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The Demand and Supply of Protection: A Reinterpretation of the Emergence of a Weberian/Olsonian State through the Lens of Modern China

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Abstract: The study of institutions and economic history was much influenced by Ronald Coase and Douglass North, in particular with Douglas North's notion of government as an endogenous outcome of institution competition. Although Max Weber articulated a concept of government as a monopoly of violence in 1919, much subsequent modeling work on governments was built around the banditry notion of governments of Mancur Olson (1993, "Democracy, Dictatorship and Development." *The American Political Science Review* 87(3) (September): 567–576). Examples are Usher (1989, "The Dynastic Cycle and the Stationary State." *American Economic Review* 79: 1031–1044), Moselle and Polak (2001, "A Model of a Predatory State." *Journal of Law, Economics & Organization* 17(N1)), and the like. A good summary is found in Dixit (2004, *Lawlessness and Economics: Alternative Modes of Governance*. Princeton, NJ: Princeton University Press). We called this collectively a Weberian/Olsonian view of governments. Building on the notion that a State is a monopoly of violence, these models are in line with the banditry idea of Olson, which, among many country historical studies, he used the Chinese example that governments are essentially stationary/roving bandits. Taking Olson's ideas as a lead, this paper uses the counter-example of Feng Yu-hsiang (馮玉祥 1882–1948) (Feng), a Chinese "warlord", to present an alternative analytical framework in terms of a supply-demand model for the emergence of governments. The level of generalization for a framework of such societal order is necessarily heuristic, and can be compared to such economic simplification of social reality by Hayek, Schumpeter and North. However, it should help constellate facts that can be gathered to evaluate refutable hypotheses that are of interest to political theorists and historians. The model formulated

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for this paper is not intended to justify violence, which the authors deplore, but is recognized as merely a statement about *realpolitik*.

Keywords: government, history

1 Introduction

This paper evolved when the first author was a Ph.D. student of Steven N.S. Cheung at the University of Washington. Douglass North was a member of his thesis committee and the Chair of the Economics Department when he graduated in 1978. The paper has gone through numerous revisions, with the co-authors making substantive contributions in changing directions for the paper over the years. Under his supervision, the second post-graduate dissertation of the third author, on adversarial politics (Lai 1987), benefited from a 1983 version.

The late Mancur Olson, in a very interesting paper (1993), offered the view that governments are basically stationary bandits with an expertise in taxation, which is acquiesced to by their people who prefer them to roving bandits. He called that “the first blessing of the invisible hand” (p.568). To illustrate his idea, he used examples of Feng, versus a roving bandit, White Wolf, who was alleged to be suppressed by Feng. Olson disputed the contractarian views of the state developed by Barzel (1991, 1992, 2002), Barzel and Edgar (1991), Kiser and Barzel (1991), North (1981, 1990), and North and Thomas (1973).

Olson’s idea is interesting, but the example he used was unfortunately ahistorical. Feng did not suppress White Wolf when Feng was a warlord.¹ Nor was he able to tax a lot because he did not have time to hold onto certain places for a long time. Indeed, the entire period of “warlords” in China was short-lived and lasted only from 1916 to 1930, unless we regard the Nationalist (KMT) and Communists ALSO as warlords! There were many examples of warlords who not only roved and robbed, but used tax funds to invest in the territories they controlled.

¹ Feng Yu-Hsiang’s name is sometimes spelled Feng Yu-Hsing. See Feng (2002): Ch. 17, pp.134–143). According to Feng, during a battle with White Wolf, his troops expended 200,000 rounds of ammunition, but only inflicted 200 casualties. The White Wolf battles were fought in 1914 (Sheridan, pp.50–51), which was several years before Feng became a warlord. The battles with bandits were fought in Honan with Red Spear, when Feng was a warlord, rather than with White Wolf (Sheridan, p.91, pp.114–115).

But the point to note is that no warlord has ever come out of the blue as a man on horseback by himself. A closer analysis of the typical warlord shows that he was the outcome of public choice in many respects other than his ability to organise violence, a Weberian view of government. A typical warlord in Northern China was a general in the Northern Army of Imperial China, led by Yuan Shikai, who had a political agenda to sell to prospective subjects, hopefully all over China, after the collapse of the Manchu Dynasty. Yuan apparently believed that once he was in control of Peking, the seat of the Chinese Government would be recognised by the Western Powers, and once he called himself the true President of China, everyone in China would treat him as the real president. As it turned out, he had to step down or retreat in light of the demonstrations and outcries spread by the newspapers and dissension within his own military, not to mention the military fortunes of the competing Canton Government. Canton itself was the prize for the southern warlords and those factions of the republicans who helped Yuan overthrow the Manchu Dynasty.

The soldiers who supported the warlord could surely be seen as the latter's assets, but also as his liabilities. They were often imperial soldiers recruited from the same province,² and hence, the general had a moral responsibility to take care of them. If he did not, then he would soon lose his power base. The question of the unification of China was thus not just a matter of the ability of armed groups to impose their rule by force, but, more profoundly, a choice made by buyers of a concept introduced in this paper as *organized violence* in hopes of gaining a better protected life, rather than gaining protection from violence *per se*.

Many great nations in history were built up by a process of roving, which was more than just looting. Abraham's tribe roved through several places in the Middle East until they settled in Canaan. The roving of Alexander the Great and the Turks, which left the Hellenistic states and the Ottoman Empire, respectively, are also classic examples. In Chinese History, many successful and less successful dynasties began their lives as armed, roving organizations. Good examples are the Kingdom of Shu during the period of the Three Kingdoms; the Tsui Dynasty, which built the Grand Canal; and various, anonymous ancient Silk

² Warlord Feng, like Wu Pei-fu, had his base in Zhili Province (Zhili refers to parts of today's Hebei, Henan, and Shantung (Shandong) Provinces as well as the cities of Peking (Beijing) and Tientsin (Tianjin)). Yen Hsi-shan's home base was Shensi (Shanxi) Province, Pai Chung-hi's was in Kwangsi (Guangxi) Province, and Chang Tso-lin's was in Manchuria.

Road developers. The main contenders for the seat of Modern China, the KMT and the Communists, were also rovers. The former roved north from Canton with the latter. After the two split up, the Communists continued to rove until they conquered all of China by 1949. The KMT, which probably roved less than the Communists, took flight to Taiwan. While roving *per se* does not build a state, a government that has no roving ability can hardly expand a state.

It is from this backdrop that we offer this framework of analysis with the roving of bandits only as a background, but with an added assumption that choices can be made at the individual level, or, via the mobility of all players, include bandits. Our purpose is to enrich the contractarian understanding of democracy as a specific mode of organising violence to better protect individuals and property rights. The story of Feng turns out to be illustrative in highlighting a key ingredient in this process that Olson overlooked in his analysis.

2 Understanding government as “organized violence”

Around the time Olson wrote about governments as stationary bandits, there was much work being done on the modeling of the different angles of government as an executor of violence. Hirshleifer (1995, 2001) modeled attack and defense technologies without explicitly assuming that governments are bandits. The setting he used in his model, which Dixit (2004) succinctly summarized, typically assumed the existence of a predator (attacker) and prey (defender). Hirshleifer placed emphasis on examining the equilibrium conditions that determined the amount of resources the offense and defense expended when they were away from their production activities. Multiple equilibria were possible, but with complete specialization as a corner solution, while equilibria that involved pure predation and pure production were perhaps special cases. The focus of attention was on conflicts and appropriation. Each model has its own special feature highlighted. For example, Whittman (2000) adopted a nations-mutually-expropriating model, which pointed out that violence can be used as a threat rather than a means for execution. Moselle and Polak (2001), building on the work of Usher, pointed out that primitive states emerging from banditry can result in lower levels of output and welfare.

The framework we will display in this paper differs from the modeling angles in the above literature in terms of the views towards violence, as well as the nature of the protection market in reaching equilibriums. We found that the traditional model of supply and demand, which economists have commonly

used for analyzing market activities, can be easily modified to be equally applicable in the market for violence. It may be more useful to view a problem from the supply and demand angle of the problem if a contractarian viewpoint is to be pursued, as specialization and the gain from trade arising from exchanges of individuals are at the heart of supply and demand. Also, there can be insights that can be directly borrowed from market economics to be applied to the market for protection. Indeed, the market structure of violence can act as a useful categorizing tool for determining the various forms of government, which are various degrees of “organized violence”.³ The model categorizes players during the emergence of governments through an evolving market structure of protection, rather than through roving and stationary bandits. An illustrative model that spells out the assumptions used is described in the Appendix. Here, we summarize the assumptions and qualitatively describe the nature of various equilibria, which are interpreted as institutions entailing various degrees of organized violence.

Let’s start with a demand and a supply of protection,

A. On the demand side: We hypothesized that all individuals demand protection of some sort, whether through self-defence, adequate shelter and circumstances, the contracting out of a service of protection and the execution of violence, the organization of a production function of violence, or simply adopting a faith in the spiritual protection of various divine forces. All individuals need security and protection of some sort.

