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A PUBLIC CHOICE APPROACH TO PRIVATE ORDERING: RENT-SEEKING AT THE WORLD'S FIRST FUTURES EXCHANGE

Comments on Mark West's 'Private Ordering at the World's First Futures Exchange'

Omri Yadin*

The literature on private ordering systems has expanded exponentially over the last decade. Yet, very few scholars have actually attempted to define the term "private ordering"¹ — a failure that sometimes leads to confusion. Some scholars identify *private* ordering with *non-state* ordering. According to this view, the private legal systems Robert Ellickson, Lisa Bernstein, McMillan & Woodruff, Mark West, and others have investigated are "private" simply because their norms are not manufactured or enforced by the state. The alternative view emphasizes the decentralized feature of private ordering systems. Robert Ellickson, for example, studied "how people manage to interact to mutual advantage without the help of a state or other hierarchical coordinator,"² implying that any form of centralized coordination, even if not controlled by the state, renders the system less private. Similarly, Bob Cooter has attributed the superiority of private ordering to its decentralized structure and the fact that its lawmaking processes are subject to competition.³ The second approach would treat a nonstate legal system like that of the National Grain and Feed Association (NGFA)⁴ as "private" only if (a) it competes with other associations, or (b) its substantive law gives priority to the law that mer-

* Tel Aviv University, School of Law. — Ed. I thank Mark West for the opportunity to comment on his article and for his remarks on my comments. I am especially thankful to him for providing me an access to the database he had put together so diligently. The tables that I present in these comments are all based on the price information found in West's database.

1. Professor Fuller has defined private ordering as "law" that parties bring into existence by agreement. See Robert H. Mnookin & Lewis Kornhauser, *Bargaining in the Shadow of the Law: The Case of Divorce*, 79 YALE L.J. 950, 950 n.1 (1979).

2. ROBERT C. ELLICKSON, *ORDER WITHOUT LAW* 1 (1991) (emphasis added).

3. See Robert D. Cooter, *Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant*, 144 U. PA. L. REV. 1643 (1996).

4. See Lisa Bernstein, *Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms*, 144 U. PA. L. REV. 1765 (1996).

chants write in their contracts. The mere fact that the organization is a nonstate entity is not a sufficient condition for it to be “private.” The opposite may also hold — a piece of legislation produced by the state may give rise to private ordering. The Clean Air Act, for example, is certainly the product of a centralized lawmaking process, but it generates a private ordering system: instead of dictating pollution standards, it assigns property rights, thereby allowing the market to dictate standards.⁵ Similarly, United States corporate law is produced and enforced by states, but it may still be considered “private ordering” because (a) states compete, and (b) states largely give priority to corporate bylaws.

Mark West’s fascinating article provides an interesting case study for demonstrating the tension between these two approaches. In *Private Ordering at the World’s First Futures Exchange*,⁶ West tells a remarkable story about the Dojima Rice Futures Exchange. The governance rules of this futures market, which began its operation in the late seventeenth century and survived until World War II, resemble those of any modern futures exchange, including clearing houses, brokers, margin accounts, and trading rules designed to contend with manipulative practices.

Dojima’s most striking feature, though, was its ability to function smoothly despite the government’s refusal to enforce futures contracts. But for a twelve-year hiatus (1773-1784), the futures market was *forced out* of the Japanese legal system. West surmises that the government vigilantly designed this force-out policy to facilitate Dojima’s efficient private ordering system. On the basis of pricing data from 1755 to 1827, West concludes both that Dojima’s private ordering system was efficient and that the twelve-year experience of public enforcement did not improve the market’s performance. He then argues that the data provide support for contemporary theories of private ordering, in particular the conjecture that private ordering of over-the-counter derivative markets can be superior “when parties ‘are involuntarily shut out’ of the legal system.”⁷

Notwithstanding my admiration for West’s contribution to our understanding of the *historical* evolution of futures markets, I am skeptical regarding his empirical and theoretical claims. Whereas West claims that the government instituted its forcing-out policy to facilitate the development of Dojima’s private ordering and to promote market efficiency, I question both the efficiency of the system and its private nature.

5. See Cooter, *supra* note 3, at 1645.

6. Mark West, *Private Ordering at the World’s First Futures Exchange*, 98 MICH. L. REV. 2574 (2000).

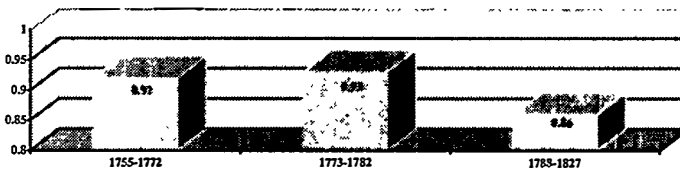
7. *Id.* (internal citation omitted).

