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U.S. Policy for Agricultural Adjustment

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Abstract

Domestic and international factors may combine to stimulate change in US agricultural policies and reductions in the costs of support. This would create additional pressures for economic adjustment in the sector. Current U.S. agricultural policies are not oriented to facilitating such adjustment. A trade adjustment program for agriculture, recently included as part of U.S. trade legislation, continues the traditional focus on income support. We discuss the reorientation of existing agricultural policies to facilitate economic adjustment resulting from the reform of domestic agricultural and trade policies. We focus on measures to address three key areas: 1. asset value reductions; 2. human capital issues; and 3. persistent poverty. Estimates of costs suggest that after an initial period, during which compensation for reductions in asset values would be made, the ongoing costs of an active adjustment policy for agriculture would be substantially lower than existing programs.

Keywords: adjustment assistance, international trade policy, U.S. agricultural policy

A combination of domestic and international factors may combine to create pressure for change in U.S. agricultural policies. In recent years, the United States has moved from a position of relative fiscal balance to one of substantial deficit. In the early 1990s, similar budgetary problems led to modifications in agricultural programs aimed at reducing government expenditures. Currently, negotiations are underway through the World Trade Organization (WTO) on liberalizing agricultural trade. A final agreement will likely require a reduction in import protection and will impose greater discipline on government support expenditures. Changes in current agricultural policies in response to these domestic and international factors would intensify adjustment pressures in the U.S. agricultural sector. It may be necessary to take action to aid the adjustment process in order to facilitate policy reform.

While considerable debate may be generated about the need for government action, three areas have been identified in the economics literature as potentially providing a justification for policy measures that aid economic adjustment: 1. efficiency; 2. equity; and 3. political economy (Richardson 1982). The efficiency argument centers on losses created when factors are potentially mobile but market failure (due to imperfect information, incomplete markets or imperfect competition) prevents their reallocation. Corrective action is justified if its costs are less than the value of additional output generated by improved factor allocation. The equity argument centers on compensation for private costs and redistributive effects when factor endowments differ across individuals. Classical welfare economics suggests that society as a whole will benefit from a policy change if gainers can potentially compensate losers and still be better off. The political economy argument centers on the fact that losers may apply political pressure to block change and that compensating payments may be needed to overcome their opposition. It may be argued that all three of these areas apply to agriculture, and provide a justification for an active approach to adjustment in the sector.

In this paper, we explore some options for an active adjustment policy for U.S. agriculture. In the first section, we provide a brief review of existing policies, with particular emphasis on elements oriented towards facilitating adjustment. To bring the issues into sharper focus, we then discuss the likely initial impact of a policy change involving a reduction in support, note the associated market adjustments, and identify particular target groups for adjustment policy. Finally, we offer suggestions for the future direction of adjustment policy for agriculture, dealing specifically with measures to address reductions in farm asset values, human capital issues, and persistent poverty.

U.S. POLICIES AND AGRICULTURAL ADJUSTMENT

In common with many industrial countries, the dominant and enduring focus of U.S. agricultural policy has been on price and income support for farmers. With the exception of the Resettlement Administration that pioneered explicit farm-level adjustment activities in the 1930s and some modestly funded rural development initiatives, little emphasis has been placed on facilitating or promoting adjustment by the agricultural sector to changing economic conditions.² Production controls were used for major crops, such as corn and wheat, and import restrictions are used for commodities, such as milk and sugar, to keep domestic prices above world levels and to limit government expenditures.

Beginning with the Food Security Act of 1985, there was a gradual shift away from production controls and price supports as the primary instrument of policy for crops and towards the increasing use of direct payments. This culminated in the Federal Agriculture Improvement and Reform Act of 1996, which replaced the previous system of deficiency payments with direct

payments that were largely decoupled from current plantings. A declining schedule of payments was established for the latter part of the period covered by the Act (1999-2002), holding open the possibility of their eventual elimination. The legislation also foresaw the end of the price support program for dairy products. There were no explicit provisions for facilitating the adjustment that would be required as a result of this policy reorientation.

The changes foreseen in the 1996 Act never materialized. A decline in market prices (linked in no small measure to the appreciation of the U.S. dollar) and the emergence of a Federal budget surplus prompted Congress to authorize substantial increases in subsidies for farmers. Expenditures in fiscal year 2002 reached a record high of almost \$23 billion. The current legislation, the Farm Security and Rural Investment Act of 2002, formalized the return to large subsidies. Producers of major crops are eligible for price supports (marketing loans), fixed direct payments, and counter-cyclical payments (triggered when prices fall below pre-determined levels). Previous price support programs for milk and sugar remain in place. Preliminary figures for 2003 indicate that of the roughly \$17.4 billion of government payments to agriculture, nearly 87 percent (\$15.1 billion) was paid out in various forms of price and income support, with the balance for conservation payments. This figure, however, understates the total transfers to farmers attributable to price and income support, because it does not include programs, like those for dairy products and sugar, that keep domestic prices above those in world markets by restricting import competition.

One notable departure from a return to the status quo in the current legislation is in the program for peanuts. Production controls have been eliminated, and the same types of price and income support mechanisms are now used as for other program crops. The legislation also authorized compensation for former holders of peanut production quotas for the loss of quota values created by changes in the program. In so doing, it was explicitly recognized that a reduction in the value of agricultural assets (in this case, the right to grow peanuts) is a key adjustment issue associated with policy reform.

While the adjustment components of U.S. agricultural and related policies have been limited, a more active approach has been embodied in measures that address the effects of trade policy liberalization. Trade adjustment assistance (TAA) provisions have been an enduring characteristic of U.S. legislation since the 1962 Trade Expansion Act, which provided presidential authority for the Kennedy Round of GATT negotiations (see Annex). The current Trade Adjustment Assistance Reform Act of 2002 provides supplemental unemployment compensation to workers displaced by international competition, and assistance for retraining and relocation. There is a modest program of assistance for firms. The Act also contains a TAA program for farmers run by the Department of Agriculture.³

In keeping with the focus of agricultural policies in the United States, the TAA program for farmers is a supplementary income support program. Unlike TAA for workers, which is linked to retraining and encourages relocation, there is a minimal active adjustment component. Adjustment consultation through the extension service is required, but no specific action, for example, a change in existing activities, a switch to alternative activities or additional training, is mandated as a result of that consultation. The active adjustment component of the program for farmers is therefore relatively weak.

