

Preserving Small while Strengthening Large Farmers in the USA and OECD

Jian-Ming Zhou

PhD in Economics, European University Institute

50016 San Domenico di Fiesole, Florence, Italy

Fax: 0039-055-4685298, 599887. Tel: 0039-055-4685373, 4685322

E-mail: Zhou@datacomm.iue.it, Jmzhou46@hotmail.com

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Abstract: Facing the general trend towards larger but fewer farms since 1935, the US government implemented a protective safety net for small farmers during 1933-96 which did not halt it but incurred market distortions and other drawbacks. It then switched to market oriented measures in 1996 which have made small farmers more exposed to market risks. A suitable solution to both preserving small and strengthening large farms has not been found. This paper provides a proposal not included in the 145 recommendations in the report 'A Time to Act' by the National Commission on Small Farms of the USDA in January 1998: to promote part ownership of land by encouraging small farmers to develop off-farm activities and lease the land beyond self-need to part owners (including competent small farmers) to boost large farmers. In this way, while part owners could achieve economies of scale, small farmers would be boss of self-used land and landlord of rented-out land, integrated with large farmers, gain more income from rent, increase time for and earnings from off-farm activities, so that small farmers, rural communities, democracy roots and landscape could be conserved. It shows an example of how some black farmers who were small in terms of owned land but became large after renting in land achieved success in farming. Although part ownership has been increasing, it has never been promoted as a policy direction and even be neglected. This proposal may be relevant to other OECD countries with a large versus small bimodal farm structure.

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OECD (1998: 15-87) reports that in its member countries in general², there has been a long-term trend towards larger but fewer farms, namely, larger farmers have achieved lower costs by economies of scale while small farmers been put in an inferior position as either being crowded out from agriculture or to the margin of it (keeping in mind a caveat that a few of them have become large).³ Until the mid-1990s, many governments maintained a protective safety net aimed at retaining small farms, but the subsidies largely went to the few large farmers while markets had been distorted and budget burden increased. The development of off-farm activities in recent decades has had the positive result of slowing small farmers' exiting, but also the negative consequences of decreasing land mobility towards more efficient large farmers.⁴ Although part ownership of land tenure has developed, it has not been raised as a new policy direction. Since the mid-1990s, many governments have begun to adopt market-oriented policies, by reducing market-distorting supports and providing transitory direct income support, with the long-term aim of establishing a '*farming without subsidies*'.⁵ The market-oriented measures would be unfavorable to the already weak small farmers, and more exiting by them is anticipated. Thus governments wish to not only strengthen large farmers for reducing costs and promoting competitiveness, but also retain small farmers in agriculture and rural areas for protecting environmental landscape and avoiding aggravating the already serious urban

² The Organization for Economic Cooperation and Development includes 29 countries: Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, UK, USA (original members in 1960), Japan (joined in 1964), Finland (1969), Australia (1971), New Zealand (1973), Mexico (1994), Czech (1995), Hungary, Poland and South Korea (1996).

³ For example, in the United Kingdom, large farms are very competitive, but 'the squeeze on agriculture is likely to be felt most keenly by the small, poorer farms, and this in turn raises another issue: that of the effect of agricultural decline on social and economic life in rural communities' (WE 1993: 580). The very similar Canadian case is analyzed comprehensively in the Special Issue of 'Canadian Journal of Agricultural Economics' 1995.

⁴ For instance, in Portugal, 'the growth of part-time farming in some regions ... fossilized the farm structure, with the off-farm income allowing families to retain small, uneconomic holdings' (WE 1993: 464). It has become the last obstacle in sustainable rural development Japan, South Korea and other rice-based economies in monsoon Asia, see Zhou (1997) and Zhou (1999).

⁵ For example, in March 1998 the Commission of the European Union made this its Agenda 2000 (EC DGVI 1998a & 1998b).

unemployment and homelessness.⁶ But no effective solutions have yet been found to match these two seemingly contradictory goals.

In order to find a solution, this article analyzes the typical case: the USA. The American model of rural development started in 1783 with eight features.⁷

1. Institutional changes for setting up an individual land ownership after the War for Independence (1775-83) in the North and Civil War (1861-65) in the South.

2. Government policies supporting agricultural production.

3. Commercialization of the individual farming units leading to large farmers and driving small farmers to an inferior position.

4. Technological progress, managerial resources, rural development, procurement and marketing facilities further strengthening large farmers.

5. Government protective safety net (1933-96) failing to prevent the trend towards fewer but larger farms since 1935 and retain small farmers from being crowded out from agriculture.

6. Government market-driven measures since 1996 leaving small farmers more exposed to free market forces.

7. Part ownership of land tenure dominating since 1950 but never being promoted as a policy direction or a new round of institutional changes.

8. The development in recent decades of off-farm employment pursued as subordinate to the loss-making independent small farming resulting in inefficient land-holding and only slowing but not halting small farmers' exiting farming.

Because these features are compatible with those already described by the above-cited OECD report, only features 7 and 8 are dealt with below.

Performance of Part Owners

In order to find a solution to both strengthening large and preserving small farms, let us first look at the performance of part owners of land.⁸

⁶ For example, 80 % of a random sample of adults in 1987 expressed that 'the family farm (not referring to large family corporate farm) is an essential part of our heritage and must be preserved' (Jordan & Tweeten 1987: 3), and the small farms 'are exactly the farms that the American public seems most eager to protect' (Gardner 1995: 277).

⁷ This model, unseen in the literature, is presented in Zhou (1999) in detail.

⁸ For simplicity reason, in this article, unless specified, small farmers include medium farmers as opposed to large farmers in the USA.

The US land tenure structure includes three types of tenure of operators: full owners who operate only land they own; part owners who operate both land they own and rent in (as part ownership and part tenancy); and tenants who operate only land they rent in (as full tenancy) (Janssen 1993: 473). More specifically, there are full owner operators (operating their own land and not renting in or out any land), full owner operator landlords (operating some of their own land and renting out some of it, but not renting in any land), part owner operators (operating their own land and land rented in, not renting out land), part owner operator landlords (operating some of their own land and renting out some of it, and operating land rented in), tenant owner operators (owning land but not operating it and not renting it out, only operating land rented in), tenant owner operator landlords (owning land but not operating it, renting out some or all of their own land, only operating land rented in), nonoperator landlords (not operating any land, but renting out some or all of their own land), and nonoperator nonlandlords (reporting the ownership of land, but not operating it or any other land, and not renting it out) (Harris & Gilbert 1985: 34-5).

Trend in the evolution of the land tenure structure. Table 4 shows that during 1900-92, the number of farms under full owners and full tenants decreased from 1920 and 1935 respectively, while that of farms under part ownership, though reduced from 1950, was still higher in 1992 than in 1900. Table 5 indicates that the acreage of farms under full ownership and full tenancy dropped from 1910 and 1935 respectively, while that of farms under part owners, although declined from 1978, was nevertheless much larger in 1992 than in 1900; and since 1950, part ownership has been the major form of land tenure. Table 6 demonstrates that during 1978-92, the percentage of farms under full owners in all farms fell, while that of farms under part owners grew continuously, along the increase of farm acreage; within small farms (1-49 acres⁹) and lower medium farms (50-179 acres), full owners were the majority; in medium farms of 180-499 acres, they were still more than part owners (the data did not distinguish lower medium farms of 180-259 acres and upper medium farms of 260-499 acres); but for upper medium farms (500-999 acres) and large farms (1 000 and more acres), it was part owners who took majority; in contrast, full tenants were minority in all categories of farms. Therefore, the trend in the US

⁹ 1 acre = 0.4047 ha.

land tenure structure has experienced the reduction of full owners and full tenants, but an increase and dominance of part owners.

Superiority of part owners over full owners and full tenants. The major reason why part owners could have gained increase and dominance is that they have achieved larger acreage and could thus benefit from economies of scale, lower production costs in general, and be competitively stronger, as revealed in Table 7.