In the first part of these comments, I show that West's findings do not support his claim that Dojima's governance rules were efficient. At most, he demonstrates only a very weak form of information efficiency. In the second part, I offer an alternative, public-choice explanation for the evolution and persistence of the Dojima legal system. I argue that the force-out policy was more likely implemented to preserve the monopoly power of a small group of traders and that of the government itself. A careful analysis of West's database, presented in the third part, provides support for this rent-seeking explanation and undermines West's efficiency rationale. In particular, I show that the Dojima market performed better during the twelve years of public enforcement. All this, along with the fact that trading in the market was contingent upon government licensing, suggests that the Dojima market was controlled by a centralized lawmaker with monopoly powers subsidized by the government's force-out policy. Thus, although formally, Dojima was not a state entity, it does not comply with any of the material conditions for entering the "private ordering" club.

PART A: MARKET EFFICIENCY

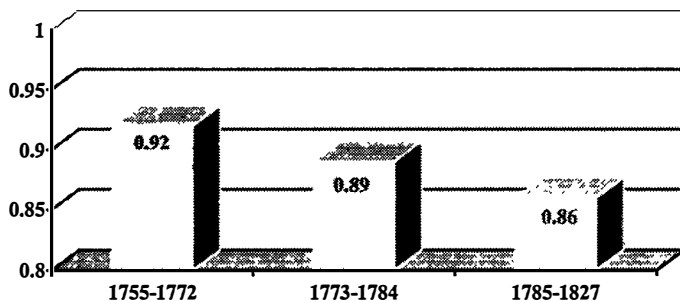
Mark West tests the efficiency of the Dojima exchange by measuring correlation between rice futures and spot prices. As shown in Table 1 below, the correlation figures are indeed high. More importantly, West's data suggest that correlation during the public enforcement era (1773-1784) was slightly higher than the correlation exhibited after the 1773 edict was lifted, but slightly lower than before the edict was introduced.⁸ On that basis, West concludes that legal intervention did not improve the efficiency of the Dojima market.⁹

8. As shown in the table below, by excluding the years of the famine (1783-1787), which are peculiar and not representative, we see a slightly different picture. Still, the correlation during the edict is almost identical to the correlation figures before the 1773 decree was introduced.



9. See West, *supra* note 6, at 2613.

TABLE 1: CORRELATION BETWEEN FUTURES AND SPOT PRICES



But what notion of efficiency does correlation test exactly?

Finance theorists define three levels of market efficiency: weak, semi-strong, and strong. The efficiency levels differ in the type and amount of information reflected in the market price. In the *weak* form of market efficiency, prices reflect all information contained in the record of past prices. In the *semi-strong*, prices reflect all publicly available information. Lastly, markets are said to exhibit a *strong* form of efficiency if prices incorporate “all the information that can be acquired by painstaking analysis of the company and the economy.”¹⁰

Based on the correlation figures shown in Table 1 above, the most favorable statement we can make about the Dojima market’s efficiency is that futures prices reflected information about spot prices and spot prices reflected information about futures prices — a relatively narrow information set, probably narrower than the set required by the weak form of market efficiency. It certainly does not provide support for West’s efficiency claim. In fact, any other finding would have been surprising. Consider, for example, West’s description of the evolution of the Dojima market. It supposedly all began with a forward contract signed between Chozaemon and a fellow Nagoyan named Ichizaemon. The price of the contract they signed, as the theory of futures pricing predicts, was based upon the spot price and the prevailing interest rate.¹¹ If these two gentlemen were to enter a forward transaction the following day, they would do just the same, and the correlation between the forward contract and spot prices would again be very significant. Correlation between futures and spot prices,

10. RICHARD A. BREALY & STEWART C. MYERS, *PRINCIPLES OF CORPORATE FINANCE* 329 (5th ed. 1996).

11. See, e.g., HANS R. STOLL & ROBERT E. WHALEY, *FUTURES AND OPTIONS — THEORY AND APPLICATIONS* (1993).

therefore, should be found even without an efficient, liquid futures market in the background. The fact that futures prices in Dojima reflected information about spot prices, and vice versa, is, therefore, almost trivial.

Moreover, absent information about interest rates and storage costs, it is impossible, merely on the basis of correlation figures, to draw any conclusions regarding whether the futures market absorbed information about the spot price, and vice versa, in an efficient manner. Consider an extreme case in which futures and spot prices perfectly correlate (correlation=1). According to West, such a market is more efficient than a market exhibiting lower correlation. But in fact, assuming nonzero carrying costs, such a perfect correlation suggests the market does not take carrying costs into account.