In summary, few components of U.S. agricultural policies have been designed to facilitate adjustment to changing economic circumstances. Trade Adjustment Assistance programs have taken a more active approach to adjustment, particularly for hired labor. TAA

provisions recently introduced for agriculture focus on the provision of direct payments to compensate for reductions in prices attributable to increased international competition.

ADJUSTMENT POLICY FOR U.S. AGRICULTURE

Despite attempts to embrace agricultural adjustment through modifications to trade adjustment legislation, we believe that current policies fail to address key issues likely to arise with the reform of existing agricultural policies. One of the major limitations is that trade adjustment programs focus primarily on wage labor. While that may be useful for addressing the displacement of labor in industries that are upstream or downstream from the farm, at least in as far as such displacement is associated with changes in trade policies, current programs are not designed to address adjustment issues for the farm household firms that dominate U.S. agriculture.

To formulate an approach to adjustment policy at the farm level we must examine the potential impact of reforming existing agricultural policies, specifically reducing the amount of price and income support that these provide. To varying degrees, the rationale for specific recommendations draws heavily on the efficiency, equity, and political economy justifications for adjustment policy identified at the beginning of the paper.

Tracing the impact of policy reform

Current U.S. agricultural policies generate significant transfers to farmers. Support is provided directly through various types of government payments and indirectly through government policies that raise consumer prices or lower production or marketing costs. In recent years, direct payments have varied between \$11 and 23 billion per year (table 1). According to OECD estimates, the total cost of support that can be directly linked to individual commodities has varied from roughly \$40-\$56 billion per year in the United States.

Not all of this support translates into extra income for producers. The transfer efficiency of support is likely to be substantially less than 100 percent because of efficiency losses in production and consumption (Blandford and Dewbre, 1994). However, some of the support will translate into extra income. It has been further argued that much of the additional income is eventually reflected in higher prices for fixed assets in agriculture – particularly land (e.g., Floyd, 1965).

For at least the past half century, many policy economists, price and trade analysts, production economists, and others have documented how these policy transfers have affected the agricultural sector. Their analyses have been both simple and complex, and the conclusions vary in degree, and sometimes even in direction. However, all, we are sure, would resist the temptation to argue that the impact of gradual reductions or the eventual elimination of domestic support could be described by the symmetric reversal of the effects precipitated by the persistence of the policy intervention. The reasons for asymmetric response within the sector even to rather short-term changes in price, etc. are well known, and have solid foundations in notions such as asset fixity (Edwards, 1959; Hathaway, 1963), an agricultural treadmill (Cochrane, 1965) and our understanding of the process of technological adoption in agriculture that has its origins in the work by Griliches (1957).

For these, and other reasons, the impact of a reduction in domestic agricultural support must be viewed within the context of the dramatic and continual changes in the structure of production agriculture and changes in the structure of agricultural output and input markets, many

of which are in response to the advance of agricultural technology and the persistence in farm support legislation. Adjustment will also be affected by changes in the demographics of agricultural households and their increased reliance on off-farm income. Changes elsewhere in the economy are also important, particularly the increased competition for land and water by non-agricultural users.

Anyone attempting to understand the detailed impact on agriculture of a reduction in domestic support in an industrialized country is likely to confront this same level of complexity. However, as was seen in several papers at an earlier workshop, the general direction and magnitude of adjustments in countries, that have reduced domestic support for all of agriculture or for specific commodities, are generally consistent with straightforward economic reasoning (Harris, 2003; Rae et al., 2003; Doan et al., 2003; Hallberg, 2003). By taking a stylized view of the adjustment process, as reflected in figure 1, we are able to distinguish the initial impact of a policy change involving a reduction in support, from associated adjustments in product and factor markets, and finally, identify particular groups to which adjustment policy might be targeted.

As reflected in the figure, the immediate impact in domestic support will likely be a reduction in current agricultural income, particularly if support is reduced unilaterally. To the extent that output markets react to the reduction in support, price changes (higher output prices) may partially offset the impact of the support reduction on net income. Such effects are more likely if support reductions are multilateral. Markets for purchased inputs may experience similar adjustments, if a reduction in input demand leads to a decline in variable input prices. To the extent that they are not impeded by transactions costs of various descriptions, these adjustments will lead to improvements in market efficiency.

The potential impact of a reduction in domestic support on the agricultural land market is arguably considerably more complex, as are the implications for adjustment assistance. For example, whatever its final magnitude, a reduction in agricultural income will ultimately affect the returns to fixed assets used in agriculture, particularly land. As lower returns are reflected in the price of land, landowners will experience a reduction in wealth. Furthermore, since the users of farmland are not necessarily the owners of that land, the income of farm operators will be affected by how rapidly rental rates for farmland adjust to the reduction in its value. It is for this reason that we must distinguish separate target groups for adjustment assistance as land values fall when domestic support is reduced (figure 1). Clearly the wealth and income positions of landlords, farm operators that own much of their land, and farm operators that rent most of their land will be affected differently. A key factor for the impact of asset value adjustment on each of these groups stems largely from the demographics of farmland owners—their stage in the lifecycle and the relative importance of non-farm sources of household income and wealth.

From figure 1, it is also clear that adjustments will occur in the rate of entry and exit of farms and farm operators from the sector. For those operators wishing to remain in agriculture, some will need no assistance to remain competitive, while others might survive if they are able to enhance their business skills in order to compete effectively in a more market-oriented environment. For those farm operators that either decide to leave farming, or are forced to do so, the need for adjustment assistance clearly depends on whether they must make a transition to another type of employment, or they are at an age where retirement is a realistic alternative.

Three essential components of adjustment policy

Viewed in terms of the simple representation in figure 1, there would seem to be three essential components to a policy to facilitate adjustment to reductions in domestic agricultural

support. These components include compensation for reductions in asset values; measures to improve the quality of human capital or to facilitate its reallocation; and payments to address any persistent poverty problem in agriculture that remains following policy reform. With the exception of the adjustments that will naturally occur in commodity markets and markets for purchased inputs, which can be justified in large measure in terms of increased efficiency, the justifications for these three essential components derive also from equity and political economy considerations.

Since there are likely to be farmers that potentially qualify for all three components, it would be essential that the adjustment measures be well coordinated. While some adjustment initiatives might be accommodated through an expansion of existing TAA legislation, other components will be new. For purposes of efficiency and coordination, it seems preferable that these new adjustment mechanisms be implemented as part of future farm legislation. As seen below, it would seem natural to accommodate any compensation for reductions in asset values within such legislation. This could also be important in providing a safety net to low-income farmers to avoid the stigma felt by many rural residents of participation in more general income assistance programs. Current programs under the TAA legislation and the USDA could be a starting point for developing programs to enhance the human capital of farmers looking to remain in agriculture or find alternative employment, and it might also be preferable to develop these through future farm legislation.

