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6 Political Bargaining and Cartelization in the New Deal: Orange Marketing Orders

Elizabeth Hoffman and Gary D. Libecap

> Yet, in our generation we have seen scarcity vanquished, and our ever present fear, so far as agriculture is concerned, is a fear of over abundance. We wish, if not for scarcity, at least for relief from price depressing surpluses.
>
> Rexford G. Tugwell, assistant secretary of agriculture[1]

6.1 Introduction

Virtually no aspect of agriculture has been excluded from some form of federal regulation, ranging from output restrictions, price supports, and marketing controls to international trade programs.[2] Although there were limited federal programs for alleviating agricultural distress in the 1920s, current regulation dates from the New Deal programs initiated by the Agricultural Adjustment Act (AAA) of 12 May 1933.[3] Federal agricultural policies share similar origins with regulations elsewhere in the economy. As noted by Cass Sunstein in his article on New Deal regulation, a disproportionate share of current regulatory policies and agencies dates from the decade between 1930 and 1940.[4]

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1. Quoted in Perkins 1969, 10.

2. See Lenard and Mazur 1985 for a critical evaluation of the social costs of marketing orders. A more general evaluation of government intervention into agricultural markets is provided by Gardner 1981, 1993.

3. *Agricultural Adjustment Act of 1933, U.S. Statutes at Large* 48:31. For discussion of agricultural policies in the 1920s and the characteristics of the products that were regulated, see Hoffman and Libecap 1991.

4. Sunstein (1987, 424) points out that eleven regulatory agencies were created from the framing of the Constitution to 1865; twenty-four were added in the sixty-five years between 1865 and 1929; but over seventeen were added in the relatively short period 1930–40.

Faced with rapidly falling agricultural prices and farm incomes, President Roosevelt and the Congress passed the AAA to cartelize the industry.[5] The aim of the new agricultural policy was to raise farm prices to parity with those reached during August 1909 to July 1914. Between 1919 and 1933, wholesale farm prices had fallen by 67 percent, whereas over the same period nonagricultural wholesale prices had fallen by 45 percent. Moreover, the fall in agricultural prices was particularly severe after 1929.[6] The goal of the price-fixing policy was equity for agriculture, and the policy was asserted to be in the public interest because prosperous farmers would contribute to the general economic recovery.[7] The emphasis on raising prices was made clear in congressional debates over the AAA: "the present acute economic emergency being in part the consequence of a severe and increasing disparity between the prices of agricultural and other commodities, which disparity has largely destroyed the purchasing power of farmers for industrial products, has broken down the orderly exchange of commodities."[8]

There was disagreement within the administration as to the best means for increasing prices: production controls as advocated by Secretary of Agriculture Henry A. Wallace and by the second administrator of the Agricultural Adjustment Administration, Chester C. Davis, or domestic shipment controls and greater exports as advocated by George N. Peek, the first administrator of the Agricultural Adjustment Administration.[9] In either case, whether the emphasis was on regulating inputs (land) or outputs (amount marketed), the objective was to reduce domestic supply to inflate prices to the targeted parity levels.[10] For basic commodities, such as wheat, corn, and cotton, acreage reductions were implemented as production controls, whereas for specialty crops, such as oranges, interstate shipment restrictions were adopted under marketing agreements.[11]

The AAA delegated regulatory authority to officials in the Agricultural Adjustment Administration, who were to negotiate the details of production and shipment controls with industry representatives. Given the crisis, these negotiations were expected to proceed quickly and be relatively smooth. Major opposition was not anticipated. Great faith was placed in the abilities of technically

5. For discussion of the AAA, see Murphy 1955; Shover 1965; Perkins 1965, 1969.

6. U.S. Bureau of the Census 1975, 199–200.

7. Nourse, Davis, and Black 1937, 20.

8. Quoted in ibid., 17.

9. These notions were embodied in the McNary-Haugen acts of the 1920s. Exports of oranges did rise in the 1930s, but the export share of total production remained similar to that of the 1920s (U.S. Department of Agriculture 1942, 235). In contrast, others, such as agricultural economist John Black, saw a need to sharply reduce production. These conflicting views were represented in the AAA's separate provisions for general and specialty crops. For discussion, see Irons 1982, 111–55.

10. There is no question of the cartelizing goal of the AAA, although some authors have wanted to downplay the price-fixing aspects of agricultural regulation. See Perkins 1969, 1, 3, 33; Nourse 1935, 315–16; Nourse, Davis, and Black 1937, 117; Schultz 1949, 141.

11. Marketing agreements also used quality controls and shipping holidays.

trained administrators to devise policies that would raise prices and restore farm income. Indeed, in his examination of New Deal policies, Peter Irons noted that officials in the Agricultural Adjustment Administration "were confident almost to the point of cockiness that the farm problem would yield to their reformist zeal and technical skills."[12]

Accordingly, in what represented a fundamental break with past policies, the federal government in 1933 was prepared to cartelize agricultural output or shipments to raise prices.[13] The purpose of this paper is to show why even government-sponsored cartelization was unable to reach parity-price goals in the 1930s. By 1940, wholesale prices for nonfarm goods reached 91 percent of their 1929 levels; however, agricultural prices remained at 65 percent of those in 1929. Further, through 1940, the ratio of agricultural prices to general prices remained well below those reached during the parity period 1909 to 1914.[14] The production and marketing controls put into place by the AAA failed to substantially reduce market supply. For general commodities, such as wheat, corn, and cotton, acreage was reduced marginally, but output grew due to a rise in yields, as farmers substituted capital and labor for land.[15] Participation rates in government programs also varied, with a substantial fraction producing outside of the output restrictions. Dramatic actions taken by the Agricultural Adjustment Administration in 1933, such as the plow down of between 25 and 50 percent of each state's cotton acreage and an emergency hog slaughter, brought widespread criticism of the agency.[16] Even so, farm incomes rose due to government transfer payments, credit subsidies, and price-support programs that emphasized government purchases of "excess supplies," rather than from successful cartelization.[17]

We focus on orange marketing agreements to show why the cartelization of agriculture under the AAA failed. Marketing agreements for oranges were

12. Irons 1982, 125. As Sunstein (1987, 441) summarizes, "[T]he enduring legacy of the period is the insulated administrator, immersed in a particular area of expertise, equipped with broad discretion, and expected to carry out a set of traditionally separated functions." For other discussion of the overconfidence of early reformers, see Perkins 1969, 4; Nourse, Davis, and Black 1937, 285.

13. See Perkins 1969, 1, 19–28.

14. U.S. Bureau of the Census 1975, 200. For 1909–14, the ratio of farm wholesale prices to all wholesale prices averaged 1.04; in 1929, the ratio was 1.10; in 1933, it was .78; and in 1940, it was .86.

15. The literature is uniform in concluding that the output and market controls of the AAA were unsuccessful. Schultz (1949, 143) points out that, although corn acreage fell by 8 percent between 1937 and 1939, output grew by 17 percent. A severe drought in 1933 helped to reduce wheat production that year. For assessments, see Nourse, Davis, and Black 1937, 289–320; Benedict 1955, 443–44.

16. Perkins 1969, 103, 140.

17. The Commodity Credit Corporation purchased "excess" stocks and provided subsidized credit. Benefit payments were made for reducing acreage, and price support programs were adopted. Schultz (1949, 154) shows that supplementary government payments in 1939 were as much as a quarter of total farm income. Nourse, Davis, and Black (1937, 285) suggest that one-fourth of the increase in farm income in 1933 was due to transfer payments, two-thirds in 1934, and one-half in 1935. See also Rucker and Alston 1987.

implemented 18 December 1933, among the first marketing agreements put into place. Among agricultural products, specialty crops, such as oranges, offered the greatest potential for a successful cartelization policy. There were many reasons for optimism: there were relatively fewer growers than existed for general commodities; production was concentrated in a few isolated regions; there was a consensus among orange growers that government cartelization was necessary (between 1930 and 1933, nominal orange prices had fallen by 75 percent, whereas the consumer price index had fallen by 22 percent); established, formal cooperatives, such as the California Fruit Growers Exchange (CFGE), existed to implement the marketing agreements; and oranges were a perishable crop that limited the buildup of inventories that could depress prices.[18] If a government-enforced cartel could not succeed for oranges where conditions were more favorable, similar arrangements certainly were doomed for the general commodities.

Under AAA, the secretary of agriculture could issue a marketing agreement if 50 percent of the shippers and two-thirds of the growers in the state agreed to the provisions.[19] The marketing agreements authorized the secretary to limit interstate orange shipments through weekly allotments to shippers that were enforced through revokable shipping licenses and fines of $1,000 for violation.[20] Violators were to be prosecuted by the Justice Department, and the agreements were exempted from antitrust regulations. The weekly shipping quotas were to be determined by industry boards in California and Florida, based on estimates of supply and demand consistent with targeted prices. There were provisions in the law for national prorationing of total orange shipments by region. With national prorationing, a national control commission was to be established to assign state quotas and prorate shipments among the states throughout the growing season. Excess production was to be diverted to other uses, such as by-products (livestock feed) or foreign markets.[21]

Despite this framework, an orange cartel was not established as described by the AAA. National prorationing among the producing regions was never adopted. Further, there were sharp differences in the industry response to the

18. Nominal orange prices are from Manthy 1978, 47–52, and the consumer price index and all-food price index are from U.S. Bureau of the Census 1975, 211. For other discussion of marketing orders, see U.S. General Accounting Office 1976; Hallagan 1985; Cave and Salant 1987.

19. For California oranges, the required percentages were 80 percent of the shippers and 75 percent of the growers (Nourse, Davis, and Black 1937, 234).

20. The original agreements were voluntary. In the face of noncompliance, they were supplemented with marketing orders issued by the secretary of agriculture as authorized by amendments to the AAA, 24 August 1935. These marketing orders were binding on all growers and interstate shippers of the commodity covered by the agreement (ibid., 231–34). By 1980, only one marketing agreement for peanuts had not been supplanted by a marketing order. The marketing agreement for peanuts is still in effect because of successful enforcement by the secretary of agriculture. For discussion, see Vetne 1981, 87–100. Here we use the terms "marketing agreements" and "marketing orders" interchangeably.

21. Between 1933 and 1955, seventeen marketing agreements and orders were established for fresh fruits, as were eleven for vegetables and twelve for canned and dried fruits (Benedict and Stine 1956, 383–86).

marketing agreements proposed by the secretary of agriculture for California and Florida. California growers and shippers accepted their 1933 marketing agreement with weekly prorationing of interstate orange shipments, and although some modifications were made, the basic thrust of these regulations remained intact through December 1992.[22] Growers and shippers in Florida, however, rejected a 1933 marketing agreement that was virtually identical to that implemented in California. It was terminated in 1934. Between 1934 and 1937, two other marketing agreements were executed by the secretary of agriculture for Florida but terminated, before an acceptable arrangement could be devised in 1939.[23] The final Florida marketing order did not involve prorationing of orange shipments. Instead, it relied on temporary shipping holidays and adjustable size and quality controls to limit interstate shipments. Florida never adopted weekly prorationing of orange shipments as practiced in California. Under these circumstances, orange prices did not rise to parity levels, although tight prorationing controls in California and the use of shipping holidays in Florida appear to have moderated price fluctuations in the 1930s compared to those in the 1920s.