We may conclude, therefore, that strong correlation between futures and spot prices tells us very little about the weak-form efficiency of the futures market. It tells us nothing about the information reflected in the spot and the futures prices. For example, we do not know anything about the time it takes for the *two* markets (the spot and the futures) to respond to information about an anticipated shortage in rice. In fact, in anticipation of such shortage the two markets may respond inefficiently with a price decline, and yet, West's correlation test will consider this response efficient. Correlation tells us they will respond together; it does not tell us anything about the timeliness and the accuracy of that response.¹²

Our main interest, however, is not the information efficiency of the Dojima futures market but rather the efficiency of its governance rules and enforcement mechanisms. West seems to conflate information and government efficiency, arguing that strong correlation implies the efficiency of Dojima's private ordering system. But in fact, even if West could prove that futures prices responded efficiently to spot prices and carrying costs, such proof would hardly support the claim that Dojima's governance rules were efficient. Futures prices must respond to spot price fluctuations, and vice versa; otherwise traders will gain by arbitrage. This should hold true whether the enforcement mechanism of futures contracts is efficient or not. In other words, a very efficient market information-wise may operate under very inefficient enforcement mechanisms. If enforcement is inefficient, transaction costs should increase, and we should expect fewer transactions to be executed; but, those futures transactions that do take place must be priced in relation to spot prices.

12. Following my oral comment, West concedes in the final version of his article that "insufficient data exist to determine the market's informational efficiency." West, *supra* note 6, at 2599. But he still claims that his correlation tests "provide insight into whether Dojima functioned in accordance with modern efficient market theory." *Id.*

To test the efficiency of Dojima's private ordering system and to measure the effect of public enforcement, we should look at other data, such as trade volume and margin rules. If indeed, as West claims, public enforcement was inefficient, enforcement costs should have increased during the legal intervention era, causing an increase in margin requirements and a decrease in trade volume. Apparently, however, no reliable data on these factors are available.

PART B: A RENT-SEEKING EXPLANATION FOR PRIVATE ORDERING

We tend to think of private ordering systems as a profound example of free markets, subject to no government intervention. No wonder West considers the Japanese policy toward Dojima as noninterventionist. But whether a policy is interventionist or noninterventionist depends largely upon our understanding of the role of the state. A libertarian would define an antimonopoly policy as interventionist. A traditional law and economics scholar, on the other hand, would view the enforcement of a cartel agreement as government intervention. In other words, characterizing a policy as interventionist is meaningless because it proves too much. Any policy, including the crudest free market policy, is inevitably interventionist.¹³ Hence, the question is not whether the government adopts an interventionist or a noninterventionist policy, but rather whether its manner of intervention is justifiable.¹⁴

Clearly, West uses the term "intervention" in the popular sense, as an antonym for a laissez-faire policy — a policy that respects parties' freedom of contract. He cites scholars who argue that "legal intervention can improve the welfare of market participants only when participants have poor judgment or face high drafting costs. Absent either of these circumstances, legal intervention hurts participants."¹⁵ But this school of thought, which West claims to join, endorses the very policy to which West objects, namely, the public enforcement of contracts. Indeed, the scholars on whom West relies label a court decision not to enforce a contract as interventionist.¹⁶ This traditional law and eco-

13. See Robert L. Hale, *Coercion and Distribution in a Supposedly Non-Coercive State*, 38 POL. SCI. Q. 470 (1923).

14. See Richard A. Epstein, *The Assault that Failed: The Progressive Critique of Laissez Faire*, 97 MICH. L. REV. 1697 (1999) (reviewing BARBARA H. FRIED, *THE PROGRESSIVE ASSAULT ON LAISSEZ FAIRE: ROBERT HALE AND THE FIRST LAW AND ECONOMICS MOVEMENT* (1998)).

15. West, *supra* note 6, at 2575.

16. See, for example, Ian Ayres's statement in *Symposium — Just Winners and Losers: The Application of Game Theory to Corporate Law and Practice: Panel Discussion*, 60 U. CIN. L. REV. 405, 409-10 (1991) ("These inefficiencies might call for . . . government interventions . . . where the law says, 'you can contract for higher duties . . . but there's an immutable floor of good faith that you can't get around.'").

nomics approach typically views the enforcement of contracts as the main role of the state. Hence, according to this school of thought, the law should certainly allow parties to opt out of the legal system; but a force-out policy is as interventionist as any other form of regulation that forces market participants into the public ordering system.