Advantages in increasing farm size by part ownership. How could the part owners achieve larger acreage? Here an analysis of the major advantages and disadvantages of the full ownership, full tenancy and part ownership of farmland is useful.

The main advantages of full farmland ownership by farm operators include (1) greater security of tenure, (2) greater managerial freedom and independence, (3) earlier purchase could avoid the impact of further price rising, (4) farmland can be used for loan collateral, (5) land ownership reflects prestige, may be a family heritage, and can be passed on to heirs. The chief disadvantages are (1) reduced working capital due to farmland debt servicing, (2) mortgage payments may exceed net returns from the purchased land, (3) compared with investment in farm machinery, livestock or operating inputs, capital for buying land may bring lower current rate of return, and (4) farmers with limited capital and sole reliance on farmland ownership often find it difficult to increase farm size. (Kay 1981: 252)

The principal benefits from full tenancy of farmland by operators consist of (1) higher flexibility in deciding farm size, (2) more elastic financial obligations, compared to typical land purchase arrangements (mortgage or installment), and (3) greater working capital for buying machinery, livestock, or operating inputs. The key shortcomings are (1) farm size reduction due to dis-renewal of lease, (2) poor facilities and reluctance of lessors and lessees to invest in land improvement (Kay 1981: 252), (3) fragmentation owing to non-adjacency of leased parcels.

Part ownership permits operators to acquire the right to use farmland without obtaining ownership, which allows them to increase farm size while conserving capital from purchasing land (Janssen 1993: 470, 476), and avoiding the disadvantages of full tenancy. Part owners have already owned some land, upon which the problems of withdrawal and low incentive of investment in land improvement could be avoided, and fragmentation

could be solved by joining parcels through land consolidation. In contrast, full tenants do not have such a base.

Upon the leased land, how to avoid the problems of withdrawal and low incentive of investment in land improvement? In 1986, a common questionnaire for farmland leasing survey was mailed to 5 800 Nebraska and 4 100 South Dakota landlords and renters - a random sample of 5 % of the total in the two states, and completed by 1 615 Nebraska and 1 155 South Dakota respondents (Johnson; Janssen; Lundeen & Aiken 1987. Lundeen & Johnson 1987. Peterson & Janssen 1988). The survey provided useful answers.

There were two major methods for resolving the problem of withdrawal. *The first was multiple leasing* - leasing land from more than one landlord by farm operators. This has been the rule rather than exception. Also, most operators with multiple leasing combined cash and share leases [common types of farmland leasing arrangements in the USA are crop sharing, cash rent, and livestock sharing (Janssen 1993: 470)]. Thus, a sophisticated process of land resource control via farmland rental was adopted by lessees. In so doing, their risks related with losing any one parcel have been reduced. It also suggested that many renters may have more knowledge of and experience with farmland rental agreements than many landlords.

The second method was informal and short-term, but de facto long-term leasing. Despite a 27 % of absentee landlord ownership (residing in another state) and multiple leasing among renters, most leasing agreements were relatively informal (verbal) and short-term (annual). This facilitated not only dis-renewal of leasing but also adjustment of rental rates.

In cropland leasing of these two states, crop sharing was dominant. In almost all cases, landlords could get one-third, two-fifths or a half of crop output, depending on the region, quality of land and crops grown.

75 % of crop share lease respondents reported that the landlord and tenant shared expenses for one or more variable inputs, but less than 10 % stated sharing all variable input expenses. In almost all crop share leases, the proportion of input sharing was the same as in output sharing. Fertilizer was the most commonly shared input, followed by insecticide or herbicide. Input costs were more likely to be shared on tracts with relatively

high per acre input costs.

Cash leases completely dominated rangeland and pasture leases, with cash rent per acre or per animal. Cash leases also accounted for 40 % in South Dakota and 28 % in Nebraska of cropland acres leased. Cash rental rates changed annually.

While 75 % of renters were highly dependent on net farm income, rent accounted for less than 30 % of total household income for most landlords.

However, except for the annual changes of cash rental rates, the incidence of change in the details of share and cash agreements were infrequent. Moreover, the typical lease agreement had been in effect for more than a decade and most respondents reported considerable satisfaction with their leasing agreements.

Therefore, although the leasing agreements were informal and short-term, the result was a de facto long-term leasing. This, in the author's view, was chiefly because the informal and short-term agreements gave incentives to tenants to cherish the leasing, removed the concern of landlords that leased land may not be taken back, and facilitated the adjustment of rental rates to a balanced satisfaction of both lessors and lessees.

On the leased land, how is it possible to overcome the obstacle of low incentive of investment in land improvement by both lessors and lessees? The answer already exists in the above account. In principle, because the leasing contract was informal and short-term, in order to obtain its renewal, the lessee would have the incentive to improve the land. In specific measures, sharing input costs in the same proportion as sharing crop output between landlord and tenant joined them together to improve the land for their common interests.

How to solve the issue related to fragmentation due to the non-adjacency of leased parcels? Physically, it would not always be possible to join leased parcels together, since the same parcels might be leased to other tenants, which would lead to re-split of the united ones. However, as Table 2 has shown, in 1992, only 8.6 % of the US farms were smaller than 10 acres (= 4.047 ha) which are very large farms in monsoon Asia, and 28.8 % of farms under 50 acres (= 20.235 ha) which are normally unimaginable in monsoon Asia.¹⁰ Therefore, even if parcels are not adjacent, each parcel may still be

¹⁰ There are 19 rice-based economies in monsoon Asia: China (mainland), Japan, North Korea, South Korea and Taiwan Province of China in East Asia; Cambodia,

large enough to use large machinery, and fragmentation would not cause a serious problem.

Being able to achieve the advantages of full ownership and tenancy while avoiding their disadvantages, part owners tend to rent in more acres than full tenants, as a comparison between the 1951 survey of farmland rental market in Nebraska and South Dakota and the above-mentioned 1986 survey in the same states shows (Hurlburt 1954, Janssen & Johnson 1989). Thus part owners could realize larger farm size than full owners and full tenants.

Senilization and feminization of nonoperator landlords. Landlords in many cases are reluctant to sell farmland because it is a family heritage. Many of them were raised on farms, have some farm management experience and are more familiar with farmland as an investment opportunity. Rates of return to farmland ownership (current rates plus expected capital appreciation) have been competitive with many other long-term investments. (Janssen 1993: 476). Moreover, many landlords are unwilling to rent out land.

The 1986 survey in Nebraska and South Dakota discovered that nonoperator landlords were often near or past retirement age - 84 % of women respondents were nonoperator landlords and a majority were over 65 years of age; women were 40 % of nonoperator landlords and only 10 % of farm operator respondents. Full tenants were the youngest group. Between these two extremes were part owner operators and full owner operator landlords.

Similarly, beyond these two states, Harris and Gilbert (1985) have made a comparison between the 1946 and 1978 nation-wide Land Ownership Survey by the US Department of Agriculture and found that nonoperator landlords were the oldest group, followed by full owner operator landlords, full owner operators, and part owner operators, with full tenants as the youngest. The majority of male landowners were full owner operators and the majority of female landowners were nonoperator landlords.

The above data of tenure by age may be explained to some extent by the ordinary life cycle of farm occupation. Start-up farmers may rent in land when their capital is short,

Indonesia, Laos, Malaysia, Myanmar, the Philippines, Thailand and Vietnam in Southeast Asia; and Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka in South Asia.

the successful part of them may later buy some land, then purchase more, further expand by renting in more, when aging cut operations to their owned land, and finally rent out land first on crop sharing and then cash leasing. (Wunderlich January 1999). Therefore, a tendency could be perceived that as long as a landowner is physically still able-bodied, one would be reluctant to rent out land. In contrast, because old and female landowners are not or less able-bodied, they are more willing to lease land.

Successful black farmers: an example. Compared with large farmers, small ones have been in a worse situation, and black farmers the worst in general. But a small group of black farmers in Louisiana have been highly successful.

