



RUPRI Farm Bill Policy Brief #3

Economic Impacts of Direct Farm Payments and Business and Industry Loan Guarantees

Thomas G. Johnson¹, Dennis Robinson², and Kathleen Miller³
October 15, 2007

Executive Summary

- Both direct farm payments and guaranteed loans have short-run impacts on the local economy, but guaranteed loans continue to yield impacts over the long-run.
- The purpose of subsidies is to support incomes of farmers and reduce the risks they face but they are not a particularly cost-effective way of stimulating the local economy. Guaranteed loan programs cost roughly 5% of the loan size, and consequently, guaranteed loans have a much larger direct effect on the economy per dollar of program cost.
- Each \$1 million dollars of public funds spent on commodity programs raises the GDP of the state economy by \$1.4 million. Each \$1 million dollars of public funds used for guaranteed loans raises the local short-run GDP by almost \$14 million. (In both cases administrative costs are excluded).
- The full impacts of the guaranteed loan program (short-term plus long-term) are almost \$30 per dollar of program costs (excluding administrative costs).

¹ Frank Miller Professor of Agricultural Economics and Public Affairs, University of Missouri – Columbia, and Director of RUPRI's Academic and Analytic Programs

² Research Assistant, Community Policy Analysis Center, University of Missouri - Columbia

³ Program Director, Rural Policy Research Institute

Introduction

Rural areas receive infusions of public funds from a variety of programs. Two of the most ubiquitous and significant are the commodity payments and USDA Rural Development Business and Industry Loan Guarantees. These programs are designed for very different purposes and are of significantly different magnitudes, but both are believed to be important economic stimulants for rural areas.

Commodity payments are delivered to farm operators to support incomes and reduce risks faced by farmers. These programs frequently account for significant portions of farm income. Over the period 2003 to 2006 direct government payments averaged 24.7% of net farm income (USDA, 2007). This income allows farm families to make additional purchases in their local communities, thereby increasing regional income, employment, and tax revenues. A vast majority of these funds go to land owners for rental or lease payments and to owner-operators to increase their net farm profits. Some of these funds may go to investments in farm and off-farm assets other than land. In all cases the net effect is increased farm income and higher spending in farming areas.

Rural Development programs such as the Business and Industry (B&I) Guaranteed Loan program stimulate rural economies by providing financing for business start-ups and expansions in rural areas. The program limits its financing to cases where the businesses would not be able to invest in these rural areas without the loan guarantee. These guarantees allow local banks to provide borrowers with the funds they require to succeed. Not all borrowers do succeed of course, but all recipients of the funds invest in the area, and start businesses. A vast majority of these firms then employ local workers, purchase inputs and pay taxes to local, state and federal governments for many years. Like commodity payments this program has a one-time only impact on the local economy as the proceeds of the loans are spent during construction and set up. Unlike commodity payments most of the loan recipients continue producing and employing in the longer run.

Measuring Program Impacts

Proponents for rural areas often debate the relative effects of commodity programs and rural development programs on rural economies. But the goals of these programs are quite different. The primary goal of the guaranteed loan program is clearly to stimulate local rural economies. The primary goal of direct payments on the other hand is to stabilize and enhance farm income. Economic development of rural areas is a secondary goal of direct payments.

This analysis does not attempt to measure the success of farm payments in achieving their primary goal. The purpose of the analysis is to shed light on the relative impacts these programs have on the economies of rural areas.

Large amounts of data and an evaluation methodology or tool are required to undertake such an analysis, so it is fortunate that USDA Rural Development (RD) has recently developed an evaluation tool called the Socio-Economic Benefit Assessment System (SEBAS) to evaluate its many programs for rural areas. This program, while intended only for evaluations and comparisons of RD programs, can also be used to evaluate the impacts of the direct farm payments. The paper

describes the results of such an analysis and the comparison with the RD's B&I Guaranteed Loan program.

Assumptions

As in all analyses, the veracity of the results of this analysis depends on the degree to which the assumptions are realistic. The current analysis requires a number of assumptions which affect the accuracy of the results. This section considers these assumptions and assesses whether each are likely to affect the results of the two scenarios differently.