The basic incentive to exchange goods and services for protection is inherent in the fact that people are not identical. Their preferences for and their abilities to engage in violence vary. Contracts for protection lead to specializations for those who have a comparative advantage in executing violence. They are the violence

³ The Weberian/Olsonian view of government has many variations. Moselle and Polak (2001) also attempted a similar classification, but used a different set of terminologies involving anarchy (the state of nature), organized banditry (groups of raiders), and the primitive state (minimal organization, like a “King”), p. 2. It is not the purpose of this paper to make comparisons between our notion of organized violence and that by Moselle and Polak. Categorization is a matter of subjective choice. Moselle and Polak cited the famous work of Wittfogel’s oriental despotism in support of their main conclusion. That might be true for ancient China, but the story of Feng happened in the context of Modern China, notably with the founding of the Republic of China in 1912, which made a difference. In that sense, Usher (1989), on whose work Moselle and Polak based their study, was also inadequate as a source for discussing Modern China’s political and economic problems, as innovations that affected the market structure of protection were explicitly ruled out in the formulation. The notion of organized violence that we wish to highlight in this paper include the important element of innovation and could be used in a discussion on the political economy in other countries as well. However, we shall look at this through the lens of modern China in this paper only.

specialists⁴ who exist not because of they are threatened for survival, but because they are skilful in executing violence – and perhaps enjoy doing so, just as professional basketball players enjoy playing basketball.

B. On the supply side: We invited a deeper examination of the nature of violence that went beyond the categorization of roving and stationary bandits, attackers, and defenders. The perspective of violence used here can be found in the *Art of War* by Sun Tzu. Among the many techniques discussed in this Chinese classic, there is one that is particularly relevant to the topic of discussion here: attack can be used as defense, and defense can be used as attack. A warrior combines offensive and defensive strategies to win a war. American football dichotomizes the game into offense and defense; a defense rarely becomes an offense except when mistakes are committed by the offense. Most contests in the world have fluidity and flexibility so that offensive and defensive maneuvers can be executed at the same time. We categorically grouped bandits, protectors, attackers, defenders, organized criminals, and the military as executors of violence.⁵

There are various market structures that can evolve from a basic specification of the demand and cost functions of protection. The emphasis of this paper is on governments as alternative market structures of protection. The evolution of a market structure is almost the same everywhere. Generally, there will be a competitive market of protection that resembles a perfectly competitive market. This market structure is only a little more efficient than a complete autarky where no protection contracts of any type are enforced. Every individual expropriates others, or at least needs to self-defend against expropriation. A perfectly competitive market is one in which there are some degrees of specialization of violence execution, but the nature of the contract for protection is *quid pro quo*,

⁴ Contrast this with the Hirshleifer and the Dixit models, in which every individual is assumed to allocate resources to violence, and thus, a market structure for anarchy becomes the intrinsic characteristic of the outcome of those models.

⁵ This conflict technology assumption is vastly different from what the literature cited has emphasized. To us, the ability to inflict damage lies in an attacker's technology relative to the defensive ability of the target. Bows and arrows cannot possibly tear down a stone castle and shields are useful only against certain weapons. Regardless of weapons technology, the cost of serving a particular subject under protection is different from the cost of protection to fight off potential attackers or enemies. The cost of providing protection, unlike that of providing consumer goods and services to satisfy the preferences of the buyers, is structured to serve the weapons preferences of the attackers and very much depends on their propensity for violence. It is true that a wealthy and more mobile individual is more costly to protect than a low value immobile object, but whatever resources a violence specialist expends while fighting, they are not directly consumed by a buyer in the sense that a buyer consumes bread when s/he buys it from a bakery. The benefit received by those under protection comes indirectly – only when their protectors win the war or when the attackers refrain from continuing their attack. This assumption is important to understanding the way the protection cost function is specified.

defined on the spot, and exists for a period of time implicitly defined. A subject will be protected by Supplier 1 in one period, and depending on the circumstances, be protected by Supplier 2 in the next period. The degree of safety under the protection plan of A is identical to the protection plan of B by assumption of identical suppliers of protection. Under assumptions described in the appendix, a spot market of protection resembles a perfectly competitive market, as described in the diagram below:

D is the aggregate demand for protection in a society consisting of N number of individuals wanting protection and Z number of protectors. D comes from an arrangement of one's willingness to pay for protection (as specified as WTP_{ij}^* from eq. [1] in the appendix, with j^* being the j protector chosen at equilibrium) in descending order. The marginal cost and total average cost of Protector 1 is specified as MC_1 and ATC_1 , with that of Protector 2 defined correspondingly (but not labelled explicitly) with $\sum_{j=1}^Z MC_j$ being the aggregate market supply. X_1 is the number of individuals protected by Protector 1. N^* is the total number of people under protection by Z protectors. The equilibrium protection fee is P^* .⁶

We believe this model of protection can be more illustrative for describing the warlord era in Modern China than Olson's framework of roving and stationary bandits. Although the logic of Olson's argument has features that resemble the protection market described here, he avoided pursuing the argument on this platform.⁷ He was more interested in the results of "stationary banditry over anarchy" (p. 569) in that democracy can evolve as the market structure changes. Our study of the history in China suggested that territorial dominance by warlords, particularly those under the control of Feng, was rather fluid and changed from year to year. Feng did not stay long at one place. Moreover, as we will show later, the nature of competition in China at the time went beyond the static condition of the spot market of protection as described above. So Figure 1 is just the starting point. Before we conceptually describe this evolutionary process, let us first summarize some features of the warlord period in early twentieth century China to provide a backdrop.

⁶ Strictly speaking, the demand for protection ends at P^* as unprotected individuals will either be expropriated and thus that portion of the demand no longer exists, or become bandits themselves. Realistically, individuals at the lower portion of the demand curve are either too poor to be robbed, or they won't care about being robbed. We leave the demand curve as drawn to exaggerate the similarity between this and market demand for goods and services.

⁷ The closest he came to a perfect competitive market of protection as described here is in a statement that "a dispersion of power and resources over a large area can result in a set of small scale autocracies but no democracy," p. 573.

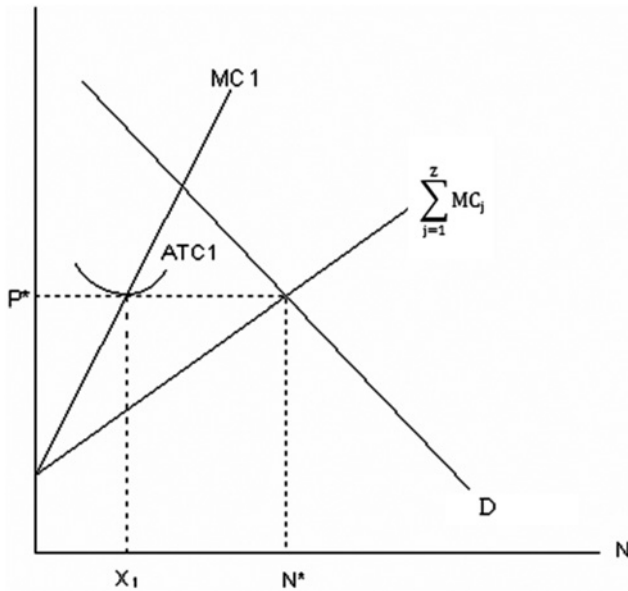


Figure 1: A perfect competitive market of protection.

3 Warlords period in China

A large volume of literature documenting the warlord period in China exists. To reiterate, this period occurred between the fall of the Manchu Dynasty and the emergence of the loose alliance between the KMT and the CCP.⁸ Aside from Sheridan's study, on which Olson's thesis was based, we used several Chinese references.⁹ The following features can be broadly summarized:

3.1 Income sources

The warlords formally received their income from several sources: by stealing tax income (on land and salt) that should have gone to the Northern Government

⁸ KMT, founded by Dr. Sun Yat-Sen in 1912 was the first Republic of China (ROC), now based in Taiwan. The Red Army, under Mao Tse-tung and others, formed a Chinese Communist Party (CCP) which led to the founding of the People's Republic of China (PRC), now the Beijing Government.

⁹ Pao, Lee and Ng (1956–1959), Lim (1994), Chang (1997), Feng (2002), Wong (2006), Chang (2007), and several other Chinese articles on the internet.

of the Republic of China, expropriating income from railways they controlled, obtaining loans from banks backed by foreign interests, borrowing from foreign governments, and printing money. The Central Government received residual income not kept by the warlords, customs collected by foreign powers, and loans from foreign governments. Its budget was always in the red – an important factor that probably contributed to its downfall.

3.2 Economic consequences

Historians tend to agree that the economic impact of the warlords was, as a whole, negative except perhaps for a certain period during the reign of Chang Tso-lin in Manchuria, where rapid industrialisation took place. Tax rates and military expenditures generally increased over time,¹⁰ suggesting a situation of rent dissipation, resulting in MC and ATC of protection for all protectors shifting higher, in the context of the graphical explanations surrounding Figure 1. Table 1 shows that of the four provinces surveyed, three witnessed growth in military expenditures from 1919 to 1925. Table 2 shows that the additional tax levied on land to finance the military expenditures of warlords varied from province to province and from year to year, but generally grew from 1912 to 1933. Although there was no corresponding growth in representative democracy, there was a gradual change in the market structure of protection starting at around 1912.¹¹ (This is a point we will further note after displaying the full evolutionary market structure of the protection framework, as illustrated in the appendix.)

Table 1: Military expenditure of the central government by warlord zone.