McLean-Meynsse and Brown (1994) made a survey to a sample of 15 of the 46 outstanding black farmers listed by the US Soil Conservation Service in Louisiana. They mainly produced soybean, sugar cane, rice and wheat. Respectively in 1986-88, they achieved average gross sales of \$ 95 000, \$ 84 000 and \$ 78 000 (the lower sales in 1988 were attributed to the drought); 20 %, 33 % and 40 % of them realized gross sales over \$ 100 000, thus equaling large farms in gross sales. In contrast, in 1987, the gross sales of 64.8 % of all farms and 91 % of all black-operated farms in the USA was below \$ 25 000, and of a typical black farmer in Louisiana only \$ 15 551 (Table 3. BCUS 1987). Due to their higher farming income, less than 30 % of them resorted to off-farm activities, while 74 % of all black farmers in Louisiana had to do so (BCUS 1987).

McLean-Meynsse and Brown find that their success was related to (1) younger age [80 % of the sampled farmers was below 50 years old, while a typical black farmer in Louisiana 57.6 in 1987 (BCUS 1987)], (2) a better level of education (40 % of them had completed high school and three obtained some college education), (3) good management, (4) early adoption of new technology, (5) love of farming and sound work ethics, (6) strong family support (which provided the bulk of labor; some of them hired labor mainly in the planting and harvesting seasons), (7) participation of government programs, and (8) larger farm size [80 % of them on average operated 488 acres while a typical black farmer in Louisiana only 110 acres in 1987 (BCUS 1987)].

How did these black farmers achieve larger farm size? 13 owned 19-270 acres, while nine owned less than 50 acres. Most of the average 488 acres were rented in. Therefore, they were *part owners* (but McLean-Meynsse and Brown do not include this

concept in their article).

In terms of the owned land in acreage, nine of them were still small farmers (1-49 acres), four lower medium (50-259 acres) or just entered upper medium (260-999 acres). But thanks to part ownership and part tenancy, they reached average 488 acres as upper medium farms, thus being able to benefit from economies of scale and achieving success in farming.

Part ownership has never been promoted as a policy direction. There are economists who have noted the contribution of part ownership of farmland to the success of both large and small farmers, but ignored it. The typical example is the above-cited McLean-Meynsse and Brown who revealed that part ownership (although they do not possess this term) was one of the factors of the highly successful black farmers in Louisiana who were small farmers in terms of land owned. However, part ownership did not get a place in the 'Policy Recommendations' of their article. Rather, in the 'Summary and Conclusions', they emphasize that 'potential black farmers must be aware of available opportunities to borrow funds to purchase land'. (McLean-Meynsse & Brown 1994: 79-82)

Interestingly and puzzlingly, even these black farmers themselves disregarded part ownership, as 'they indicated that although their future in farming appeared favorable, they would not actively encourage their children to continue farming. To them, the main farm problems today were lack of land at affordable prices, and high costs of getting started in farming.' (McLean-Meynsse & Brown 1994: 78-9). It is true that land is and will still be very expensive to purchase, but why can their children not inherit their own small, and rent in other, land to enjoy the similar 'favorable future'?

There are also economists who slightly recommend part ownership. For instance, Janssen (1993: 476, 495) notices 'the dominant trend to part ownership since 1950' and elaborates it. However, in the overall conclusion, he merely states that 'Farm management, resource and policy economists should continue: (1) to monitor ongoing changes in land tenure, ownership and rental market; (2) to examine probable socio-economic consequences of alternative changes in tenure and ownership patterns; and (3) to recommend specific changes which improve efficiency and equity of leasing agreements.' Apparently, he does not raise part ownership to such a high position as a deliberate policy

direction or a new round of institutional changes.

Most recommendations advocate the unsustainable full owners and less stable full tenants. For example, very recently, a comprehensive report by the National Commission on Small Farms of the USDA in January 1998, dedicated to `Thomas Jefferson, who envisioned the "yeoman" farmer as the bedrock of American democracy'¹¹, provides a considerable amount - 145 - recommendations on promoting small farmers. Although it sporadically mentions to extend credit and tax exempt to beginning farmers to buy and lease land, its aim was to foster full owners and full tenants, rather than promoting part ownership (in fact there is no such term in the text).

Major Effects of Off-Farm Activities on Small Farmers

The second issue to examine for finding a solution to both strengthening large and preserving small farms is the major effects of off-farm activities on small farmers.

Off-farm income helped maintain loss-making small farming. Off-farm work exists among operators of all farm sizes. On average, off-farm income contributed to 31 % of total farm household income in 1950, 55 % in 1970, 62 % in 1982, and 87 % in 1993 (US Congress 1986. Tweeten 1995).

Specifically, a few large farms could gain farm earnings as the largest proportion of their family income, while the large number of small farm families have had little or no farm income and received almost all their income from off-farm sources (Bollman; Whitener & Tung 1995: 24). The lower the total income of farm families, the more dependent they are on off-farm income to maintain family well-being. In many cases, off-farm employment is crucial to the continuation of small farming. (Gebremedhin & Christy

¹¹ Jefferson (President 1800-08) pronounced an agrarianism which has influenced farmers and farm policy throughout the US history. He believed that a wide distribution of land ownership provides the backbone for a democratic government (Harris & Gilbert 1985: 31). It still `remains an American belief today' (Brewster 1979). Jefferson's ideal farmer `yeoman' provided for his (her) family from his own land by his own efforts and achieved self-sufficiency. He (she) carried on a self-dependent agriculture, buying and selling as little as possible. He did not rent in his land but owned it in fee simple. He did his own work. As an independent, self-supporting member of the society, he was his own boss, responsible for his own managerial decisions. (Rasmussen & Stanton 1993: 32. USDA 1998). According to Wunderlich (1999), Jefferson also stated that when opportunities were superior outside of agriculture, farmers should and would move out (Letter to John Jay, Paris, 23 August 1785), but this point has been paid little attention.

1996: 63-4). Compared to white farmers, the outlook for black farmers seems bleak because they are slightly older, operate a much smaller farm and have much lower gross sales. The survival strategy of many black operators is to work more days off-farm. (Jones 1994: 27)

As a result, expanding off-farm employment opportunities in rural communities have enabled families operating small farms to improve their incomes while continuing farming (Peterson and Brooks 1993: 13). Many (perhaps most) small farms exist only because of off-farm income. Thus, rural development is an important means to sustain small farms. (Tweeten & Amponsah 1996: 93). In fact, an econometric analysis using county-level data from 2 323 rural (nonmetro) counties (excluding those in Alaska and Hawaii, and Virginia municipalities) for 1980-90 found that those counties in which off-farm income was relatively important had stabilized or even increased rural population (Goetz & Debertin 1996: 518, 528-9).

Small farmers could not satisfactorily combine farming and off-farm work.

Although most small farm families make their living by combining farm and off-farm activities (Ahearn 1996: 95), this does not ensure the survival of their farm operation on one hand, because it reduces their time available for farm work, causes decreased productivity and limits farm expansion (Jones 1994: 27); on the other, by the same rationale, part-time farming also cuts down their time available for off-farm work, constrains them on learning advanced knowledge and hinders them from obtaining posts with higher pay.

In fact, some small farm operators hold full-time jobs in the cities and do farming only at night and on weekends, thus unable to take care of land and production. Many of them work in the secondary labor market of the small rural towns, receiving low wages corresponding to their educational backgrounds and practical experience. (Gebremedhin & Christy 1996: 64)¹²

¹² In the literature no data have been found to indicate that at least some small farmers are making economically irrational decisions with land they own (farming it when they could earn a higher return by renting it out). But there may be two causes for no data on a phenomenon: (1) this phenomenon does not exist at all; (2) it exists, but no data have yet been collected. With the reports of Ahearn, Jones, Gebremedhin and Christy cited above, one may think that (2) would be a more possible cause for the shortage of data. If so, the Proposal raised below at least could arouse the society to pay more attention to this

Part-time farming by small farmers did not prevent their exiting farming.

