Market-based approaches to environmental regulation: Editors' introduction

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The practice of environmental regulation in the past two decades has been transformed by the rise to prominence of market-based instruments, tradable permits, off-sets, taxes labels, etc. replacing old-style command-and-control traditionally at the heart of the regulatory tool-kit.

This is an area where academic research lead policy practice, with scholarship from the learned journals of the 1970s and 1980s providing the intellectual foundation for the reform of policy that followed. The kernel of the market-based approach to policy is to face polluters with a price for the environmental damage that they impose. This is an old idea, dating back at least to [Pigou \(1920\)](#), who developed the classic analysis of taxing externalities to correct incentives, and carried forward in the guise of marketable property rights by [Coase \(1960\)](#), [Dales \(1968\)](#) and others. Modern economics has become increasingly sophisticated in its analysis of market-based environmental regulation, using theoretical, econometric and experimental approaches, and the *Journal of Regulatory Economics* has been an important outlet for such research in recent years.

It is now fair to say that the 'default' approach when developing environmental policy is the application of such market-based mechanisms. Examples abound. In 2012 Australia put a carbon tax at the heart of its Clean Energy Plan, while British Columbia became the first North American jurisdiction to implement such a scheme in 2008. Carbon emissions in the European Union have been managed through the EU Emissions Trading Scheme since 2005; China announced in 2012 it would launch a comprehensive trading scheme in 2015. The California Air Resources Board launched

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its cap-and-trade scheme at the start of 2013, and in April 2013 State Governor Jerry Brown announced plans to integrate that scheme with the similar program already in place in the Canadian province of Quebec.

This Special Issue brings together five papers that address current questions in the design and use of market-based regulatory interventions. A mix of theory and empirics, the collection represents several important strands of research.

Taxes and tradable permits can straight-forwardly be designed to restore ‘correct’ incentives in the otherwise frictionless world envisaged by economic textbooks. There is, however, practical concern regarding how they perform—and how their implementation should be adjusted—in more realistic, second-best settings where externality coexists with other distortions. Much recent intellectual energy has been spent on these questions, as understanding has become more nuanced and sensitive to context, and two of the papers in this issue fall into this line of work. Revisiting and developing the classic insights of [Weitzman \(1974\)](#), Erin Mansur addresses the important question of how the comparative merits of taxes and permits are impacted when the regulated sector is imperfectly competitive. He applies his theoretical analysis to the Mid-Atlantic electricity market by way of simulation. John Stranlund and Carlo Chavez point out that policy intervention involve administrative costs—which can be substantial, but are often overlooked in economic modeling—and investigate how those costs should inform the calibration of an emission tax, and how those costs should be apportioned between parties.

Market-based instruments work by inducing people to change their behavior, so an understanding of how behavior responds to price-based incentives is an essential input to the process of policy prescription. Recent contributions from behavioral economics have pointed towards responses being more difficult to understand, and more context-specific, than conventional economic analysis might have lead us to think—with salience, framing and peer pressure amongst the behavioral factors that could be important factors. This means that *actual* evidence on *actual* behavior change is key to assessing what policies work, and when. Two of the papers here provide an econometric assessment of the impact of market-based policies in important settings. Don Fullerton and his colleagues estimate how vehicle choice and driving behavior in the US respond to price incentives, while Grant Jacobsen, Matthew Kotchen and Greg Clendenning assess the efficacy of subsidizing community-based programs to promote the purchase of green electricity, arriving at the interesting conclusion that while the existence of a subsidy matters, the *size* of that subsidy seems to make little difference. Both sets of authors draw out the implications of their analyses for future policy.

Many market-based environmental policies embody ‘offsetting’ - allowing regulated entities to meet some or all of their obligations to deliver on some ‘core’ regulatory requirement by providing environmental improvements that take place outside the core. In their contribution Robert Hahn and Kenneth Richards reflect on the use of offsets in practice, and attempt to identify the factors that will determine their effectiveness—emphasising political and institutional context.

Market-based mechanisms offer a highly promising approach to current and future environmental problems. In addition, they have considerable potential for further development as this issue illustrates.

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