Compensation for Reductions in Asset Values

Except for the compensation of the holders of peanut quotas for loss in value, there have to our knowledge been no previous attempts to compensate owners of U.S. farm assets for losses in value due to a change in policy. To gain some idea of how such an adjustment provision might work, we must examine recent trends in agricultural land prices and the extent to which past program benefits are reflected in these prices.

U.S. farmland prices have increased substantially in recent years (figure 2). From 1990 to 2003, the average price of U.S. farmland rose by an average of 6.6 percent per year. That may be compared with a rate of increase in U.S. producer prices (all commodities) of 1.4 percent, and U.S. consumer prices (urban consumers) of 3.1 percent. The rapid increase in farmland prices is not entirely due to developments in the agricultural sector, although these have undoubtedly played a part. Particularly significant in some areas is the growing demand for land for non-agricultural uses (e.g. land for housing and urban/suburban development at the rural-urban fringe).

In other areas, some land previously used in agriculture is valued for its contribution to wildlife habitat, biodiversity, erosion control, or other components of environmental quality, and farmers are paid to keep this land out of agricultural production through the wetlands reserve and conservation reserve programs. It is unlikely that these kinds of payments will be reduced along with other types of domestic support, and as some would argue, they might well be increased over time as the public throughout the industrialized world places higher and higher values on these non-market goods (Blandford et al., 2003). Given that one of the major original objectives of the conservation reserve was to reduce surplus supplies, especially of corn (Cochrane and Runge, 1992), even with current provisions that evaluate the potential environmental benefits of land offered for enrolment, it is unlikely that the program is designed optimally. If such programs were to continue and be justified solely the basis of environmental contributions, their design would need to be re-examined as adjustment in the sector unfolds in response to reductions in domestic support.

With respect to that support, empirical analysis yields mixed results on the pass through of commodity program benefits to land values. Using county data for 1950-92, Gardner (2003) found only weak support for a positive relationship. Using farm-level data for 1998-2000, Goodwin et al. (2003) find a positive effect, differing by type of payment and by region. Using the same data set, Barnard et al. (2002) derive an estimate of the total impact of farm program payments on cropland values of \$62 billion, with nearly two-thirds of this being concentrated in the “Heartland” region of the Midwest (table 2).⁴ Since much of the land involved is rented, the primary beneficiaries are landlords. For the United States as a whole, 62 percent of that land is owned by non-operator landlords. These same authors argue that a rapid transmission of changes in program payments to land owners is made through changes in land rental rates. Goodwin et al. (2003) estimate that 60 percent of a given change in payments is passed through to landowners in one year. Barnard et al. also note that “many non-operator owners are retired farmers, their survivors, or others formerly directly associated with agricultural production.”⁵ This, combined with the fact that benefits from current program are concentrated geographically, may well add weight to the potential political importance of providing compensation to individuals affected by a reduction in price and income support.

Using the estimates derived by Barnard et al., data on total support from the OECD, and estimates of the transfer efficiency of payments also from the OECD, we derive a rough estimate of the total capitalized value of the support generated by U.S. agricultural programs of \$109 billion (table 3).⁶ In 2002, the total value of U.S. farm real estate was estimated to be roughly \$1.3 trillion. The estimated capitalization of support payments is therefore equivalent to less than 10 percent of the value of U.S. farmland, and slightly more than the \$103 billion of outstanding farm real estate debt in 2002. By way of further comparison, the estimated capitalization of support is equivalent to six times the average annual direct payments made under government programs for the past six years and slightly more than twice the average annual value of total government support as estimated by the OECD.

Any significant reform of U.S. agricultural policies is likely to require the phased elimination of current price and income supports. This could be accompanied by a series of annual asset value compensation payments to land owners. Various options could be explored, but the simplest would seem to be one in which one payment rate would be set per acre for land in program crops, and a second rate for land devoted to other products. The area upon which compensation would be paid could be the base acreage established under current legislation for program crops, and the average area in production during a recent time period for other crops such as sugar. To the extent that farmland rental rates may be less flexible on the downside than on the upside, appropriate reductions in rental rates may have to be required as a condition for landlords to receive payments for loss in farmland value.

Compensation for the loss in value of the fixed assets of livestock producers, particularly dairy, presents greater challenges since it is difficult to identify the area of land upon which compensation would be based. In the short-run, changes in milk prices are reflected in market prices for dairy cattle and their replacements. Over the longer-term, it is likely that the value of government support will be reflected both in the value of land used to keep dairy cattle and to raise replacements, particularly in parts of the upper Midwest and the Northeast where dairy production is the best use of the land. Given the difficulty of identifying the appropriate land base on which payments could be made, it may be necessary to adopt a blended approach to compensation with a payment linked to the number of dairy cows and replacements for individual operators in a recent base period, and one based on land in pasture and forage production.⁷ We

recognize that such a blended compensation scheme may result in over-compensation to some individuals and under-compensation to others.

In conclusion, we might note that the value of farm assets accounts for a declining proportion of the total wealth of U.S. farm households. USDA data indicate that nonfarm net worth of the average farm household increased from 15 percent of the total in 1993 to 31 percent in 1999 (Mishra et al. 2002). While this means that fluctuations in the value of farm assets has less of an impact on farm households than in the past, it is difficult to believe that policy-induced changes would not generate strong pressures for offsetting action.

Human Capital Issues

The reform of agricultural policy would place new demands on the managerial ability of U.S. farmers. Some may need assistance in restructuring their farm operations to reduce costs and increase profitability. Others may decide to exit agriculture altogether.

It is difficult to know *a priori* how many farmers would fall into each category. However, some initial estimates might well be made by classifying farm operators similar to the groups typically identified by economic researchers to distinguish among farms that adopt new technology or employ other types of production and management innovations. Diederer et al. (2003), for example, assign farms to four groups: innovators; early adopters; late adopters; and non-adopters on the basis of behavioral characteristics of farmers. A slightly different categorization might be appropriate for identifying needs for adjustment assistance, but clearly, it is the farmers in the first (or similarly defined) group that would make the transition to a more market-oriented economy without any assistance. The transition might also be quite easy for many in the second group. It is farmers in the latter two groups that would be most likely to need assistance to exit agriculture. Whether or not they would prepare to make the transition to alternative employment or into retirement would depend largely on age, wealth, and other lifecycle considerations. Depending on the structure of their assets, the wealth of some of these farmers would, in turn, be affected by compensation for loss in land values mentioned above.