Although part-time farming has resisted to some extent the general trend towards fewer but larger farms, it has not reversed it. Thus Peterson and Brooks (1993: 13) envisage that the farm sector will continue to move in the direction of greater concentration in the remaining years of this century and the next.

In conclusion, many small farmers have chosen farming as an occupation because of the values they attach to farm work, including the opportunity to be one's own boss (Gebremedhin & Christy 1996: 64). As a result, small farms with annual gross sales below \$ 25 000 (accounting for 62.8 % in total farm number, but only 4.9 % in total gross sales; 62.3 % had operators who worked off-farm; and 28.9 % had operators 65 years old or over in 1992) were operated by *full owners* of land rather than part owners or tenants; and on average the operators of these farms had negative net income from farming alone (Table 3. Brooks & Kalbacher 1990. Tweeten 1994. Tweeten & Amponsah 1996: 89, 91).

Thus, the preference to be one's own boss led to full owners, who were unable to expand small farms, that resulted in loss-making farming, and further required supplementary off-farm work, which has only slowed but not prevented their gradual and eventual being crowded out from agriculture.

Off-farm activities have been promoted only as a subordinate occupation.

The promotion of off-farm employment has been supported by many, almost without disagreement. But it is still generally regarded as subordinate to the independent small farming, which, although a loss-making enterprise, is upheld as the major occupation for small farmers. Hence a relatively passive and reluctant engagement.

It is important to note that *inefficient land-holding* has also appeared, for many small farms 'get most of their income from off-farm sources and continue to subsidize their way of life even through multi-years of not making any money on the farm' (Perry 1999).

Two Vital Dilemmas

The US government policies shifted from one unfunctionable extreme, i.e, a protective safety net during 1933-96 when the Democrats controlled the Congress, to another, i.e., free market forces since the adoption of the 1996 Farm Bill after the

phenomenon and start to collect relevant data.

Republicans dominated the Congress in 1994. But the Democrats still would like to restore the previous safety net partially or completely. In fact, President Clinton (1996) declares that 'I am signing H.R. 2854 (1996 Farm Bill) with reservation because I believe the bill fails to provide an adequate safety net for family farmers. The fixed payments in the bill do not adjust to changes in market conditions, which would leave farmers, and the rural communities in which they live, vulnerable to reductions in crop prices or yields. I am firmly committed to submitting legislation and working with the Congress next year to strengthen the farm safety net.' The continuous Republican control of the Congress since 1994 has prevented him from doing so. But even if the Democrats did gain the control of the Congress in the future, e.g., in 2000, and restore the safety net, two vital dilemmas would still not be solved: (1) For raising domestic efficiency and international competitiveness, large farms should be promoted, while for conserving environmental landscape, rural communities and democracy roots, and reducing rural poverty, small farms should be preserved. These two goals seem contradictory. (2) Full or partial restoration of the previous protective safety net would not only bring back its drawbacks (market distortions, budget burden, bureaucracy, etc.), but also, even such a net could not change the trend towards fewer but larger farms as proved since 1933, while without such a net, small farmers would face stronger squeezing power of free market forces. No solution has ever been found to stop the swinging between these two unworkable extremes. Therefore, Browne, Allen and Schweikhardt (1997) lament that 'the road to agricultural policy reform has a long way to go'.

A Conjectural Proposal

Content. In order to find a way out of oscillating between the two unfunctionable extremes of protective safety net (1933-96) and free market forces (1996-), to achieve the two necessary but seemingly contradictory aims of not only strengthening large but also preserving small farms, a new round of institutional changes is proposed here. This would focus on the *promotion of part ownership of land and off-farm activities with either a Dual Land System or Single Land System*, i.e., small farmers, being engaged in off-farm activities, retain self-sufficiency land (under the Dual Land System) or family plots (under the Single Land System) as small farms, and lease production land to competent farmers (including some small farmers) as part owners (who either are already, or could

become, large farmers) to strengthen the existing, or form new, large farms. Small farmers would thus hold a triple status or possess three principal occupations: off-farm workers, bosses of self-operated small farms, and landlords in leasing to part owners.

Dual Land System. Where off-farm activities are not yet highly developed and most small farmers working there have not secured jobs, their farmland could be divided into *self-sufficiency land* to be kept for producing food grains and vegetables for the family, and *production land* to be leased to competent farmers as part owners.

Single Land System. Alternatively, where off-farm activities are highly developed and most small farmers have secured jobs there, they could keep a *family plot* for growing vegetables to accommodate farmers' tradition of not buying them from the market, and lease the rest of farmland as production land to competent farmers as part owners. Small farmers would not need to retain self-sufficiency land because they could use off-farm income to buy food. Since a family plot would be much smaller than a self-sufficiency land, from quantitative point of view, agricultural land is no longer divided into the Dual Land. Hence a Single Land System. Reducing self-sufficiency land to family plots correspondingly makes the farming scale of the production land by part owners much larger than under the Dual Land System. Nevertheless, family plots for self-use by small farmers still constitute small farms.

The Dual Land System and Single Land System could co-exist in one locality, if some small farmers are already willing to concentrate on off-farm activities and only retain the smaller family plots, while others still wish to keep the larger self-sufficiency land. Following the development of off-farm activities to higher levels, more and more small farmers could secure jobs there and lease more land to part owners, the Dual Land System would evolve into the Single Land System.

Although physically it would be unimaginable that someday the whole of American farmland would be merged into one super-large farm, and legally the US anti-trust law would not allow such a situation, the general trend towards fewer but larger farms may still continue, due to domestic and international competitive pressure. Yesterday's large farms may become today's small farms still (Gebremedhin & Christy 1996: 60). But, in this dynamic process, part owners could become larger through merging and renting in more land, and small farmers as landlords would not be crowded out but integrated.

Considering the old and female land owners are already willing to rent out land, able-bodied male small farmers should be emphatically encouraged to do so. Of course, some of them who are competent could rent in land to become large farmers.

Small farmers' housing land together with their houses would constitute part of the small farms, dotted in the landscape.

Absentees could choose to lease the whole land without keeping any for self-use. But absenteeism is not advocated here, taking into account both American small farmers' traditional preference to be one's own boss on land and the need for small farms as part of the environmental landscape.

Of course, if some small farmers are willing (rather than forced) to transfer land ownership and quit farming for better full-time off-farm jobs, this should be encouraged, just as Jefferson states in 1785 but overlooked by many.

The interventions of the federal, state and local governments should be reoriented chiefly in two dimensions: (1) Not to foster independent small farming, but guide, encourage and help small farmers to lease production land to part owners to form large farms; it is essential to lead small farmers to realize that independent small farming would be unsustainable, and no government assistance could be strong enough to rescue them, hence 'joining or perishing'; favorable tax and credit treatment and transitory direct income support may be given to those who rent out land and develop off-farm activities. (2) To guide small farmers to treat off-farm employment, not passively because of no other choice and as a subordinate engagement, but actively as one of their three principal occupations; and help them to actively develop overall off-farm activities to generate more employment opportunities and construct rural communities. Vigorous experiments are both beneficial and necessary.

Significance. *Large farms would be strengthened* since leasing the production land by small farmers to competent farmers as part owners could increase their farm size, and accordingly their domestic and international competitiveness. Numerous small lands, which are loss-making when operated by small farmers, would become profitable after they have been leased to part owners. Land resources are thus better allocated and utilized.

Small farmers would share the reinforced strength of part owner large

farmers. Technologies (mechanical, divisible, biochemical, environmental, informational, etc.), managerial resources, rural development, procurement and marketing facilities which have thus far mainly favored large farmers would no more be antagonistic to small farmers but could be enjoyed by them because they are now also a part of the large farmers. By joining large farmers and sharing their strength, small farmers would no longer be vulnerable and could retain ownership of their small farmland and receive land rent permanently. Improving the quality and productivity of farmland which small farmers have neither time nor resources to do due to being engaged in off-farm work and weak capacity could now be performed by large farmers, since part owners not only would gain incentives to do so through informal short-term but actual long-term leasing, and shared investment in input costs, but also possess advanced technologies, managerial resources and sufficient capital to do so. Small farmers could thus release more time to gain advanced knowledge so as to obtain better off-farm employment. They are not only still their own bosses on the self-sufficiency land or family plots, but also become bosses of others, i.e., part owners who rent in their land, and could thus exert power of ownership control. The dynamic process of farms' becoming fewer and larger would not be at the expenses of squeezing out small farmers, as they would be integrated by part owner large farmers through merging and renting in more land.