We do not claim that cartel success was guaranteed had Florida responded in the same way as California to the marketing agreements. Other problems caused by falling incomes and entry would have plagued the orange cartel. Real personal income in the United States fell by 28 percent between 1929 and 1933, and such shifts in demand would have forced recalculation of individual shipper and state quotas.[24] For oranges with a likely high income elasticity, falling income and demand would have been an especially difficult problem.[25] Further, New Deal agricultural programs failed to deal with the problem of entry, and between 1933 and 1940, as shown in table 6.1, total orange acreage and production in California and Florida grew by 21 percent and 79 percent, respectively.[26]

22. In 1989, there were forty-six active marketing orders for a variety of fruits, vegetables, and nuts under the Agricultural Marketing Agreement Act (Powers 1990, 6). In December 1992, the Bush administration discontinued weekly prorationing of interstate orange shipments in California. The California/Arizona marketing order for oranges was split into separate ones for navel and Valencia oranges in 1953 (navels) and 1954 (Valencias). The marketing orders were temporarily suspended by the Reagan administration during the 1984–85 season. For discussion, see Powers 1990; Thompson and Lyon 1989.

23. The 1939 Florida marketing order remained in operation for fresh fruit shipment in Florida. See Powers 1990. By the late 1950s, most Florida orange production, however, went to juice concentrate and was outside the marketing order.

24. U.S. Bureau of the Census 1975, 225. Quota negotiations and enforcement are difficult enough as it is without having to deal with demand shifts. For discussion of quota problems in another context, see Johnson and Libecap 1982.

25. If higher prices were to result in higher revenues and income, price elasticities had to be relatively low. Nourse, Davis, and Black (1937, 400) discuss the role of price elasticities in the success of the AAA. Although per capita consumption of oranges grew in the 1920s, oranges remained a "luxury" fruit compared to apples, peaches, or other competitors.

26. The problems of designing quotas and of obtaining support for output and shipping controls were not discussed in detail in congressional debates or in hearings that focused on the general crops provisions of the AAA. See Murphy 1955.

Table 6.1 **Orange Acreage and Production**

	Florida				California			
Season	Acreage (1,000s)	U.S. Share (%)	Output (1,000s of boxes)	U.S. Share (%)	Acreage (1,000s)	U.S. Share (%)	Output (1,000s of boxes)	U.S. Share (%)
1919–20	52.8	24	7,550	31	155.8	73	16,632	68
1920–21	57.7	26	8,700	27	157.8	71	23,771	73
1921–22	65.1	28	7,850	35	163.2	69	14,021	63
1922–23	74.0	29	10,150	32	166.5	65	21,283	67
1923–24	87.7	32	13,150	35	169.7	62	24,153	64
1924–25	106.2	37	10,400	36	173.0	61	18,506	64
1925–26	109.2	38	9,500	28	174.8	60	24,200	71
1926–27	123.5	40	10,100	26	180.8	58	28,252	73
1927–28	126.2	40	8,650	27	182.9	58	22,737	71
1928–29	129.3	40	15,000	27	185.9	57	39,159	72
1929–30	133.0	40	8,950	29	190.1	57	21,195	68
1930–31	140.0	40	16,800	32	192.5	56	35,179	67
1931–32	155.0	42	12,200	25	197.3	53	34,658	72
1932–33	169.0	43	14,500	29	200.4	51	34,265	70
1933–34	178.6	44	15,900	35	197.9	49	28,439	63
1934–35	187.3	44	15,600	25	206.7	49	45,047	73
1935–36	195.7	44	15,900	32	211.1	48	32,809	66
1936–37	202.4	45	19,100	37	215.7	48	29,827	58
1937–38	208.5	45	23,900	33	221.6	47	45,914	64
1938–39	213.5	45	29,900	40	226.3	47	41,420	55
1939–40	216.2	45	25,000	34	229.2	47	44,425	61
1940–41	226.0	45	28,600	35	231.1	46	50,778	61

Source: Shuler and Townsend 1948, 7.

Nevertheless, we do claim that if Florida had accepted the 1933 marketing agreement and joined California in nationwide prorationing of orange shipments, orange prices likely would have risen with more effective shipment control. Moreover, incumbent growers in both California and Florida could have directed more attention to the problem of entry. Peanut growers eventually were able to obtain quite restrictive marketing quotas.[27] As it was, for orange growers throughout the 1930s, the key question was whether *any* marketing agreement could be put into place in Florida.

By chronicling the conflicts within Florida and the negotiations between the Agricultural Adjustment Administration and the Florida industry over successive marketing agreements, we show how difficult cartels are to assemble and maintain even when there is enabling legislation for cartelization, a supportive agency anxious to cartelize, and industry agreement on broad policy goals. The distributional effects of the proposed quotas proved too formidable to overcome. The close relationship between the Agricultural Adjustment Administration and the CFGE is examined to explain why the Department of Agriculture was so persistent in holding to the California model of regulation, despite continued opposition in Florida. This relationship helps to explain why California continued to comply with federal cartelization efforts in the face of repeated noncompliance by many Florida shippers.[28]

6.2 The Nature of the Orange Industry in the 1930s and Cartelization through Federal Regulation

In the 1920s and 1930s, the California/Arizona and Florida orange industries competed in the fresh fruit market.[29] Until the 1940s and the development of new technology for frozen concentrates and hot-pack juice for soft drinks and canned juice, there was little use for oranges in juice or other by-products.[30] California produced two kinds of oranges: winter navels with a season of October to June and summer Valencias with a season from May through October. Florida produced at least five varieties, all during the winter season: Parson Brown and Hamlin (October–December), Homosassa and Pineapple

27. See Benedict and Stine 1956, 147–57, and Rucker and Thurman 1990 for discussion of the peanut program.

28. As an alternative to the orange case, see discussion of the raisin marketing agreement by Saker 1992; Powers 1990, 3; Armbruster and Jesse 1983, 129; Vetne 1981, 97; Ockey 1936, 5. For discussions of other marketing orders, see Hallagan 1985 for hops. Marketing agreements for milk involved considerable conflict within the industry, especially between large and small producers. See Irons 1982, 149–55.

29. The third region of citrus production, Texas, was especially important for grapefruit; oranges were less important. The Texas industry response to the adoption of marketing agreements in 1933 fell between that observed in Florida and that observed in California/Arizona. We do not examine Texas in this study.

30. Thompson 1938, 28–29; Reuther, Webber, and Batchelor 1967, 36.

(January–March), and Valencia (April–June).[31] Storage possibilities at this time were limited, especially for Florida fruit. Because of climate conditions, Florida oranges did not store well on the tree and had to be harvested quickly in order to avoid fruit drop. In California, because of relatively cool nights, oranges could be stored on the tree for two to three months.[32] Accordingly, all Florida oranges competed with California navels, whereas California Valencias generally did not compete directly with any other orange.

To underscore the competition between Florida oranges and California navel oranges, figure 6.1 presents the differences in the log of weekly California and Florida per box orange prices in New York City for the 1926–27 and 1927–28 seasons. The differences trend toward zero, as would be the case if the oranges were close substitutes.[33]

Table 6.1 lists acreage and production for California and Florida between 1919 and 1941. As the table shows, during the 1919–20 season California had approximately 73 percent of U.S. orange acreage and 68 percent of U.S. production, whereas Florida had 24 percent and 31 percent, respectively. By the 1940–41 season, California's acreage and production shares had fallen to 46 percent and 61 percent, whereas Florida's shares had increased to 45 percent and 35 percent. Florida acreage increased with the planting of new trees, but there was a lag of five to six years between planting and production, which partially explains the lower production levels in that state.

Both Florida and California growers had similar objectives for securing government intervention into the orange market in the 1930s. Orange growers and the Department of Agriculture in 1933 agreed that controls on shipments were necessary if prices were to be increased. For an understanding of the subsequent regulations that were adopted and of the relative positions taken by the California and Florida orange industries, it is important to note the critical role taken by California growers and shippers in lobbying for and molding federal regulation. They were well organized under the CFGE, the major pooling and marketing organization in the state with approximately 75 percent of the California orange crop, and the Mutual Orange Distributors (MOD) with another 15 percent of the crop. Both organizations were major advocates of federal and state regulation.[34]

In 1932, the two organizations cooperated in a private arrangement that controlled shipments of Valencia oranges by prorating shipments weekly and that provided the prototype for the marketing agreements.[35] Further, the California

31. For discussion of orange types, their seasons, and production, see Reuther, Webber, and Batchelor 1967, 66, 74; Shuler and Townsend 1948, 9–11; Thompson 1938, 7.

32. Reuther, Webber, and Batchelor 1967, 437–84; Webber and Batchelor 1943, 82.

33. The per box prices were taken from the *New York Times* from 24 October 1926 through 26 June 1927 for the 1926–27 season, and from 29 October 1927 through 22 June 1928 for the 1927–28 season. These seasons were chosen because they were in the preregulation period. The log of Florida prices was subtracted from the log of California prices.

34. *Citrograph*, April 1933, 161, 167.

35. Thompson 1938, 39.

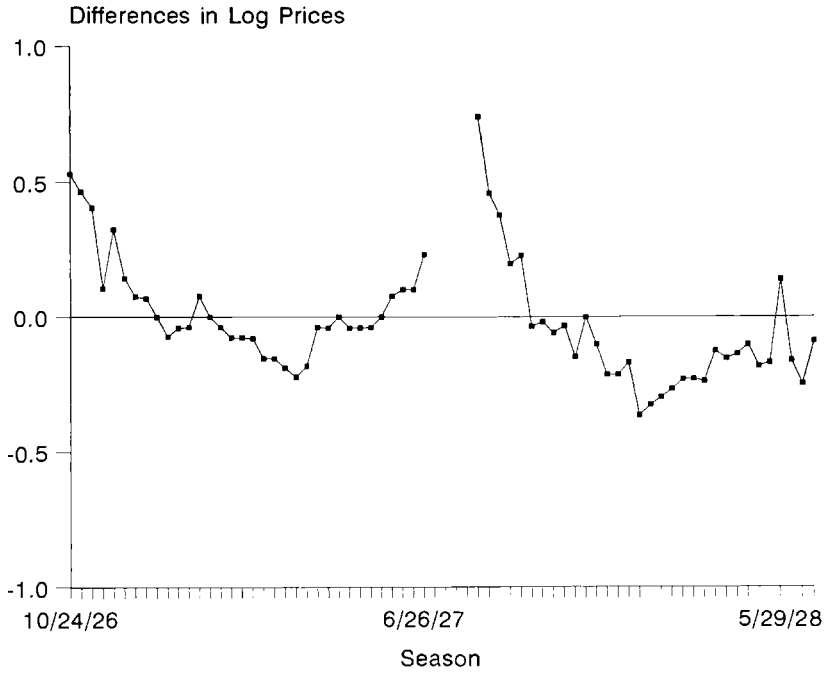

Fig. 6.1 Differences in the log of New York orange prices for California and Florida
Source: New York Times, 24 October 1926–26 June 1927, 29 October 1927–22 June 1928.