Regardless of the numbers of farmers in each group, the current adjustment assistance program seems of limited use for several reasons. First, the program is limited to adjustments resulting from trade policy changes, whereas changes in domestic agricultural policies could be of much greater significance for adjustment in agriculture. Second, the program is primarily designed to aid the adjustment of hired labor – the provisions for firm-level adjustment are weak and much of the adjustment in agriculture will involve adaptation in both farm and non-farm activities by farm-firm households. Finally, the current provisions for agriculture, which focus on supplementary income compensation, fail to address farm-level adjustment, a substantial part of which will require improved financial management and planning.

What limited Federal activity there is in this area is funded through the USDA. The farm and financial training courses are supported through the Farm Service Agency (FSA), and risk management education activities are supported by the Risk Management Agency (RMA).

The FSA provides direct loans and loan guarantees for farm ownership and operating expenses to borrowers who would otherwise be unable to obtain financing. It also operates two special programs – one oriented towards under-represented groups (women, African Americans, Native Americans, Alaskan Natives, Hispanics, Asians, and Pacific Islanders) and another to beginning farmers. Of the total funding of \$3.5 billion for FY2004, \$128.4 million (about 4 percent) was authorized for direct farm ownership loans and \$614.7 million (about 17 percent) for

direct operating loans. The FSA requires all borrowers to complete a farm and financial training course, unless they can demonstrate an adequate knowledge and ability in the subject area. FSA also requires borrowers to provide information on their financial performance and to participate in an annual review. Other conditions are attached to financing, including the requirement for borrowers to conduct their operations in an environmentally sound manner, to comply with government environmental policies, and to operate according to a USDA land management plan, if required.

FSA training is conducted by collaborators often drawn from state extension services. The training program typically focuses on key finance topics such as “the balance sheet, income statement, cash flow budget, fixing broken farm finances, financial planning... (and) goal-setting and decision making methods” (Hanson et al., 1996). An analysis of the use of financial information by participating farmers in Kentucky revealed that fewer than 25 percent use a system of accounts that make it easy to perform periodic analysis of income and expenses (Ibendahl et al., 2002). Analysis of the impact of the training for participating farmers in Maryland, New York, and Pennsylvania in 1996 suggests that the application of business plans developed in the course of training would result in an increase of roughly 4 percent in gross income, including income from off-farm sources (Hanson et al., 1998).⁸

Additional financial training activities are provided through the Risk Management Agency (RMA) of USDA under the authority of the Agricultural Risk Protection Act of 2000 which required the agency to “...establish a program under which crop insurance education and information is provided to producers in States in which (as determined by the Secretary) – (a) there is traditionally, and continues to be, a low level of Federal crop insurance participation and availability; and (b) producers are underserved by the Federal crop insurance program.” Fifteen states have been identified as being eligible for the program.⁹ While the primary emphasis of the program is on risk management, it also seeks to improve the financial health of small farms and includes training in basic areas, such as the analysis of financial statements and credit management (RMA, 2000). The program is funded at a level of \$5 million per year. As with the FSA program, the training is provided by a range of partners, including staff in state extension services.

These current programs for improving management skills in agriculture are limited in scope by being restricted geographically or to certain groups of farmers. Greater market orientation will require that farmers be skilled both in production methods and the management of the farm business. Work by the USDA has examined the characteristics of top performing small farms in the United States. Perry and Johnson (1999) conclude that such farms are characterized by three critical management characteristics: cost control; active marketing (the use of hedging or futures and options, forward contracting, and spreading sales throughout the year); and the use of effective financial strategies (management of cash and credit). Available evidence, although limited, suggests that there is a need for additional investment in financial and business management training for farmers to further the aim of successful adjustment to policy reform.

Given the growing importance of off-farm income in total farm household income, the focus of training for some farmers will certainly be on enhancing skills for off-farm employment. The approach adopted in TAA programs, in which financial assistance is provided for those undergoing retraining, might well be used to address this issue. Support for retraining would also be appropriate for farmers who are not of retirement age, but who choose to exit the industry. Farmers approaching retirement might be offered assistance in planning for this. Many of these services have traditionally been provided through cooperative extension and the network is generally in place to address these needs. Additional Federal funding would need to be provided

for program delivery, with the bulk of this being required during the early phase of the implementation of policy reform.

It is difficult to estimate the cost of programs to address human capital issues associated with adjustment in agriculture, but this is likely to be modest in comparison to recent annual support expenditures.

The Persistent Poverty Issue

Equity considerations have long been cited as one of the principal justifications for U.S. agricultural policies. Numerous books and articles have been written over the years about the “farm problem”, i.e., the persistence of low incomes and high poverty rates among farmers. With growing diversification in the sources of income of farm households, in particular a large increase in the proportion of total income obtained from off-farm sources, these arguments carry less weight than before. According to recent USDA data, 95 percent of the aggregate income of U.S. farm households was derived from off-farm sources and average household income was 9 percent above median U.S. household income in 2000 (McElroy et al., 2003). Over 90 percent of the roughly 2.1 million farm operator households in the United States have a net worth above that of the median U.S. household. The average net worth for all farm households was roughly \$514,000 in 2000 (Mishra et al., 2002).

Nevertheless, even with measures such as those suggested above to ease adjustment to a more market-oriented environment, the persistent low-income problem that characterizes certain parts of U.S. agriculture is unlikely to disappear. There may be a case for “safety net” payments to address this issue. A study by Gundersen et al. (2000) examined the impact of a range of safety net options for U.S. agriculture using historical data for 1993-97 and projections for 1999-2003. Their analysis indicates that the distribution of payments would change dramatically if these were based on income, expenditure or earnings criteria, with a much larger share of payments being directed to “limited resource” farm households.¹⁰

Selected characteristics of limited resource farms (LRFs) are summarized in table 4. There are roughly 130 thousand such farms in the United States, representing roughly 6 percent of the total number of farms. Less than 20 percent of limited resource farms received government payments in 1997 and the average payment per recipient of roughly \$2,200 was the lowest among the farm types identified by USDA (Gundersen et al., 2000, table 9). From other data in table 4, we can see that the operators of LRFs tend to have lower educational levels than those of other farms. In 2000 it was estimated that 42 percent of limited resource farm operators had an educational level equivalent to “some high school or less” compared to an average of 15 percent in that category for all farm households. Just over 50 percent of LRF operators were 65 years or older; a percentage only surpassed by farms classified as retirement farms (75 percent). Limited resource farms also had the highest percentage of operators with no spouse (41 percent, compared to an average for all farms of 15 percent). The operators of LRFs spend a larger proportion of their time working off the farm than the other major classes of farm (excluding residential/lifestyle farms for which off-farm work dominates), and the earnings from off-farm work are used to offset the losses made from farming.