Inefficient land-holding by small farmers could be resolved, for the many small farmers who 'get most of their income from off-farm sources and continue to subsidize their way of life even through multi-years of not making any money on the farm' (as cited above) could lease the part of the loss-making farm beyond self-need to part owners, so that part owners could achieve economies of scale, they earn rent, and land be efficiently used.

The landscape, rural communities and democracy roots would be conserved, as the small farms including their houses constitute environmental scenes, the development of off-farm activities strengthens rural communities, and the preservation of small farmers also preserves their votes.

The government would be relieved from the unbearable burden of small farmers. The traditional interventions provided small farmers with *Farm Ownership Loans* for buying land, *Farm Operating Loans* for buying equipment, refinancing debts,

etc. They were impotent, however, in the face of the overwhelming strength of large farmers. It would be impractical to increase such loans to so many small farmers to such an extent that they could resist large farmers or become large themselves. The safety net designed to protect small farmers during 1933-96 ended up with assisting large farmers more than those it was devised to help and therefore failed. The 1996 Farm Bill introduced in a stronger bias in favor of large and against small farmers. In contrast, according to the Proposal, the government subsidies the cost of which has been borne by taxpayers and consumers would be partially or even fully replaced by land rent paid by large farmers to small farmers and increased off-farm income both of which are yielded within rural areas and could be permanent.

The two-tier or bimodal system of agriculture, including a few large corporate farms and most farmers on part-time farming with off-farm work or on welfare as advocated by the Committee for Economic Development (CED 1974: 25) could be integrated, with the difference that the land rent and increased off-farm income may partly or even completely replace the government welfare provisions.

Therefore, by solving the first vital dilemma, i.e., realizing the two seemingly contradictory aims of preserving small while strengthening large farms, the Proposal would accordingly also resolve the second, i.e., the government's swaying between protective safety net and free market forces. The Proposal would thus lead to the achievement of the essential and interdependent goals of sustainable agricultural and rural development as defined by FAO in 1991 'Food security, to be obtained by ensuring an appropriate and sustainable balance between self-sufficiency and self-reliance; employment and income generation in rural areas, particularly to eradicate poverty; and natural resource conservation and environmental protection.' (SDD-FAO 1995: 1)

A new Columbus's tragedy? In 1492, Columbus disembarked on a new continent but still believed it to be the India of Asia. Until the 1950s, full ownership by farm families was considered the 'ideal' system of land tenure (Janssen 1993: 473). But since then, small farmers, economists and policy makers have seen the success of part owners as their performance has been regularly reported. Why do they still stick to the declining independent small farming? Isn't it a new Columbus's tragedy? If so, the old one may be excused as Columbus had little time to make research. But how to explain that

after 50 years of intensive studies by so many, part ownership is still not promoted and is even ignored?

The new Columbus's tragedy has mainly been caused by the failure to solve two fundamental contradictions. First, on one hand, in order to realize Jefferson's spirit of retaining democracy roots, small farmers should be preserved. On the other, the 'ideal' full owners in Jefferson's 'yeoman' model have been too weak to sustain. Thus even 'Jefferson himself operated a commercial plantation with slave labor, producing crops for market, and importing goods from England', and 'the structure of American agriculture never followed the Jeffersonian model' (Rasmussen & Stanton 1993: 32). As the 'yeomen' being crowded out, the democracy roots also have been cut. Therefore, Jefferson's specific 'yeoman' model is the exact opposite to his spirit. But, in the USA, no one dared oppose Jefferson's spirit (at least openly). Many politicians have even been eager to show that they are the most fervent to it in order to win votes. Thus, although it is well known that promotion of independent small farming is unfeasible and may only result in the cutting of democracy roots, being unable to resolve this contradiction, people have to stick to it. Now the Proposal may provide a solution: Jefferson's model is simply modified from 'yeomen' to small farmers, because these two concepts are not necessarily the same. By retaining self-sufficiency land or family plots and leasing the rest of farmland to part owners, small farmers are maintained, and hence also the roots of democracy, although they are no more full owner 'yeomen' as before.

The second contradiction may be related to the American small farmers' traditional preference to be one's own boss. On one hand, if they lease land to part owners, they would lose this status. On the other, if they operate land themselves, they would make loss and be crowded out. Many old and female small farmers choose to be nonoperator landlords, because they are not able-bodied. But most able-bodied male small farmers, being unable to overcome this contradiction, stick to operating land themselves, and earn supplementary off-farm income, but still cannot avoid the fate of being squeezed out. The Proposal, by separating small farmers' land into self-sufficiency land or family plots upon which they are still their own bosses and the rest of land which is leased to part owners, may also settle this contradiction. In so doing, the promotion of part ownership and maintenance of small farmers could be combined, and small and large farmers integrated.

This Proposal might be relevant to other OECD countries with a large versus small bimodal farm structure in general as well.

*Table 1 Number, Total and Average Acreage of Farms in the USA 1850-1992**

Year	No. of farms (1 000)	% per year	Total acreage of farms (million acres)	% per year	Average acreage of farms (acre)	% per year
1850	1 449		299		203	
1860	2 044	4.11	407	0.36	199	-0.20
1870	2 670	3.06	408	0.02	153	-2.31
1880	4 009	5.01	536	3.14	134	-1.24
1890	4 565	1.39	623	1.62	137	0.22
1900	5 737	2.57	839	3.46	146	0.66
1910	6 362	1.09	879	0.48	138	-0.55
1920	6 448	0.14	956	0.88	148	0.72
1930	6 546	0.15	987	0.32	151	0.20
1935	6 814	0.82	1 055	1.38	155	0.53
1940	6 350	-1.36	1 061	0.11	167	1.55
1950	5 648	-1.11	1 202	1.33	213	2.75
1954	4 798	-3.76	1 206	0.08	251	4.46
1959	4 105	-2.88	1 183	-0.38	288	2.95
1964	3 457	-3.16	1 146	-0.63	332	3.06
1969	3 000	-2.64	1 108	-0.66	369	2.23
1974	2 795	-1.37	1 084	-0.43	388	1.03
1978	2 436	-3.21	1 045	-0.90	429	2.64
1982	2 241	-2.00	987	-1.39	440	0.64
1987	2 088	-1.37	964	-0.47	460	0.91
1992	1 925	-1.56	946	-0.37	498	1.65

* The census of agriculture is taken every five-year covering the years ending in '2' and '7' and includes as a farm every place from which \$ 1 000 or more of agricultural products were produced and sold or normally would have been sold during the census year (NASS 1998).

Sources: 1850-1910: SAUS 1920: 138. 1920: SAUS 1949: 613. 1930-78: SAUS 1984: 652. 1982-92: SAUS 1997: 665.

