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WHAT MAKES ORGANIC FARMING WORTH IT? PRICE PREMIUMS, PUBLIC INCENTIVES, AND A SIMPLE MODEL OF FAMILY FARM TRANSITION

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This paper develops a theoretical model to identify the economic conditions under which family farmers are willing to adopt organic production. The model derives the minimum price premium required for an organic producer to be indifferent between organic and conventional farming, considering productivity differentials, subsidized credit programs, and market interest rates. The results show a strong inverse relationship between organic productivity and the required price premium: when organic yields approach conventional levels, only a small premium is necessary, but as productivity declines, the premium increases rapidly and becomes prohibitive. The subsidized financing rate further affects viability, with higher credit costs raising the premium threshold, especially when productivity is already low. Additional simulations reveal how technological parameters, such as the returns-to-scale and macro-financial conditions, such as the market interest rate r, jointly shape the economic feasibility of organic adoption. Overall, the findings highlight that productivity constraints, financing conditions, and production technology critically influence the minimum price premium necessary for organic farming to become competitive. These results suggest that subsidized credit alone is unlikely to generate a broad transition to organic agriculture unless accompanied by productivity enhancing technologies and improved market access. The study contributes to ecological and agricultural economics by linking microeconomic adoption decisions to broader sustainability and rural development policies in Brazil.

Palavras-chave: agricultural policy; agroecological transition; subsidized credit; dynamic partial equilibrium.