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Merchant and regulated transmission: theory, evidence and policy

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Merchant transmission is investment in transmission systems financed by locational price differentials within that system rather than by the conventional levy on all flows within that system. Regulators internationally are now considering what role it should play, and what modifications to the regulatory framework are thereby indicated.

Some have argued that changes in transmission technology have shifted the balance of advantage in favour of a market-based approach, and that only 'large and lumpy' transmission investments should be regulated, with everything else left to the market. Others have argued that the conditions required for merchant transmission investment to be optimal are not likely to be met in practice. Problematic aspects included wholesale market power, lumpiness of investment, strategic behaviour and difficulties of coordination. Merchant transmission might be a complement but not a substitute for regulated transmission. Yet others have taken a more pragmatic and eclectic stance, suggesting that different solutions might be appropriate in different circumstances.

Most of the analytic papers seek to characterise an optimal solution and to establish whether merchant transmission involves a departure from this. There is an alternative 'comparative institutions' approach that accepts that market and regulated approaches are both imperfect, and tries to identify and compare the pros and cons of each approach.

The present paper applies this approach to merchant and regulated transmission - taking merchant transmission in the broad sense, to include 'private initiatives'. It seeks to identify what have been the main market failures and regulatory failures, as predicted in theory and experienced in practice. It first examines experience with merchant

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and regulated transmission in Australia, where there is a direct comparison between the two types of interconnectors. It then examines experience in Argentina, whose 'beneficiaries pay' approach to transmission expansion has recently been adopted (with modifications) in the US. This sheds light on the question whether transactions costs are an obstacle to merchant transmission reaching an efficient outcome.

The potential imperfections of merchant transmission that cause most concern seem to be the following:

1) market power associated with a transmission expansion, reflected in lower capacity and output, delayed investment and higher prices;
2) lumpiness, leading to lower capacity and output because of the need to cover costs by locational differentials in prices;
3) imperfect information, resulting in misjudgements about what, where and when to build transmission;
4) transactions costs, resulting in inability to address problems associated with coordination and the aggregation of stakeholder preferences, negotiations between market participants, network deepening investments, gaming between interdependent entities and projects, and the separation of ownership and control;
5) long lead times and lack of forward markets and commitment, leading to difficulty of financing merchant interconnectors, lack of credibility vis a vis shorter projects, and regulatory uncertainty and opportunism.

The main potential regulatory imperfections seem to be the following:

6) imperfect information - about the regulated firms and also about the customers to be protected - leading to misjudgements about when, where and how to build transmission;
7) bureaucratic costs, time-consuming decision-making and problems of multiple regulatory jurisdictions;
8) less incentive to efficient construction costs, and conservatism with respect to new technologies and new and better ways of regulating;
9) interest group capture and political influence;
10) the possibility of inadequate resources to do the regulatory job well and consequent reliance on regulated firms.

How significant have these ten potential imperfections been in practice?

The paper finds that, in Australia, the two merchant interconnectors may have suffered from imperfect information but were not

characterised by market power or the other four alleged market imperfections. In contrast, the regulated interconnector SNI in NSW was characterised by all of the conjectured regulatory imperfections, and QNI in Queensland by several of them. In Argentina, merchant transmission was made mandatory because of the observed weaknesses of previously-regulated transmission. Contrary to initial impressions, this merchant framework worked well: there were productive negotiations between transmission users that resulted in commissioning needed transmission expansions, of all kinds and sizes, without undue transactions costs. Similarly, in various US and Canadian jurisdictions, transmission companies and their customers often find it possible and indeed advantageous to negotiate settlements rather than leave this to the regulatory commissions to decide. They do this to avoid the time and cost of bureaucratic processes, and because they can achieve outcomes that are better informed and better reflect the preferences of the parties themselves.

In sum, market power, transactions costs and various other conjectured limitations might be serious problems for merchant transmission in theory – but in the cases we have examined they were not serious in practice. Bureaucratic processes, interest group capture, political influence and regulatory resource limitations might be serious problems for regulated transmission in theory – and in the cases we examined they indeed often were serious in practice.

Imperfect information is a significant challenge for both modes of delivery. The problem is not asymetric information as usually presented, whereby the regulated company knows what its costs and demands are but does not tell the regulator. Rather, the problem is a lack of coordination between all those parties potentially involved. Those who propose to build new transmission, and those who must approve such building, need to be confident that generators and final users will have sufficient demand in future to warrant the investment. This applies not only to each potential interconnector as a whole but also to each detail such as location, size, timing etc. And similarly, those who propose to build or use new generation need to be confident that the necessary transmission facilities will be in place.

Several recommendations for policy follow from this. The main theme is that policy should seek to improve the regulatory framework and to remove barriers to merchant transmission and private initiatives.

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An important role for regulation is to facilitate coordination between potential providers and users of transmission lines.

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