



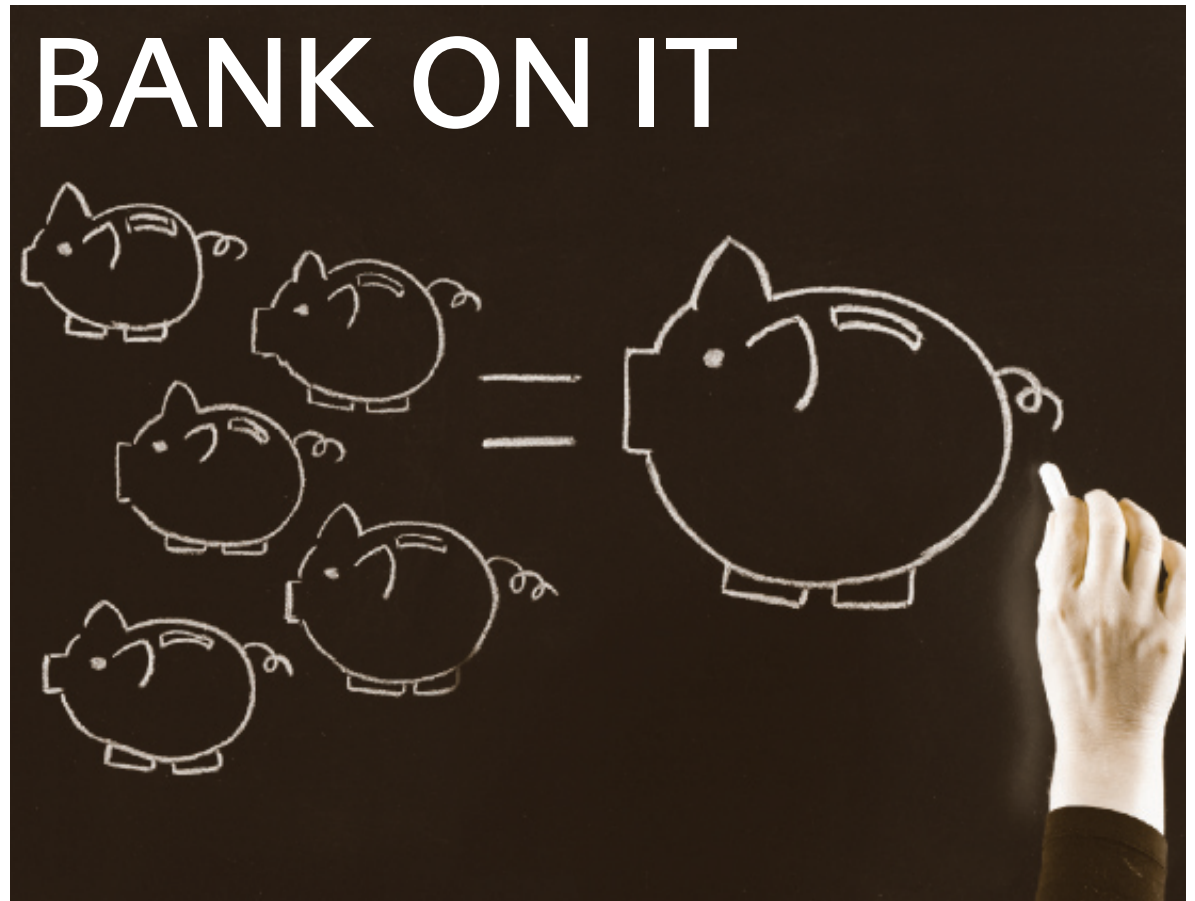
COMPETITION & REGULATION TIMES

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Lyndon Moore examines the merger movement in UK banking between 1885 and 1925 and considers some implications for modern-day regulation.¹

In the mid-19th century, the British banking market was characterised by hundreds of small and mid-sized banks. However, a merger movement began to gather pace in the later decades of the century. The larger London-based banks took over their country and city rivals in piecemeal fashion. The private banks, which had been plentiful in earlier times, either banded together for strength (Barclays was formed from such an arrangement) or were taken over by larger ones. The share of banking sector deposits held by the largest ten banks in England and Wales rose from 36% to 97% between 1880 and 1920. Bank concentration across England and Wales increased more than six-fold, from an HHI (Herfindahl-Hirschman Index) value of 0.022 in 1885 to 0.155 in 1925.