If we define poverty in terms of both low income and low net worth, it is apparent that this is not confined exclusively to LRFs. Despite low incomes, data for 2002 indicate that roughly 54 percent of LRFs are wealthier than the average U.S. household (imputed from McElroy 2003, table 7).¹¹ USDA data indicate that LRFs make up roughly 38 percent of the total farms that have lower incomes and lower wealth than the average U.S. household (table 5). Residential/lifestyle

farms make up 33 percent of the total, and farming occupation/lower-sales farms a further 17 percent. If we were to adopt a target of a minimum income level of \$30,000 for farm households that fall into the low income/low asset category (the figure used by Gunderson et al., 2000) this would require transfer payments of roughly \$13,600 per farm or total transfers of \$1.8 billion in 2002.¹² Again this may be compared to \$11-23 billion devoted to direct payments per year and the total OECD estimate of commodity-based support of roughly \$40-\$56 billion per year (table 1).

The use of targeted income support payments is only part of an approach that could be adopted for addressing the poverty issue in U.S. agriculture. As may be seen from table 4, some poor households may actually be losing money on their farm operations.¹³ It would seem that there is a role for the expanded human capital activities discussed earlier (managerial training or counseling for exit from farming) to address these issues.

Conclusions

The adjustment issues associated with policy reform in U.S. agriculture may be addressed through a reorientation of existing policies to address three important aspects: 1. reductions in asset values; 2. improvements in or reallocation of human capital; and 3. persistent poverty. We have used available data to explore these issues and, where possible, to derive some rough estimates of costs. These estimates could certainly be improved, and the specifics of program design could be examined in greater depth. Overall, it appears that the reorientation of US agricultural policies towards facilitating the process of adjustment to change would be much less expensive over the longer term than current policies.

While adjustment to the change that would result from a general reduction in price and income support would be a key factor in the design of future US agricultural policies, it is not the only factor. The growing recognition of the importance of agriculture in the provision of non-commodity outputs, particularly environmental goods, also has implications. An assessment of the extent to which current programs are effective in achieving environmental objectives or need to be modified are outside the scope of this paper, but we recognize the importance of these issues for future policies for the sector.

Despite the limitations of our analysis, we believe that it forms a useful basis for considering future directions in U.S. agricultural policy. Whether radical change in the direction of policy is likely or feasible is an open question, but as economists we should at least be prepared to “think the unthinkable” from time to time.

Annex. A Brief History of U.S. Trade Adjustment Assistance Programs

The 1962 Trade Expansion Act contained provisions for adjustment assistance to firms or workers. A firm or group of workers (or their union) could petition the Tariff Commission to investigate their eligibility for assistance.¹⁴ In the event that the Commission's investigation proved positive the President could provide an opportunity for firms or workers to apply for aid. For firms, such aid could take the form of technical, financial or tax assistance, or some combination of these. A firm was required to submit an adjustment proposal for certification by the Secretary of Commerce. Certification was dependent on the proposal being judged to "materially to contribute to the economic adjustment of the firm"; "give adequate consideration to the interest of workers"; and "demonstrate that the firm will make all reasonable efforts to use its own resources for economic development." Technical assistance could also be provided, on a cost sharing basis, to enable a firm to prepare its adjustment proposal. Financial assistance, in the form of loans or loan guarantees, could be made available for "acquisition, construction, installation, modernization, development, conversion, or expansion of land, plant, buildings, equipment, facilities or machinery" or in exceptional cases "to supply working capital." Financial assistance could only be provided if this were not available from alternative sources on reasonable terms.

The determination of worker eligibility for adjustment assistance was the responsibility of the Secretary of Labor. Such assistance involved the payment of a trade readjustment allowance to workers who were judged to be totally or partially separated from employment due to import competition.¹⁵ The allowance was 65 percent of the average weekly wage of an unemployed worker, up to a maximum of 65 percent of the average weekly manufacturing wage. If a worker received some weekly remuneration, the payment was reduced by 50 percent of that amount. Workers undergoing on-the-job training were also eligible for payments, although they did not need to undergo training to receive benefits. All payments under the legislation were a "top up" for those provided through state unemployment insurance programs. Payments were limited to 52 weeks, with an additional extension of 26 weeks for a worker undergoing approved training, or 13 additional weeks for a worker aged 60 or over at the time of total or partial separation. Workers were also eligible for payments to defray transportation and subsistence expenses while undergoing retraining, and for relocation.

Payments under TAA are directed through the states, since trade readjustment allowances are essentially supplementary unemployment insurance payments. Since the creation of a federal unemployment insurance program in 1935, funds for unemployment insurance have been channeled through the states.¹⁶ States were also required to provide additional services to displaced workers such as testing, counseling, and referral to training and placement services. An Adjustment Assistance Advisory Board was created to advise the President on the implementation of the policy. The Secretary of Agriculture was one of the members of the Board.

The TAA provisions were modified in the Trade Reform Act of 1974, which provided the negotiating authority for Tokyo Round of GATT negotiations. The legislation made it easier to qualify for assistance and increased benefits. It also expanded assistance to "trade-impacted" communities. The new act made specific reference to "workers in any agricultural firm or subdivision of an agricultural firm" as being eligible to apply for adjustment assistance. There were no specific references to agriculture in earlier legislation. The Act led to an enormous increase in expenditures. Payments to workers alone rose from \$79 million in 1975-76 to \$1 billion in 1980. This resulted in a tightening of eligibility criteria and reduction in benefits in the 1981 Omnibus Reconciliation Act (Banks and Tulmir, 1986). The Omnibus Trade and Competitiveness Act of 1988 made worker retraining both an entitlement and a requirement for receiving income support.

Under the North American Free Trade Agreement (NAFTA) Implementation Act of 1993, a specialized TAA program was established, which took effect in 1994. The program was designed to provide TAA to firms and workers affected by increased import competition from Canada and Mexico. The program provided assistance to workers in so-called “primary” firms who lost their jobs either because of increased imports, or because of the relocation of plants to those countries. In a major innovation, it also extended coverage to workers in firms who were indirectly affected by increased trade with Canada or Mexico. These so-called “secondary” firms were either suppliers to primary firms or assemblers of finished components who were affected by imports or shifts in production in primary firms.

