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The book reflects on the limitations of Australian agriculture and approaches to advancement. Most chapters accurately describe industries that are aiming to survive by improving efficiencies and producing essentially the same products at lower costs. However, the book largely overlooks the role of new technologies in delivering productivity gains, and new or improved products in agriculture and the implications of those for the industries involved. Application of information technology, nanotechnology and biotechnology to agriculture continues at an ever accelerating pace and is delivering dramatic productivity gains globally. A focus on food technology could have allowed an exploration of how new technologies might improve the sustainability and economic contribution of agricultural production in Australia.

This book provides a useful background account of the current status of agriculture in Australia to support the next step, identifying where we want Australian agriculture to be in the future. What will Australian agriculture look like in 2050 or 2100? How sustainable can we make it? What types of products should be produced? How will food contribute to public health and how strong will demand be for healthier food products? How much can agriculture contribute to the economy and society? What technologies do we have that can make all this a reality?

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The Economics of Biofuel Policies: Impacts on Price Volatility in Grain and Oilseed Markets, edited by Harry de Gorter, Dusan Drabik and David R. Just. Published by Palgrave, New York, NY, USA, 2017, 282 pp, ISBN: 9781137414847, US$ 115.

The review of this manuscript incorporates the viewpoints of three individuals: a master's student, a PhD student and a professor. These three individuals represent: a person new to the topic area; a student who has been involved in significant biofuel research during the past years; and a person who has been working in the bioenergy area for 48 years. The students read the book and discussed their review through written word with the professor. The book review below is a compilation of these discussions.

This book is an informative and insightful examination of three biofuel markets – Brazil, United States and Europe. The book illustrates how unintended consequences (high food prices) occur as an unexpected change in demand for agricultural commodities is fed with policy. It links that change in

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demand to the price of oil which results in crop price linked to gasoline prices. The book also provides – through economic models – illustrations of how policy worked during the ethanol ramp up.

In 2007–08, cereal and oilseed prices tripled. They increased again in 2010–12. The authors argue that 80% of the increase in prices is a result of biofuel demand caused by policy. They demonstrate that since 2006, there has been a direct link between crop and crude oil prices as a result of biofuel policy.

The book attempts to move through the policy arena explaining how biofuel policy impacted corn price. They explain that two events precipitated the direct link between corn and crude oil prices. The first was the banning of MTBE as a fuel oxygenate and the second was a U.S. energy policy implemented in 1978 that introduced a blender's tax credit which became activated by high oil prices. The blender's tax credit provided an ethanol premium over gasoline prices. However, corn prices did not become linked with ethanol price until September 2006. With the banning of MTBE and subsequent introduction of the Renewable Fuel Standard in 2005, ethanol plant capacity began to grow. By mid-2006, ethanol plant capacity was on pace to double from roughly 6 billion gallons of capacity to nearly 12 billion gallons of capacity. Because the primary feedstock for ethanol was corn, corn markets surged upon observing this substantial increase in capacity. Corn prices rose 88 per cent in the six months of September 2006 to February 2007. International spillovers led India and Ukraine to ban wheat exports and soon other developing countries implemented their own policies in response to increased commodity prices.

The authors develop a formal model to derive the key link between ethanol and corn prices incorporating both a blender's tax credit and a mandate. A corn–ethanol price multiplier included in this model has, historically, been an approximate average of four, meaning that a one cent increase in the price of ethanol per gallon would correspond with a four cent increase in the price of corn per bushel.

In the absence of a biofuel policy, market forces render the two prices to be equal when adjusting for miles per gallon achieved. Ethanol achieves a lower mile per gallon rating (i.e. the ratio λ of miles per gallon of ethanol to miles per gallon of gasoline is <1). Thus, the ethanol consumer price P_E is the consumer price of gasoline times this ratio $\lambda(P_G + t)$. If the ethanol price is above the consumer price of gasoline, consumers could simply purchase the same distance travelled by using gasoline exclusively. When the blender tax credit is in effect, the blender (consumer) price of ethanol is bid up until it is increased by the amount of the tax credit. End-users of ethanol fuel are indifferent between using gasoline and a mileage equivalent amount of ethanol, and gasoline prices change little with changes in ethanol production. Therefore, the incidence of the tax credit is such that ethanol producers realise most of the benefit.

The implications of this model and its impact on price volatility depend on whether the tax credit or the mandate is binding. When the mandate is

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nonbinding, corn prices are linked to crude oil price, and thus, price volatility in crude oil markets is transmitted to corn price volatility. However, when the mandate is binding, corn prices respond to corn supply and demand shocks because the corn–ethanol link is weakened in this state. In that case, the blender's price of ethanol is determined by the point on the ethanol supply curve that corresponds to the quantity of production required to fulfil the mandate.

The authors also provide a foundation for analysing the effects of national biofuel policy. The complexity of these policies and their respective instruments for compliance are detailed. The basic economics of biofuel policies for three basic biofuels – sugarcane and corn, ethanol and biodiesel – are developed, providing a core strength of the book. Unfortunately, the authors of the book presented a theory that appears to be limited in its ability to explain second-generation or even third-generation biofuel policies. The economics of biofuel policies would be strengthened by extending the work and dedicating a chapter to second-generation biofuels.

In a chapter about the future, it is clear to us that while the model may have been appropriate for the period 2008 to 2012, it may not be appropriate now, nor is it likely to be in the future. For now, agriculture has overcome the shock of the increased corn demand. Corn–ethanol production capacity is at (or nearly at) the mandate maximum and exceeding the current blend wall. In 2006, when the price signal was sent, farmers reacted and shifted about 9 million acres out of soya beans and into corn production. While a portion of aggregate corn demand is now tied to the price of oil, we would think that commodity supply is tied to farmers' responses, and therefore, the longer term price link between oil, ethanol and corn is weakened. However, if, in the future, demand for an agricultural commodity is significantly increased by the demand for a nonfood item, then this model could shed some light on the likely impact that the demand for a nonfood item has on global food prices.

This book provides an excellent perspective of biofuel policies and their impact on commodity prices. It is well written and provides a notes section that is also a very good source of information on the ebbs and flows of biofuel policy. The list of references used in the book is a must have for individuals studying biofuel policy. We highly recommend this book to those interested in energy policy and its potential ties to agricultural markets.

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