The first set of assumptions relates to the way in which these programs impact the local economy. Highly linked activities have a higher multiplier and larger impact on the local economy than those in which much of the initial funds immediately leave the community. For the purposes of this analysis we assume that direct farm payments go to residents of the state in which the farm is located and are used to increase family consumption. In reality, it is likely that some of these funds are invested in productive assets (other than agricultural land) both on-farm and off-farm. At issue is whether direct payments increase the total investment in the local areas. Economic theory suggests that without inducements, the location and timing of investments will be unrelated to the income of the investor. Thus we make the standard assumption in this type of study that all new income is partially saved and partially spent on consumption, but that savings do not induce additional local investment. This assumption is applied to both the direct farm payments scenario and to the guaranteed loan scenario. Since the guaranteed loan program generates more income per dollar of program costs, this assumption has a larger conservative effect on guaranteed loans than on direct payments.

The proceeds of guaranteed loans are assumed to increase the demand for the construction sector. In reality, some of the loan funds will be used to purchase land, property and equipment. Because it involves relatively large amounts of labor, the construction sector is highly linked with local economies and thus has a strong multiplier effect. Money that goes to the purchase of land and property will generally have an even larger impact per dollar, while purchases of equipment will generally have a smaller impact. Overall it is not clear if this assumption under or over-estimates the impact of guaranteed loans.

Another assumption applied to the guaranteed loan program is that the loan is the only stimulus to the economy. In reality the loan is just part of the money invested in these projects. The guaranteed loans leverage equity and other loans that are not included in the direct or indirect effects reported here. This assumption leads to under-estimates of the impacts of the guaranteed loan program.

From the perspective of the beneficiaries of these two programs, the biggest difference between these programs is that loans have to be repaid and direct subsidies do not. In this analysis, we account for this difference by applying a negative income stimulus to the economy equal to the size of the loan since loans must be repaid by the program beneficiaries.

From the perspective of taxpayers, subsidies are more expensive than loan guarantees since subsidies are not repaid. The cost of the guaranteed loan program is the guaranteed loan subsidy

rate which considers the loss rate on defaulted loans. A loss rate of .05 means that for each \$1,000,000 of loan guarantee, the government must compensate lenders \$50,000 for their losses. Over the last 15 years the guaranteed loan subsidy rate has varied from just under .01 to just under .06 with a mean of .029. In 2005 this rate was .0503. We applied the 2005 rate to all projects in the B&I portfolio for 2005.

A very critical assumption about the guaranteed loan programs is that of additionality. Would these projects have happened in the rural location that they did without the guaranteed loan? Obviously, this condition is not completely satisfied in every case. In some cases, the projects would have occurred without the loan guarantee. But research indicates that a carefully constructed program can generate high levels of additionality. A recent study of Canadian guaranteed loans (Riding and Madill, 2007) found that additionality in this program was about 75% plus or minus 9%. Since the B&I program screens applications to assure that their guarantees go to those which are not "bankable" without the guarantee, we believe that the additionality achieved by this program approaches 100%. However, it is clear that this assumption leads to an over-estimation of the programs impacts.

The SEBAS program makes an important assumption related to additionality. It uses a full-employment assumption not typical of economic impact tools. All new productive activities are assumed to displace activities elsewhere in the global economy. The location of the displacement is critical. Since SEBAS calculates impacts at the local, non-metro and state levels, activities which compete with existing local activities are assumed to be offset by up to a 100% displacement effect. In this particular analysis, the net jobs created are estimated at only 59% of the permanent jobs reported by the borrowers of guaranteed loans. In other words, SEBAS estimates that 41% of reported new and saved jobs are actually offset by job losses elsewhere in state.

Results of Analysis

Table 1 summarizes the nationwide impacts of the two programs in 2005⁴ and presents three columns of impacts. The first column is for the annual impacts of the direct farm payments program. The last two columns report the impacts of the Business and Industry Guaranteed Loan program. Of these, the first shows the short-term annual impacts of the investment and start up costs associated with those loans in 2005; the last column shows the long-term impacts of the businesses created and included within the total portfolio of loans as of 2005. The amount of new loan guarantees approved in 2005 was just over \$678 Million, or roughly one-ninth of the total portfolio that year.

⁴ All impacts are calculated at the state level, but summed for the Nation.

Table 1: Economic Impacts of Direct Payments and B&I Loan Guarantees, 2005

	Direct Payments (\$millions)	B&I Loan Guarantees (\$millions)	
	Short-term effects	Short-term effects	Long-term effects
Direct Effect	\$5,208	\$678	\$6,079
Cost of Program	\$5,208	\$34	\$304
Short-term Employment Impact (FTE)	45,136	10,171	
Long-term Employment Impact (FTE)	-	-	136,877
Short-term FTEs per \$M program cost	9	300	
Long-term FTEs per \$M program cost	-	-	321
One-year GDP Effect	\$7,294	\$499	
Permanent annual GDP Effect*	-	-	\$8,570
One-year GDP per \$ program cost	\$1.40	\$13.94	
Permanent annual GDP per \$ program cost	-	-	\$28.19

* *Approximate annual loan repayment has been subtracted.*

The total direct effect of direct farm payments is the level of payment to farmers during 2005. The direct effect of the annual B&I program is the new approvals for 2005.