The current TAA program, defined by the Trade Adjustment Assistance Reform Act of 2002, provides assistance to workers and firms. The provisions for firms are simply an extension of those in earlier legislation with a maximum of \$16 million per year authorized for expenditures – a very modest sum. It continues the provisions of the NAFTA program in that those eligible for assistance include workers in firms affected by the shift of production to certain overseas countries. The legislation limits government financial exposure by specifying that the shift in production must be to a country that is party to a free trade agreement with the United States. As in the NAFTA TAA program, the Act extends potential eligibility to “secondary workers”, i.e., those employed by suppliers or downstream producers (firms performing additional value-added processes) to firms who are judged to be eligible for TAA. Again, in order to limit financial exposure, in the case of downstream producers, eligibility for TAA is dependent on an increase in imports from, or a shift in production, to Canada or Mexico.

The Act increases the period for which support can be paid to workers and increases benefits. As in previous legislation, workers are ordinarily required to undergo training to be eligible for benefits (within 16 weeks after separation or 8 weeks after certification), but six criteria are specified that allow workers to receive support without undergoing training.¹⁷ The Act also allows for an extension of the enrollment period for training under extenuating circumstances. The legislation strengthens the possibilities for on-the-job training by authorizing support for training customized to a specific employer's needs. A cap of \$220 million per year is specified for training under the program.

There are several increases in worker benefits. The maximum TAA income support period is increased from 52 to 78 weeks, which together with 26 weeks of support from unemployment insurance provides for a period of potential support of two years. An extra 26 weeks of support can also be secured by workers whose training includes remedial education. Finally, caps on one-time payments for job search and relocation are increased from \$800 to \$1,250. Workers that are 50 years and older can choose, in lieu of other TAA benefits, to receive 50% of the difference between their new salary and old salary for two years, up to a maximum of \$10,000 and also may receive health care assistance. Health care assistance, in the form of tax credits for the cost of health insurance, is also available to other TAA participants.

TAA for communities, originally introduced in the 1974 act, is not contained in the current legislation. The major components of the community provisions were grants for conducting strategic planning and economic development projects.

Under the agricultural provisions of the Act, a group of commodity producers or an association acting on their behalf, can petition for TAA direct payments. These are triggered if the national average price for the commodity (or a class of goods within that commodity) is less than 80 percent of the average for the previous five years, and a determination by the

International Trade Commission concludes that imports “contributed importantly” to the decline in price. The Secretary of Agriculture is required to conduct a study of the number of producers likely to be eligible for assistance, and the extent to which adjustment to import competition may be facilitated through existing programs. The findings of this study are submitted to the President and made public.

In order to be eligible for payments, a producer’s net farm income in the current year (as determined by the Secretary) must be less than that in the latest year for which no TAA was paid, producers must have met with an extension service employee to obtain technical assistance to improve competitiveness in the production and marketing of the affected commodity, and information on the feasibility of substituting other commodities for the affected commodity. Producers are not eligible for assistance under the program if their average adjusted gross income for the previous three years exceeds \$2.5 million. Individual producers may be eligible for payments of up to \$10,000 per year. The size of the payment is calculated as: $0.5 (0.8P_b - P_m) Q_p$, where: P_m is the national average price of the commodity in the most recent marketing year; P_b is the national price for the five preceding years; and Q_p is the amount of the commodity produced by the farmer in the most recent marketing year. TAA payments calculated in this way are also counted against the overall maximum of \$50,000 per producer for “counter-cyclical” payments applied under the Farm Security and Rural Investment Act of 2002.

Table 1. Government Support for U.S. Agriculture (billion \$)						
	1998	1999	2000	2001	2002	2003P
Total direct payments	12.4	21.5	22.9	20.7	11.0	17.4
Production flexibility contract	6.0	5.0	4.0	3.4		
Fixed direct payment					0.4	7.7
Counter-cyclical payments					0.2	1.9
Loan deficiency	1.8	5.9	6.4	5.4	1.3	0.6
Marketing loan gains	0.2	0.9	1.1	0.7	0.5	0.7
Peanut quota buyout payments					1.0	0.3
Milk income loss payments					0.9	0.9
Conservation	1.5	1.6	1.7	1.9	2.0	2.3
Ad hoc and emergency	2.8	7.9	8.6	8.5	1.3	3.3
Producer support estimate	48.3	55.9	49.7	51.7	39.6	n.a.
Note: P = preliminary; n.a. = not available. Detail may not add due to rounding						
Source: Economic Research Service, USDA and OECD.						