In fact, if we measure intervention on a competition-monopoly scale, a force-out policy may be even more interventionist and anti-competition than a force-in legislation. A force-out policy denies ill-reputed players the option of assuming liability, thereby leveling their trustworthiness with that of the reputed firms. Hence, it raises entry barriers, restricts competition, and preserves the reputed firms' market power. A force-in policy, on the other hand, subsidizes the ill-reputed firms by providing them the backing of legal liability. At the same time it taxes reputed firms — from their perspective, given their reputation, the marginal cost of liability exceeds the marginal benefit. Consequently, reputed firms will be forced to raise prices, entry barriers will diminish, and ill-reputed firms will find it easier to compete.

My underlying claim, therefore, is that a force-out policy is very similar to any other immutable term the law imposes on contractual parties, and sometimes it is even more anticompetitive than a force-in legislation. Like any other form of regulation, therefore, the Japanese government's force-out policy may simply be the product of rent-seeking in the service of a narrow group of reputed brokers and clearing houses. This policy forced rice growers and ill-reputed traders to use the intermediary services of the large reputed firms.

The rent-seeking story provides an alternative view of Dojima, which, I believe, is more persuasive than West's claim that the government was motivated by an urge to facilitate an efficient private ordering system. The fact that the nonenforcement policy coexisted with a license requirement provides further support for the rent-seeking argument and weakens West's characterization of the Japanese policy as noninterventionist, laissez-faire legislation.

Now, the skeptical reader may argue that if the forcing-out policy was indeed inefficient, other interest groups would have lobbied for a change. In West's words, the longevity of this market is, arguably, the best evidence of its efficiency. Indeed, how can the rent-seeking story explain Dojima's longevity? One explanation is that the group of clearing houses and brokers, who enjoyed the benefits of nonenforcement, was narrow and well organized to lobby for it. The harms, on the other hand, were widely dispersed such that the relevant interest group, rice growers for example, could hardly organize to lobby for enforcement. Another possibility is that the force-out policy served another interest group — the government itself. The more competitive the market, the more dispersed the revenues, and therefore, the harder it is for the government to collect taxes. By refusing to enforce rice futures transactions, the government increased the appeal of the

Osaka reputed market and magnified the rents traders derived from the license to trade in Dojima. This, in turn, enabled the government to charge higher fees for the licenses it issued.

Having said all this, I must concede the fact that the force-out policy served a narrow interest group does not negate the possibility that the policy was nonetheless efficient. Theoretically, we may justify high entry barriers to futures trading on the grounds that it reduces the free ride that traders can take on the transparency of the futures exchange. The refusal of the government to enforce futures contracts increases the cost of entering forward transactions outside Dojima, and promotes the attractiveness of the Dojima reputed market. Thus, it protects the exchange's property rights in the price information the exchange produces. We may conclude, therefore, that the rent-seeking story may explain how an inefficient regulatory system can survive for a long time but it does not negate the possibility that the regulation of the futures market in Japan was efficient. We need more empirical evidence to examine whether the force-out policy was indeed efficient.

PART C: EMPIRICAL EVIDENCE IN SUPPORT OF THE RENT-SEEKING ARGUMENT

A deep look into West's database provides a few results that support the rent-seeking explanation. Absent data on broker commission, margin requirements, and trade volume, volatility is probably the best proxy we can use to measure the efficiency of the government's "intervention." If, indeed, public enforcement reduces transaction costs, then more traders will participate in the game, volume of trade should increase, the price signal should incorporate more information and opinions, and therefore, the market should be less volatile.

Table 2 presents market volatility, measured as the standard deviation of returns, during three periods: the pre-intervention era (1755-1772); the intervention era (1773-1784); and the post-intervention era (1785-1827). Table 3 provides a very similar picture but excludes the famine period, from 1783 to 1787. As West explains, the famine is a very peculiar, unrepresentative era, and therefore, it is probably justifiable to exclude it from the study.