Year	Henan Province (Zhili Clique)	Chekiang Province (Chekiang Clique)	Gulin Province (Manchuria)(Feng Tien Clique)	Sichuan Province (civil war zones)
1919	4,500m 60 % provincial total	2,500m 40 % provincial total	300m 60 % provincial total	600m 63 % provincial total
1925	1,700m 85 % provincial total	1,000m 70 % provincial total	900m 60 % provincial total	2,600m 86 % provincial total

Source: Chang (1997, p. 206), (Chinese publication).

¹⁰ See Chang (1997).

¹¹ Nineteen twelve is the first year of the Republic of China, which was founded by Dr. Sun Yat-sen. Warlords were rampant during the early years of the Republic.

Table 2: Supplementary land taxes imposed by warlords on top of the central government's land tax.

Province	1912	1931	1932	1933
Hupei	+ 89 %	+ 131 %	+ 119 %	+ 127 %
Hunan	+ 79 %	+ 98 %	+ 107 %	+ 115 %
Shansi (Shanxi)	+ 85 %	+ 114 %	+ 112 %	+ 121 %
Kiangsu (Jiangsu)	+ 90 %	+ 118 %	+ 125 %	+ 113 %
Wupei (Hubei)	+ 64 %	+ 95 %	+ 112 %	+ 124 %
Xichuan (Sichuan)	+ 65 %	+ 108 %	+ 122 %	+ 113 %
Kwangtung (Guangdong)	+ 117 %	+ 135 %	+ 143 %	+ 156 %
Yunnan	+ 71 %	+ 140 %	+ 143 %	+ 152 %

Note: Lim (1994 translated, p. 231). Central government land tax = 100 %.

3.3 The mobility of warlords

Other than Chang Tso-lin and Yen Hsi-shan, warlords tended to be quite mobile, as their territorial ambitions and zones shifted, expanded, and contracted as a result of politics (amalgamation and dissension) and war in a typical Machiavellian manner. Their activities were sometimes coloured by elements of romanticism and religion: for example, there were the so-called “Christian” (Feng)¹²; “Buddhist” (Tong); and “Muslim” (Bei) Generals. Before the Canton-based KMT started the Northern Expedition in an attempt to subdue the various generals, warlords were also sporadically supported by different foreign interests: Soviet, American, British, French, and Japanese.

Whether warlords roved or remained stationary, they have been called “bandits” from a western perspective. In a book describing Christian missionary services in China around the turn of the twentieth century, the influence of the warlords was evident.¹³ As we will argue in later sections, the characteristics of

¹² According Fairbank (1986, p. 181). Feng was baptized in 1913 by Rev. John R. Mott; but according to Sheridan (1966, p. 53), he was baptized in 1914 by Liu Fang of the Methodist Episcopal Church. Sheridan also discussed Feng's motivation to become a Christian.

¹³ Wong Sik Pui, author of *Sacrificial Love – Portraits of CIM Missionaries* (a book written in Chinese), studied past issues of *China's Millions* (English journal) of China Inland Mission in his compilation of a record of foreign missionaries in China. Wong pointed out that the journal constantly referred to “bandits” in China at that time. To Wong, the account of the warlord era

these bandits were not whether they roved or not, but their ability to win a quid-pro-quo protection contract from ordinary citizens.

There were more than 200 “bemedaled generals” during the warlord years (1916–1930) in China.¹⁴ But, according to Taiwan’s account of the Northern Expedition, which was an important transition during the early stage of the Republic of China, the “important” warlords mentioned were only four – Wu Pei-Fu, Suen Chuen-Fong, Chang Tso-Lin, and Tuan Chi-jui (Pao, Lee, and Ng, pp.158–160). Feng was not listed in these overview paragraphs. In an account written by a Mainland Chinese writer, Chang (2007), Feng was working as a backup to Wu Pei-Fu as early as 1922. He was appointed by the Northern Government in Beijing (Peking) to be the Governor of Henan, and his accomplishments in Henan aroused Wu’s jealousy.¹⁵ Pao, Lee, and Ng wrote that Feng worked under Tuan.

With the highlighted backdrop of the warlord period in China, Feng did not appear to be a military bully or a local thug of the type suitable for the term “stationary bandit,” but more of an agent and executor of violence for others, irrespective of whether his principals were legitimate or illegitimate governments. This was particularly so during his battle with White Wolf in 1914. He was under the command of Lu Chien-Chang, the commander of the 7th Division under Yuan Shikai, who headed the Peking Government at the time. Feng’s “victory” over White Wolf did not result in him staying put either, except later when delegated by his superior to remain at Changde, where he stayed for no more than two years. In fact, Feng’s army was nicknamed the “Flying Army” (noted by Katsuji Fuse in Sheridan, p. 51) in reference to its quick mobility.

Feng also did not evolve into “grasping hand” (in the model language of Olson, p. 569). Indeed, he always worried about financing his army, as revealed in his autobiography. The following account of Feng by Sheridan hardly fits the image of a wealthy warlord:

reported in *China’s Millions* were more “objective,” as it was reported from the perspective of grassroots individuals, rather than from the official points of view of Taiwan or the PRC (interview conducted on Mar 12, 2007, Seattle). Wong also cross-referenced official Chinese language history books.

14 Fairbank (1986, p. 181).

15 Fighting between warlords during this period conformed well to the competitive market of protection described in the theoretical model in this paper. For example, in 1924, while Wu was fighting Chang in the North, Feng marched to Beijing, forcing an incumbent warlord (Tsao) out, and thereby opened the door to let Tuan march in. Fighting during this period stretched from Laoning (Liaoning), Inner Mongolia, to Hopei (Hebei), Shantung (Shandong), Kiangsu (Jiangsu), Anhui, Honan (Henan), and Shansi (Shanxi). Chiang was based in Canton. It was in this environment that Sun Yat-sen died on March 12, 1925 in Beijing.

...Feng's most serious difficulties while in Hsinyang [in 1921] concerned finances. He did not hold any local or regional office in Honan, and therefore had no handy source of revenue... Feng had trouble even providing a sufficient diet for his men... Feng turned into banditry... Learning that a train was to pass through Hsinyang carrying...[Peking] government revenue, Feng simply had his troops stop the train and seize the money (p.100).

If there was an example of a stationary bandit during the warlord period, Feng was not that person. Indeed, his career helped illustrate a framework beyond what Olson had depicted – one that starts with a spot market of protection as depicted in Figure 1. Yet, that is not the final story. It is the evolutionary market structure of protection that Feng's army has particularly evolved to transpire. We now turn to this concept to bring in a dynamic evolution of a protection market.

4 Evolutionary market structure of protection

The competitive spot market of protection will not last too long, just like atomistic competition in a product market will not last because of technological changes. The driving force, other than new technology, could be a specific strategy chosen by entrepreneurial firms (which may start out small). Built into the framework of the supply condition of protection, as illustrated in the appendix, are the innovative shift parameters of α_j , which affect the public goods offered by protector j , and γ_j , affects the technology of the execution of violence by j . The parameters can be turned into choice variables chosen by protector j in a multi-period long term competitive process.

The precise trajectory of this evolutionary process is extremely difficult to model. The lead author of this paper discussed the intuition of a particular outcome in the context of *prior contracting* for innovation (1981).¹⁶ Modelling

¹⁶ The idea drew upon the concept contained in *Competition for the Market* by McNulty (1968) and Demsetz (1968). Both authors questioned the usefulness of the conventional concept of perfect competition, especially in situations when there are scale economies, where marginal costs are falling, and average total costs are higher than marginal costs. Yu (1981) proposed that competition in this context may take the form of competition in contractual and institutional forms, suggesting that a term, *prior contracting*, be used to replace most economists' familiar price-taker framework to analyse this class of problems. See also Barzel (1994) in this elaboration in a general context of property rights, Masahiko Aoki (2001), who independently worked on scale economies, developed a direction of inquiry that concentrated on institutional choices. It resulted in a broad area of analytical thinking known as *Comparative Institutional Analysis*. The relationship between this area of inquiry and that in constitutional political economics, initiated by the cumulative works of James Buchanan, is the notion of a constitutional balance budget, in which tax revenues are constitutionally constrained to cover only expenses, which is the outcome of a benevolent dictator.

work in this direction has been virtually non-existent in the literature. Yet, in view of advances in the digital frontier towards the end of last century and continuing into this century, the evolutionary trajectory of high tech firms, such as Microsoft and Apple, followed a pattern that was not too far from the concept described in that paper. The trajectory of Microsoft has certainly been different from that of Apple, and at this point, no oligopoly theory that we are aware of can adequately model the behaviour these two companies. As for the political economy problem on hand that is relevant to this paper, Usher (1989) noted the difficulty of modelling transition (p.1042) even without considering technical changes. He, however, provided a suggestion on how to think about the problem:

A rudimentary model of the transition from anarchy to despotism might be based on the postulate that randomly chosen gangs of bandits fight and then coalesce, the winners occupying the senior positions in the new, larger gang and the losers occupying the inferior positions. Such a process would lead in time from an initial condition in which each person is his own gang to a single-unified nationwide hierarchy. *The model would not be particularly instructive. For an understanding of the emergence of despotism, one would do better to turn to history or fiction* (Note 7, emphasis ours).