At the same time as banks were buying out their local (and distant) competitors, they were expanding their branch networks quickly to cater to a more financially astute populace. There were just under 2500 branches in England and Wales in 1885. But by 1925 the system had expanded to roughly 9000 branches serving the countryside and the rapidly growing cities.

The combination of a shrinking number of banks at the national level and an expanded network of locations around the country proved a mixed blessing for consumers. Some counties actually saw an *increase* in competition, as the large London banks expanded beyond their City base; on the other hand, many of the local banks disappeared once they were bought

out. The net effect was a small *decrease* in competition at the local level, with a county-level equally weighted HHI increasing from 0.25 to 0.29.

Such a consolidation movement in today's market environment would no doubt attract the attention, if not the intervention, of banking sector regulators. In the laissez-faire environment of pre-WWI Britain there was no oversight of such mergers, except by the banks' shareholders. Directors acted both as managers and as overseers on behalf of the shareholders.

Making a match

The rationale for the mergers, as given by the bank directors, was expansion of the banks' geographical reach and

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improvement in profitability. One of the best predictors of a successful merger was the acquisition of a poorly performing bank: the larger bank could institute improved accounting methods and 'best practice' management techniques as well as bringing the advantages of a larger deposit base and membership of the London clearing house.

Other reasons for mergers put forward by previous researchers include the advance of technology (the railroads, the telegraph and then the telephone) which made management of a distributed branch banking model feasible, in a similar manner to the modern-day use of digital data communications to facilitate the internationalisation of retail banking activities. In private, however, banks were more forthright about their motives for merging. One merger was effected to avoid 'the prospect of severe impending competition between rival banks in Barnsley'.²

The process of merging would begin in secret, with one bank's directors enquiring discreetly of the other's if they might be interested in pursuing a common future. These advances would sometimes be rebuffed; but they would often result in further discussion and finally a provisional merger agreement. It was only after such an agreement had been struck that shareholders would be informed by letter and by advertisement in the press.

The directors appear to have been remarkably successful in maintaining secrecy about their intentions. One telling sign of information leakage during merger negotiations is a run-up in the price of the target bank's shares prior to the official announcement. However, no evidence is found of such price run-ups during the months prior to a merger.

Winners and losers

Shareholders were generally rewarded for the trust they placed in the hands of the directors. The stock-price reaction to the announcement of a bank merger was positive, both for the

Although the mergers were beneficial to the shareholders of the participating banks, they had mixed effects on banking consumers and other banks.

acquiring bank and for the target bank. In the month in which a merger was announced, the acquiring bank's stock price jumped up by around a percentage point. In the same month the target's stock would also jump by six or seven percent.

Although mergers were beneficial to the shareholders of the participating banks, they had mixed effects on other groups such as banking consumers and other banks.

Other banks actually benefited from a merger announcement, with banks *uninvolved* in the merger witnessing a rise in their share price in the month of an announcement of a merger.

The effect on consumers, however, was clearly negative. Counties that experienced a rise in bank concentration tended to have lower employment-to-population ratios and fewer bank branches per head of population. These two features may be interrelated: banks in concentrated markets restricted credit (or raised the interest rate charged on loans) and this slowed private sector investment and economic growth in the local area.

Messages for modern-day regulation

As the merger movement continued, popular dissent began to develop. Critics began pointing

out the dangers of a highly concentrated banking system. The outbreak of WWI saw the first imposition of governmental oversight, with all mergers needing to be authorised by Treasury (all were approved). It was during the war that the final 'mega' mergers were completed and by the end of the war it was understood that Treasury approval for further consolidation would be refused, although formal legislation to prevent such behaviour was never passed. The net result was the formation of the 'Big 5' (Barclays, Lloyds, Midland, National Provincial, and Westminster), which later authors have lambasted for running a 'highly cartelised and rigid system'.³

Although the disadvantages of the highly concentrated market are clear, there were also some less apparent advantages. One is that the UK did not suffer a banking crisis during the Great Depression, whereas the US (with a highly diversified banking market) struggled with its crisis for several years.

As the British experience showed, a cartelised banking market can result in poorer services to consumers and slower economic growth. If a diverse market for banking services is considered desirable by regulators then some kind of restraints on mergers is probably needed. In the absence of such regulation, progress towards an oligopoly by market forces is quite likely.