Prorate Act that created a state agency for intrastate regulation of shipments of specialty crops was considered in the California legislature at the urging of the CFGE and other cooperatives in April 1933 and enacted on 5 June 1933, approximately the same time that Congress was passing the AAA.[36] As discussed in the trade journal *Citrus Leaves* (July 1933, 3, 4, 14–20), the California Prorate Act had provisions for marketing orders that were very similar to those in the AAA. These included industry committees to determine weekly prorationing quotas, voting procedures to implement regulation, and revokable shipping certificates for shippers.

By contrast, the Florida orange industry was much less organized. The Florida Citrus Exchange (FCE), a pooling and marketing organization similar to the CFGE, handled only about 25 percent of the Florida orange crop.[37] Further, no state prorationing legislation was enacted in Florida.

Other California organizations, such as the California Farm Bureau Federation, also were active in lobbying for marketing agreements for specialty crops

36. *Citrus Leaves*, April 1933, 5–7; July 1933, 3, 4, 14–20.
37. Spurlock 1943.

under the AAA.[38] Close personal and philosophical ties between the CFGE and the Agricultural Adjustment Administration were quickly established. In Senate hearings, George N. Peek, a proponent of the agricultural cooperative movement, proposed the marketing agreement amendments for the AAA.[39] In addition, Howard Tolley, director of the Giannini Foundation at the University of California at Berkeley, which worked closely with the CFGE and other California agricultural cooperatives, was named chief of the Special Crops Section of the Agricultural Adjustment Administration. The Special Crops Section was responsible for negotiating with the industry and for drafting and implementing the marketing agreements.[40] As noted by Edwin Nourse, Tolley "was thoroughly familiar with the problems of California fruit and vegetable producers and with the developments in that state leading up to the passage of a proration law analogous in its operation to the marketing agreement feature of the Agricultural Adjustment Act."[41] Further reinforcing this link between the two organizations, in 1934, H. R. Wellman of the Giannini Foundation was named chief of the General (formerly Special) Crops Section of the Agricultural Adjustment Administration.

The sharing of personnel and the subsequent close collaboration among the CFGE, the FCE, and the Agricultural Adjustment Administration in controlling market supplies reflected long-standing efforts by the Department of Agriculture to promote agricultural cooperatives that could fix prices. Indeed, throughout the 1920s, the Department of Agriculture had assisted cooperatives in marketing their crops and in controlling supplies through stockpiles and exports.[42] Department officials believed that through independent planting decisions farmers tended to "overproduce," but that through cooperative decisions output and shipments could be restricted.[43] Well-structured agricultural cooperatives, such as the CFGE, not only embodied coordinated production and marketing so favored by the department, but their existence reduced the number of parties with which the department had to deal in administering regulations. Falling relative agricultural prices in the early 1930s, however, demonstrated that private cooperative organizations alone could not muster sufficient control of the market to limit supplies and raise prices. Collaboration between the Department of Agriculture and agricultural cooperatives was seen as necessary for implementing successful regulations.[44]

38. Nourse 1935, 15; Blaisdell 1940, 40–43.

39. Perkins 1969, 32.

40. Nourse 1935, 28; Perkins 1969, 94.

41. Nourse 1935, 28.

42. These actions to promote farmer cooperatives and raise prices were promoted by a series of laws enacted or considered during the 1920s: the Capper-Volstead Act of 1922 (*U.S. Statutes at Large* 42:388), the Cooperative Marketing Act of 1926 (*U.S. Statutes at Large* 44:802), the Agricultural Marketing Act of 1929 (*U.S. Statutes at Large* 46:11), and the McNary-Haugen bills of 1924–28.

43. See Hoffman and Libecap 1991 for discussion.

44. Breimyer 1983, 335–43; Perkins 1969, 8, 21–24.

Throughout the summer of 1933, orange producers and shippers from California/Arizona, Florida, and Texas met with the Agricultural Adjustment Administration personnel in Washington, D.C., to draft marketing agreements for their respective states and to conclude a national prorationing agreement. The representatives of the CFGE lobbied hard for national prorationing with fixed state quotas and a national price stabilization plan (national cartelization). They offered their draft marketing agreement for adoption by the Agricultural Adjustment Administration.[45]

At the 20 July 1933 Washington meeting, California had nine delegates, Texas had nine, Arizona had one, but Florida had thirty-seven because of differences in opinion within the state as to the nature of the proposed regulations.[46] Indeed, the variety of views held by the Florida delegates reflected a problem that was of concern to the Department of Agriculture because Florida did not follow the cooperative model of California espoused by the department. The Florida industry presented at least two competing draft marketing agreements, one supported by the FCE and similar to that proposed by the CFGE, and one backed by the Florida Citrus Growers Clearing House Association (FCHA). Many of the independent growers and shippers in Florida were organized under the FCHA, and they did not enter into long-term sales contracts to pool fruit as practiced by the cooperatives. The Department of Agriculture supported and ultimately adopted the draft marketing agreements proposed by the CFGE and FCE that called for the weekly prorationing of orange shipments among shippers whose quotas would be based on season-long contracts for fruit.[47] These long-term contracts were an integral part of the pooling agreements administered by the CFGE and FCE.

Importantly, independent shippers, who did not use a formal cooperative organization to contract with growers, would not have been able to get shipping quotas under the arrangements proposed by the CFGE and the FCE. Such shippers, who were particularly prevalent in Florida, tended to engage in spot purchases of fruit and would not have had fruit under contract at the beginning of the season, when quotas were to be assigned under the marketing agreement. The adoption of this quota arrangement in 1933 by the Agricultural Adjustment Administration after negotiating with representatives of the California and Florida industries was an effort to require growers and shippers in Florida to join the FCE.[48]

45. Nourse 1935, 133, 159; *Citrus Industry,* August 1933, 10, 14; October 1933, 10; *Citrus Leaves,* February 1934, 4.

46. *Citrus Leaves,* August 1933, 20; *Citrus Industry,* March 1934, 26.

47. *Citrograph,* September 1933, 301.

48. U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence File, box 362: letters from James C. Morton, Florida Citrus Growers Clearing House Association, to Henry A. Wallace, 27 November 1933, 8 December 1933; telegram from James C. Morton, Florida Citrus Growers Clearing House Association, to J. W. Tapp, Agricultural Adjustment Administration, 10 December 1933; Letter from A. E. Fowler, Florida Control Committee, to W. G. Meal, Agricultural Adjustment Administration, 19 December 1933, with the Florida Marketing Agreement attached.

Not only did the Department of Agriculture adopt a quota rule to encourage membership in the FCE, but the FCE was given a majority of the positions on the state administrative committee. Under the marketing agreement, Secretary of Agriculture Henry A. Wallace *appointed* the members of the Florida Control Committee that was set up to determine weekly shipping levels and to assign shipping quotas. Most of those selected were from the FCE. On the other hand, the California/Arizona marketing agreement allowed for the *election* of members of the administrative committees for that region.[49]

Independent shippers and growers within the FCHA, who attended the Washington meetings to draft the marketing agreements, understood the effect of the prorationing rule in requiring membership in pooling cooperatives. The department recommended that growers who were worried that their shippers would not have quotas under the prorationing rule link up with established shippers who did.[50] During negotiations in the fall of 1933, the FCHA demanded that the Agricultural Adjustment Administration modify its proposed marketing agreement for Florida, because it would force independent shippers out of business. The agency refused, arguing that the agreement could be amended later if necessary. But, while ratification of the marketing agreement required concurrence of 50 percent of the shippers and two-thirds of the growers, amendments required two-thirds concurrence of both groups.

Despite their efforts, the FCHA could not block the marketing agreement negotiated by the Agricultural Adjustment Administration and the FCE. Since the agency used the California model for regulation, the marketing agreements imposed in the two states were virtually the same. Whereas there was substantial consensus in California for the marketing agreements, opposition in Florida to the prorationing rule and to the Florida Control Committee appointed by the secretary of agriculture meant that additional negotiations would have to take place between the agency and the industry, delaying and modifying the proposed orange cartel. Negotiations between the Agricultural Adjustment Administration and the Florida industry continued for the rest of the decade before an agreement could be devised, but it did not lead to a cartel as described in the AAA. Due to the close ties between the Agricultural Adjustment Administration and the large formal cooperatives, the agency was unwilling to make major concessions in the marketing agreement until 1939. The repeated efforts of the Department of Agriculture after 1933 to impose regulations in Florida based on the California model explains the general adherence in Cali-

49. *Citrus Industry,* December 1933, 7, 10; *Citrus Leaves,* October 1933, 3, 4, 11–20; January 1934, 1–2, 16.

50. U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence File, box 362: telegrams and letters from James C. Morton, Florida Citrus Growers Clearing House Association, to J. W. Tapp, Agricultural Adjustment Administration, and R. G. Tugwell, USDA, 10 December 1933, 12 December 1933; letter from thirteen growers to Henry Wallace, USDA, 27 December 1933; letter from A. M. Prevatt, a Florida grower, to Henry Wallace, USDA, 28 December 1933; letter from O. G. Strauss of the Florida Control Committee to Jasper Wolfe, a Florida shipper, 22 March 1934.

fornia, despite opposition and violation in Florida. The marketing agreements provided federal enforcement of California regulations, and the California industry expected that the department would eventually force Florida into compliance.[51]

6.3 Modification of Regulation through Constituent-Agency Negotiations

6.3.1 Modification of Regulation

Table 6.2 summarizes the pattern of regulation of orange shipments under the AAA and subsequent federal legislation through 1941. Notice that in California the original marketing agreement, based on existing CFGE practices, remained in operation through 1947. The picture is very different in Florida. The first marketing agreement was terminated in August 1934; a second was adopted in December 1934 and terminated in July 1935; a third was implemented in May 1936 and terminated in July 1937; and a fourth that remained in effect was adopted in February 1939.

It is notable how tenacious the Department of Agriculture was in holding to the California model of regulation in the first three marketing agreements in Florida. The department modified the prorationing rule in the second and third marketing orders to provide more opportunities for independent shippers to obtain a quota. However, negotiations over six years ultimately led to a marketing order without prorationing. In the final agreement, shipping controls were limited to shipping holidays and adjustable grade and size restrictions. Neither of these regulations required individual quotas or membership in agricultural cooperatives. State regulations in Florida for grading and classification were enacted in 1935.[52] Hence by 1939, the model of cartelization of orange shipments through formal agricultural cooperatives as envisioned by enthusiastic officials of the Agricultural Adjustment Administration in 1933 had been discarded.

6.3.2 The Effects of Regulation

As with other New Deal agricultural programs, entry and expansion were not halted by the orange marketing agreements. As indicated by the data in table 6.1, acreage and output grew between 1933 and 1940, especially in Flor-

51. U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence File, box 363: letter to P. R. Taylor, Agricultural Adjustment Administration, from A. W. Fowler, Florida Tentative Control Committee, 27 November 1933; letter to P. R. Taylor, Agricultural Adjustment Administration, from O. Strauss, USDA, Bureau of Agricultural Economics, 28 November 1933; box 362: letter from Eugene Dodd, attorney, to R. C. Butler, USDA, 21 December 1933; letter and resolution to Henry Wallace from James C. Morton, Florida Citrus Growers Clearing House Association, 8 December 1933; box 363: memo to Chester C. Davis from H. R. Wellman, Agricultural Adjustment Administration, 3 November 1934.