Usher used China as an example in the setup of his model of dynastic cycles, which, in terms of its inspirational source, was similar to Olson's model. But Usher treated banditry as an external constraint for a ruler, while Olson viewed all rulers and robbers as bandits. Neither author saw technical changes to be the driving force of their models. That is odd, as the subject matter dealt with problems for a time period as long as a dynasty, aiming to derive powerful propositions resembling Adam Smith's famous "invisible hand" (see Olson's First Blessing of the Invisible Hand [1993, p.568]).¹⁷ Both Usher and Olson were top notched economists whose thinking inspired economists and political scientists alike. Yet, over the question of how a state or dynasty evolved, the two could not agree. Olson thought that the concept of a predatory state is misleading, even for autocracies (p.569), as tyrants and dictators all produce public goods of some type. He therefore focused on stationarity vs. roving being the deciding factor, not predator vs. prey.

¹⁷ Olson did not provide a model in his paper, but mentioned an "invisible" model in a footnote that is available on request (Note 9, p.575). Yet, if there is anything "invisible" about the process, it is a contract for specializing in the violence that is mentioned in the formulation of the demand curve in earlier sections of this paper. These contracts, which are quid-pro-quos for violence, can lead an individual's allocation of resources between the production and execution of violence to a corner solution.

In our opinion, the evolutionary process of governments is better studied through examples than by modelling. We echoed Usher's methodological suggestion to offer additional facts concerning the country (China) that Usher and Olson were interested in analysing. However, we found that the framework offered by the two scholars was not entirely applicable to Modern China. Again, we believe that the shift parameters in α_j and γ_j are crucial in generating contracts that can be solidified into institutions. Successive processes of contracting lead to higher orders of violence in the form of centralized governments, which aim to be benevolent, but can certainly degenerate into despots. This process has often been overlooked in the literature, but it is one that we believe is closer to the truth, at least in the modern Chinese context played out by Feng.

With the above caveats in mind, let us delve into the possible trajectory further: the intuition of an adjustment process in Usher's footnote quoted above is illuminating and straightforward, but there is an added public goods aspect, as well as a *contractual* process to be interplayed together with this adjustment. Both Usher and Olson saw history as being primarily determined by a conflict of interactions between bandits and rulers. Peasants have no say in this process unless they themselves become bandits. Until they enter the political arena of conflict competition, they are simply fish in the ocean waiting to be caught.¹⁸ On the other hand, the institutional approach, as suggested by the notion of *prior contracting*, believes that peasants do have a say in the whole evolutionary process because individual choices matter.

The point needs further elaboration. If individuals under protection, including soldiers working for a ruler or a bandit, are committed to the whole ruling package offered by any competitive protector, this can change the dynamics of the process in reaching an equilibrium without a despotic outcome being the sole consequence. Indeed, it could be argued that, if there is a stationary component to the analysis of the emergence of a government, it is the peasants, the individuals under protection, that will evolve to become *stationary*¹⁹ as a *commitment* to the public goods of protection offered by protector j . There should not be any presumption, in theory or in practice, that stationarity will come about necessarily on the part of the ruler or the bandit. Solicitation of

¹⁸ Usher pointed out the complete lack of cooperation between farmers and bandits in his model, p.1044. In his conclusion, he suggested that relaxing this assumption would be "a necessary, though not sufficient, condition, for the development of a more humane society, [but] a matter well beyond the scope of this paper."

¹⁹ The term "stationary" means different things in different papers. In Usher, it refers to time. In Olson, it refers to location. Here, it refers to commitment. Generally interpreted, the commitment could be on investment on land and properties that are not easily movable, e. g. instead of living in tents, people invest in building stone houses.

commitment and lock-in (loyalty) becomes the gist of the competition for the market of protection. Again, the ubiquitous pricing strategies of digital/internet companies that we see during this and the last century in solidifying their respective client bases via long term commitments rather than spot contracting suggest that the notion of *prior contracting* is not a fairy tale. The argument for applying this to the political market of protection is similar.

In the context of *competition* for the market of protection, the dynamic process involves simultaneous adjustments in public goods, military technology, and the civil administrative process. The model in the appendix does not prove that this entrepreneurial strategy will necessarily succeed in transforming a market from atomism to an oligopoly; and from there, whether a ruling package that results in a monopoly (a single supplier of protection) will necessarily be the case. However, it outlines the parameters of choice for this evolutionary market structure game. An individual protector may do a little more of one thing in the ruling/protection package than another, but any offering of protection package has to be considered as a whole. That is what our model is saying: individuals under protection, or groups considering coalescence have to consider the net benefits they get out of paying P_j for the services of *all* components in the package, including violence (in the form of either offence or defence), which some protectors would call “national defence”.

The above statement seems trivial, but its implications can be subtle. At the heart of the evolutionary process, which is described as a *centralized democracy* in the appendix, are individuals or groups of individuals successively giving up their rights to execute violence in exchange for protection by others. Centralised democracy here refers to democracy that succeeds in enabling the development of a lower set of long run costs of protection for property and human rights which does not preclude adversarial politics. This is what we call a higher form of organized violence – protectors offering protections in lower forms can subscribe to protection from others in higher forms. It was this, and not only a defeat of the enemy’s war-making capacity, that competition between KMT and the emerging (and ultimately winning) Red Army in Modern China was about. In other words, the essence of competition here is not just competing to defeat one’s enemies, but competing to obtain a quid-pro-quo process involving renouncing violence from the peasant level to the bandit level, from the bandit level to the warlord level, and from the warlord level to the revolutionary level. This successive quid-pro-quo process will lead to what can be called a *centralized democracy*.

The following diagram describes the concept of centralized democracy graphically and compares it with the equilibria and the transitional processes envisioned by Usher and Olson.

The diagram was not drawn on the same scale as that in Figure 1. Point A on the demand curve in Figure 2 is used as a starting point of reference, with P^*

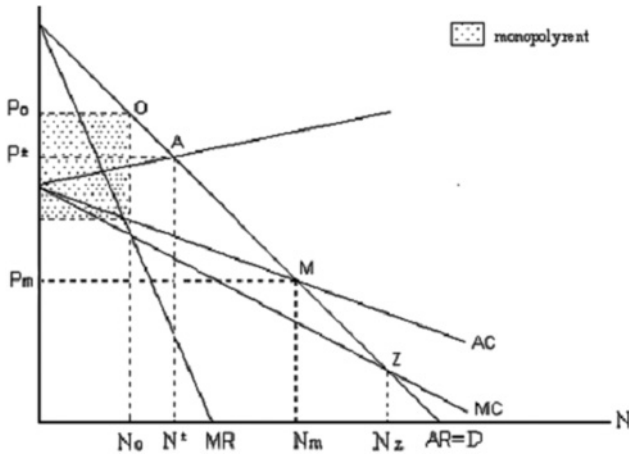


Figure 2: Alternative market structures of protection.

and N^* being the perfect competitive (but rent dissipating) market equilibrium depicted in Figure 1. Technological changes lower total fixed costs and variable costs of firms in the industry and, through a process of competition (described in the appendix), result in a scale economies cost structure of protection, as denoted by AC and MC (note the downward sloping properties of AC and MC for this diagram). That the power of protection can be centralized does not imply that a monopoly price is charged (equilibrium O in the diagram with protection fee at P_0 and individuals under protection at N_0). This, however, is the dynastic equilibrium conjectured by Usher, and thus, the idea of a predatory state with monopoly rent indicated by the dotted area. The dynastic cycle of Usher examined the conditions needed for equilibria O and A to oscillate.

Olson implicitly argued that a stationary bandit will turn A into an autocracy. He saw the “grasping hand” as a transitional process (pp. 569–570) implying a monopoly rent, which was also depicted by equilibrium O. However, Olson examined the mechanisms in which an autocracy can voluntarily turn into a democracy. He conjectured that the provision of local public goods have a lot to do with that. This aspect of his thinking shared a similarity to our approach and can also be phrased in terms of the above diagram in that local public goods are captured in the variable cost component of protection and the innovation shift factor can make the MC lower and falling (i. e., capable of attracting more clients in light of growing demand). Thus, the trajectory implicit in Olson’s argument, in the context of the model described here, starts from equilibrium A by being stationary. The description of that trajectory has a bandit evolving

from A to O. Then, by being benevolent, the equilibrium will evolve to M. Olson was not concerned about M reversing into A, and so did not share the same dynastic cycle problem that Usher had wished to examine.

The framework described in this paper starts with A as well, but we envision a process of achieving M *without first* going through equilibrium O. The competitive process can allow a market structure transformation directly to go from A to M. Indeed, if price discrimination (progressive taxation) can be practised, a state can achieve equilibrium Z over M. Equilibrium Z gives the largest extent of protection, reaching a protected population of N_z , which is greater than the equilibrium under a despotic monopoly, N_o , the perfect competitive spot market equilibrium, N^* , and the balanced-budget-uniform-head-tax benevolent dictator equilibrium, N_m . A sophisticated state (as opposed to a primitive state) can increase traditional military expenditures while substantially lowering variable costs by innovating in other public areas. This would make the discrepancy between M and Z even larger. Our framework in this paper will not elaborate on this discrepancy. We categorically identify both M and Z to be centralized democracies.

