

# Did 1933 new deal legislation contribute to farm real estate values: A regional analysis

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## Abstract

The proportion of land values generated by farm program payments and farm returns are examined using an extended income capitalization model. The extended income capitalization model addresses the identification issue introduced by the counter-cyclical nature of farm program payments and farm returns. Procedures are presented that allow the estimation of agriculture land value shares without requiring explicit knowledge or assumptions with respect to the net land rental shares of farm returns or farm program payments. Results from the panel recursive or triangular-structure simultaneous equation model applied to 48 states in the U.S. for the period 1938–2010 indicate on average 24–29.2 percent and 76–70.8 percent of the agricultural land values can be identified with farm program payments and farm returns, respectively. Spatially, at the resource regional level the contribution of farm program payments was as low as 20.5 percent in the Eastern Upland region compared to a high of 69 percent in the Mississippi Seaboard region.

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## 1. Introduction

In the last century, American agriculture aided by federal farm programs has undergone an impressive transformation with much debate about structural changes. In 1933 among the first pieces of New Deal legislation proposed by incoming President Franklin D. Roosevelt, was a farm program designed to address declines in farm prices and net farm income. Since 1933, the design of federal farm policy changes or remains status quo approximately every five years with the authorization of a new farm bill. Aside from the domestic policy implications, considerable interest can be found among our trading partners regarding the impact U.S. farm programs have on world production and international markets. Given this context, interest has grown in understanding how past federal farm programs have affected the structure of agriculture and how future policies could be designed to achieve preferred social outcome. Recently concern has grown about how to redesign federal farm programs to minimize federal program outlays and production impacts for domestic and trade purposes, while at the same time strengthening the survivability or preventing the demise of family farms.

Although federal farm programs in the U.S. are rarely intended to alter the structure of U.S. agriculture, the effect of these programs on the structure has long been an economic as well as political concern. Farm commodity programs, once viewed as temporary and supplementary to agricultural earnings, are increasingly considered permanent and of major proportion. Literature (Gardner, 1987; Sumner, 2003) has examined the cause and effect of U.S. farm commodity programs on U.S. farm structure. Apart from technology the widely held view that a major, if not the most significant mechanism for structural change in agriculture is the effect of federal farm programs on land value or farm real estate. Related concerns have been raised that current congressional emphasis on substantially reducing farm program payments might adversely affect U.S. agricultural land prices. Thus, some portion of expected agricultural subsidies have been discounted in land prices, reducing expected future transfer payments is also likely to decrease agricultural land prices. Given this possibility policy makers are interested in studies estimating the potential magnitude of adverse effects of policy changes upon land values. The results of this study will be of interest to such policy makers in that we present methods to econometrically estimate the share of U.S. and regional agricultural land values resulting from farm program payments.

Farm real estate comprises approximately 80 percent of farm assets and it is hypothesized that a large share of the farm program payment is capitalized into these values. Reliably estimating the magnitude of the effect farm program payments have on land value is an empirically challenging task. Both statistical and budgetary-based methodologies have been used to estimate the share of land prices generated by farm program payments and farm returns. Statistically based methods are complicated by the fact that both real per acre farm returns and per acre farm program payments have drifted in the same direction over time but tend to be inversely correlated within any given year. Thus, this extension has the potential problem of identification introduced by the counter-cyclical relationship between expected farm returns and expected farm program payments. To address the identification issue, the econometric estimation uses a recursive/triangular structure simultaneous equation model. This assumption means that unobserved factors can affect both land value and farm program payments, and farm program payments can affect land value directly, but land value cannot affect farm payments directly.

An additional complication affecting both the statistical and budget-based approach is the fact that the net land rental share of farm returns and farm program payments are unknown and

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