TABLE 2: FUTURES VOLATILITY

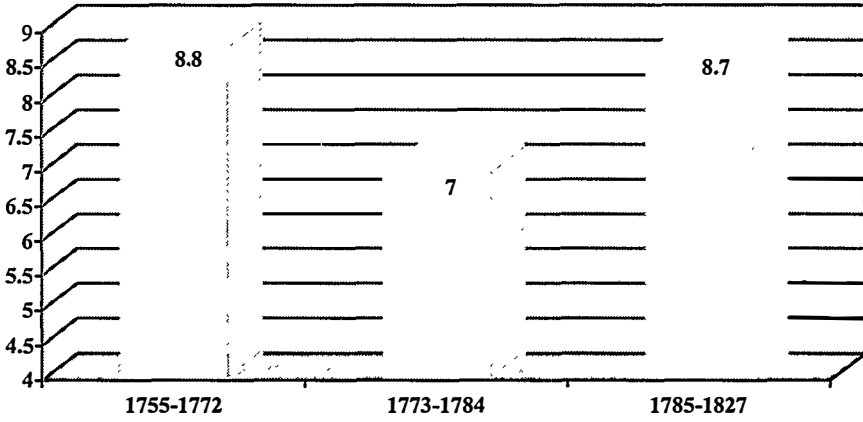
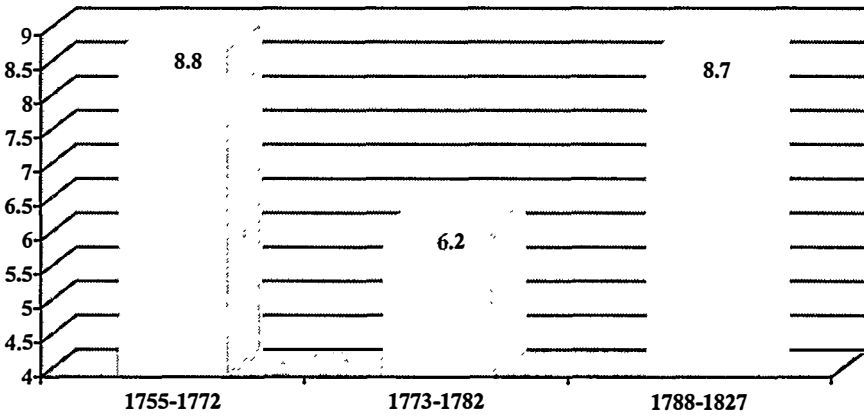


TABLE 3: FUTURES VOLATILITY (FAMINE EXCLUDED)



As shown in the tables above, volatility declined substantially during the intervention era.¹⁷ Compare these findings with those of Carol Simon's study of the 1933 Securities Act's effect on the stock market.¹⁸ Simon found that after 1933, standard deviation of returns on investment in new issues declined significantly. Despite the fact that such a decline could have been linked to other coincidental events, many consider Simon's study as strong evidence for the claim that the Securities Act improved market efficiency.¹⁹ The data on the Osaka market is even more persuasive because it is based on two anecdotes: as shown in Table 2 and more so in Table 3, volatility sharply declined after the 1773 edict ensured public enforcement of futures contracts and rose again, back to the pre-edict levels, when the 1773 edict was lifted. Although there is also a possibility that this is mere coincidence, the evidence does at least suggest that the change in volatility might have been the consequence of the shift in enforcement policy.

In an earlier version of his article, West dismissed the evidence on volatility as irrelevant for the following reason:²⁰ a similar decline in volatility is evidenced in the spot market (see Table 4 below). West argued that the decline in spot volatility cannot be explained by the legal intervention, because unlike futures, rice transactions were always enforced — before, during, and after the intervention. Since the decline in the spot volatility cannot be explained by the intervention, other factors must have affected volatility in the spot market, and these factors must have affected the volatility of the futures market as well.

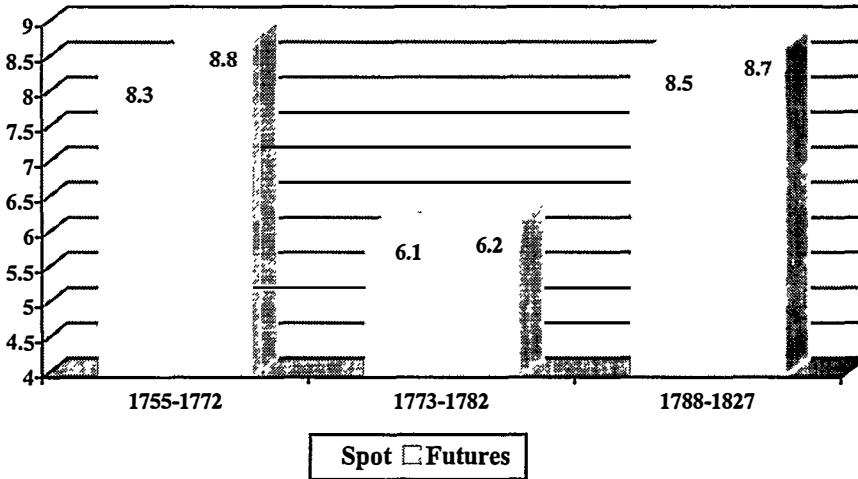
17. All the results presented in these comments that point to differences between market performance during the intervention and nonintervention eras are statistically significant, at least at the 5% level.

18. See Carol J. Simon, *The Effect of the 1933 Securities Act on Investor Information and the Performance of New Issues*, 79 AM. ECON. REV. 295 (1989).