A centralized democracy in our framework is definitional. It describes the property of an evolutionary outcome rather than an administrative method of running a government. It may or may not entail voting or the “general will” prescribed in Rousseau’s *Social Contract*. It does not require individuals to give up their private preferences, but it does require them to give up their right to execute violence except for self-protection. Our point is that when a protector is *perceived* to be capable of delivering a ruling package, this voluntary choice will be made. When many individuals commit to the same protector, centralized government will be the outcome. Feng is an excellent example to illustrate this process, as his strategy was so much different from that envisioned in either Usher or Olson’s model, aiming to be neither despotic nor stationary, and thus there is a need to evaluate it in the context of a different model. Delegating this difficult task to be attempted as an illustrative model in the appendix, we now turn to additional facts concerning Feng Yu-Hsiang.

4.1 Feng Yu-Hsiang as a study case of prior contracting

As a man who could have become the *fictitious* President of China, but lost by a vote count of 98,²⁰ Feng had a career that is interesting in many ways. From the

²⁰ According to Sheridan, p. 119, “not less than 25,000” was surveyed in 1923 by *The Weekly Review*, an English-language weekly published by Americans, on who the Chinese wanted to be the next President. Sun Yat-Sen had the highest vote 1,315, with Feng Yu-hsiang second at with 1,217 votes.

Chinese perspective, Feng's accomplishments were not recognized upon his defeat of White Wolf. Indeed, Feng himself did not claim in his autobiography any credit for suppressing White Wolf. In his battle with White Wolf in 1914, Feng cited much inefficiency in his own army.²¹ Rather than blessed by an "invisible hand" as described by Olson, Feng's military power was bequeathed by the visible hand of the central government during the Manchu Dynasty. He joined the army when he was young and worked his way up, at one point leading a regiment of the central government's army around the time of the Wuhan Revolt in 1911 (Chang 2007). Feng's credibility depended on others' respect for his personality, his alleged discipline, and moral values, all of which helped recruit additional soldiers to his army and gain the support of peasants and city dwellers alike.²²

Anyone who has studied Mao Tse-tung's founding of the PRC would note the importance of a peasant-dominated army. Feng, who was not acquainted with Mao during the warlord period, revealed aspects of his ability to gain grassroots approval. Feng recalled in his autobiography that one time when he approached a village, the whole village came out to welcome him, with many of its youngsters joining his army. The recruitment of new forces from villages and the countryside was an important element in expanding the size of any army (Sheridan, pp. 74–78, p. 112, p. 160).

Feng's troops were also known to be loyal. A well-known incident occurred in 1918 when he was dismissed by the Peking Government's Tuan Chi-suen. His 9,500 soldiers jointly swore to fight for Feng only, thus forcing Tuan to withdraw the dismissal. Likewise, in 1927, prior to Feng's push eastward, various troops assembled from the North at Xian under the command of Feng. Although many of them were poor, with "99 out of 100 [having] broken shoes and worn out clothes,"²³ the news of the Eastern conquest was met with great enthusiasm, as described in a Chinese book discovered by the first author on his 2007 site visit of Feng's territory:

21 The publications of the three-volume autobiography of Feng in China (Feng 2002, 2006) mentioned the war with White Wolf (see Note 1), but the crux of the publication was critical of Chiang and the KMT and supportive of the Communists. Why was this almost 60-year old autobiography published at this moment in history? This must be an intriguing question for Western political scientists and historians. However, we have reason to believe that had Olson read Feng's work, he would have withdrawn his point that Feng was a classic example of a stationary bandit.

22 Feng Yu-hsiang is now included in primary schools study material in the PRC, where he is seen as a "democracy fighter" rather than a warlord. His disciplined army was highly praised, even by foreign observers, for the way it occupied a city. A diary written by a preaching minister from Canada in 1925 revealed that Feng fought outside a city while trying to leave the city itself undisturbed. Hence, he cared about minimizing civilian losses.

23 Chapter 37 in *My Life of Autobiography*.

[On] April 10, 1927, Feng (Kaomingchuan) sent wire across the country, announcing the East Conquest. The wire was received in the area of Shansi and Honan with great enthusiasm. Many local farmers and farming associations in Honan have meetings, returning wire to Feng, urging him to depart from Tung Kwan (Tongguan) as soon as possible, as he will be warmly supported²⁴ (*translated from Chinese*).

Although not an explicit contract, actions at such a grassroots level amounted to some form of *prior contracting* made at that level. In addition, there were quid-pro-quo contracts between protectors (warlords) at higher levels happening simultaneously. The following account of how the city of Changde was occupied can be revealing:

... There was a banker by the name of Wang Chun Yea who issued his [private] money of several ten thousands; but the bank has a notice stating that the money is not commodity based. Wang used the private currency to buy rice wholesale in large quantities, transporting them to Hankow (Hankou) by boats, thereby earning other currencies of which he will issue more of his own currency. His practice was despised by the local people. When I arrived into the city, I talked to him saying, "Our brothers have arrived at your territory, when we used the legitimate currency to buy things in town, the changes we got back were all your currency (not commodity based). How could I use your currency to spend in other areas outside this territory? Wang laughed, admitting that the issue of private currency was a method because there were no other methods. He agreed to let my army treasurer to talk to his army treasurer. He said things can be resolved. Our troops just entered the Honan province. It was a good idea to avoid conflicts. That was why I go along with this. It turned out that Wang was quite friendly and accommodating towards our approaching troops (*translated from Chinese*) writings by Feng.

Perhaps the most explicit example of a protection fee contract being negotiated during the warlord years in China can be found in an episode in which Warlord Wu Pei-Fu asked Feng in 1922 for an initiation protection fee of 800,000 yuan for the first month and 200,000 yuan for each month thereafter (Sheridan 1966, p. 114; Chang 2007). This request, although rejected by Feng, provided casual evidence of the formation of quid-pro-quo negotiations over protection contracts to shape a market structure of protection in China at the time.

Feng is probably most noted by historians in Taiwan for formally uniting Chiang Kai-Shek's KMT army in 1926 (Pao, Lee, Ng, p. 193). Events evolving around the time clearly indicated he was roving, and not stationary. Chang (2007) described the situation:

After 1922, Feng roved with ups and downs, reaching the northwest part of China in August 1926. 1926 was an important year for Feng in that he changed his thoughts and actions. At

24 冯玉祥率部 北伐过陕洲 “Feng Yu-Hsiang’s Northern Expedition via Xiang County” in *DiChuChongLiao* (1990).

around 1925, he contacted the Communist Party and recruited some Communist Party members into his army, and also invited Russian consultants to train his army. In March 1926, Feng visited Russia. In August, he returned to China. During the interim, he joined the KMT and declared his army part of the KMT army. This was when the Communists and KMT collaborated before the beginning of the Northern Expedition. On September 17, Feng launched his campaign to join the Northern Expedition. He was appointed in May 1927 to be [the] Republican Revolutionary Army's 2nd Army Commander (*Translated from Chinese*).

The mixed psychology of Feng can perhaps only be studied from his own autobiographies.²⁵ Although described as a moral and disciplined person in earlier paragraphs, nowadays, some writings in China found on the internet have mocked Feng as “someone who would call anybody mother as long as he could get milk from her”.²⁶ This was so because it was only a few years after he cast his lot with Chiang Kai-Shek's army that he broke up with Chiang and was soundly defeated by the latter in 1930. But the 1927 union of the 2nd Northern expedition in Cheng Chau clearly was a political landmark, as it signified a centralization of violence execution, a characteristic of the quid-pro-quo evolutionary process that is described in the framework of this paper.

Feng's 1927 conquest eastward from Tung Kwan to Cheng Chau, highlighted by the famous military saga called “Central realignment” (中原会师), constituted the most successful part of his career. According to a scholarly article written by a professor in China, the following account of the meeting of the union is revealing:²⁷

Prior to the meeting of [the] union in Cheng Chau, Feng wired the Wuhan Government, requesting a monthly military fee of 3 million. [The] Wuhan Government agreed to a monthly sum of 1.5 million and another 600,000 worth of currency, bond[s], and silver dollars. After the meeting, Feng asked the Wuhan Government for additional military machineries... [but was refused]. Thus, Feng changed his focus to Chiang, who took the opportunity to offer Feng 500,000 on the spot in their meeting at Chui Chau [a city next to Cheng Chau] and a commitment of [a] 2.5 million monthly military fee (p. 65).

25 Sheridan's study captured a good part of that, but different interpretations can be derived if analyzed from the point of view of the first person singular. Sheridan noted: “Feng was from the outset in complete sympathy with the National Protection Army, but his actions were not completely consistent with his attitude... having *conflicting factors* he had to reconcile – his preference for a cause, his obligation to his superiors, his overriding desire to maintain his army's strength and independence” p. 56.

26 In a Chinese academic journal article, Li (2004) 李朝阳 argued that the flip-flop changes in Feng's political thoughts was a necessary path towards the new democratic republic of China. 论抗战胜利后冯玉祥政治思想的演变, <河南师范大学学报(哲学社会科学版)>, Vol. 31, No.4.

27 Su (2004) 苏杭 also studied Feng's political thought process, but revealed features that were intrinsically economic. 大革命时期冯玉祥的政治倾向, <湖北行政学院学报>武汉: 湖北行政学院学报编辑部, Vol.13, No.1.

