Farming the Program:
Rent-seeking Behavior Among Farmers and the Associated Deadweight Loss

Barrett E. Kirwan[*]

University of Maryland

[*] Contact: bkirwan@umd.edu

Most policies that aim to redistribute resources among the population are motivated by equity concerns. During the Depression in the 1930s, equity concerns played a key role in the adoption of farm subsidies, when urban interests joined farmers and rural legislators to give "agriculture a fair share in the national income."[1] By the 1960, when the farm population had dwindled and subsidies were ballooning, equity concerns prompted cries to limit, reduce, or even eliminate farm subsidies. That debate over equity came to a head in the 1970 Farm Bill, when Congress enacted payment limits on agricultural subsidies for the first time. Recently, in light of greater transparency in the subsidies received by individuals and against the backdrop of the World Trade Organization (WTO) Doha Development Round negotiations, concerns about equity in farm subsidies have reemerged as a major policy issue.

Spurred on by equity considerations the 91st Congress implemented farm subsidy payment limits in 1970 in order to "put an end to the scandal of these gigantic payments," in the words of Rep. Silvio Conte.[2] The 1960s saw an increased public awareness that farm subsidies were highly concentrated among a few farms. One economist noted, "The concentration is really of no concern to the economic policy goal of resource efficiency for production of agricultural products.… The concern comes from the equity goal, i.e., our concern that income and wealth are more unevenly distributed than we desire" (Paulsen 1969, p. 1237).

Equity concerns were not the only motivating force behind the adoption of payment limits. The public *perception* of equity also played a large role. An influential study by Undersecretary of Agriculture John Schnittker stated, "One cannot build a strong economic case *for* or *against* limiting the size of price support loans. Limiting price support loans may have merit, however, as public

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[1] Nourse, Davis, and Black (1937, p. 20) report that, "Executives of industrial companies, mail-order houses, railroads, banks, and other agencies which depended to a large extent on business originating in the country had joined the demand that 'something be done for the farmer.'"

[2] Rep. Silvio O Conte. "Farm Payment Limitations: An Idea Whose Time Has Come." *Congressional Record* 115: 15869–71, June 16, 1969.

relations for farmers."[3] Representative Paul Findley, a staunch supporter of payment limits, echoed the sentiment, stating, "Annual payments as high as $4 million to a single farmer bring these programs into such disrepute as to threaten their survival."[4]

Payment limits still play a vital role addressing inequality among farms. In discussion surrounding the 2002 Farm Bill, Sen. Charles Grassley echoed Paul Findley's remark from three decades earlier, "How long will the American people put up with programs that send out billions of dollars to the biggest farm entities? All this does is damage our ability to help people we originally intended to help—the small and medium-sized producers."[5] Sen. Grassley has championed tighter payment limits, a torch picked up by the Bush administration in 2005 in order to reduce deficit spending.

In spite of the important role payment limits play, little is known about their efficacy and effects on farm structure. Anticipating the potential effects of payment limits before their 1970 adoption, Schnittker, in his 1968 report (p. 10869), stated, "One of the serious administrative problems sure to arise would result from proposed division of farms into smaller units if a limitation were imposed, in order to evade the limit." Thirty-six years later, the Government Accountability Office (2004b, p. 3) echoed that concern, "Some farming operation may reorganize to overcome payment limits to maximize their farm program benefits."

Anecdotes abound regarding the lengths some farmers go to in order to avoid payment limits.[6] The 2004 GAO report titled, "USDA Needs to Strengthen Regulations and Oversight to Better Ensure Recipients Do Not Circumvent Payment Limitation" (GAO 2004b), documented

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[3] See "Schnittker Study of Payment Limitations." *Congressional Record*, 115(70): 10867–72, April 30, 1969. p. 10868

[4] See "Schnittker Study of Payment Limitations." *Congressional Record*, 115(70): 10867–72, April 30, 1969. p. 10868

[5] See "Senate Votes to Lower Farm Subsidy Ceiling." *Washington Post*, February 8, 2002. p. A06.

[6] See the report of Vann Irvin, a Georgia farmer whose family farm restructured and collected $800,867 in 2005 in Dan Chapman, Ken Foskett, and Megan Clarke, "How Savvy Growers Can Double, or Triple, Subsidy Dollars." *The Atlanta Journal-Constitution,* p. 1A, October 2, 2006.

several specific cases of farms organized to maximize subsidy receipts and avoid payment limits. In spite of the case studies and anecdotes, little empirical evidence exists regarding the extent to which constrained farms reorganize in order to avoid payment caps.