52. *Citrus Industry*, March 1937, 11.

Table 6.2 The Pattern of Regulation of Orange Shipments

Florida	California	National Prorationing
1st marketing agreement	*1st marketing agreement*	*7/20/33 Meeting*
CFGE model for prorationing 12/18/33–3/13/34	CFGE model for prorationing 12/18/33–5/17/47	Committee designed to draft a national plan
2d marketing agreement		*9/7–9/33 Meeting*
Modified CFGE model for prorationing 12/18/34–7/15/35		Plan details debated by the states
3d marketing agreement		*1/6/34 Meeting*
Modified CFGE model for prorationing 5/8/36–7/31/37		No agreement on a plan or on a national coordinator
4th marketing agreement		*6/18/34 Meeting*
Florida model with no prorationing, other forms of control 2/22/39–1955		Disagreement on a national coordinator and prorationing
		1/36
		National prorationing dropped

Sources: Benedict and Stine 1956, 382–86; Ockey 1936, 5–42; *Citrus Industry,* November 1933, 6; September 1935, 6; March 1936, 8; *Citrus Leaves,* November 1935, 6; April 1936, 1.

ida, where through new planting total acreage essentially equalled that of California by 1940. Florida production, however, remained substantially below that of California, due to more heterogeneous growing conditions and the immaturity of groves. We do not have data on actual interstate shipments in the 1930s, but the records of the Agricultural Adjustment Administration in the National Archives, trade journal articles, and reports of the CFGE indicate that weekly prorationing of orange shipments was practiced and strictly enforced in California after 1933. In Florida, shipment prorationing in the 1930s was intermittent at best, and regulation primarily involved periodic shipping holidays and adjustable size and quality controls. These placed fewer constraints on shipments from Florida, although with perishable fruit, a shipping holiday of a few days (the common practice) could result in a significant loss of fruit suitable for shipment.[53] The marketing agreements did not succeed in raising either nominal or real orange prices to their 1920s levels, but the path of prices smoothed.[54]

53. The use of prorationing, shipping holidays, and grade and size restrictions as a means of influencing prices is discussed by Powers (1990) and Bocksteal (1984, 1987).

54. Lacking shipment data and obvious unregulated crops for comparison, we cannot test whether the marketing agreements alone smoothed prices. As we show in the text, marketing agreements in other contexts have had similar results. The federal government also purchased "surplus" oranges to promote demand. Although the absolute amounts of purchases by the Federal Surplus Commodities Corporation do not appear to have been large (about 4 percent of the 1937–38 crop [Florida Citrus Inspection Bureau 1938, 157, 169]), if they were strategically timed, purchases could have prevented short-term price falls during heavy deliveries.

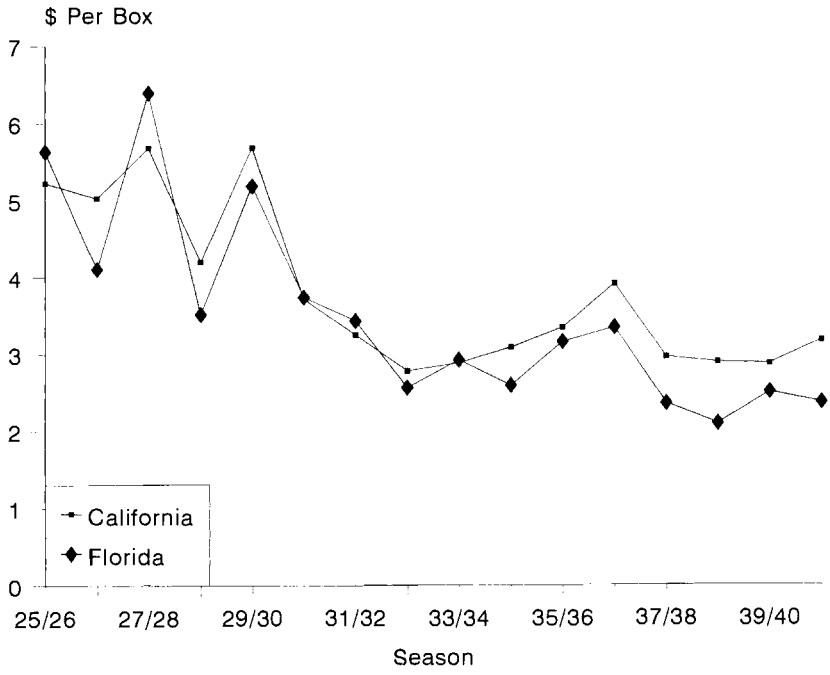

Fig. 6.2 Seasonal mean prices for California and Florida oranges, 1925–26 to 1940–41

Source: U.S. Department of Agriculture (1934, 516, 517; 1940, 215, 216; 1942, 244).

Figure 6.2 plots the pattern of seasonal mean nominal orange prices per box for Florida and California from the New York auction market for sixteen seasons from 1925–26 through 1940–41. The first eight seasons are before regulation was enacted in 1933, and the last eight seasons are under federal and state regulations.[55] There is a noticeable moderation in price movements under regulation. The mean preregulation California price is $4.42 with a coefficient of variation of .353. For Florida, the mean preregulation price is $4.25, with a coefficient of variation of .353. The postregulation mean California price is $3.14, with a coefficient of variation of .177, and the postregulation mean Florida price is $2.65, with a coefficient of variation of .227.[56] Robert Manthy provides annual orange prices, and his series for the period 1920–40 reveals a

55. The data are per box from the New York auction market as reported in U.S. Department of Agriculture 1934, 516, 517; 1940, 215, 216; 1942, 244.

56. The mean prices and variances are significantly different across the two time periods for both states. Because the variances are not the same, the usual t-tests cannot be used to test for significant differences in the means. The Mann-Whitney U tests for differences in the means provides z-statistics for differences in the means of −5.99 for California and −8.03 for Florida. The F-statistics for differences in the variances are 5.65 for California and 5.85 for Florida. All are significant at better than the 99 percent level.

similar pattern of price level and variation between the pre- and postregulation periods.[57]

6.4 Cartelization through Cooperative Pooling: Differences between California and Florida

6.4.1 Cartelization Efforts and the Incentive to Pool

In implementing marketing agreements under the AAA, the Department of Agriculture relied on the existence of formal agricultural cooperatives and their seasonal pooling arrangements as means of regulating shipments. To understand why the department placed so much emphasis on cooperative organizations, it is necessary to examine how pooling fit within the cartelization goals of the AAA. We examine why most California growers in 1933 were part of the season-long pools administered by the CFGE or MOD, whereas Florida growers generally did not participate in such arrangements, and thus why the department had so much difficulty in implementing marketing agreements based on seasonal pooling in Florida.

Under formal cooperative pooling arrangements, growers combined their output over a stated period and obtained the average price received by the pool. Under these private arrangements, pooling was not designed to cartelize but to spread the risk of seasonal price fluctuation among growers, lower shipping costs if there were economies of scale in shipping, and improve marketing, since known quantities and qualities of fruit could be delivered to particular destinations throughout the season.[58] With large enough market shares in particular markets, the cooperative pooling association could capture many of the returns to those activities. Seasonal pooling required relatively long-term contracts between growers and shippers to provide specified quantities and qualities throughout the length of the pool. Usually, pooling agreements were established at the beginning of the season with allocations or quotas to each grower based upon past years' contributions to the pool. Provisions were made to allow for new entry and adjustment of individual quotas.

An established pooling agreement, however, became a ready-made vehicle for regulatory controls on shipments under the AAA, since restrictions on deliveries could be imposed on the pooling organization and then prorated across the contributing growers and their shippers. The assignment and management of individual grower/shipper cartel quotas could be accomplished within the existing structure of the pool. Policing involved insuring that the pooling organization adhered to the quantities authorized by the Agricultural Adjustment Administration. If a single or at least a small number of pooling organizations

57. Manthy 1978, 47–52. Marketing agreements appear to have stabilized prices for other crops at different times. See Jamison 1971, 241–85.

58. There were no futures markets in fresh oranges at this time, so pooling provided a means of spreading the risk of price fluctuation. See Hoffman 1932, 54–55.

existed in each state, then nationwide shipping controls would have involved assigning quotas to each organization and monitoring compliance. This essentially is what happened in California. As long as the pooling organization retained the support of growers, it provided the mechanism for reducing the transactions costs of implementing and monitoring the marketing agreements.

These attributes of cooperative pools help to explain why the Agricultural Adjustment Administration sought to promote membership in organized cooperatives, such as the FCE, in the design of the marketing agreements. To understand why the California model for marketing agreements was accepted in that state but rejected in Florida, it is necessary to examine both the differential incentives to engage in seasonal pools in the two states, and why distributional issues in quota assignment played a greater role in Florida than in California.

Figure 6.3A illustrates some of the incentives for growers to pool their crops in the absence of futures markets. Assume that a set of risk-averse producers faces a common distribution of prices for their product over the producing season. The price distribution has a lower bound of $\underline{p}$ and an upper bound of $\bar{p}$. This generates a profit distribution for firm i of $[\pi_i(\underline{p}), \pi_i(\bar{p})]$. Firm i's risk-averse utility function over profits is represented by the concave function U_i. If firm i sells its output on the spot market and assumes the risk of fluctuating prices, it can realize average profits of $E(\pi_i)$ and expected utility of $E[U_i(\pi_i)]$. Such a risk-averse firm would prefer to join a pool that spreads the risk of seasonal price fluctuation and offers the firm the pool's average price so that firm profits are guaranteed to be $E(\pi_i)$. If the firm does not have to assume the risk of selling on the spot market, it realizes a utility of $U_i[E(\pi_i)]$, higher than $E[U_i(\pi_i)]$. In fact, firm i would be willing to pay up to γ_i, the firm's risk premium, to participate in the pool, instead of having to sell on the spot market. The greater the expected variation in prices, the greater the incentive for the firm to enter the pool.

Figure 6.3B, however, describes the problem for pooling if firms differ with regard to price expectations. The pool faces a price range from $\underline{p}$ to $\bar{p}$ and a profit range of $[\pi(\underline{p}), \pi(\bar{p})]$. Consider firm i that produces a variety v and expects a higher price range $\underline{p}_v$ to $\bar{p}$ and a corresponding profit range of $[\pi(\underline{p}_v), \pi(\bar{p})]$. If firm i joins the pool, it can guarantee itself a return of $E(\pi)$ and utility of $U_i[E(\pi)]$. However, given the distribution of prices and profits it faces, firm i would prefer to ship individually and realize $E[U_i(\pi_v)]$. Such firms can only gain by pooling among themselves. In that case, firm i would realize $U_i[E(\pi_v)]$, which is greater than $E[U_i(\pi_v)]$. While small pools for different varieties and maturation dates may develop under the conditions illustrated, such pools may not be able to take advantage of the scale economies in transportation or the public goods associated with the marketing opportunities afforded larger pools.

A more damaging problem, however, is if fruit maturities and varieties vary so significantly among growers that seasonal price expectations are sharply different within the industry, making widespread seasonal pooling unlikely.