It is not important that *all* quid-pro-quo contracts are enforced in order for the framework described in this paper to hold, as it is not important that *all* contracts in market activities should be enforced in order to prove that markets work. The point that needs to be shown is what is *perceived* to be enforceable at the time when negotiations take place. In that respect, the mixed psychology of Feng at a time when political ideas in China were in a vacuum was understandable. The death of Sun Yat-sen in 1925 left the constitution of the First Republic open to interpretation except for Dr. Sun's will of revolution—an overcoming of the many years of China's dynastic history.²⁸

To us, Feng's mixed psychology is like a consumer shopping for a new car or a new house; the choice might not be simplistically described as “to buy” or “not to buy” – perhaps the choice also involves co-purchase, rent with option to buy, etc. etc. Anyone could have been indecisive. It is precisely this “shopping mentality” of Feng that can be used to illustrate the concept of *individual choices of protection systems*. In this sense, it is *mobility* that was probably more instrumental in helping to shape a centralized government in China. Mobility applied on the supply side in terms of roving bandits and on the demand side in terms of individual migrations.

These questions are certainly worth exploring in high schools and even universities across China today. In an instructor manual for high school teachers in China that can be accessed from the internet, we already see teachers soliciting student discussions in addressing the question of Feng's uprising against the Northern Peking Government at the time. Why did Feng invite not only Sun Yat-sen, but also warlords Tuan and Chang, to Peking?²⁹ High school students in China now have to discuss this and teachers are encouraged to draw conclusions from their discussions.

Undoubtedly, what we learned from our study of Feng's career is that his legacy was not built upon his encounter with White Wolf. His mystical career was built upon his initial and final relationship with the Central Chinese (Warlord) Government at Peking, and, most interestingly, his conversion from a soldier, to a roving warlord, to a “Christian General”, to an agent for various warlords and governments, to an army commander in the KMT Government, and, after his defection, to a Communist sympathiser! Feng died in 1948 when a fire broke out on board a Soviet ship carrying him across the Black Sea to

28 The famous quote in Sun Yat-sen's will that almost every Chinese knows is: “Revolution has not yet completed, comrades must strive to succeed!”

29 冯玉祥北京政变 简要讲述政变过程，提出问题：冯玉祥在政变后为什么既邀孙中山北上，又邀请段、张来京？引导学生思考角度：冯玉祥是什么人？在怎样的形势下发动了政变？政变后的形势如何？在学生分析、回答的基础上，教师进行总结。· <http://www.tingniu.com/viewthread.php?tid=32060>

Communist China from the USA via Russia. Neither the Communist nor the KMT regimes gave the incident much publicity at the time. His life probably would not have changed the course of Chinese History, but it brought out a prominent feature of the demand and supply protection model described in this paper – the role of individual actions and the notion of a *higher order of organized violence*, which ultimately led to centralized democracy.

The notion of a centralized democracy here does not imply an economic philosophy (market vs. command) or a political regime (KMT vs. CCP). Although it is not the same as the Western notion of a representative democracy, a centralized democracy resembles a constitutional democracy, since it challenges the concept of governments as stationary bandits, as suggested by Olson and described in the econ-political theories in the literature. Even when the protection market had evolved into a duopoly between the KMT and CCP after the warlord era, the KMT Government was known to have engaged in war tactics known as “Fortress Strengthening, Enclosure for Attack” (碉堡圍剿)³⁰ against the Red Army. The term “fortress strengthening” is particularly reflective, as it coincides with the stationary aspect of governments. Yet, by 1950, it was the KMT that lost that stationary foothold to the CCP, which fought the KMT by roving.

5 Projection of the future of modern China

Dynastic China is now history. While no one can say whether history will repeat itself, Modern China is going through an evolutionary trajectory different from that envisioned by Usher. Likewise, the distinction between roving and stationary bandits did not appear to characterize the emergence of governments appropriately in Modern China. Indeed, the conceptual puzzle that Olson pursued in his quest for a rationale for democracy took a different path of reasoning in the case of Modern China. Instead of viewing a government as one that evolves to become a stationary bandit or as a bandit that achieves local autocracy, with a subsequent theoretical probe of how autocracy can evolve into democracy (Olson’s chain of thought), this paper suggested an alternative chain of reasoning: evolve first from anarchy into a spot market for protection and, through a dynamic sense of competition, from the spot market to a declining marginal cost of protection, thereby leading to a centralized democracy. The sense of democracy used in this context is different from the representative democracy as envisioned by the Greeks, Italians, British, and North Americans. It can be

³⁰ Wong (2006) used the term, citing 郭廷以著 <近代中國史綱> as the reference for it.

considered in relation to “democracy with Chinese characteristics” but the concept is general, and is not confined to the Chinese context only.³¹

The saga of Feng is an interesting story told in the backdrop of a political environment in which there were no *a priori* reasons for history to go one way or another. In the context of the framework discussed in this paper, players’ actions can be explained ex-post by the parameters of the model. This does not mean that the model proved anything in the same manner as Mao Zedong’s concept of centralized democracy proving a theory. Yet, the market structure of protection described in this paper suggests that the concept of a centralized democracy is important. Achieving a higher order of organized violence is important. Freedom of choice is important.³² Centralized democracy as a concept, and perhaps an ideal one at that, can be supported by a framework that is derived from those premises based on value and costs. It is a universal proposition and a scientific one in the sense of the logical steps of reasoning, without specific moral implications, particularly with respect to the use of force.

From a positive economics perspective, how history has been played out and how events will unfold in the future can be suggestively phrased in the context of the model of this paper, depending on how the actors within the model communicate parameter values to each other. What influences outcomes are the parameters, α_j and γ_j , which were perceived at the time when individual choices are made, be they active or passive. Whether the parameters are (or have been) achievable is a different matter. The internal dynamics within the model could be adjusted, while parameters could also be adjusted as circumstances change. In other words, there can be organic internal growth as well as disturbances from outside the model that can change the adjustment process when the system is heading towards a particular targeted equilibrium. With such caveats, a few words can be said about the future unification potential of China:

1. The vast ongoing promotion of exchanges at all levels between *Cross-Strait Three Regions* is a good thing. It paves the way for voting with actions, and is unquestionably a prerequisite that will facilitate the evolution of the market structure of protection. The freedom of individuals to choose their protectors is important.

³¹ The discussion on centralized democracy as a concept in this paper is different from the discussion of democracy as an administrative method for a government, which is a separate dimension of the problem in the negotiation over a quid-pro-quo contract. This paper is not about administrative effectiveness. The possibility of a “quid pro quo” political contract in the politics of Colombia was also discussed in Acemoglu et al. (2013).

³² This is in line with the first author’s earlier work with Tony Lowenberg (see 1990, 1992a, 1992b).

2. With declining marginal costs of protection as the hallmark of a centralized democracy, it would be useful to examine Cross-Strait (Mainland and Taiwan) proposals regarding how people's livelihoods would be affected by a future unified regime. There is a much more acute income inequality distribution problem for Mainland China than for Taiwan. The former may need to pledge non-appropriation to the latter, and competing regimes may need to address the problems of China's lower income groups in order for competition between regimes with declining marginal costs to take place. Without this condition, centralized democracy is unlikely to happen.
3. The existing market structure of protection in China can be characterized by a duopoly with rising marginal costs of protection. Unification for duopolies as purely an inter-governmental endeavour without citizen participation will turn an alleged centralized democracy into a monopoly. While a duopoly is not as efficient as a centralized democracy, it is more efficient than a dynastic monopoly.
4. Military integration lowers the total fixed costs in the market for protection, and is definitely more efficient than an armed race with rising marginal cost of protection. However, military integration or unification via unilateral dominance, by threat or by war, to the extent that it affects only the fixed cost component with no effect on the variable cost of protection, will not result in a centralized democracy.

6 Conclusion

The reasons for the birth of nations can be many. According to Ronald Coase (1960), the government is a "super-firm" (but of a very special kind). Thus a nation arises very much like a firm arises. There is an untold story of Feng in Olson's source of inspiration on dictatorship and democracy in the story of the forming of a super-firm. Olson reviewed the evolution of governments from roving to stationary bandits, with autocracies and democracies as the puzzles he sought to explain. This notion of the State reinforced a Weberian concept of State as a monopoly of violence Weber (1919). Feng played a role in formulating Olson's thoughts on the matter of bandits. He fought White Wolf in 1914, but in Olson's view, he did not contribute significantly to the theorizing of a transition from autocracy to democracy. This paper attempted to fill this void by providing additional facts and a framework for understanding the emergence of a centralized democracy in China. Although democracy in this sense is not a representative democracy like that in the West, the motivation for this exercise is distinctively Olsonian: "The moral appeal of democracy is now almost universally appreciated, but its economic advantages

are scarcely understood” (p. 575). Within the framework developed in this paper, the demand and supply of protection, centralized democracy clearly provides the highest welfare, total value (summing up one’s willingness to pay) minus total costs over anarchy or despotic dynasty.

Our paper places primary emphasis on contractual relationships, not only amount rulers (Suppliers of protection), but more importantly between subjects and rulers. Individuals voluntarily agree to relinquish their right to self-defense by contracting with a local warlord or a ruler for provision of protection services. The local rulers in turn give up their rights to exercise violence in return for provision of protection services from higher-level rulers. Through a series of such contracts for “organized violence”, a centralized democracy emerges. The evolution of higher orders of protection is driven by technological change which alters the cost parameters of the supply of protection and thus changes the market structure of protection, initially from atomistic perfect competition (anarchy), possibly to despotic monopoly, but ultimately to centralized democracy. Due to falling marginal costs of protection, a centralized democracy is able to provide protection to more individuals more efficiently than either spot markets or local despots.