Figure 1. Agricultural Policy Reform and Adjustment Issues

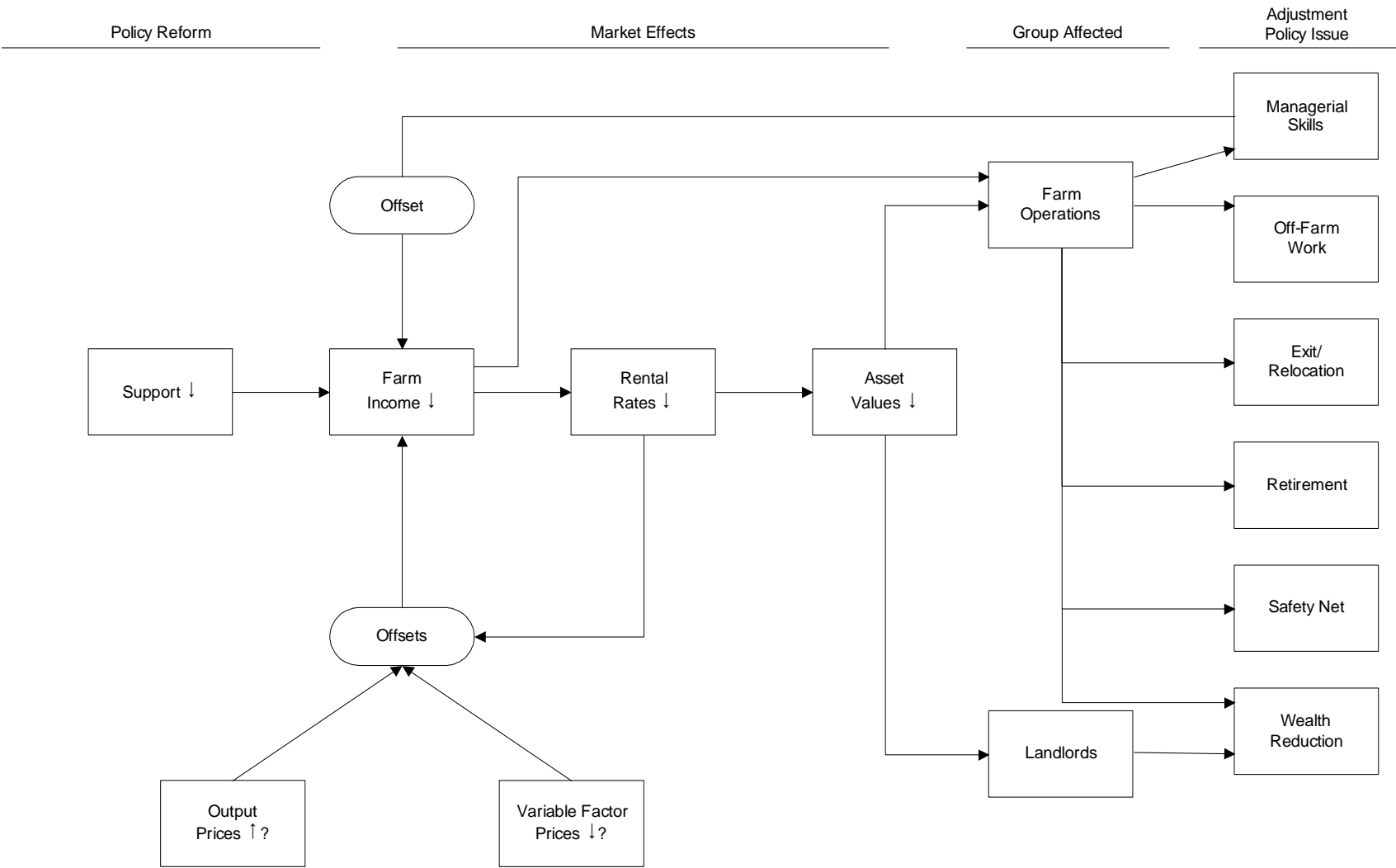
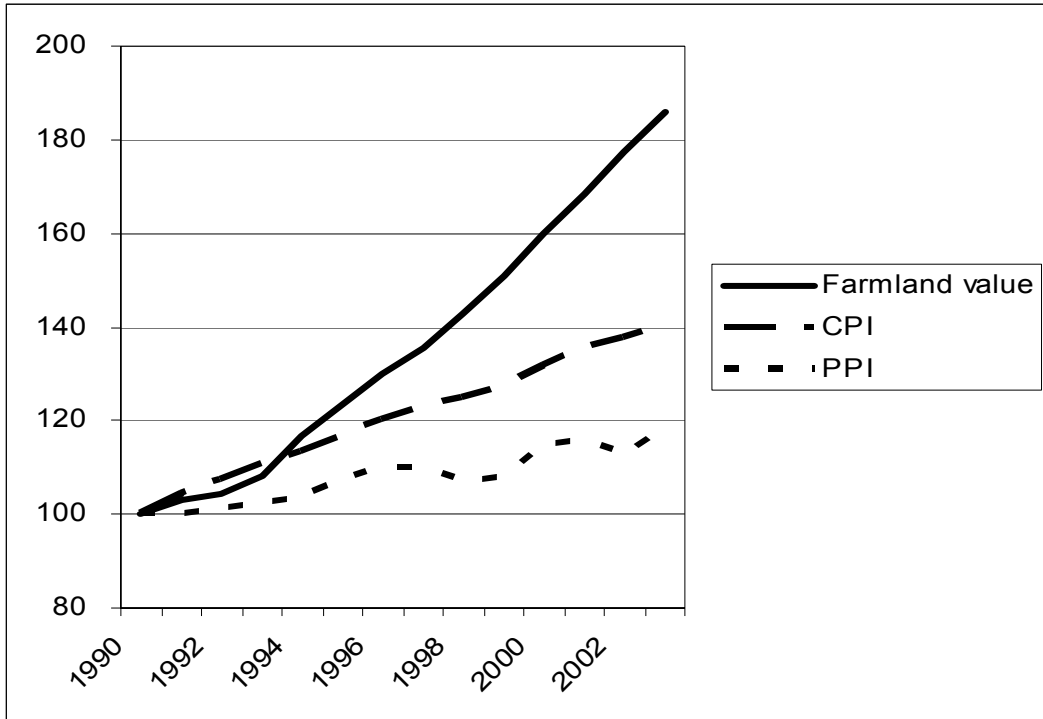


Figure 2. Average Value of U.S. Farmland per Acre Compared to Changes in U.S. Producer and Consumer Price Indices (1990=100)



Region	Total value of land harvested in program crops	Estimated value attributable to payments	Proportion of total value attributable to payments	Proportion of land owned by nonoperator landlords
	\$ billion	\$ billion	Percent	Percent
Heartland	167.3	40.2	24	63
Prairie Gateway	41.7	9.4	23	65
Mississippi Portal	17.3	2.7	16	75
Northern Great Plains	11.3	2.5	22	53
Fruitful Rim	21.6	2.2	10	53
Northern Crescent	26.0	1.9	8	53
Southern Seaboard	18.2	1.8	10	53
Eastern Uplands	4.6	0.5	10	39
Basin and Range	4.2	0.4	10	61
United States	312.3	61.6	20	62

Source: Barnard et al. (2002)

Table 3. Estimate of the Capitalized Value of U.S. Government Support Programs for Agriculture			
	Average PSE (1996-2002) Billion \$ A	Capitalized Value Billion \$ B	Capitalization Ratio C
Major field crops (1)	17.3	61.6 (3)	3.6 (4)
Other products (2)	26.4	46.9 (6)	1.8 (5)
Total	43.6	108.5	2.5
Notes:			
(1) wheat, corn, other coarse grains, rice, oilseeds and cotton; cotton estimate derived by applying percentage PSE for crops covered by the OECD to the value of cotton production from USDA			
(2) all other supported products including milk and sugar			
(3) from Barnard et al. (2002)			
(4) figure in column B divided by figure in column A			
(5) based on an assumed transfer efficiency of support of 50 percent of that for major field crops from OECD (2003).			
(6) figure in column A multiplied by that in column C			
Source: Based upon data from OECD and USDA			