The last column of Table 1 shows the sum of all guaranteed loans in RD's 2005 portfolio. The 2005 portfolio is interpreted as an indicator of the long-run direct effects of the program using the following logic. To estimate the long-term direct effect of the guaranteed loan program, we require data indicating the range of projects funded, the success rate of these projects over time, and the change in direct employment, if any, over time. The approach adopted here was to view the current portfolio of loans as a cross-sectional picture of the program including the range of projects and the success rate of firms. The 2005 portfolio included recent awards and all existing cases, some dating back to 1992. Excluded from this list are all businesses which failed as well as those which successfully paid off their loans and are no longer listed as cases. With respect to actual jobs created, we reviewed a random sample of B&I cases and found that while some businesses fail or generate fewer jobs than expected, others create more jobs than expected. When combined, the over-achieving firms more than offset the under-achieving firms. Total actual jobs created exceed initial projections. For these reasons we conclude that this approach underestimates benefits.

The costs of these programs to the taxpayers are very different. Ignoring administration costs, the direct farm payments cost the public \$1.00 for each \$1.00 of direct effects. The guaranteed loan programs cost only \$.05 per \$1.00 in direct effects.

The short-term employment impacts are the jobs created by the expenditures of the direct farm payments and guaranteed loans. In the case of direct farm payments we calculated impacts by adding the payments to final demand for local goods and services according to average household expenditure coefficients. The guaranteed loan funds were added to the final demand for the

construction sector. Here we find that given the relative size of these programs in 2005, the direct farm payments created more than four times as many short-term jobs (one-person years) in 2005 than did the B&I guaranteed loans.

However, if one calculates the impact per dollar of program cost, a very different picture emerges. Direct farm payments created only 9 FTE jobs per \$1 million in subsidies while the guaranteed loan programs created 300 FTE jobs -- these are temporary jobs calculated so that they are the equivalent of 9 and 300 jobs for one year. The reason for this large difference is twofold. First, \$1 million of subsidies leads to something less than \$1 million in local spending, while \$1 million of guaranteed loans leads to at least \$20 million in local investment spending. Second, construction has a lower leakage from the local economy than does family consumption.

The impacts of the businesses created by the loan guarantees are long-term. They may not be permanent, but for successful businesses, they persist for many years. As a conservative estimate we have reported the jobs created and still existing by all borrowers in the B&I program in 2005. If firms created employment only as long as they benefited from loan guarantees then the impact of the program in 2005 was almost 137,000 FTE jobs. This is a cost of about \$2,221 per job (not including administration costs).⁵

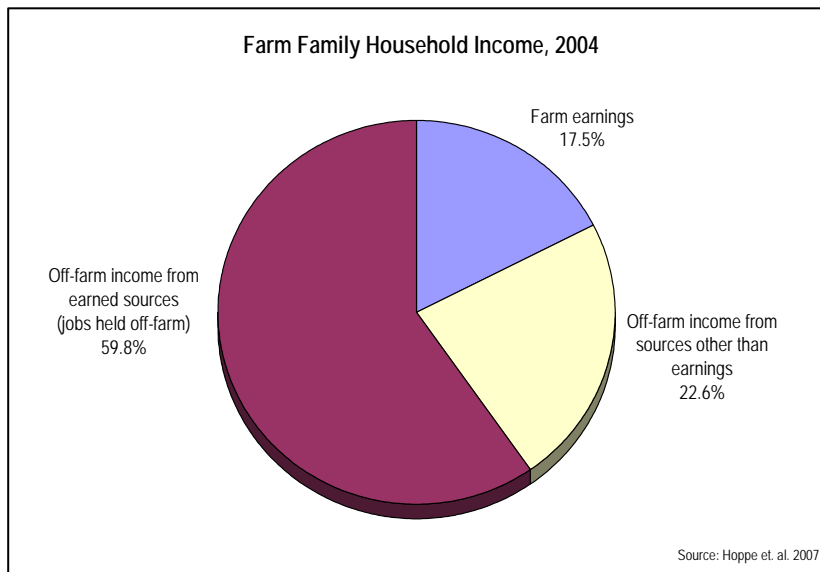
The SEBAS program uses Gross Domestic Product as its primary indicator of economic impact. GDP includes all income plus indirect taxes and other public revenues. Both direct farm payments and the expenditure of guaranteed loan funds have one-time impacts on the local contribution to GDP. Since the direct payments increase income in the community directly and indirectly, the program has a GDP multiplier of 1.401. For each dollar contributed to farmers, \$1.40 in GDP is generated locally. Since the B&I program generates income only indirectly, it has a GDP multiplier of only 0.736. However, when calculated on a per program dollar basis, the GDP per dollar of cost is \$1.40 for the direct payments compared to \$13.94 for guaranteed loans.