The emergence of a government in Modern China was shown in this paper to be a problem beyond “the first blessing of the invisible hand”. Analyses based on offensive and defensive tactics may be useful for violence execution, but are less useful as frameworks for understanding how governments evolved. Understanding the nature of violence and the role of organized violence could be important in the new formulation discussed in this paper. A contractarian model in which individual choices and governmental actions intermingle has been shown to be a more viable framework of interpreting changes that happened during the warlord period in China. Many implications can be projected for future studies, this paper provides a few in the context of modern China.

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Appendix

The Demand and Supply of the Protection Market

The model will start from specifying a demand for protection, which is the willingness to pay for protection. A subject's sense of security determines his/her willingness to pay, but we assume here that there is a mindset of peace and quiet that are inert that can be expressed in terms of willingness to pay. A subject seeks various forms of protection, as simple as a lock and a shelter to hide, and as complicated as bodyguards and national defense, all aiming to give the subject a sense of security. Unlike sporting events, where the strategy of conflict produces innate consumption value for spectators, buyers of protection care less about the weapon technologies used except for the purpose of winning. They only care about the end result – to defeat the enemy for security and peace of mind, which can be affected positively or negatively by having a larger number of individuals covered under the same protection scheme.

We further postulated that the characteristics of this security function to be the following. The effect of military inputs on security is intrinsically different from the effect of the number of protected individuals on security. For military inputs, if the resources devoted to conflict (including attack and defense) are the same for every protector, a sense of security for everyone is very low, as the outcome of a conflict is nothing more than the flip of a coin. The more asymmetric is the weapons technology used by the warriors, the higher the outcome of security will be, as war would be more unlikely when an outcome is known in advance. On the other hand, the effects on security of a number of individuals under protection could be neutral in that when the number increases, it will cost the attacker more to attack, just as it will cost the defender more to protect. The difference in resource expenditure on violence could remain the same even when the number of individuals being protected increases, and thus, the level of security remains the same even when the number of individuals being protected increases.

The above characterization of security demand in relationship to violence (military inputs) leads to the following model specification: A society consists of N number of individuals wanting protection that are indexed by i and Z number of violence executing groups (i. e., protectors indexed by j). (N, Z) defines a domain under analysis, which could be interpreted as a family, a street block, a city, a country, a region, or the world. Resources devoted to violence by j is denoted by m_j , while the mean violence resource devoted by $Z-1$ protectors is

denoted by \underline{m} .³³ The security provided by protector, j , is $S_j(m_j - \underline{m})$, with $S_j' > 0$. For simplicity, S was not indexed by i in that a security system provided by j is assumed to uniformly apply to all clients under its protection. As explained in the early paragraphs in this section, the total number of clients under protection also did not enter into this security function.

The willingness of individual, i , to pay for protection by j is denoted by WTP_{ij} .

$$WTP_{ij} = W_{ij}(S_j(m_j - \underline{m}), K_j(\alpha_j), e_{ij}) \quad [1]$$

The inclusion of a local public good, K_j , as a function of an innovation factor, α_j , and an idiosyncratic factor of individual, i , towards protector j , e_{ij} , showed that one's willingness to pay can also be affected by a large number of variables that protector j may control. This factor can be overwhelming, and largely contribute to a sense of inert sense of security a subject, i , has for a protector j . The technology of protection is captured by security function, S , which is an outcome of military inputs of j relative to the military inputs expended by the average inputs of other executors of violence.

Turning now to the cost side of technology of protection, the framework we use will separate the cost structure of protection into two components: a fixed cost component that does not vary and a variable cost component that does vary with respect to the number of individuals under protection. Letting the number of individuals protected by j be denoted by x_j , we can write the cost function of protection as TC_j :

$$TC_j = V_j(x_j, K_j, \dots, \alpha_j) + F_j(m_j, \underline{m}, \gamma_j) \quad [2]$$

Note that the variable cost, V , of servicing protection depends on things other than the technology of attacking and defending. The latter are to be indexed by γ_j only in the fixed cost component, F . Innovations in local public goods affect the variable cost component only and are indexed separately as α_j . Examples of the fixed cost of protection are military expenditures, national defense, and the cost of maintaining an army. Examples of the variable cost of protection with respect to the number of people protected are the cost of administering the protection, tax administration, fiscal financing, and expenditures for local police and politicians.

³³ The military resources of other protectors, \underline{m} , can also be broadly interpreted as the military resources of all potential attackers of j . In Dixit's model, they are resources expended by the bandits.

From anarchy to organized violence – a perfectly competitive market of protection

Many individuals learn to protect themselves. As the art of self-protection is acquired, a few individuals offer their protection services to others in exchange for other goods and services that generate utility. The incentive to trade is no different from that depicted by an Edgeworth-Bowley box, in which individuals with different levels of tolerance for violence will engage in mutually beneficial exchanges. We shall call this the 1st degree of *organized violence*, which is contingent only upon differences in preferences. The trading of violence can result in some specializations in violence, allowing the mechanics of violence to be practised more efficiently, and thus leading to *organized violence*.

The 1st degree of organized violence has an enforcement issue at the most fundamental level that is as difficult to resolve as the end period problem in game theory.³⁴ Yet, in contracts for protection (violence), a higher degree of *organized violence* need not resolve the end period problem in order to reach equilibrium. A specialist of violence may not be able to expropriate all his clients at the same time. What is more likely is that specialists will expropriate bit by bit rather than renege on all their clients at the same time. Although for cultural and whatever reasons, some primitive isolated society may want to uniformly expropriate the welfare benefits of all the clients who cannot make choices, the market for protection is contingent upon the assumption that individuals (and their assets) have some degree of mobility and choice. Without this assumption, the market for protection is a moot issue. In other words, a market for protection hypothetically assumes individuals can seek other competitive producers of violence, which would result when surviving victims vote with their feet. If buyers of protection can choose alternative suppliers of protection, this would impose a constraint on expropriation and equilibrium within a market of protection can exist.

Give the above setup of the problem, anarchy can evolve into a primitive form (1st order) of organized violence, which would then evolve into a spot

³⁴ The end period problem entails: (1) the contract for protection being reneged on by the specialist of violence (particularly if s/he becomes more efficient in performing it him/herself) and (2) other specialists of violence becoming more aggressive in threatening their neighbours. Olson examined conditions in which an autocracy would voluntarily give up full expropriation with an independent judiciary review or democracy as an enforcement mechanism. These commitment issues were examined in the contractarian camp extensively, e.g. North and Weingast (1989), Kiser and Barzel (1991), Barzel (1992), Acemoglu and Robinson (2013), Fleck and Hanssen (2006), etc.

market (perfect competitive market) for protection, which can then be considered the 2nd order of organized violence. Notice that the spot market structure implies nothing about the roving or stationary ability of the protectors. All it requires is that the customer is willing to pay, there are competitive suppliers willing to protect, and implicit contracts can be honoured.

Theoretically, the above notions can be conceptualized as conditions for which suppliers of protection offer it to individuals who want it in a competitive market. Without including the element of innovation, the model is similar to the demand-supply model in any market except for one thing: competing suppliers of protection can raise each other's costs of protection by engaging in violent conflict. In this spot market of protection, entry will raise, rather than reduce, costs. The essential features of the equilibrium include:

- (1) Rising marginal costs of protection;
- (2) free entry in supplying protection; and
- (3) violent interactions among suppliers of protection.

We wish to first illustrate this spot market model as a benchmark for further consideration of (and including) the element of innovation. The benchmark case is similar to a standard demand and supply model found in economics textbooks:

Demand conditions

Arranging WTP_{ij} in descending order according to i constitutes a market demand for protection, D (see Figure 1 in the text). Among other things that can affect the demand curve is the security function, S . $\frac{\partial W_{ij}}{\partial S_j}$ is the marginal product of a unit increase in the security of j on i . The higher is civilian net productivity, the higher will be this marginal product. In general, we expected the height of the aggregate demand for protection to shift upward as a society's productivity (and the asset wealth) increases. Wealth creation is assumed in this model to be exogenous. It can be endogenized by further extension. Presumably, the more security that can be offered, the larger will be the wealth accumulation. More wealth also induces higher demand for security. We assumed that this reiterative process would be smaller for each reiteration so that cumulative effects converge with stability.

Although there are additional angles on the demand for protection that can be further elaborated on, the main point in the display of the formulation here is to show that this demand is not that much different from other demand curves used in economics for demand analysis in that it has an income effect, and the possibility of substitution when competing products are made available in the market.

An individual maximizes consumer surplus by choosing the best protector, j , which can offer the highest security with the lowest protection fee.

For individual i , he chooses the maximum over all j from bids from all j by maximizing a net protection benefit, π_i where

$$\pi_i = WTP_{ij} - P_j \quad [3]$$

P_j represents the protection fee (tax) charged by the protector, j .