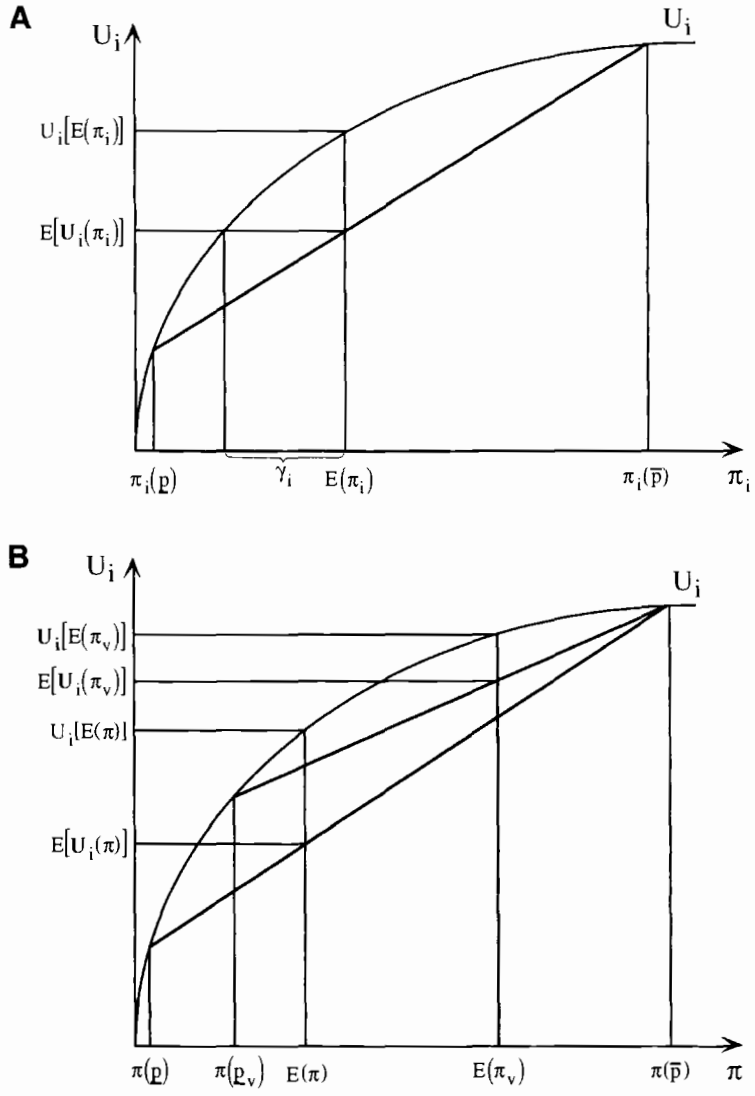

Fig. 6.3 The effect of heterogeneity on insurance gains from pooling: (A) incentives for growers to pool crops with a common price distribution; (B) incentives for growers to pool crops with different price distributions

Under those circumstances, it will be difficult to generate much interest in pooling because the pool's guaranteed average price may not exceed what many growers expect to obtain by shipping independently. A related problem is that heterogeneous varieties and maturities also raise the costs of combining fruit into homogeneous pools for delivery and marketing.

In sum, the benefits and costs of seasonal pooling are determined by (1) relatively similar expected price patterns during the season for all growers, where no one expects that their crop will be harvested when prices are high or low; (2) similar but variable maturation and harvest dates that can be predicted imprecisely for each grower; (3) uniform production conditions with respect to variety, size, and quality; (4) limited geographical areas where oranges are produced; (5) easier policing of shipments due to distant markets or a single form of transportation; and (6) lower shipping costs associated with larger volume shipments.

6.4.2 Pooling in California and Florida

Since the early development of the orange industry in the two states, pooling through a formal cooperative was much more common in California than in Florida. Membership in the FCE was limited to a minority of large Florida growers in the most productive regions of the state, particularly Polk and Orange counties, and the organization remained controversial throughout its history.[59] The CFGE, in comparison, had been dominant in California, with members throughout the state. Cooperation among California growers also was promoted by the formation of irrigation districts, since all California groves had to be irrigated.[60] Ongoing cooperation through irrigation districts appears to have lowered the transactions costs of bargaining to pool shipments and to implement and police marketing agreements. Additionally, the requirement for irrigation in California, restricting the geographic range of production, contributed to the greater homogeneity of production in that state as compared with Florida.

In Florida, there was a large number of shippers, and most did not belong to a formal pooling cooperative. H. G. Hamilton shows that in 1941–42 in Florida, 348 firms shipped Florida citrus: 300 were independents and 48 were listed as organized cooperatives, some subexchanges for the FCE.[61] California also had a large number of shippers, some 290 in 1934, but virtually all of them were linked to either the CFGE or the MOD.[62]

The observed contrast in membership in pooling cooperatives between California and Florida existed despite the fact that growers in both states faced similar seasonal price fluctuations, providing otherwise comparable incentives to pool for insurance purposes. For the period 1925–33, the coefficient of variation for monthly New York auction prices from October through June for both

59. Hopkins 1960, 127–30.

60. *Citrus Leaves*, April 1933, 1; *Citrograph*, January 1931, 96.

61. Hamilton 1943, 3.

62. *Citrus Industry*, May 1934, 5; U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence File, box 161: letter from W. C. Frackelton, Manager of the California-Arizona Citrus Marketing Agreement, to W. G. Meal, USDA, 11 December 1934. There were some 386 shippers in Florida and over 300 packing houses in 1930. The shippers included 54 cooperatives (Hamilton and Brooker 1939, 7).

states was 0.353.[63] Neither were pooling differences due to differences in the number or size distribution of farms in the two states.[64] There were approximately nineteen thousand orange growers in both Florida and California.[65] An examination of the size distribution of fruit farms drawn from the 1930 Agricultural Census in the six major orange-producing counties of California and the twenty-one major orange-producing counties of Florida that produced 97 percent and 96 percent respectively of the crop, yields a coefficient of variation across farm sizes of 1.87 in California and 1.57 in Florida.[66]

Accordingly, we must look elsewhere to determine why seasonal pooling was far more prevalent in California than in Florida. All things equal, seasonal pooling should be more common where there are uniform production conditions and output that is similar with respect to variety, size, and quality. This clearly describes California's production, not Florida's. Not only did California produce only two varieties that did not compete with one another, but quality was uniformly high because of favorable and consistent growing conditions. Most production was concentrated in six adjacent southern California counties with most output from within a radius of ninety miles around Los Angeles, where climate and soil quality were relatively similar.[67]

As noted earlier, in California oranges stored well on the tree for two to three months, and the CFGE took advantage of this condition and prorated harvests across growers throughout the season, picking only a portion of each grower's crop at any time. This practice ensured that each grower's fruit was sold throughout the season, so that no grower would differentially benefit or suffer from temporary price swings. This practice also served to enforce shipping restrictions.

The situation was quite different in Florida, where orange production was

63. The data are per box from the New York auction market as reported in U.S. Department of Agriculture (1934, 516, 517; 1940, 215, 216).

64. The problems of differential bargaining positions due to firm size (market share) alone that were encountered by Wiggins and Libecap (1987) in their analysis of industry support for crude oil regulation appear not to have been more serious in Florida than in California.

65. U.S. Department of Commerce 1930, 561–65, 720–25.

66. In 1930, the twenty-one major orange-producing counties in Florida produced 9,357,270 boxes of oranges of a state total of 9,720,998, and the six major California counties produced 41,960,140 boxes of the state total of 43,140,726 (U.S. Bureau of the Census 1930, 714–25, 561–65). The data for calculation of the size distribution of producers in each state are drawn from the 1930 Agricultural Census, which provides size distributions for various categories of farms. Although there is no separate category for orange or citrus farms, the census provides the number of fruit and orange farms in each county. For the leading counties of the two states, most fruit farms were orange farms. The coefficient of variation was calculated for Florida and California using farm size intervals and numbers of farms in each category provided in the 1930 Agricultural Census. The twenty-one Florida counties were Alachua, Brevard, Dade, De Soto, Hardee, Hernando, Highlands, Hillsborough, Indian River, Lake, Lee, Manatee, Marion, Orange, Pasco, Pinellas, Polk, Putnam, St. Lucie, Seminole, and Volusia. The six leading California counties were Los Angeles, Orange, Riverside, San Bernardino, Tulare, and Ventura.

67. Webber and Batchelor (1943, 73–82) describe producing conditions (weather, soil, insect, water) in the two states. Although there were differences between the coastal and interior growing regions of California, conditions appear to have been much less variable than in Florida.

more broadly spread than in California. The Florida growing region was a rectangle of approximately 300 by 150 miles with varying soil, drainage, and weather.[68] These conditions contributed to differences in maturity, orange type, quality, and vulnerability to frost and wind damage. The twenty-one counties that accounted for most of Florida's orange production in 1930 ranged throughout the central third of the state.[69]

In addition, Florida growers produced a variety of oranges, all competing for the winter market. Each of the five leading varieties had different maturing dates and different quality characteristics.[70] For example, Hamlin and Parson Brown oranges matured early, between October and December, while Pineapple and Homosassa oranges matured between January and March. Valencias matured later in the spring.[71] Early-maturing oranges tended to be grown in northern counties that were more vulnerable to December frosts.[72] In contrast to California, Florida oranges did not store well on the tree because of climate conditions, and had to be harvested rapidly in order to avoid fruit drop.[73] Thus, also in contrast to California, harvests in Florida could not be spaced across the season to even grower price expectations. Early fruit was harvested and shipped in October and November; midseason fruit was shipped from December through March; and late season fruit was shipped from April through June. Accordingly, Florida growers had specific subseasons with much narrower ranges of price expectations than did growers in California, who produced for the entire season.

As illustrated in figure 6.3B, different seasonal price expectations among growers reduced the incentive to engage in seasonal pooling. Generally, orange prices followed a U-shaped pattern across the season, high early in the season, low during the midseason, and high again late in the season. The mean per box prices for the three Florida subseasons for 1925–26 through 1932–33 were early (October–November) $4.34; mid (January–February) $3.81; and late (May–June) $4.89.[74] Accordingly, producers of early-season varieties had little incentive to pool across subseasons. Because their fruit did not store well on the tree, they knew that their fruit would be harvested and sold at a time when prices were expected to be higher than later in the season. Moreover, they had no incentive to engage in activities that would smooth price fluctuations across

68. *Citrus Industry*, May 1934, 5.

69. Hopkins 1960, 68.

70. Thompson 1938, 3; Shuler and Townsend 1948, 32–33. Shuler and Townsend provide tables of orange production by type and by county for 1948. Early and midseason varieties tended to be grown somewhat further north with Marion County, north of District 2, the fourth-largest producer. Valencia and other late-season varieties were grown in central and southern counties.

71. Ziegler and Wolfe 1975, 22–26; Webber and Batchelor 1943, 505–30.

72. Ziegler and Wolfe 1975, 86.

73. Webber and Batchelor 1943, 82.

74. The mean prices were calculated from monthly data from the New York auction market as reported in U.S. Department of Agriculture (1934, 516, 517; 1940, 215, 216). They are for the leading months in each subseason, to avoid transition months between subseasons.

the entire season. Such activities would only serve to lower their expected returns.