Table 4. Selected Characteristics of Limited Resource Farms in 2000		
	Limited Resource Farms	All U.S. Farms
Number of farms (1)	129,810	2,121,576
Percentage of total farms (1)	6.1	100.0
Percent of operators who are: (1)		
65 years or older	50.2	26.6
with some high school education or less	42.1	15.1
Male	73.7	90.4
without a spouse	40.7	14.9
Operator hours worked: (2)		
On farm	958	1,809 (a)
Off farm	463	281 (a)
Percent off farm	48.3	15.5 (a)
Share of off-farm income in total household income (4)	137.5 (b)	90.1 (b)
Notes: Figures in parentheses relate to the table number in the appendix of the source.		
(a) excluding residential/lifestyle farms for which work off the farm accounts for more than 80 percent of the total hours worked		
(b) data for 1999		
Sources: Mishra et al. (2002)		

Table 5. Estimates of Income Support for Low-income/Low-wealth U.S. Farm Households in 2002	
Number of farms (1)	130,485
Percent of total number of farms	6.2
Distribution by farm type (percent):	
Limited resource	37.5
Residential/lifestyle	33.0
Farming occupation/low sales	16.8
Other	12.7
Income and payments per farm (\$):	
Average government payment	2,091
Farm income	-7,762
Off-farm Income	24,080
Farm household income	16,409
Payment required to meet \$30,000 income target	13,591
Total payments required to meet income target (billion \$)	1.77
(1) farm households with lower income and lower wealth than the median U.S. household	
Source: Based upon data from McElroy et al. (2003), table 7	

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Endnotes

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² The Resettlement Administration, subsequently the Farm Security Administration, purchased large farms for division and sale as smaller economically viable units; purchased and amalgamated small farms for sale; resettled farmers and their families from whom farms had been purchased; and provided investment loans and grants. The Farmers Home Administration (FHA), the predecessor of the current Farm Service Agency (FSA), was created in 1946 with a more limited role of providing loans and technical business assistance to farmers, particularly those unable to obtain financing from commercial lenders. A Rural Development Program with ambitious economic adjustment objectives was launched under the Eisenhower Administration but with limited funding (\$2 million) and had little impact (Cochrane, 1965). Rural development efforts continued under the Kennedy and Johnson Administrations but without any significant increase in resources. A Rural Community Development Service was formed as part of the USDA in 1965. In 1972, the Rural Development Act was passed which consolidated Federal rural development programs under a single piece of legislation and provides the current authority for USDA agricultural and lending programs. Subsequent farm bills have amended the legislation but have continued the tradition of modest funding.

³ A report by the General Accounting Office (GAO) indicates that farmers are not excluded from pre-existing benefits under TAA and NAFTA-TAA, although it does not discuss how these benefits would apply. See GAO, table 5.

⁴ The USDA defines a set of Farm Resource Regions that reflect geographic specialization in production in the United States. The Heartland region has the most farms, highest value of production, and the most cropland and is dominated by cash grain and cattle farms. It is comprised of the states of Illinois, Indiana, and Iowa and parts of Kentucky, Minnesota, Missouri, Nebraska, Ohio, and South Dakota.

⁵ USDA data on farmland ownership for 1999 indicate that people 65 years and older own 63 percent of the farmland controlled by non-operators. Since non-operators own 62 percent of total farmland (table 2), roughly 40 percent of farmland is owned by people of retirement age.

⁶ The analysis of Barnard et al. deals only with the impact of the major types of direct payments provided to agriculture. It does not address the impact of other programs, such as those for milk and sugar. Those programs rely primarily on price supports. It has been argued elsewhere that the income transfer efficiency of such measures is far lower, primarily because farmers must supply a product to receive the benefits of price support, and they incur significant costs in doing so (Blandford and Dewbre 1994). The average support provided to the major field crops covered in the Barnard et al. study averaged roughly \$17 billion from 1996-2002, and that provided to other products was roughly \$26 billion (table 3). If we take the capitalization figure obtained by Barnard et al. as a base, this implies a capitalization ratio of roughly 3.5 (the proportionate increase in land values relative to support). A recent OECD study (OECD 2003) suggests that the transfer efficiency of the types of direct payments that make up most of the support for field crops in the United States is roughly twice as high as that for the price supports that are more important for other products (such as milk and sugar). Use of that assumption yields an estimate of the capitalized value of support of roughly \$46 billion for land used in other products. Note that the OECD estimates for support include payments under environmental programs. As we argue, these would not necessarily be eliminated under policy reform and consequently their value should be excluded from the compensation calculations.

⁷ California is the one state in which this task could be simplified because its dairy program includes a pool quota which determines the pool price paid to each farmer on the amount of the quota the farmer owns relative to the amount of the milk marketed. Wilson and Sumner (2004) have examined the factors that drive the variation in the California dairy quota over a 29-year period.

⁸ Interestingly the financial impact was not found to differ by the level of education of participants. The authors observe that “the workshops achieved substantial impact at all levels of educational attainment.”

⁹ These are twelve states in the Northeast/Mid-Atlantic region (Connecticut, Delaware, Maine, Massachusetts, New Jersey, New Hampshire, New York, Maryland, Pennsylvania, Rhode Island, Vermont and West Virginia) and three western states (Nevada, Utah and Wyoming).

¹⁰ These are farms with gross sales of less than \$100,000, total farm assets of less than \$150,000, and total operator household income of less than \$20,000.

¹¹ These data indicate that LRFs make up roughly 38 percent of the total farms that have lower incomes and lower wealth than the average U.S. household. Retirement farms make up 33 percent of the total, and farming occupation/lower-sales farms are 17 percent. These data indicate that low incomes and limited asset values are not confined exclusively to limited-resource farms.

¹² This is not an exceptionally large figure. Gunderson et al. 2000 note that the average large family farm received program payments of \$18,000 in 1997.

¹³ Tax management strategies can play a part in the measurement of income derived from farming. The reduction of tax liability is likely to be of greater importance for farms that appear to generate a low income from a high value of sales. These are not included in the category of farms considered here.

¹⁴ The Tariff Commission was established by Congress in 1916. Its name was changed to the U.S. International Trade Commission in the Trade Act of 1974. The role of the Commission is to investigate trade issues and to report on these to the President and the Congress in order to inform trade policy.

¹⁵ Partial separation was defined as a reduction in hours of work to 80 percent or less of previous weekly hours worked, or a reduction in wages to 75 percent or less of prior average weekly wage.

¹⁶ A key factor shaping the federal legislation was the possibility of legal challenges to the constitutionality of a program in this area through the Supreme Court. It was this possibility that resulted in most of the detail of the implementation of the program being devolved to the states.

¹⁷ These are: recall to work; possession of marketable skills; approaching retirement; health reasons; enrolment unavailable; training not available.