks clear. Being provided with the risk sharing mechanism, subordinates willingly committed to the authoritarian social regime. Being protected by the risk bearing ability of their fathers, Japanese women obedient to the patriarchal family system. It was the coexistence between the social stability and the productivity stagnancy of the Japanese economy before the 1920s.

At the same time, even though he was a pioneer to attempting risk sharing mechanism in the informal sector, his understanding of its significance might not be sufficient. Due to the upward pressure in the 1920s and the downward pressure in the 1930s, the stable regime was threatened. At the point of the publication of Yamada (1934a), Yamada was optimistic over the future as a Marxian revolutionist. The outcome was different. People lost their trust in the capitalist market economy. It might be okay for him, a Marxist. However, then they sought the social security provided by the state socialist administration, not least the healthcare system from 1938 and the pension system built from 1939, and proceeded with the nation to a destructive end.

The defeat and the US occupation, however, did not change the deeply rooted trend. A draft of amendment of the Constitution of Empire of Japan lacked an essential article, article 25 that define entitlement to the benefit of social welfare as the social "right," a human right, not a "privilege" in the US. The US officers did not suggest the concept. When the last Imperial Diet discussed the amendment plan suggested by the US, the House of Representatives of the Imperial Diet added the article modeled from the constitution of the Weimar Republic of Germany. It was consented by the House of Peers, the Privy Council, and approved by the Emperor. Building Japan's welfare state to replace the "patriarchal family" that was decimated amid the Great Depression and to take on the risk-sharing function of it was completed in 1958 and 1959 by the administration of Nobusuke Kishi, who was a leading minister of the wartime administration.

Japan adopted the isolationist and assertive policies in the 1930s when it was affected by the Great Depression and its insurance mechanism fell in apart. After the defeat, it was reconstructed in the free trade camp led by the US. However, it continued to build an extensive welfare state from 1938 to 1959 led by the right camp of policy makers. This was a reason Japan's public accepted the recovery of the market economy and democracy. When an economy with a large portion of the informal sector is affected by a recession, like Southern Europe after the financial crisis, a better prescription might not be making a small government like the US.

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