Table 2 Percentage in Farm Number by Farm Size (acre) in the USA 1910-92

Size		1910	1935	1950	1959	1969	1978	1987	1992	
Small	< 10	5.3	8.4	9.0	6.5	5.9	6.7	8.8	8.6	
	10-49	30.1	31.2	27.5	21.9	17.3	17.4	19.7	20.2	
Small subtotal		< 50	35.4	39.5	36.5	28.4	23.2	24.1	28.5	28.8
Lower medium	50-259	54.8	49.7	49.1	49.8	47.9	44.0	40.1	39.3	
Upper medium *	260-499				12.7	15.3	15.4	13.7	13.2	
	500-999						9.4	9.6	9.7	
Medium subtotal		(50-259)	(50-259)	(50-259)	(50-499)	(50-499)	(50-999)	(50-999)	(50-999)	
		54.8	49.7	49.1	62.5	63.2	68.8	63.4	62.2	
Small-medium subtotal		(< 260)	(< 260)	(< 260)	(< 500)	(< 500)	(< 1 000)	(< 1 000)	(< 1 000)	
		90.2	89.2	85.6	90.9	86.4	92.9	91.9	91.0	
Large	260-499	7.0	6.9	8.9						
	500-999	2.0	2.5	3.4	5.4	7.9				
	1 000-1 999				3.7	3.3	4.3	4.9	5.3	
	> 1 999	0.8	1.3	2.3		2.2	2.8	3.2	3.7	
Large subtotal		(> 259)	(> 259)	(> 259)	(> 499)	(> 499)	(> 999)	(> 999)	(> 999)	
		9.8	10.7	14.6	9.1	13.4	7.1	8.1	9.0	

* Stanton invariably classifies farms of 260-499 acres and 500-999 acres as large farms from 1900 through 1987 (Stanton 1993: 49-50), which may overlook the dynamic changes of farm size distributions. Actually farms of 260-499 acres and 500-999 acres started to decline in the 1950s and 1970s respectively. Thus the author downgrades them from large to medium farms from 1959 and 1978 onwards respectively accordingly, and calls those with 50-259 acres as lower medium farms, and those with 260-999 acres as upper medium farms (this dynamic classification is not seen in the literature)

Sources: 1910-35: SAUS 1939: 613. 1950-59: SAUS 1962: 610. 1969: SAUS 1979: 687. 1978: SAUS 1992: 645. 1987-92: SAUS 1997: 665.

Table 3 Farm Number, Acreage and Value of Sales by Size of Sales in the USA 1949-92

Value of products sold (\$)	Farm no. (1000)	%	Acreage (acre)			Value of sales (\$)		
			Total (mil.)	Average per farm	% of total	Total (mil.)	Average per farm (1000)	% of total
1949								
2 500 & more	2 087	100	850	407	100	18 919	9.1	100
2 500 - 4 999	882	42.3	169	191 medium	19.9	3 093	3.5	16.3
5 000- 9 999	721	34.5	215	298 large	25.3	4 894	6.8	25.9
10 000 & more	484	23.2	466	963 large	54.8	10 932	22.6	57.8
5 000 & more large		57.7		298-963 large	80.1			83.7
1959								
2 500 & more	2 067	100	940	455	100	29 003	14.0	100
2 500- 4 999	618	29.9	119	192 lo-med	12.6	2 275	3.7	7.8
5 000- 9 999	654	31.6	189	288 up-med	20.1	4 723	7.2	16.3
10 000- 19 999	483	23.4	215	445 up-med	22.9	6 705	13.9	23.1
20 000- 39 999	210	10.2	166	791 large	17.7	5 648	26.8	19.5
40 000 & more	102	4.9	252	2 466 large	26.8	9 652	94.5	33.3
20 000 & more large		15.1		791- 2 466 large	44.5			52.8
Below 500	2 1 638	100	140	86	100	1 514	0.9	100
50-2 499	349	21.3	37	106 lo-med	26.4	461	1.3	30.4
<i>Abnormal</i>	3	100	43	14 007	100	109	36.3	100
1969								
2 500 & more	1 734	100	918	530	100	44 476	25.6	100

Value of products sold (\$)	Farm no. (1000)	%	Acreage (acre)			Value of sales (\$)		
			Total (mil.)	Average per farm	% of total	Total (mil.)	Average per farm (1000)	% of total
2 500-4 999	395	22.8	76	192 lo-med	8.3	1 346	3.4	3.0
5 000-9 999	390	22.5	107	274 up-med	11.6	2 814	7.2	6.3
10 000-19 999	395	22.8	171	433 up-med	18.6	5 693	14.4	12.8
20 000-39 999	331	19.1	207	626 large	22.6	9 267	28.0	20.8
40 000-99 999	170	9.8	185	1 092 large	20.2	10 073	59.3	22.6
100 000 & more	52	3.0	172	3 304 large	18.7	15 282	293.8	34.5
<i>20 000 & more large</i>		<i>31.9</i>		<i>626-3 304 large</i>	<i>61.5</i>			<i>77.9</i>
<i>Below 2 500</i>	994	100	90	90	100	935	0.9	100
50-2 499	193	19.4	19	96 lo-med	20.8	188	1.0	20.1
<i>Abnormal</i>	2	100	55	26 174	100	153	72.3	100

1978

<i>2 500 & more</i>	1 865	100	927	497	100	107 164	57.5	100
2 500-4 999	332	17.8	37	112 lo-med	4.0	1 191	3.6	1.1
5 000-9 999	331	17.7	56	168 lo-med	6.0	2 361	7.1	2.2
10 000-19 999	310	16.6	84	272 up-med	9.1	4 425	14.3	4.1
20 000-39 999	306	16.4	133	435 up-med	14.3	8 788	28.7	8.2
40 000-99 999	363	19.5	245	675 up-med	26.4	23 059	63.5	21.5
<i>100 000 & more large</i>	223	<i>12.0</i>	372	<i>1 669 large</i>	<i>40.1</i>	67 339	302.0	62.8
<i>Below 2 500</i>	612	100	47	77 lo-med	100	705	1.2	100
<i>Abnormal</i>	2	100	56	24 309	100	245	106.4	100

Value of products sold (\$)	Farm no. (1000)	%	Acreage (acre)			Value of sales (\$)		
			Total (mil.)	Average per farm	% of total	Total (mil.)	Average per farm (1000)	% of total
1987 total	2 088	100	965	462	100	136 049	65.2	100
<i>10 000 & more</i>	1 060	50.8	829	782	86.1	132 645	125.2	97.5
10 000-24 999	326	15.6	92	283 up-med	9.6	5 244	16.1	3.9
25 000-49 999	220	10.5	111	504 up-med	11.5	7 869	35.8	5.8
50 000-99 999	218	10.4	162	743 up-med	16.8	15 661	71.8	11.5
100 000-249 000	203	9.7	225	1 111 large	23.3	31 178	153.9	22.9
250 000-499 999	61	2.9	114	1 858 large	11.8	20 740	339.2	15.2
500 000-999 999	21	1.0	63	3 002 large	6.5	14 076	672.5	10.3
1 000 000 & more	11	0.5	63	5 655 large	6.5	37 876	3414.4	27.8
<i>100 000 & more large</i>				<i>1 111-5 655 large</i>	<i>48.1</i>			<i>76.2</i>
<i>Below 10 000</i>	1 028	49.2	135	132	14.0	3 404	3.3	2.5
Below 2 500	490	23.5	60	122 lo-med	6.2	498	1.0	0.4
2 500-4 999	263	12.6	30	114 lo-med	3.1	946	3.6	0.7
5 000-9 999	275	13.2	46	166 lo-med	4.7	1 960	7.1	1.4
1992 total	1 925	100	946	491	100	162 608	84.5	100
<i>10 000 & more</i>	1 019	52.9	822	807	86.9	159 565	156.6	98.1
10 000-24 999	302	15.7	82	271 up-med	8.7	4 841	16.0	3.0
25 000-49 999	195	10.1	91	477 up-med	9.7	6 967	35.7	4.3
50 000-99 999	188	9.8	134	713 up-med	14.2	13 517	72.0	8.3
100 000-249 000	208	10.8	228	1 094 large	24.1	32 711	157.0	20.1

Value of products sold (\$)	Farm no. (1000)	%	Acreage (acre)			Value of sales (\$)		
			Total (mil.)	Average per farm	% of total	Total (mil.)	Average per farm (1000)	% of total
250 000-499 999	79	4.1	131	1 666 large	13.8	26 914	342.7	16.6
500 000-999 999	31	1.6	81	2 598 large	8.5	20 953	675.4	12.9
1 000 000 & more	16	0.8	76	4 751 large	8.0	53 663	3377.2	33.0
<i>100 000 & more large</i>		<i>17.3</i>		<i>1 094-4 751 large</i>	<i>54.4</i>			<i>82.6</i>
<i>Below 10 000</i>	907	47.1	124	136	13.1	3 043	3.4	1.9
Below 2 500	423	22.0	56	132 lo-med	5.9	411	1.0	0.3
2 500-4 999	232	12.1	27	116 lo-med	2.8	836	3.6	0.5
5 000-9 999	252	13.1	41	162 lo-med	4.3	1 797	7.1	1.1

* Large, lower medium (lo-med) and upper medium (up-med) sizes in acreage as in Table 2.

