

# Introduction

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Climate change is arguably the greatest threat to long-term social, environmental and economic growth that the world needs to deal with. However, the complexity and global nature of the problem has proved a substantial obstacle to effective action. The inherent complexity of the problem has been exacerbated by misinformation and rent-seeking. Despite this, economists have reached broad agreement that the appropriate response must be based on the imposition of a price on emissions of carbon dioxide, sufficient to induce substantial reductions in national and global emissions over coming decades.

In 2012, Australia introduced a carbon price. The proposal involved the creation of a system of emissions permits, initially issued at a fixed price. After 2015, it is proposed that the permits should be tradable, and that permits purchased from the European Union's Emissions Trading Scheme should be usable in Australia.

Although criticism of the carbon price was replete with predictions of economic disaster (the Leader of the Opposition described it as a 'wrecking ball' that would destroy the Australian economy), there was little immediate evidence on the economic impact of the price. Carbon dioxide emissions declined, but, as always, there were a range of factors involved.

With the carbon price a reality, it seemed desirable to examine its initial impact. The Risk and Sustainable Management Group (RSMG) therefore organized a two-day workshop to examine a wide range of issues relating to early experience with the carbon price.

The contributors assembled in this book have not only been instrumental in the development, and operation, of Australia's carbon policy and its price, but have challenged the previous foundations of economic understanding of complex issues with rigorous thinking and debate. The objective of the 2012 workshop was to provide an in-depth analysis of Australia's policy stance on pricing carbon and its implications for the wider economy. To tell this story the book has been divided into four parts.

## **PART I: UNDERSTANDING THE ECONOMICS OF CLIMATE CHANGE, POLICY IMPLEMENTATION AND PUBLIC PERCEPTIONS**

In Chapter 1, Ross Garnaut details the history and development of Australia's economic policy of climate change. This work by Garnaut outlines the economic challenges of domestically internalizing the international carbon externality. Within this discussion the logic and rationale that directly challenges the assumptions and arguments other reviews is provided when dealing with appropriate discount rates. These critical differences expand the economic foundations of climate change policy and challenges rent-seeking compensation behavior.

In Chapter 2, Daniel Besley, Christian Downie, Steven Kennedy and Simon Winer review the policy and its design, discussing how the implementation has been achieved and the preliminary findings of its impact on the economy. The chapter also explores the role of building a flexible policy to allow transformation away from a tax to an emissions trading scheme and its in-built features, to allow the carbon emission targets to be adjusted without the need for government intervention. A discussion on how the policy design has influenced its implementation is then provided.

In Chapter 3, John Cook reviews issues associated with the public's perceptions of the carbon tax. This chapter disentangles the influences on climate skepticism and deals directly with the common topics of misinformation espoused. Cook then provides strategies to disseminate the scientific consensus on these issues.

## **PART II: TAXING EXTERNALITIES**

In Chapter 4, John Freebairn examines the role of a carbon tax and tax reform as it applies to economic activity within the economy. The impact on the tax for traded and non-traded sectors and the role on exporting and import-competing industries provide arguments on the need for industry compensation. Then a discussion on how the revenue generated from pricing carbon could be redistributed through the economy is examined.

In Chapter 5, John Quiggin augments the work by Freebairn by following the discussion associated with a price on carbon and determining the optimal path for reducing emissions. Quiggin provides a counter to the existing mainstream economic perception arguing that without the renewable energy target the existing carbon price doesn't provide the necessary conditions to achieve the optimal Hotelling solution for emission reduc-

tion. Further evidence on how this policy helps redistribute welfare is also explored.

### **PART III: THREATS, OPPORTUNITIES AND INDUSTRY ADAPTATION AND ADJUSTMENT**

Part III examines industry case studies on the impacts of implicit and explicit prices of carbon, and also examines the role of decision-making adaptation and adoption.

In Chapter 6, Phillip Wild, William Paul Bell, and John Foster track the changes in comparative advantage for all electricity generation by fuel type in Australia. This analysis illustrates the carbon pricing switching point for alternative energy supplies and predicts what may occur to power generation in alternative states. Such analysis allows for discussions concerning the longevity of alternative fuel mixes and helps identify shortfall in capacity as less efficient generators become exposed as the price of carbon increases.

In Chapter 7, Mick Keogh examines the indirect impacts a rising carbon price has on the input costs for rural producers, agriculture being exempt from paying the carbon price directly. The analysis highlights the decreasing return margins that energy-intensive industries face, indirectly, from a carbon price, thus exposing the uncertainty associated with long-term planning with incomplete information.

In Chapter 8, Michael Battaglia and Rohan Nelson argue that to offset the price of carbon, farmers can be involved in the Carbon Farming Initiative (CFI), allowing producers to sell mitigated carbon onto the open market. However, as the authors explain, direct and indirect transaction costs prevent many primary producers from participating in the scheme. This is followed by a discussion on the role that science can play in helping farmers participate.

In Chapter 9, Thilak Mallawaarachchi and Michael Harris highlight the historical ability of primary producers to adapt to adverse conditions, including climatic patterns, by adopting flexible management practices. They follow this discussion by asking what is significantly different about climate change to justify government expenditure to assist with the transformation to a new climate. The discussion centers on the role of market failure and long-term economic growth.

## PART IV: DEALING WITH THE UNCERTAIN FUTURE

In Chapter 10, Simon Grant and John Quiggin deal with the central problem of any policy and the future: uncertainty. The precautionary principle is examined and expanded on to develop a heuristic decision-making strategy for incorporating adverse impacts. They argue that the true outcome from a changing climate is still uncertain. By following their logic, however, responses to adverse outcomes can be incorporated into policy, thus improving its resilience to future shocks.

### SUMMARY

This book highlights the effectiveness and challenges of encapsulating an international externality into a domestic economy. Solid foundations on economic thinking and understanding of the role of policy and sociology of climate change are presented.