Supply conditions

We assumed that each protector has two objective functions: 1) to maximize the probability of winning and 2) to maximize their profits of protection subject to competition.³⁵

For the first objective, protector j

$$\max_{m_j} (S_j(m_j - m)) \quad [4]$$

When one specialist (group) expends resources to prepare for violence, the cost of the other specialists (groups) will also increase. Resources expended by a specialist of violence, m_j , are assumed to be an increasing function of the expenditures of its competing groups of violence specialists. If the reaction function has a slope of less than one, Nash equilibrium exists with $S_j^*(\underline{m}^*, \gamma_j)$. A strategic choice of γ_j can disrupt this equilibrium, but the formulation will not be explicitly modelled in this paper.

The second objective function a protector faces is the profit function of P_j charging protection fees to his clients, net of costs.

Thus, for Protector j , the objective function is to maximize

$$P_j \cdot x_j^* - TC_j \quad [5]$$

where x_j^* is the number of individuals protector j can recruit to be under his protection umbrella. x_j^* can be interpreted as the demand as seen by the protector, j , which is also a function of P_j , K_j , and the equivalent offered provided by other protectors.

More precisely,

$$x_j^* = \sum_{i=0}^{\infty} d_i(P_{ij}, K_j; \bar{P}, \bar{K}) \quad [6]$$

³⁵ This dual objective re-emphasizes the peculiarity of violence as a form of production technology discussed earlier. The objective in the game of violence is to overwhelm or win. It is not an economic decision in which the marginal gain per blow is made to execute an action.

where d_i takes on the binary value of zero and 1 depending on if individual, i , signs up for protection with j .

Total number of people in the population, N , under protection is $N^* = \text{Sum of } x_j^*$

Market equilibrium

The competitive process so described seems quite complex. However, the assumptions described in Equations (1) to (6) implicitly assert a sequential method of competition in the model in that combat between protectors is to be separated from (and preceding in a conceptual sense) competition in attracting tax revenues. A protector will engage in an arms race for a winning prize of NOT tax revenues per se, but more security for whomever and whatever a country is protecting. The cost of that violence competition will then be included as a fixed cost in the market of protection. Furthermore, the assumption of the separation of fixed and variable cost components of protection means that competition in the arms race would not affect the variable costs of providing other public goods, resulting in a market equilibrium that is not much different from other competitive market adjustments. Namely, protectors compete by offering better security with lower protection fees and local public goods to attract potential clients, which is similar to that envisioned in the Tiebout Hypothesis, at least in the case of perfect symmetry in which α_j and γ_j are assumed to be constant and identical for every protector.³⁶ The equilibrium can be graphically represented by Figure 1 in the text.

Inclusion of innovation: formation of a centralized government

A society can transform a perfectly competitive market of protection, which is characterised by the rising cost of protection, into an alternate market structure of protection. To do so, societal interactions would have to go beyond the first and second degrees of *organized violence*. Higher degrees require protectors (and therefore their clients under protection) to give up their means of executing violence – a process of centralizing military resources under a centralized government. One can speculate the process through which this can occur, but the precise trajectory cannot be easily formulated. For one thing, oligopoly theory in this direction has not been well-developed, and many real world examples are still undergoing trials. Moreover, a centralized government has not been viewed as similar to the problem of democracy in the literature.

³⁶ See Tiebout (1956).

Therefore, centralized democracy has not been the focus of attention.³⁷ Yet, in modern Chinese political thought, a centralized democracy is a very important philosophy even in today's pro-market PRC government politics.

The framework here is not saying that a centralized democracy will necessarily be the evolutionary outcome of a market structure of protection. Indeed, the current situation for modern China is still a duopoly, but the framework here describes the *possibility* of a tendency for the market structure to move towards this equilibrium, while admitting that other market structures, including the dynastic equilibrium examined by Usher, could also be theoretical outcomes. The choice variables that will enable a centralized democracy to be the market structure outcome include a current committed price protection scheme, a future spot market price protection scheme, technological shift parameters of α_j and γ_j (and their associated costs), and a game theoretical choice of military competition in the manner described by eq. [4] versus a cooperative solution of getting out of a prisoner's dilemma.

Granted that the decision variables of the choice problem are much broader and much more complicated than what is needed in a perfectly competitive (atomistic) model, they should not prevent us from conceptualizing the nature of the choice problem in this dynamic setting. Although to introduce them runs the risk of underspecifying a model, omitting them can turn a model into one that addresses an empty issue, at least in the case of Modern China.

We can use additional mathematical symbols to represent each of the parameters listed above and organize a set of modified equations that describes this broader dynamic choice problem corresponding to Equations (1) to (5). However, this process would not provide additional analytical insights in that we cannot predict, at this stage of our analysis, under what situation will one type of evolution trajectory *necessarily* dominate another. We are thus compelled to discuss the outcome conceptually. Basically, the evolutionary process could come about through choices made by the individual actions of both the suppliers and demanders of the market of protection.

On the supply side: a protector offers a *prior contract* for a committed price, which will reduce the demand for protective services to his competitors, with the future spot market (uncommitted) size shrinking. His competitor, upon seeing a possible shrinking future market, will compare a spot pricing tactic with the

³⁷ Democracy, not centralized democracy, was Olson's inquiry. In addressing the question of how democracies emerge from autocracies, he provided a default answer: "The theory here predicts that democracy would be most likely to emerge spontaneously when...individual[s]... who orchestrated the overthrow of an autocracy could not establish another autocracy..." (p. 573).

strategy of following suit to also offer a committed price, which is very much like a Bertrand competition. The twist here is that the average and variable costs of protection are also lowered (or anticipated to lower). The incentive of offering lower committed prices to customers would be much higher if the costs are expected to go down by an amount larger than the price cut. On the other hand, if a protector continues to operate in a spot market context only, he will be alienated (or marginalized) when individuals under his protection switch to an alternative protector perceived to have a lower cost through α_j and a higher military means of protection, γ_j

On the demand side: an individual shopping for protection will compare offered committed prices, the level of security, and the amount of public goods offered by j (and the expected spot price if uncommitted) and choose whether or not he wants to commit to a *prior contract*, and if so, from whom. The larger the spot price one has to pay for identical security and public goods, the larger is one's incentive to accept a lowered committed price. In order to choose a particular protector, an individual will pick the one who presents the highest chance of reducing the average and marginal costs of protection (i. e., delivering what he promises to deliver).

It may be useful to think of this evolution as a contract for innovation and an institutional choice problem.³⁸ In other words, the evolution can be achieved through a contract between protected individuals and a protector who promises to improve his/her protection ability so that the marginal cost of protection becomes a decreasing cost function in return for the taxes paid by the protected individuals. This contract can be considered a social contract and a form of "quid pro quo taxation".³⁹

We noted that an important precondition of a centralized democracy is a decreasing marginal cost of protection. Without that, a protector cannot handle a large population under protection, just as a mom-and-pop street corner restaurant will not be able to handle a large patronage. α_j is important not only for shifting the variable cost components of protection, but for making them decline (i. e., recruiting additional individuals under the same system of protection lowers the marginal cost of protection).

A decreasing cost of protection, however, is only one precondition for a centralized democracy. If "consumers" of protection have not made prior arrangements with a centralized government, and if the latter evolves purely from the supply side as weapons and/or administrative technology improve, the protector can turn into a single despot who charges a monopoly price for the

³⁸ See Yu (1981, 1984).

³⁹ Buchanan (1975) made an important contribution to this notion of a constitutional economy.

protection of $MR=MC$. Conceptually, a government with a declining average cost of protection may emerge dictatorially by might or under a democratic social contract, in which buyers of protection are directly (or indirectly) involved in government policies. Figure 2 in the text compares the various equilibria in this technological cost-decreasing environment.

Note in the diagram in the text that a dictator would charge a monopoly rent $(AR-AC)N_0$ by equating MC with MR . How this monopoly rent is divided determines the outcome of the ideal of centralized democracy vs. a despot. *S/he* may be a benevolent or enlightened dictator if part of this rent is redistributed to his/her subjects, but a despot or tyrant if *s/he* grabs all the rent for him/herself. Olson “did not” consider this problem, which went from Point *O* to Point *M* in the diagram. Point *M* denotes a democratic government that aims to charge at the average cost (i. e., adopt a uniform head tax with balanced budget in the long run) and earn normal returns with $AR=AC$. This is one notion of democracy that is consistent with the notion of constitutional economics.

The mechanism by which equilibrium, *M*, emerges over equilibrium, *O*, is tricky and not easily engineered. The history of the world suggests that it does not always happen, although there is a great efficiency gain for a society as a whole to choose *M* over *O*, even if it is achieved for only a short period of time. The condition of *M* as a stable equilibrium is a theoretical possibility, but it can also act as an ideal that many governments in the world try to achieve. The choice problem entails the involvement of individuals: a person can do nothing and wait to be forced to pay a monopoly protection fee of P_0 , or commit to the offer of a lower price of protection, P_m , of an emerging central government.

This appendix basically outlines all political institutional equilibria within a framework of market of protection without predicting which will necessarily be the outcome. The framework does imply that transaction costs aside, and from pure economic efficiency perspective, equilibrium *M* is clearly the long run solution. Unfortunately, Feng Yu-Hsiang has not been successful in reaching that equilibrium. Although he managed γ_j (technology in affecting fixed costs) well, he had little to offer in α_j (principles affecting the variable costs). Perhaps that was what contributed to his political failure. Nevertheless, his existence served being a transitional step, in a very important process on how other “protectors” in China have tried to reach the equilibrium of a centralized democracy.