Sources: 1949: SAUS 1964: 615. 1959: SAUS 1976: 635. 1969-78: SAUS 1981: 663. 1987: SAUS 1991: 648. 1992: SAUS 1997: 666.

Table 4 Farm Number (1 000) under Different Tenure of Operator (1 000) in the USA 1900-92

Year	Total No.	Full owner	%	Part owner	%	Tenant*	% *
1900	5737	3202	55.8	451	7.9	2084	36.3
1910	6362	3355	52.7	594	9.3	2413	37.9
1920	6448	3367	52.2	559	8.7	2523	39.2
1935	6812	3210	47.1	689	10.1	2913	42.8
1940	6097	3084	50.6	615	10.1	2398	39.3
1950	5382	3090	57.4	825	15.3	1468	27.3
1959	3711	2119	57.1	811	21.9	760	20.5
1969	2730	1706	62.5	672	24.6	353	12.9
1978	2479	1451	58.6	714	28.8	314	12.7
1982	2241	1326	59.2	656	29.3	259	11.5
1987	2088	1239	59.3	609	29.2	240	11.5
1992	1925	1112	57.7	597	31.0	217	11.3

* 1900-59 included data for managers.

Sources: 1900-35: SAUS 1939: 615. 1940-50: SAUS 1964: 618. 1959-78: SAUS 1984: 653. 1987-92: SAUS 1997: 665.

*Table 5 Farm Acreage (million acres) under Different Tenure of Operator
(1 000) in the USA 1900-92*

Year	Total acreage	Full owner	%	Part owner	%	Tenant *	% *
1900	839	431	51.4	125	14.9	283	33.7
1910	879	465	52.9	134	15.2	280	31.9
1920	956	461	48.3	176	18.4	319	33.4
1935	1055	391	37.1	266	25.2	397	37.7
1940	1061	382	36.0	300	28.3	378	35.6
1950	1159	419	36.2	422	36.4	317	27.4
1959	1124	349	31.0	498	44.3	167	14.9
1969	1063	375	35.2	550	51.8	138	13.0
1978	1030	341	33.1	565	54.9	124	12.0
1982	987	342	34.7	531	53.8	114	11.6
1987	964	318	32.9	520	53.9	127	13.2
1992	946	296	31.3	527	55.7	123	13.0

* 1900-59 included data for managers.

Sources: 1900-35: SAUS 1939: 615. 1940-50: SAUS 1964: 618. 1959-78: SAUS 1984: 653. 1982-92: SAUS 1997: 665.

Table 6 Farm Number (1 000) and Percentage by Tenure of Operator in Different Farm Acreage in the USA 1978-92

Size (acre)	Total	Full owner	%	Part owner	%	Tenant	%
1978 *	2479	1451	58.6	714	28.8	314	12.7
Under 50	690	532	77.1	74	10.8	84	12.2
50-179	814	563	69.2	157	19.3	94	11.5
180-499	596	262	43.9	247	41.4	87	14.7
500-999	215	57	26.5	128	59.5	30	14.0
1000 & over	161	36	22.4	107	66.2	18	11.4
1982	2241	1326	59.2	656	29.3	259	11.5
Under 50	637	505	79.3	68	10.7	63	9.9
50-179	711	489	68.7	144	20.2	79	11.1
180-499	526	232	44.1	221	42.0	73	13.8
500-999	204	57	27.9	120	58.8	27	13.2
1000 & over	161	41	25.4	103	64.0	17	10.6
1987	2088	1239	59.3	609	29.2	240	11.5
Under 50	596	483	81.1	59	9.9	53	9.0
50-179	645	449	69.6	130	20.1	66	10.3
180-499	478	217	45.3	195	40.8	67	13.9
500-999	200	53	26.3	117	58.3	31	15.4
1000 & over	169	37	22.1	108	64.2	23	13.7
1992	1925	1112	57.7	597	31.0	217	11.3
Under 50	554	444	80.1	58	10.5	52	9.4
50-179	584	395	67.6	130	22.3	59	10.1
180-499	428	190	44.4	183	42.8	55	12.8
500-999	186	48	25.8	111	59.7	27	14.5
1000 & over	173	35	20.2	114	65.9	24	13.9

* Earlier data unavailable.

Sources: 1978: SAUS 1984: 653. 1982: SAUS 1989: 629. 1987: SAUS 1994: 666. 1992: SAUS 1997: 665.

Table 7 Average Variable Cash and Economic Costs for Corn (1987), Soybean (1986), Wheat (1986) Production by Tenure of Operator in the USA

Tenure	Average variable cash costs (\$/bushel)			Average economic costs (\$/bushel)		
	Corn	Soybean	Wheat	Corn	Soybean	Wheat
Full owner	0.98	1.45	1.74	2.06	4.71	4.41
Part owner	<i>1.00</i>	1.43	1.30	<i>2.17</i>	4.61	3.38
Some share, no cash	0.91	1.22	1.20	<i>2.20</i>	4.41	3.30
Some cash, no share	<i>1.13</i>	1.71	1.38	<i>2.24</i>	<i>5.09</i>	3.52
Both cash & share	0.96	1.37	1.32	<i>2.07</i>	4.32	3.32

Sources: USDA 1986a. USDA 1986b. USDA 1987.

References

1. Ahearn, Mary C. (July 1996): 'Alternatives for Small Farm Survival: Government Policies versus the Free Market: Discussion', 'Journal of Agricultural and Applied Economics' 28 (1): 95-98.
2. BCUS - Bureau of Census, US Department of Commerce (1987): '1987 Census of Agriculture', Washington DC.
3. Bollman, Ray D; Whitener, Leslie A. and Tung, Fu Lai (1995): 'Trends and Patterns of Agricultural Structural Change: A Canada-U.S. Comparison', 'Canadian Journal of Agricultural Economics', Special Issue: 15-28.
4. Brewster, David (1979): 'Historical Notes on Agricultural Structure' and 'The Family Farm: A Changing Concept', 'Structure Issues of American Agriculture', Agricultural Economics Report No. 438, Economic Research Service, US Department of Agriculture.
5. Browne, W. P.; Allen, K. and Schweikhardt, D. B. (1997): Never Say Never Again: Why the Road to Agricultural Policy Reform Has a Long Way to Go', 'Choices - The Magazine of Food, Farm, and Resources Issues', No. 4: 4-9.
6. Brooks, N. and Kalbacher, J. (1990): Profiling the Diversity of America's Farms', in 'Americans in Agriculture: Portraits of Diversity' (1990 Yearbook of Agriculture), US Department of Agriculture, Washington DC: 18-23.
7. CED - Committee for Economic Development (1974): 'A New U.S. Farm Policy for Changing World Needs'.
8. Clinton, William J. (4 April 1996): 'Statement by the President on the Farm Bill Signing', <http://www.usda.gov/farmbill/state.htm>
9. EC DG VI (March 1998a): the European Commission, Directorate General VI: 'Agenda 2000 - Agricultural Part', http://europa.eu.int/comm/dg06/ag2000/index/index_en/htm
10. EC DG VI (March 1998b): the European Commission, Directorate General VI: 'Agenda 2000 -Commission Proposals - Fact Sheets - Rural Development', http://europa.eu.int/comm/dg06/ag2000/fact/rudev/index_en/htm
11. Gardner, B. Delworth (1995): 'Plowing Ground in Washington: The Political Economy of U.S. Agriculture', Pacific Research Institute for Public Policy, San Francisco.
12. Gebremedhin, Tesfa G. and Christy, Ralph D. (July 1996): 'Structural Changes in U.S. Agriculture: Implications for Small Farms', 'Journal of Agricultural and Applied Economics', Vol 28, No. 1: 57-66.