The extent to which payment limits distort behavior is an important, unanswered question. If constrained farms can easily restructure in order to avoid the payment cap, then payment limits are ineffective policy tools that only cause deadweight loss by funneling productive resources into unproductive activities, such as restructuring. The evidence presented below constitutes a first look at the potential ineffectiveness of payment limits.

The Farm Security and Rural Investment Act of 2002 established payment limits for each of three different types of Title I crop subsidies: direct payments, countercyclical payments, and loan deficiency payments/marketing loan gains. Of the three subsidy types, direct payments are the most certain. Direct payments are attached to the land, and farmers receive direct payments regardless of price or their productivity. Countercyclical payments depend on market prices, but like direct payments they are land-specific subsidies that do not depend on production. Finally, loan deficiency payments/marketing loan gains are production subsidies that depend both on price and a farmer's productivity.

That payment limits affect farmer behavior can be seen most clearly by focusing on direct payments, the ex ante known subsidy. Because each farm knows its total annual direct payment in advance, the producer knows how binding the payment limits will be. Consequently, it is possible that farmers know how to restructure their farm organization in order to get the greatest subsidy without being limited by payment caps. The evidence presented in figure 1 bears this out. Figure 1 illustrates the distribution of direct payment for wheat and rice in the 2004 crop year. Panels a and c illustrate the distribution of payments across FSA farms for wheat and rice, respectively. The crop-specific subsidy distributions over FSA farms are smooth and symmetric. Superimposed on each of the panels is a solid, vertical line depicting the $40,000 payment limit for

direct payments. At the FSA farm level, it appears that relatively few wheat farms receive subsidies above the cap. Yet a considerable portion of the rice-farm subsidy distribution lies above the payment cap.

Of course, payment limits apply to members of the farm organization, not to the farm itself. Panels b and d, therefore, depict the distribution of direct payments across farm members for wheat and rice, respectively. The distribution for wheat farm members in panel b is smooth and symmetric, reflecting the distribution across FSA farms, with relatively few people receiving payments above the limit.[7]

Panel d, however, tells an entirely different story. Rather than having a standard bell-curve shape, this distribution is bimodal, with a sharp peak just before the payment limit. The irregular shape of this distribution in panel d, the coincidence of the distribution peak for rice farm members just before the payment limit, and the relatively high proportion of FSA rice farms affected by the payment limit suggest that constrained rice farms restructure their organization in order to, essentially, bypass payment limits. Operationally, one might consider a strategy like that employed by farmer Vann Irvin, as reported by *The Atlanta Journal-Constitution*.[8] When payment limits looked to be binding, Irvin brought his mother and nephew into the farm organization, thereby maintaining total farm subsidies while keeping each recipient below the payment limit.

The graphical evidence is most clear for rice farms,[9] where the greatest proportion of farms are affected by payment limits, but the principle is the same for all crops: Farms affected by payment limits have the ability (and appear) to restructure in order to effectively avoid the limits. Although USDA data indicates that only 1.2 percent of rice subsidy recipients were at the limit, the graphical

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[7] Payments above the cap are possible through the 'three-entity' rule and due to the USDA's inability to reduce all farm organizations to their members.

[8] See the report of Vann Irvin, a Georgia farmer whose family farm restructured and collected $800,867 in 2005 in Dan Chapman, Ken Foskett, and Megan Clarke, "How Savvy Growers Can Double, or Triple, Subsidy Dollars." *The Atlanta Journal-Constitution,* p. 1A, October 2, 2006.

[9] Cotton farms show a similar, although less pronounced, pattern in their direct payment distribution.

evidence suggests that significantly more recipients (approximately 20 percent) change their behavior due to payment limitations.

Other suggestive evidence of producer response to payment limits comes from the entry rate of new farms. Table 1 contains the entry and exit rates of new *subsidy recipients* for four crops—wheat, corn, cotton and rice—annually from 2002 to 2005. Although exit rates are similar across the four crops, entry rates for cotton and rice, crops with binding payment caps, are on average about 33 percent (1.8 percentage points) higher than the entry rate for corn and wheat. The cotton and rice industries are undeniably different than the corn and wheat industries, and their different industrial structure may result in a high steady-state entry rate, but one might expect exit rates to be substantially different too. Exit rates, however, are nearly the same across crops. Higher entry rates in the production of these crops also are consistent with previously presented evidence and bespeaks a response to the incentive to restructure in order to avoid payment limits.