These conditions help to explain why seasonal pooling of fruit through formal cooperatives was much less common in Florida than in California. The variety of types of oranges with differing maturing dates and qualities also probably raised the costs of combining oranges into a meaningful seasonal pool in Florida relative to California, where fruit was more uniform.[75] This discussion indicates that, while different price expectations across varieties reduced the incentives to pool fruit in Florida, heterogeneous producing conditions and output certainly raised the costs of pooling.

We also argued that pooling should be more common where markets are distant and shipping costs are high, but subject to reductions with larger volume shipments. This applied in general to both California and Florida. New York, Chicago, Boston, and Philadelphia were major and distant markets for producers in both states. California growers relied on railroad shipment in large car lots, negotiated and organized by the CFGE and MOD. Those Florida growers whose oranges were shipped to the upper Midwest and to the Northeast also relied upon railroads or a combination of railroad and boat shipments in large car lots. Crops were combined at packing houses for transport via railroad or railroad and boat to distant markets, but unlike California, Florida growers did not rely solely upon pooling organizations for these shipments. Independent shippers also combined their oranges for bulk shipments north.[76]

Truck shipments were increasingly an option for some Florida growers in the 1930s for nearby markets in the South Atlantic and South Central states, as vehicles and highways improved. Between 1934 and 1936, some 14 percent of Florida shipments went to those two regions, although only a portion went by truck. While 11 percent of the Florida crop was shipped in small lots by truck in 1931, by the 1940–41 season some 24 percent went by truck.[77] California growers had fewer opportunities to use trucks, since the San Francisco and Los Angeles markets, the only ones close enough, given the condition of highways in the 1930s, accounted for only 11 percent of California shipments between 1934 and 1936.[78]

Truck shipments no doubt raised policing costs in monitoring quota compliance, and these problems would have existed in both states. With greater opportunities for truck shipments in Florida, the difficulties presented for policing cartel efforts were likely greater. Further, the strength of the CFGE limited out-of-state rail shipments to a few collection points in California. Boat shipments through the Panama Canal were not a competitive option. In Florida, growers relied upon independent shippers, rather than large pooling organizations, long before trucking became an option in the 1930s. Unlike the CFGE,

75. Ziegler and Wolfe 1975, 219–29.
76. Joubert 1943.
77. *Citrus Industry*, January 1933, 6; Joubert 1943, 3.
78. Thompson 1938, 27.

the FCE had never controlled a majority of the state's shipments, and it could not limit the number of rail and boat collection points. Of course, with a larger growing area and the availability of nearby ocean shipping, the costs of maintaining such restrictions would have been much higher.

These arguments suggest that, although California growers had strong incentives to engage in seasonal pools (and did so), many Florida growers had fewer reasons to take part in such pools (and did not). Because of lower expected returns and higher costs from pooling, Florida growers and shippers relied on independent, spot exchanges to market fruit. Cooperative pooling arrangements through the CFGE became the organizational basis for the regulation of shipments through the marketing orders in California, but pooling under the FCE was not extensive enough in Florida to play that role. Additionally, the growing opportunity to ship oranges by truck from Florida raised policing costs for cartel efforts.

6.5 Agency-Constituent Negotiations in the Implementation of Regulation: The Florida Marketing Agreement

Table 6.3 summarizes the marketing agreements attempted in Florida between 1933 and 1939 and lists the 1933 California/Arizona marketing agreement for comparison. As noted, the 1933 marketing agreements in each state were based on the CFGE, or California, model. They called for weekly prorationing of interstate orange shipments as set by the industry administrative committee. Quotas to individual shippers were determined by a "prorate base" assigned to each shipper on the basis of the amount of fruit held under contract with growers *at the beginning of the season.*[79] The prorate base was the shipper's fraction of total seasonal orange shipments from the state, and multiplying it times the authorized weekly total determined each shipper's weekly quota.

This prorationing rule emphasized long-term, seasonal contracts between growers and shippers as to when fruit would be picked and shipped and the division of returns. It posed an immediate threat to independent Florida growers and shippers who relied on short-term, spot, cash exchanges for fruit whenever market conditions warranted. As designed by the marketing agreement, however, these transactions did not qualify for determining the shipper's prorate base. A shipper with no seasonal contracts would have a zero prorate base, and hence would receive no weekly quota. Typically, only growers and shippers who were part of seasonal pools engaged in such contracts, since pooling cooperatives like the FCE relied on long-term arrangements to manage the flow of shipments throughout the season.

Florida independent shippers and growers strongly objected to this prora-

79. Shippers generally paid 20 percent down to secure the contract (Ockey 1936, 34, 37; *Citrus Leaves,* October 1933, 3, 4, 11–20; January 1934, 1, 2, 16).

Table 6.3 **Federal Citrus Marketing Agreements in Florida and California/ Arizona**

	Florida	California
1st marketing agreement		
Time in operation	12/18/33–8/13/34	12/18/33–5/17/47
Seasons covered	1934	1934–47
Volume proration	Yes	Yes
Proration rule	Fruit contracted for at beginning of season	Fruit contracted for at beginning of season
Grade and size regulation	Yes (federal inspection)	No
Shipping holiday	No	No
National proration	Yes	Yes
Control committee	9 shippers, 4 growers selected by USDA secretary	Distribution committee: 8 shippers elected Growers advisory committee: 8 growers elected
2d marketing agreement		
Time in operation	12/18/34–7/15/35	
Seasons covered	1935	
Volume proration	Yes	
Proration rule	Fruit contracted for at beginning of season, or average of past 2 years' shipments	
Grade and size regulation	Yes (federal inspection); no fruit below U.S. grade 2	
Shipping holiday	No	
National proration	Yes	
Control committee	7 growers, 6 shippers named by USDA Secretary	
3d marketing agreement		
Time in operation	5/8/36–7/31/37	
Seasons covered	1936–37	
Volume proration	Yes	
Proration rule	Fruit contracted for at beginning of season, or average of past 3 years' shipments	
Grade and size regulation	Yes (federal inspection); no fruit below U.S. grade 2	
Shipping holiday	No	
National proration	n.a.	
Control committee	Florida Citrus Commission: 7 growers, 4 shippers, appointed by governor	
4th marketing agreement		
Time in operation	2/22/39–1955	
Seasons covered	1939–55	
Volume proration	No	
Proration rule	n.a.	

Table 6.3 (continued)

	Florida	California
Grade and size regulation	Yes (federal inspection); no fruit below USDA grade 2	
Shipping holiday	Yes	
National proration	n.a.	
Control committee	Florida Citrus Commission: 7 growers, 4 shippers, appointed by governor	

Sources: Benedict and Stine 1956, 382–86; Ockey 1936, 5–42; *Citrus Industry,* November 1933, 6; September 1935, 6; March 1936, 8; *Citrus Leaves,* November 1935, 6; April 1936, 1.

tioning rule that was designed to force them into formal pooling arrangements. They also objected to the assignment of quotas by the Florida Control Committee, appointed by the secretary of agriculture and dominated by the FCE. Additionally, independent growers were concerned that the prorationing rules would not sufficiently recognize differences in maturity dates, which were so important in Florida.[80] If prorationing limits on shipments were tight when particular growers' fruit was ripe, those growers and their shippers would bear more of the costs of regulation than would those growers whose fruit matured at times when prorationing rules were less binding. For example, growers in the southwestern part of Florida, where oranges matured early, claimed that prorationing would "unfairly" force them to hold their fruit too long.[81]

Independent growers and shippers organized under the FCHA, and circulated a competing marketing order in 1933, but it was not adopted by the secretary of agriculture.[82] There was general agreement in Florida that some form of federal regulation was desirable. The issue was the form regulation would take. For example, James. C. Morton, vice president of the FCHA, wrote to Secretary of Agriculture Henry A. Wallace, 27 November 1933, to protest "the inequitable restrictions of the prorate clauses in the Agreement." Nevertheless, he called for modification of the proposed agreement, not its abandonment: "The situation in Florida is acute. The need of a Marketing Agreement's being put into operation at the earliest possible date is imperative, but quite a large proportion of the industry, both grower and shipper, recognizing the menace to

80. *Citrus Leaves,* October 1933, 3, 4, 11–20; *Citrus Industry,* August 1933, 16; November 1933, 6.

81. *Citrus Leaves,* November 1936, 7; *Citrus Industry,* June 1938, 12.

82. U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence File, box 362: "Proposed Amendments, California Arizona Agreement," 9 November 1933; box 362: telegrams and letters from James C. Morton, Florida Citrus Growers Clearing House Association, to J. W. Tapp, Agricultural Adjustment Administration, and R. G. Tugwell, USDA, 10 December 1933, 12 December 1933; letter from thirteen growers to Secretary Henry Wallace, USDA, 27 December 1933; letter from A. M. Prevatt, a Florida grower, to Secretary Henry Wallace, USDA, 28 December 1933; letter from O. G. Strauss of the Florida Control Committee to Jasper Wolfe, a Florida shipper, 22 March 1934.

which they believe to be their best interests, are determined to protect themselves through the courts if necessary."[83]

Instead of prorationing rules, the independents favored the use of shipping holidays and quality restrictions to loosely regulate shipments to smooth prices. Shipping holidays could block all deliveries from the state for a specified period of time to alleviate temporary market gluts. Size and quality standards could be set to deny shipment of fruit that fell below the standard, and the standard could be adjusted from time to time to provide flexible restraints. Quality standards also provided some industry-wide public goods in maintaining product reputation.[84] Enforcement for both policies would involve inspection and monitoring of all deliveries across state lines, rather than insuring individual quota compliance, as was necessary under prorationing.

Because shipping holidays and quality standards generally applied across the board, the distributional consequences were less severe than those associated with the proposed allocation of quotas under the marketing order proposed by the Agricultural Adjustment Administration. Quality constraints did harm marginal growers with low-quality fruit, but those growers appeared not to be sufficiently influential to block their use. Shipping holidays typically were short enough so as not to cause serious losses. Moreover, these alternatives did not require membership in organized cooperatives. An example of broad-based support for shipping holidays in Florida is the 6 February 1933 call by the FCE, the FCHA, and other shippers for a six-day shipping holiday in order to raise prices.[85]

The 1933 marketing agreement was challenged in federal district court almost immediately by two shippers, Hillsborough Packing and Lake Fern Groves (*Yarnell v. Hillsborough Packing Co.*, 70 F 2d 435). An injunction against prorationing was issued on 18 January 1934 by Judge Alexander Akerman in the southern district in Tampa, who ruled that the marketing order under the secretary of agriculture was unconstitutional. Prorationing controls by the Florida Control Committee were temporarily halted. Although the injunction was removed on 10 February 1934 by an appellate court and the ruling was reversed by the United States Court of Appeals for the Fifth Circuit on 14 April

83. U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence Files box 362.

84. With more heterogeneous fruit, reputation was a particular concern for Florida growers with respect to their California competitors. Because Florida oranges often had traces of green in their skins, unlike the more uniformly golden California navels, fruit was often dyed in Florida. See Florida Citrus Inspection Bureau 1938, 157, for data on "color-added" oranges. As with any restriction, controls based on shipping holidays and quality standards would have distributional effects. Those growers who had planned to ship their crops at the time of a shipping holiday would suffer. Nevertheless, shipping holidays had much broader support among Florida growers and shippers than did prorationing.