19. See, for example, Merritt B. Fox, *Retaining Mandatory Securities Disclosure: Why Issuer Choice Is Not Investor Empowerment*, 85 VA. L. REV. 1335, 1371 n.83 (1999), who argues that "everyone . . . accepts the theoretical proposition that any information that is of value to investors for predicting the future with greater accuracy will lead to less share price dispersion" and that "[Simon's] results showing that the post-Act group in fact had less dispersion should therefore logically lead one to the conclusion that the information that the Securities Act prompted to be disclosed was in fact of such value, unless one had affirmative evidence suggesting that some other factor was responsible."

20. Following my oral comment, West has removed this dismissal from his article.

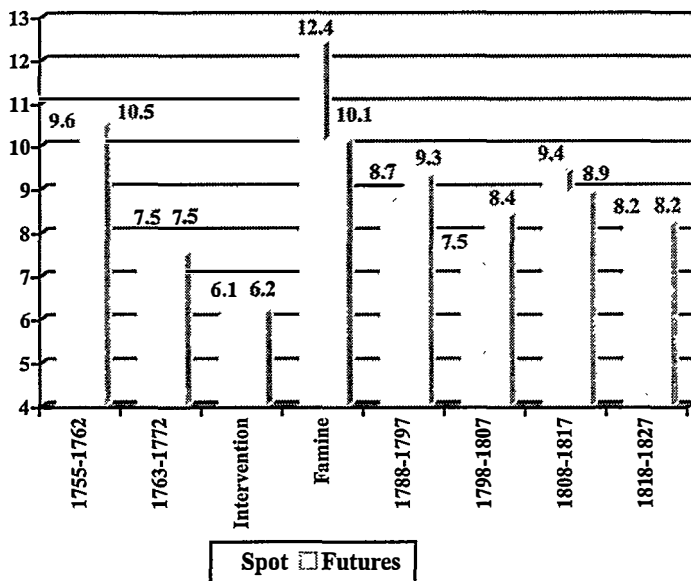
TABLE 4: SPOT AND FUTURES VOLATILITY



I beg to differ. Although we cannot reject the possibility of other, coincidental factors that affected volatility during the public enforcement era, the mere fact that volatility in rice spot price also declined does not mean that the volatility decline was not caused by the intervention. West's argument wrongly assumes that spot prices affect futures prices but futures prices cannot affect spot prices. As explained earlier, spot and futures prices must move together, otherwise there is room for arbitrage. Therefore, the decline in futures volatility, arguably caused by the intervention, must have reduced volatility in the spot market.

We can look at the same argument from the rice-growers' perspective: if futures contracts are more efficiently enforced, transaction costs should decrease, and rice growers should be able to hedge their positions more easily and cheaply. If hedging is cheaper and more accessible, more people will enter the business of growing rice, and risk-averse farmers will grow more rice. This should lead to two results: First, the higher the trade volume in one or both of these markets (futures and/or spot), the more stable the two markets should be. We have witnessed just such an effect in Table 4. Table 5 below provides a more detailed look, in which I have divided the seventy-three years of data into eight periods: the famine, the decade of the intervention, and six other comparable decades (the famine excluded). A glance at Table 5 shows clearly that volatility during the intervention was significantly lower than that experienced during any other comparable decade.

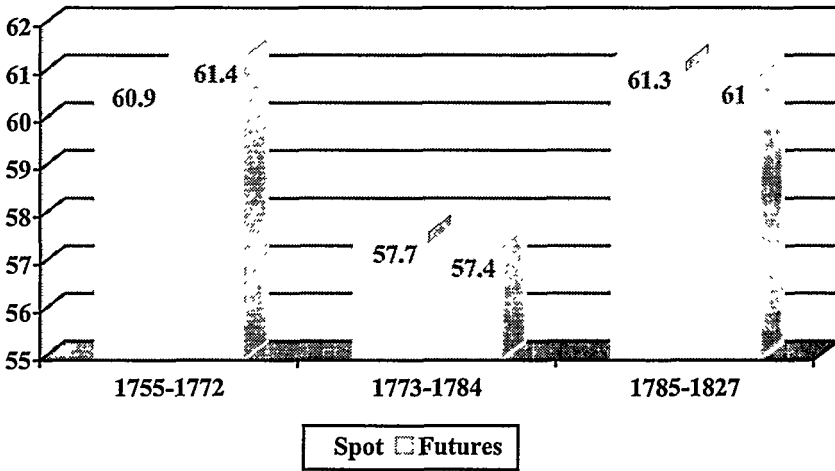
TABLE 5: FUTURES AND SPOT VOLATILITY



But we should anticipate another effect as well: if indeed transaction costs were lower during the public enforcement era, hedging should have been cheaper, and risk-averse farmers could hedge and grow more rice. Consequently, the supply of rice must have increased and we should expect to find a decline in rice prices. Indeed, as shown in Tables 6-9 below, rice prices declined significantly during the public enforcement era.