Finally, table 2 presents more evidence that payment limits might not effectively restrain subsidy payments. Loan deficiency payments, marketing loan gains, and certificate exchange gains are three ways farmers can utilize the "marketing loans" price support program. Despite the structural and procedural similarities among these three price support methods, loan deficiency payments and marketing loan gains have a joint, $75,000 payment limit, while certificate exchange gains are unlimited. Table 2 reveals that wheat and corn producers overwhelmingly utilize loan deficiency payments, but cotton and rice producers are more likely to receive certificate exchange gains. The structure of the cotton and rice industries provides one possible explanation. Cotton and rice are more likely to be marketed through a cooperative, and commodity certificates "reduce [cooperatives'] administrative costs" (Commission 2003, p. 82) by allowing the cooperative to settle marketing loans without tracking the total payment to each cooperative member. Another possible explanation is that cotton and rice producers are more likely to face binding payment limits, and certificate exchange gains provide a way around that. These two explanations are not mutually

exclusive. Combined with the arrival rate of new subsidy recipients reported in table 1 and the apparent organization of rice farms illustrated in figure 1, this evidence suggests that producers may engage in rent-seeking behavior in order to maximize subsidy receipts and circumvent payment limits.

These finding have policy implications. First of all, payment limits might only result in the diversion of productive resources, what economists call deadweight loss. Total payments to farms might be unchanged. This, it seems, is the story told by figure 1, panels c and d. Although the subsidy distribution across recipients is distorted, the distribution across farms is smooth.

Second, budget savings from tightened payment limits might be illusory. As long as farms can legitimately restructure, they can respond to member-specific limits. Increased enforcement might dampen or limit the producer response, but it also requires resources that offset budget savings.

Third, any credible attempt to tighten payment limits must limit farmers' ability to respond by restructuring. One solution is to better define qualifications to receive farm subsidies. In 2004, the GAO found the current standards to be vague and recommended that the USDA "develop and enforce measurable requirements defining a significant contribution of active personal management [to the farm]" (GAO 2004a, p. 38). Restricting who qualifies for subsidies will limit farmers' ability to restructure their organization in order to circumvent payment limits.

Increased enforcement of payment limits does not come without cost. In addition to the higher administrative burden to the USDA, the Commission on the Application of Payment Limitations for Agriculture (2003) reports potential adverse effects on farms, such as limiting farm size to less than efficient scale, and altering rental agreements. Little evidence exists to substantiate or alleviate these claims, making it an area ripe for analysis. The evidence that does exist (Goodwin 2006) concludes that wheat, corn, and sorghum farms are unlikely to be affected by binding payment limits. Rice and cotton farms are much more likely to be affected, but there is no systematic evidence on how these producers might respond to binding payment limits.
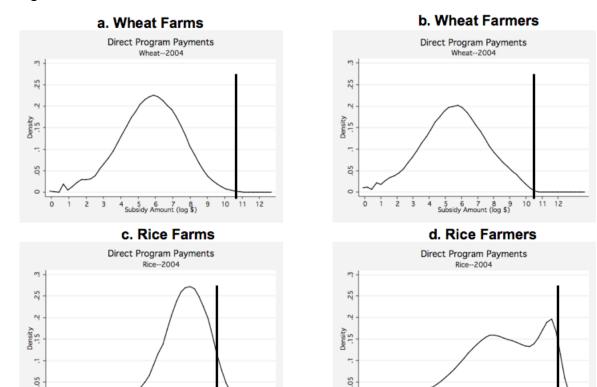
Conclusion

The distribution of agricultural subsidies is a perennial subject featured in every Farm Bill debate. The press typically focuses on the total subsidies received by large producers, while economists are prompt to dismiss subsidies as real gains because they assume the benefits to be captured by landlords. This paper has attempted to shine light on these positions through careful analysis of interesting data.

The paper explores the extent to which payment limits restrict large farms from receiving subsidies. Using administrative USDA data, it presents several pieces of evidence that, when taken together, suggest that potentially constrained farms adjust their behavior and effectively bypass payment limits. Any credible payment limit reform must include measures to clearly define and enforce the criteria to qualify for subsidies.

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Figure 1

a. Wheat Farms
Direct Program Payments
Wheat--2004

b. Wheat Farmers
Direct Program Payments
Wheat--2004

c. Rice Farms
Direct Program Payments
Rice--2004

d. Rice Farmers
Direct Program Payments
Rice--2004

Source: Author's calculations using FSA administrative data obtained through a Freedom of Information Act request.