85. *Citrus Industry*, February 1933, 5. Growers in both California and Florida also pushed for marketing programs to expand total demand for oranges and purchases by the Federal Surplus Commodities Corporation to help reduce total supplies (*Citrus Industry*, November 1936, 5). These programs were popular because neither required industry agreement on quota allocations, which had important distributional implications.

1934, the injunction was applied at the height of the Florida orange season, and it raised uncertainty about the future of prorationing.[86]

Both shippers objected to the design of the prorationing rule, but for different reasons. Lake Fern Groves shipped very high quality fruit and hence preferred reliance on grade and size restrictions to control shipments instead of volume restrictions through prorationing. Hillsborough, on the other hand, engaged in periodic cash purchases under short-term contracts with growers, rather than participating in a pool. It was precisely this kind of shipper that would be disadvantaged by a quota rule that assigned shipments based on long-term contracts struck at the start of the season.[87] The prorationing rule remained so controversial that the first marketing agreement for Florida oranges was terminated in August 1934.

Throughout the summer and fall of 1934, members of the FCE and the FCHA corresponded with officials of the Agricultural Adjustment Administration regarding the redrafting of the marketing agreement.[88] A second marketing agreement was initiated December 1934. There were two minor modifications in the order, but the Department of Agriculture continued to maintain the basic prorationing framework.[89] Past shipments were to be given greater emphasis in designing quotas, but the weights assigned to fruit controlled through long-term contracts and past shipments were left to the Florida Control Committee. This naturally became a point of contention, given the makeup of the committee.[90]

During 1934 and 1935, there were conflicts over the membership of the committee and demands for access to its records in prorationing allocations.[91]

86. The constitutional issues raised by Judge Akerman and the hostility to the AAA are discussed in Irons 1982, 142–49.

87. *Citrus Industry,* February 1934, 10; U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence Files box 362: letter from J. A. Yarnell of the Florida Control Commission to P. R. Porter, USDA, 22 January 1934; letter from W. G. Meal, USDA, to O. G. Strauss, Florida Control Commission, 24 January 1934; letter from P. R. Taylor, USDA, to J. H. Treadwell, a Florida grower, 29 January 1934; letter from Rex Tugwell, USDA, to U.S. Attorney General, 2 February 1934; memo for Arthur Bachrach from W. G. Meal, USDA, 15 February 1934.

88. For example, see letter to Porter R. Taylor, General Crops Section, Agricultural Adjustment Administration, from James Harrison of the FCHA, 15 May 1934, and letter to W. G. Meal and A. W. McKay, General Crops Section, Agricultural Adjustment Administration, from O. G. Strauss, Secretary of the Florida Control Committee and aligned with the FCE, 14 May 1934 (National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence Files box 362).

89. See U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence Files box 362: draft of Florida Citrus Agreement, 10 March 1936.

90. *Citrus Leaves,* November 1934, 6.

91. U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence File, box 362: letter from A. W. McKay, Agricultural Adjustment Administration, to C. L. Bundy, a Florida grower, 1 November 1934; box 12: letter from James C. Morton, Florida Citrus Growers Clearing House Association, to Henry Wallace, 10 November 1934; box 363: letter to Henry Wallace from James C. Morton, Florida Citrus Growers Clearing House Association, 27 November 1934; letter to C. M. Brown, California grower, from P. R. Taylor, 14 November 1934.

In the face of continued opposition, the second marketing agreement for Florida oranges was terminated 15 July 1935. In the meantime, state legislation, creating a Florida Citrus Commission and authorizing shipment regulation based on quality and size standards, was implemented.[92] The Florida Citrus Commission, named by the governor, was created to take the place of the controversial federal control commission, named by the secretary of agriculture.[93]

A third marketing order was not put into place until May 1936, ten months after the termination of the second order and after the 1935–36 shipping season had passed. As before, the Department of Agriculture maintained prorationing of orange shipments as the primary method of regulation. The proration rule continued to emphasize fruit contracted for or purchased at the beginning of the season, but it placed more weight on past shipments. Nevertheless, as with the earlier marketing orders, conflicts continued over the assignment of quotas and department efforts to force membership in cooperative pools. Court challenges of the prorationing rules brought conflicting opinions by federal district judge Holland in Miami, who sustained the marketing agreement in February 1937, and Judge Akerman in Tampa, who issued an injunction against it in March 1937.[94] The third marketing order for Florida oranges was terminated 31 July 1937.

Over a year of negotiation between the Agricultural Adjustment Administration and the Florida industry was necessary before a final and successful marketing order was implemented on 22 February 1939. The new marketing order contained *no* quota rules or prorationing provisions. Regulation instead focused on uniform grade and size restrictions and shipping holidays, the framework originally demanded by independents in the FCHA.

6.6 Implications of the Failure of the Orange Cartel

In 1933, the federal government undertook cartelization of agriculture in response to a crisis of falling farm prices and incomes. There was confidence within the Agricultural Adjustment Administration that the farm problem could be successfully resolved through mandated price inflation. It was not. Efforts to reduce output or to control shipments for most commodities failed to reduce supply sufficiently to raise prices to their target parity levels. In the face of slack demand, continued growth in production, and political opposition to tighter output constraints, the federal government increasingly turned to alternative methods of raising farm incomes that were politically more palatable.

92. Florida Citrus Inspection Bureau 1936, 5–53.

93. *Citrus Leaves,* April 1936, 1; June 1936, 3.

94. *Citrus Leaves,* May 1937, 9. U.S. National Archives, Record Group 145, Agricultural Adjustment Administration, Central Correspondence File, box 257: Florida Citrus Exchange Bulletin to all district and association managers, 29 January 1937; letter from Henry A. Wallace, USDA, to L. P. Kirkland, Florida Citrus Control Committee, 27 March 1937; press release, USDA, 27 March 1937.

Various subsidies were adopted, and price support programs were implemented whereby the government purchased surpluses to protect minimum prices. A complex web of agricultural regulations, specialized for each crop, gradually was put into place after 1933, and most remain today, protected by well-organized interest groups and their political sponsors.[95]

The examination of negotiations between the Florida industry and the Agricultural Adjustment Administration from 1933 to 1939 to implement the orange marketing agreements shows how difficult it was to cartelize agriculture, even under relatively favorable circumstances. Heterogeneous interests and conflicts over quota rules prevented the weekly prorationing of interstate orange shipments from Florida and the installation of a national prorationing framework for controlling shipments from Florida, California, and Texas. If a nationwide cartel could not be assembled for oranges, it most surely could not be assembled for wheat or corn. Hence, as agricultural regulation continued to develop, the emphasis was shifted to different ways of raising farm incomes.

The study also shows that an understanding of the actual content of regulation and its economic impact often requires going beyond the formal legislation to agency-constituent negotiations. This seems to be particularly the case for New Deal regulatory legislation, which was quite vague compared to more recent legislation. More discretion was delegated by Congress to administrative agencies in defining regulatory policy beyond the broad mandates of the enabling statutes. This delegation was by plan because of the immediacy of the Depression, a lack of agreement in Congress and in the administration as to the appropriate means to achieve policy goals, and a belief in the ability of technically trained, independent administrators to devise effective programs through consultation with organized industry groups. For example, the AAA provides little detail on how marketing agreements for specialty crops would be drafted. The rhetoric surrounding enactment of the act, however, suggests an expectation of rapid, smooth adoption. This did not occur; the marketing agreements for oranges, for instance, took six years to negotiate, and they did not achieve the strict cartelization goals of the AAA.[96] Analysis of the bargaining among the California and Florida industries and the Agricultural Adjustment Administration makes clearer why the marketing agreements took

95. There is entrenched backing for marketing orders from influential constituents and the Department of Agriculture. If the marketing orders were dropped, some growers would suffer capital losses. The Office of Management and Budget, Federal Trade Commission, and Department of Agriculture have riders to appropriations legislation, prohibiting the use of government funds for investigation of the antitrust elements of marketing orders and for support of investigations under the Freedom of Information Act.

96. The restraints in California have been binding. More fruit was produced than could be shipped fresh under the California regulations. Between 1978 and 1983, only 60 percent of the California navel crop was allowed to be delivered for fresh fruit consumption; the remaining was directed to processing, although navels are not well suited for juice production. Some fruit was never harvested. When the marketing order was temporarily suspended during the 1984–85 season, the spread between FOB and retail prices narrowed. For analysis see Thompson and Lyon 1989.

very different forms in California and Florida and why national prorationing was not adopted.

The delegation of authority to agency officials and *industry* representatives that characterized important early New Deal legislation suggests that agency capture was a likely outcome.[97] Although capture is often associated with the diversion of a previously independent regulatory agency from public to private interests, such a narrow view is not necessary for understanding when capture is possible. In the case of New Deal legislation, agencies such as the Agricultural Adjustment Administration were supposed to be captured; that is, they were directed to work closely with industry representatives to design cartels. This collaboration was perceived to be in the public interest in order to carry out government policy. Even so, policies in the broad industry's interests could not always be devised. In the case of the orange industry, serious disagreement within the Florida industry prevented the development of a consistent agency policy and hence the achievement of cartelization goals. Accordingly, the strength of agency-capture arguments appears to depend critically on the cohesiveness of the industry to be regulated.

References

Armbruster, W. J., and E. V. Jesse. 1983. Fruit and Vegetable Marketing Orders. In W. J. Armbruster, D. R. Henderson, and R. D. Knutson, eds., *Federal Marketing Programs in Agriculture*. Danville, IL: Interstate Publishers.

Becker, G. 1983. A Theory of Competition among Pressure Groups for Political Influence. *Quarterly Journal of Economics* 98:371–400.

Benedict, M. R. 1953. *Farm Policies of the United States, 1790–1950: A Study of Their Origins and Development*. New York: Twentieth Century Fund.

———. 1955. *Can We Solve the Farm Problem: An Analysis of Federal Aid to Agriculture*. New York: Twentieth Century Fund.

Benedict, M. R., and O. C. Stine. 1956. *The Agricultural Commodity Programs: Two Decades of Experience*. New York: Twentieth Century Fund.

Berck, P., and J. M. Perloff. 1985. A Dynamic Analysis of Marketing Orders, Voting, and Welfare. *American Journal of Agricultural Economics* 67 (3): 487–96.

Bernstein, M. 1955. *Regulating Business by Independent Commission*. Princeton: Princeton University Press.

Blaisdell, D. C. 1940. *Government and Agriculture: The Growth of Federal Farm Aid*. New York: Farrar and Rinehart.

Bocksteal, N. E. 1984. The Welfare Implications of Minimum Quality Standards. *American Journal of Agricultural Economics* 66:466–71.

———. 1987. Economic Efficiency Issues of Grading and Minimum Quality Standards. In R. L. Kilmer and W. J. Armbruster, eds., *Economic Efficiency in Agricultural and Food Marketing*. Ames: Iowa State University Press.