In Table 6, I compare price levels before, during, and after the intervention. The average price during the intervention was about 5% lower than the average price during the pre- and the post-intervention eras.

TABLE 6: SPOT AND FUTURES PRICES



As shown in Table 7 below, with the exclusion of the famine period, intervention-era prices are even lower — about 12% below the pre- and the post-intervention (the famine excluded of course) periods.

TABLE 7: FUTURES AND SPOT PRICES (FAMINE EXCLUDED)

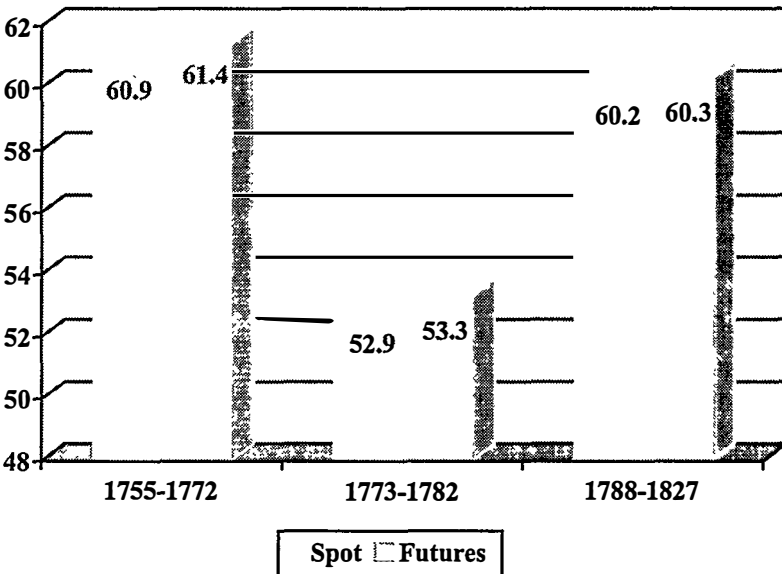
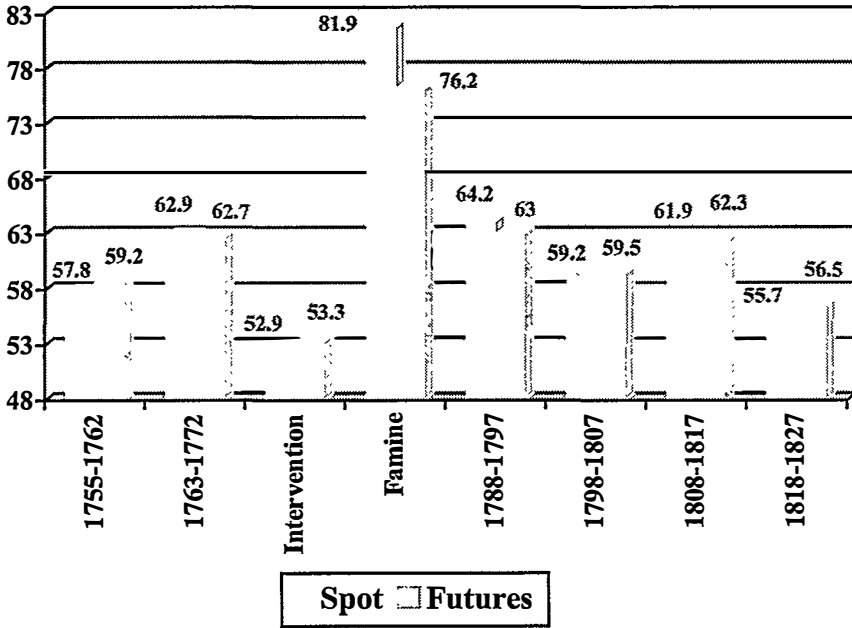


Table 8 presents a more complete picture of price levels during the eight periods examined.