The permanent impact of the loan guarantees is even greater. The 2005 portfolio of projects increased the local contributions to GDP by \$8.57 billion per year. This compares with the annual contribution of the direct payments program of \$7.29 billion in 2005. Comparing these contributions on an annual per dollar of program cost basis indicates the true magnitude of difference. Using 2005 as a proxy for the annual benefits and costs of these programs, the direct farm payments generated \$1.40 of local benefits per dollar of program cost. The B&I program generated annual benefits of \$9.069 billion at an annual taxpayer cost of \$304 million for a cost per dollar of local benefits of \$29.83. This is a more than twenty-fold difference in benefits.

⁵ This compares favorably to other research. For example, a study of the California State Loan Guarantee Program found that that program has a cost of \$3,000 per job.

Other Considerations

There are very important distributional differences between the two programs – only the direct farm payments are specifically aimed at farmers. Because the B&I program is a loan, there are no direct increases to income resulting from the program; all benefits are indirect. While it would seem farmers would benefit significantly more from direct farm payments, farm families also have a keen interest in the non-farm component of the local economy.



Farm families receive 80 to 90 percent of their income from off-farm sources (in 2004 the share was 82.5%). Roughly 60 percent of farm family income comes from off-farm earnings (Hoppe et. al. 2007). Much of this off-farm income comes from jobs and businesses in the local economy. The B&I program increases non-farm economic activities which will

ultimately increase the opportunities for off-farm employment and income for farm families. Of course, there is a major difference between these benefits and benefits from direct payments. Direct payments do not require any expenditure of resources beyond those farm activities that qualify the recipients for the payments. The benefits of the guaranteed loans come from off-farm employment of farm family labor. This represents a significant opportunity cost to farm families that is not required by direct payments. However, in the long run it is likely that this labor will be supplied by a larger population of farm families rather than simply increasing the labor demands on current families.

Cautions

Important cautions need to be noted. First, these scenarios consider the impacts of the two programs at their current levels, and should not be extrapolated too far. It is likely that increases or decreases in the direct payments program would have impacts roughly proportional to the impacts of the program in 2005. But the impacts of the guaranteed loan program would be limited by the number of viable projects and applicants. As the number of applications approved rises, the loss rate will rise and the economic impacts will decline.

Second, these results should not be extrapolated to other programs. These programs are extreme examples. The direct payments program is an example of the most expensive kind of program—subsidies with few requirements attached. The guaranteed loan program is an example of a very

low cost program—one which has a high leveraging ratio. There are many programs in between that have larger economic impacts per dollar of program cost than direct payments, and lower economic impacts per dollar of program cost than guaranteed loans.

Finally, it is important to reiterate that the direct payments program is not intended to have economic development impacts. It is designed to redistribute income. In the process it increases economic activity in rural areas. This analysis measures this impact.

Citations

Bradshaw, Ted K. 2002. The Contribution of Small Business Loan Guarantees to Economic Development. *Economic Development Quarterly* 16(4): 360-369.

Environmental Working Group, Direct Farm Payments by County, 2005.

Hoppe, Robert A., Penni Korb, Erik J. O'Donoghue, and David E. Banker. *Structure and Finances of U.S. Farms: Family Farm Report, 2007 Edition*, EIB-24, U.S. Dept. of Agriculture, Economic Research Service, June 2007.

Riding, Allan, Judith Madill, and George Haines Jr. 2007. "Incrementality of SME Loan Guarantees." *Small Business Economics*. 29:47-61.

US Department of Commerce, Bureau of Economic Analysis. 2007. CA05N - Personal income by major source and earnings by NAICS industry. <http://www.bea.gov/regional/reis/>.

US Department of Agriculture, Economic Research Service. 2007. Briefing Rooms: Farm Income and Costs: Farm Sector Income Forecast. http://www.ers.usda.gov/briefing/farmincome/data/nf_t2.htm.

Vogel, Robert C., and Dale C. Adams. 1997. Costs and Benefits of Loan Guarantee Programs," *The Financier: Analyses of Capital and Money Market Transactions*, February/May.