13. Goetz, Stephan J. and Debertin, David L. (August 1996): 'Rural Population Decline in the 1980s: Impacts of Farm Structure and Federal Farm Programs', 'American Journal of Agricultural Economics': 517-29.
14. Harris, Craig K. and Gilbert Jess (1985): 'Measuring the Social Dimensions of Land Ownership and Control', in Moyer, D. David and Wunderlich, Gene (eds.) 'Transfer of Land Rights', Oak Brook, IL.
15. Hurlburt, Virgil (1954): 'Farm Rental Practices and Problems in the Midwest', North Central Regional Publication No. 50, Iowa State University, Ames, IA.
16. Janssen, Larry (1993): 'Empirical Analysis of Tenure Patterns and Farm Structure', in Hallam, Arne (ed.) 'Size, Structure, and Changing Face of American Agriculture', Westview Press, Boulder.
17. Janssen, Larry and Johnson, Bruce B. (1989): 'Farmland Leasing and Land Tenure in South Dakota and Nebraska, NC-181 Proceedings', in Hallam, Arne (ed.) 'Determinants of Farm Size and Structure', Iowa State University, Ames, IA.
18. Johnson, Bruce B.; Janssen, Larry; Lundeen, Michael and Aiken, J. David (1987): 'Agricultural Land Leasing and Rental Market Characteristics: A Case Study of South Dakota and Nebraska', Completion Report to US Department of Agriculture, Washington DC.
19. Jones, Hezekiah S. (Spring 1994): 'Federal Agricultural Policies: Do Black Farm Operations Benefit?', 'The Review of Black Political Economy': 25-50.
20. Jordan, B. and Tweeten, L. (1987): 'Public Perceptions of Farm Problems', Research Report No. P-894, Agricultural Experiment Station, Oklahoma State University.
21. Kay, Ronald D. (1981): 'Farm Management: Planning, Control and Implementation', McGraw Hill, New York.
22. Lundeen, Michael and Johnson, Bruce (1987): 'Farmland Leasing in Nebraska', Agricultural Economics Report 152, University of Nebraska, Lincoln, NE.
23. McLean-Meyinsse, Patricia E. and Brown, Adell Jr. (1994): 'Survival Strategies of Successful Black Farmers', 'The Review of Black Political Economy', Spring: 73-83.
24. NASS (1998) - National Agricultural Statistics Service of the US Department of Agriculture: 'What is the Census of Agriculture?', <http://www.nass.usda.gov/census>.
25. OECD (1998): 'Agricultural Policy Reform and the Rural Economy in OECD Countries', Organization for Economic Cooperation and Development, Paris.
26. Perry, Janet (29 April 1999): Comments on the manuscript of this paper.

27. Peterson, R. Neal and Brooks, Nora L. (July 1993): 'The Changing Concentration of U.S. Agricultural Production during the 20th Century: 14th Annual Report to the Congress on the Status of the Family Farm', Agriculture Information Bulletin No. 671, Agricultural and Rural Economy Division, Economic Research Service, US Department of Agriculture.
28. Peterson, Scott and Janssen, Larry (1988): 'Farmland Leasing in South Dakota', Agricultural Experiment Station B-704, South Dakota State University, Brookings, SD.
29. Rasmussen, Wayne D. and Stanton, B. F. (1993): 'The Structure of Agriculture on an Historical Context', in Hallam, Arne (ed.) 'Size, Structure, and Changing Face of American Agriculture', Westview Press, Boulder.
30. SAUS (1920): 'Statistical Abstract of the United States 1920', Bureau of Census, US Department of Commerce.
31. SAUS (1939): 'Statistical Abstract of the United States 1939'.
32. SAUS (1949): 'Statistical Abstract of the United States 1949'.
33. SAUS (1962): 'Statistical Abstract of the United States 1962'.
34. SAUS (1964): 'Statistical Abstract of the United States 1964'.
35. SAUS (1976): 'Statistical Abstract of the United States 1976'.
36. SAUS (1979): 'Statistical Abstract of the United States 1979'.
37. SAUS (1981): 'Statistical Abstract of the United States 1981'.
38. SAUS (1984): 'Statistical Abstract of the United States 1984'.
39. SAUS (1989): 'Statistical Abstract of the United States 1989'.
40. SAUS (1991): 'Statistical Abstract of the United States 1991'.
41. SAUS (1992): 'Statistical Abstract of the United States 1992'.
42. SAUS (1994): 'Statistical Abstract of the United States 1994'.
43. SAUS (1997): 'Statistical Abstract of the United States 1997'.
44. SDD-FAO (22-4 November 1995): Sustainable Development Department, Food and Agriculture Organization of the United Nations: 'Current Thinking and Activities', paper prepared for the Oversight Panel on Sustainable Development, Rome.

45. Stanton, B. F. (1993): 'Changes in Farm Size and Structure in American Agriculture in the Twentieth Century', in Hallam, Arne (ed.) 'Size, Structure, and the Changing Face of American Agriculture', Westview Press, Boulder.
46. Tweeten, Luther G. (1994): 'Is It Time to Phase Out Commodity Programs?' in Tweeten, Luther (ed.) 'Countdown to 1995: Perspective for a New Farm Bill', Anderson Chair Publications No. ESO 2122, Department of Agricultural Economics, Ohio State University.
47. Tweeten, Luther G. (1995): 'The Twelve Best Reasons for Commodity Programs: Why None Stands Scrutiny', 'Choices', 2nd Quarter: 4-7, 43-4.
48. Tweeten, Luther G. and Amponsah, Willam A. (July 1996): 'Alternatives for Small Farm Survival: Government Policies versus the Free Market', 'Journal of Agricultural and Applied Economics', Vol. 28, No. 1: 88-94.
49. US Congress (March 1986): Office of Technology Assessment: 'Technology, Public Policy, and the Changing Structure of American Agriculture', Pub. No. OTA-F-285, Washington DC: Government Printing Office.
50. USDA (1986a): US Department of Agriculture '1986 Soybean version, Farm Costs and Return Survey', in Ahearn; Whittaker & El-Osta (1993): 129-32, 135.
51. USDA (1986b): US Department of Agriculture '1986 Wheat version, Farm Costs and Return Survey', in Ahearn; Whittaker & El-Osta (1993): 136-9, 144.
52. USDA (1987): US Department of Agriculture '1987 Corn version, Farm Costs and Return Survey', in Ahearn; Whittaker & El-Osta (1993): 115, 117, 120-1, 123-4, 127.
53. USDA (January 1998): US Department of Agriculture, National Commission on Small Farms: 'A Time to Act', <http://www.reeusda.gov/agsys/smallfarm/report.htm>
54. WE (1993): 'Western Europe 1993', Europa Publications.
55. Wunderlich, Gene (12 January 1999): Comments on the manuscript of this work.
56. Wunderlich, Gene (1999 - forthcoming): 'Agrarianism and Pragmatism in America', Vanderbilt.
57. Zhou, Jian-Ming (1 October 1997): 'A New Proposal for Land Consolidation and Expansion in Japan and Other Economies', Food and Agriculture Organization of the United Nations, Sustainable Development Dimensions in the Internet (voted Internet's No. 1 website - leading 78 top sites - on sustainable development by Lycos visitors, March 1998), <http://www.fao.org>, 'Sustainable Development', 'Land Tenure', 'Analysis'.

58. Zhou, Jian-Ming (1999 - forthcoming): 'Sustainable Development in Monsoon Asia and the USA with Global Applications: A New Approach to Land Ownership', Edward Elgar Publishing Ltd, hardback, ISBN 1 85898 965 5.