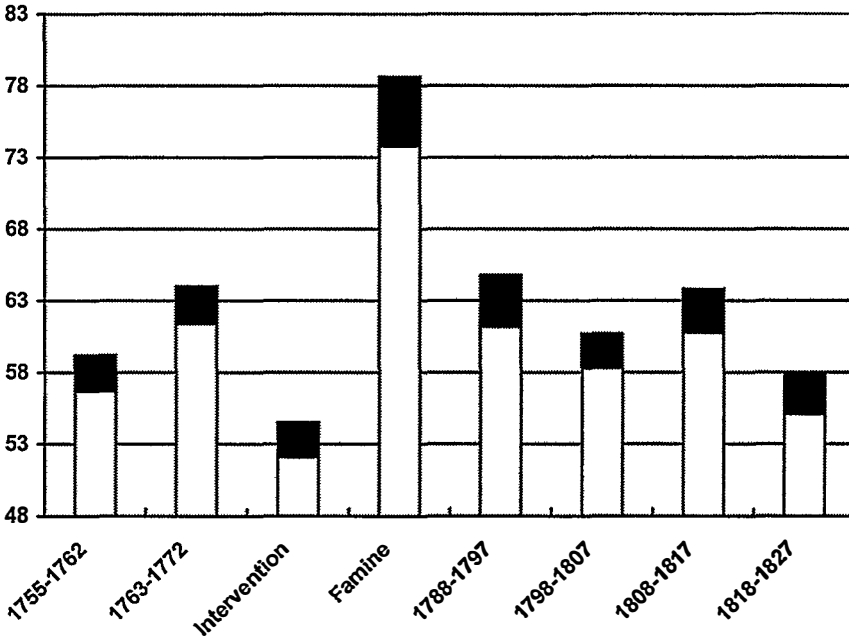
TABLE 8: FUTURES AND SPOT PRICES



Lastly, Table 9 below presents the 95% confidence intervals for average futures prices at each period.²¹

21. The picture of the confidence interval for average spot prices looks very similar.

TABLE 9: 95% CONFIDENCE INTERVAL FOR AVERAGE
FUTURES PRICES



We may conclude, therefore, that during the intervention era, when courts were willing to enforce futures contracts, both price volatility and price levels were significantly lower than in any other comparable decade. Clearly, this evidence does not prove, beyond a reasonable doubt, a causal relationship between public enforcement and improved market conditions. Arguably, other factors with which I am not familiar may account for this change.²² Yet, one convincing data

22. In response to my oral comment, West concedes in the final version of his article that price levels are relevant and should be examined. He argues, however, that there is probably no causal connection between the intervention and the price decline. See West, *supra* note 6, at 2611. He bases this argument on the fact that the Kyoto Price Index, as reported by Crawcour and Yamamura, was significantly lower during the intervention era than the index after the intervention. Indeed, the average index during the years 1773-1782 (i.e., the intervention era excluding the famine) was about 14% lower than the average index from 1788 to 1797. The same factors that account for the index decline, West argues, must also explain the decline in rice price. See *id.* This response is problematic. The Kyoto Index is comprised of five equally-weighted products including rice. Correlation figures between average rice prices and index levels are close to 0.9. Moreover, there are several missing data-points in Crawcour & Yamamura's database — most importantly, for the years at stake (1773-1783), the database reports prices for only four products — no data on soy paste prices are available for this period. Thus, the weight of rice in the index is 25%.

point suggests the volatility and price declines were not mere coincidence — the 1730 statute that authorized the operation of the Dojima market and excluded futures contracts from the public order explicitly declared that “[t]he purpose of this authorization is to raise rice prices.”²³ Thus, I believe the overall evidence casts doubts on West’s claim that the government implemented the force-out policy to facilitate an efficient private ordering system. Rather, my analysis of West’s database highlights the inefficiency of the *force-out* policy and shows that the 1773 edict, which introduced public enforcement, served the broad interests of Japan’s society.

SUMMARY

These comments offer a competing, alternative story for the origins of Dojima’s private ordering system. Whereas West claims that the government adopted its noninterventionist approach for the purpose of facilitating an efficient private ordering system,²⁴ the story I tell is more skeptical. I argue that the force-out policy might have been the product of rent-seeking activity, the purpose of which was to raise rice prices, to increase entry barriers to the futures market, and to benefit the large, reputed clearing-houses and government officials.

I believe the evidence that West’s article provides supports my claim. First, the fact that the nonenforcement policy operated alongside a licensing requirement provides support for the rent-seeking argument and weakens West’s characterization of the Japanese policy as a noninterventionist, *laissez-faire* policy. Second, if there is any “objective” definition for intervention, it should incorporate monopolization of the market. A policy that raises entry barriers by licensing or by refusing to enforce contracts and declares its goal to be a rise in rice prices is definitely an interventionist policy. Lastly, I have shown that the pricing data West collected suggest that market performance under public ordering was superior: volatility and price levels were substantially and significantly lower when courts enforced futures contracts.

Excluding the rice and the soy paste from the index, I have found that the average index (of the three products) from 1773 to 1782 was about 6% lower than the average index level from 1778 to 1797. This finding seems to provide some support for West’s claim; but, when we look at the rice price index (Crawcour and Yamamura report) during the same periods, we find that during the intervention era (1773-1782) the average rice price was about 25% lower than the average rice price during the post-intervention era (1778-1797).

23. See West, *supra* note 6, at 2584.

24. See *id.* at 2591 (arguing that “the Japanese government . . . apparently sought to promote . . . private ordering”).