Note: Panels a and c depict the distribution of direct program payments over FSA farms in the 2004 crop year for wheat and rice. The distributions were estimated with kernel density estimation using FSA administrative data obtained through a Freedom of Information Act request. Panels b and c depict the distribution of direct program payments over the members of farm entities: that is, the "persons" to whom the payment limits apply, for wheat and rice in the 2004 crop year. The distributions were estimated with kernel density estimation using data from the USDA Section 1614 database, obtained through a Freedom of Information Act request. The solid vertical lines signifies the $40,000 payment limit for a "person."

Table 1 - Farm Entity Subsidy Recipient
Entry and Exit Rates

Crop		Crop Year			
		2002	2003	2004	2005
Wheat					
	Entry Rate	0.043	0.029	0.032	0.031
		(0.202)	(0.168)	(0.176)	(0.173)
	Exit Rate	0.041	0.061	0.068	
		(0.199)	(0.239)	(0.252)	
	N	660,555	709,358	696,792	679,396
Corn					
	Entry Rate	0.044	0.028	0.034	0.032
		(0.205)	(0.164)	(0.180)	(0.175)
	Exit Rate	0.047	0.064	0.075	
		(0.213)	(0.244)	(0.263)	
	N	810,406	841,357	842,940	824,539
Cotton					
	Entry Rate	0.058	0.046	0.045	0.044
		(0.233)	(0.209)	(0.207)	(0.205)
	Exit Rate	0.053	0.068	0.079	
		(0.225)	(0.251)	(0.270)	
	N	129,526	128,897	129,841	126,785
Rice					
	Entry Rate	0.058	0.059	0.053	0.049
		(0.234)	(0.235)	(0.224)	(0.216)
	Exit Rate	0.054	0.064	0.075	
		(0.227)	(0.245)	(0.263)	
	N	35,269	35,698	35,865	35,224

Notes: U.S.D.A Farm Services Agency administrative data of subsidy recipients, 1990 - 2005. A farm entity is classified as an 'entrant' the first time it is observed in the data. A farm entity is classified as an exit the last time it is observed in the data. Numbers in parenthesis are standard deviations. Difference in totals from Table 5 represent the difference between 'entities' and 'members of entities.'

Table 2 - Distribution of USDA Program Payments
2004 Crop Year

Crop	Payment Limit	Participants	Mean	Median	Max
Wheat					
Direct Payments	**$40,000**	820,877	1,388.44	254.66	734,641.00
Counter-Cyclical Payments	**$65,000**	NA	NA	NA	NA
Loan Deficiency Payments	**$75,000**	41,982	1,685.25	608.00	75,423.67
Marketing Loan Gains		4,548	1,656.80	710.43	33,312.00
Certificate Exchange Gains	**Unlimited**	NA	NA	NA	NA
Overall		821,666	1,482.47	257.00	810,064.70
Corn					
Direct Payment Program	**$40,000**	954,920	2,206.34	530.00	343,303.00
Counter-Cyclical Program	**$65,000**	940,847	2,599.15	618.00	355,564.00
Loan Deficiency Payments	**$75,000**	547,070	4,866.00	1,900.00	477,339.30
Marketing Loan Gains		50,496	5,002.56	2,750.00	117,520.10
Certificate Exchange Gains	**Unlimited**	2,387	8,977.87	1,960.23	1,097,819.00
Overall		975,942	7,672.96	1,538.00	1,235,474.00
Cotton					
Direct Payment Program	**$40,000**	156,211	3,939.29	607.00	568,813.00
Counter-Cyclical Program	**$65,000**	154,644	8,491.74	1,345.72	1,170,884.00
Loan Deficiency Payments	**$75,000**	43,807	8,844.09	871.26	163,177.10
Marketing Loan Gains		1,404	7,095.22	1,815.21	82,530.60
Certificate Exchange Gains	**Unlimited**	54,269	24,654.42	5,474.06	2,438,102.00
Overall		159,291	23,571.21	2,709.00	2,688,855.00

Rice

Direct Payment Program	**$40,000**	49,126	8,670.01	2,017.54	90,223.84
Counter-Cyclical Program	**$65,000**	48,534	3,283.39	769.96	44,227.50
Loan Deficiency Payments	**$75,000**	26,096	1,949.35	195.61	64,602.62
Marketing Loan Gains		11,745	3,889.27	1,518.78	59,391.65
Certificate Exchange Gains	**Unlimited**	11,644	2,659.87	836.60	105,584.20
Overall		49,869	14,293.44	3,126.00	199,373.10

Notes: Summary statistics based on payments to entity members found in the USDA Section 1614 Database.