Breimyer, H. F. 1983. Agricultural Philosophies and Policies in the New Deal. *Minnesota Law Review* 68 (2): 333–52.

97. Stigler 1971; Peltzman 1976; Bernstein 1955.

Brooker, M. A., and H. G. Hamilton. 1933. Farmers Cooperative Associations in Florida: Part 2. Bulletin 263. Gainesville: University of Florida, Agricultural Experiment Station, June.

Carmen, H. F., and D. H. Pick. 1988. Marketing California-Arizona Lemons without Marketing Order Shipment Controls. *Agribusiness* 4 (3): 245–59.

———. 1990. Orderly Marketing for Lemons: Who Benefits. *American Journal of Agricultural Economics* 72 (2): 346–57.

Cave, J., and S. W. Salant. 1987. Cartels That Vote: Agricultural Marketing Boards and Induced Voting Behavior. In E. A. Bailey, ed., *Public Regulation: New Perspectives on Institutions and Policy.* Cambridge: MIT Press.

Citrograph. 1931–33.

Citrus Industry. 1933–37.

Citrus Leaves. 1933–38.

Cochrane, W., and M. Ryan. 1976. *American Farm Policy, 1948–1973.* Minneapolis: University of Minnesota Press.

Congressional Record. 1933. Washington, DC.

Erdman, H. E. 1934. The California Agricultural Prorate Act. *Journal of Farm Economics* 16 (4): 624–36.

Florida Citrus Inspection Bureau. 1936–38. Annual Reports. Lakeland, FL.

French, B. C. 1982. Fruit and Vegetable Marketing Orders: A Critique of the Issues and State of Analysis. *American Journal of Agricultural Economics* 64 (5): 916–23.

Gardner, B. L. 1981. *The Governing of Agriculture.* Lawrence, IA: Regents Press.

———. 1993. *Plowing Ground in Washington.* San Francisco: Pacific Research Institute for Public Policy Research.

Gifford, D. J. 1983. The New Deal Regulatory Model: A History of Criticisms and Refinements. *Minnesota Law Review* 68 (2): 299–332.

Gilligan, T., W. Marshall, and B. Weingast. 1989. Regulation and the Theory of Legislative Choice: The Interstate Commerce Act of 1887. *Journal of Law and Economics* 32 (1): 35–61.

Hallagan, W. S. 1985. Contracting Problems and the Adoption of Regulatory Cartels. *Economic Inquiry* 23 (January): 37–56.

Hamilton, H. G. 1943. Marketing Florida Citrus Fruit. Economic Leaflets 2, no. 3. Gainesville: Bureau of Economic and Business Research, College of Business Administration, University of Florida, February.

Hamilton, H. G., and M. A. Brooker. 1939. Farmers' Cooperative Associations in Florida. Bulletin 339. Gainesville: University of Florida, Agricultural Experiment Station.

Hamilton, H. G., and A. J. Spurlock. 1943. Farmers' Cooperative Associations in Florida. Bulletin 386. Gainesville: University of Florida, Agricultural Experiment Station.

Hoffman, E., and G. D. Libecap. 1991. Institutional Choice and the Development of U.S. Agricultural Policy in the 1920s. *Journal of Economic History* 51:397–411.

Hoffman, G. W. 1932. *Future Trading upon Organized Commodity Markets in the United States.* Philadelphia: University of Pennsylvania Press.

Hopkins, J. T. 1960. *Fifty Years of Citrus: The Florida Citrus Exchange, 1909–1959.* Gainesville: University of Florida Press.

Irons, P. H. 1982. *The New Deal Lawyers.* Princeton: Princeton University Press.

Jamison, J. A. 1971. Marketing Orders and Public Policy for the Fruit and Vegetable Industries. *Food Research Institute Studies* 10:229–392.

Johnson, R. N., and G. D. Libecap. 1982. Contracting Problems and Regulation: The Case of the Fishery. *American Economic Review* 72:1005–22.

Joubert, W. H. 1943. Freight Rates on Florida Citrus. Economic Leaflets 2, no. 9. Gainesville: Bureau of Economic and Business Research, College of Business Administration, University of Florida, August.

Lenard, T. M., and M. P. Mazur. 1985. Harvest of Waste: The Marketing Order Program. *Regulation,* May–June, 19–26.

Libecap, G. D. 1989. The Political Economy of Crude Oil Cartelization in the United States, 1933–1972. *Journal of Economic History* 49:833–55.

Manthy, R. S. 1978. *Natural Resource Commodities: A Century of Statistics.* Baltimore: Johns Hopkins University Press.

Martin, R. E. 1951. The Referendum Process in the Agricultural Adjustment Programs of the United States. *Agricultural History* 25–26 (1): 34–47.

Meyer, A. J. 1950. *History of the California Fruit Growers Exchange, 1893–1920.* Ph.D. diss., Johns Hopkins University, Baltimore.

Murphy, P. L. 1955. The New Deal Agricultural Program and the Constitution. *Agricultural History* 29–30 (4): 160–68.

Nelson, G., and T. H. Robinson. 1978. Retail and Wholesale Demand and Marketing Order Policy for Fresh Navel Oranges. *American Journal of Agricultural Economics* 60 (3): 502–9.

Nourse, E. G. 1935. *Marketing Agreements under the AAA.* Washington, DC: Brookings Institution.

Nourse, E. G., J. S. Davis, and J. D. Black. 1937. *Three Years of the Agricultural Adjustment Administration.* Washington, DC: Brookings Institution.

Ockey, W. C. 1936. *Outlines of Marketing Agreements and Licenses under the Supervision of the General Crops Section, Agricultural Adjustment Administration.* Washington, DC: U.S. Department of Agriculture, Agricultural Economics Section.

Peltzman, S. 1976. Toward a More General Theory of Regulation. *Journal of Law and Economics* 19 (2): 211–40.

Perkins, V. L. 1965. The AAA and Politics of Agriculture: Agricultural Policy Formation in the Fall of 1933. *Agricultural History* 39–40 (4): 220–29.

———. 1969. *Crisis in Agriculture: The Agricultural Adjustment Administration and the New Deal, 1933.* Berkeley: University of California Press.

Powers, N. J. 1990. Federal Marketing Orders for Fruits, Vegetables, Nuts, and Specialty Crops. Economic Research Service, U.S. Department of Agriculture, Agricultural Economic Report no. 629. Washington, DC: Government Printing Office.

Rasmussen, W. D. 1983. New Deal Agricultural Policies after Fifty Years. *Minnesota Law Review* 68 (2): 353–77.

Reuther, W., H. J. Webber, and L. D. Batchelor. 1967. *The Citrus Industry.* Vol. 1. 2d edition. Berkeley: University of California Press.

Rucker, R., and L. J. Alston. 1987. Farm Failures and Government Intervention: A Case Study of the 1930s. *American Economic Review* 77 (4): 724–30.

Rucker, R., and W. Thurman. 1990. The Economic Effects of Supply Controls: The Simple Analytics of the U.S. Peanut Program. *Journal of Law and Economics* 33 (2): 483–516.

Saker, V. A. 1992. Creating an Agricultural Trust: Law and Cooperation in California, 1898–1922. *Law and History Review* 10 (1): 93–129.

Saloutos, T. 1974. New Deal Agricultural Policy: An Evaluation. *Journal of American History* 61 (September): 394–416.

Schultz, T. W. 1949. *Production and Welfare of Agriculture.* New York: Macmillan.

Shepard, L. 1986. Cartelization of the California-Arizona Orange Industry, 1934–1981. *Journal of Law and Economics* 29 (1): 83–124.

Shover, J. L. 1965. Populism in the Nineteen-Thirties: The Battle for the AAA. *Agricultural History* 39–40 (1): 17–24.

Shuler, P. E., and J. C. Townsend, Jr. 1948. *Florida Citrus Fruit: Acreage, Production, Utilization, Prices, and Tree Numbers.* Orlando: Florida Crop and Livestock Reporting Service.

Spurlock, A. H. 1943. Florida Citrus Cooperatives. In Economic Leaflets 3, no. 1.

Gainesville: Bureau of Economic and Business Research, College of Business Administration, University of Florida, December.
Stigler, G. 1971. The Theory of Economic Regulation. *Bell Journal of Economics* 2:3–21.
Stokdyk, E. A. 1933. Economic and Legal Aspects of Compulsory Proration in Agricultural Marketing. Bulletin 565. Berkeley: University of California Agricultural Experiment Station.
Sunstein, C. R. 1987. Constitutionalism after the New Deal. *Harvard Law Review* 101 (2): 421–510.
Thompson, G. D., and C. C. Lyon. 1989. Marketing Order Impacts on Farm-Retail Price Spreads: The Suspension of Prorates on California-Arizona Navel Oranges. *American Journal of Agricultural Economics* 71 (3): 647–60.
Thompson, J. M. 1938. The Orange Industry: An Economic Study. Bulletin 622. Berkeley: University of California Agricultural Experiment Station.
U.S. Bureau of the Census. 1930. *Census of Agriculture.* Washington, DC: Government Printing Office.
———. 1975. *Historical Statistics of the United States.* Washington, DC: Government Printing Office.
U.S. Department of Agriculture. 1930. *Agricultural Statistics.* Washington, DC: Government Printing Office.
———. 1934. *Yearbook of Agriculture.* Washington, DC: Government Printing Office.
———. 1938. *Agricultural Statistics.* Washington, DC: Government Printing Office.
———. 1940. *Agricultural Statistics.* Washington, DC: Government Printing Office.
———. 1942. *Agricultural Statistics.* Washington, DC: Government Printing Office.
———. 1981. *A Review of Federal Marketing Orders for Fruits, Vegetables, and Specialty Crops: Economic Efficiency and Welfare Implications.* Washington, DC: Government Printing Office.
U.S. Department of the Treasury. 1927, 1930, 1940, 1950. *Statistical Appendix to Annual Report of the Secretary of the Treasury.* Washington, DC: Government Printing Office.
U.S. General Accounting Office. 1976. *Marketing Order Program: An Assessment of Its Effects on Selected Commodities.* Washington, DC: Government Printing Office.
U.S. House of Representatives. 1935. Agricultural Adjustment Act Amendments. Report nos. 952, 1241. 74th Cong., 1st sess. Washington, DC: Government Printing Office.
Vetne, J. 1981. Federal Marketing Order Programs. In J. Davidson, ed., *Agricultural Law.* Colorado Springs: McGraw-Hill.
Ward, R. W., and R. L. Kilmer. 1989. *The Citrus Industry.* Ames: Iowa State University Press.
Webber, H. J., and L. D. Batchelor, eds. 1943. *The Citrus Industry.* Vol. 1. 1st edition. Berkeley: University of California Press.
Wellman, H. R. 1936. Some Economic Aspects of Regulating Shipments of California Oranges. Circular 338. Berkeley: University of California Agricultural Experiment Station.
Wiggins, S. N., and G. D. Libecap. 1987. Firm Heterogeneities and Cartelization Efforts in Domestic Crude Oil. *Journal of Law, Economics, and Organization* 3 (1): 1–25.
Ziegler, L. W., and H. S. Wolfe. 1975. *Citrus Growing in Florida.* Revised edition. Gainesville: University Press of Florida.

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