1 This article is based on 'From Competition to Cartel: Bank Mergers in the U.K. 1885 to 1925', a paper presented at the ISCR seminar of the same name on 28 November 2012 (see www.iscr.org.nz/n838.html). The paper and seminar drew on research that Lyndon Moore has undertaken with Fabio Braggion and Narly Dwarkasing, both of Tilburg University.

2 HSBC Archives, Bank of Barnsley directors' minutes.

3 B Griffiths (1973) 'The Development of Restrictive Practices in the U.K. Monetary System' *The Manchester School* 41(1) pp3-18.

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the fun(ding) of farming's future



Toby Daglish demonstrates there's more to farming than just riding round on a quad bike with a dog on the back.

Introduction of new securities into a financial market can help to move the market towards the Holy Grail of 'completeness'. Why is this important, and what does this tell us about Fonterra's Trading Among Farmers scheme?

Investors generally seek to balance the tradeoff between risk and return when deciding how to spread their money through the financial market. Holding lots of different stocks, bonds and other assets enables investors to avoid having all their eggs in one vulnerable basket. However, frequently we encounter situations where unbalanced holdings are unavoidable. Buying a house, for example, often results in the homeowner having a large portion of wealth tied up in a single asset. Small-business owners face a similar problem; and so do farmers, whose livelihood depends on the profitability of their farm (which is itself largely determined by commodity prices beyond any individual farmer's control).

On the opposite side of the fence, a non-farmer 'city slicker' may look enviously at the farmer's exposure to commodity prices. These may offer high returns and may be exposed to risks that are not common to many other investments. To the non-farmer, being able to introduce dairy or other commodity price risks into his or her portfolio may seem like an attractive proposition.

The inability to move dairy exposure to the non-farmer's portfolio arises because of incompleteness of the financial market. Since there are no securities that have payoffs contingent on milk prices, the two individuals

are stuck: one unable to invest in dairy; the other with too much at risk because of it. A possible solution to this problem would be for farm ownership to take the form of companies with tradable shares. Then ownership could be spread among many investors, and the risks and returns could be diversified among them. But since most New Zealand farms are not traded companies, this is not a solution. Furthermore, the problem is exacerbated because the major dairy processors (Fonterra, Tatua) are farmer-owned co-operatives and do not have tradable shares either.

Fonterra's Trading Among Farmers scheme helps mitigate the difficulty of spreading dairy risk. At present, farmers selling their milk through Fonterra receive initially a farmgate price for their milk and then a share (proportional to their milk production) of profits realised by the co-operative from selling the processed milk in the wider market. Under the Trading Among Farmers scheme, farmers can elect to sell a portion of this profit margin while retaining the voting rights they have through their existing shares in Fonterra.

Allowing farmers to separate and sell some of the volatile component of dairy revenue from their farms allows a mutually beneficial trade to occur. The farmer now has money that can be invested in other securities (or used for physical investment, or to pay down debt). This allows farmers to diversify, and their non-farmer counterparts to expand their portfolios into previously inaccessible dairy markets.

Trading Among Farmers is not the only example of introduction of a new security

that allows diversification. The use of weather derivatives (securities that pay off as temperatures vary) allow power companies to hedge risks of high demand for heating or cooling. Securities that pay off in the cases of natural disasters allow insurance companies to hedge their exposure to risk from claims. Interest-rate swaps allow banks to shift interest-rate risk among themselves or on to other investors.

Trading beyond farmers

It's interesting to reflect on the effect of this gainful trade on farms and other assets in the economy.

Allowing farmers to partially diversify away the risk from downstream effects makes farming a less risky activity. With farming being less risky, would-be farmers require a lower return to induce them to purchase a farm and this would translate into a higher price for rural properties. Similarly, investors who examine other investments in the economy know that they can mitigate their risks by including commodity risks in their portfolio. Less exposure to what economists call 'idiosyncratic risk' (risk associated with a single security) should make investors willing to pay a higher price for assets. Hence owners of existing securities should reap the benefits of an enlarged pool of securities available.

Trading Among Farmers therefore ultimately benefits the entire New Zealand economy.

Toby Daglish is ISCR's Research Director.

Comradeship versus Camaraderie



Forced participation in collective organisations has been very common in New Zealand's past. Even now in areas of primary production the Commodity Levies Act 1990 is used to enforce collective contributions from firms: broadly speaking, a majority vote in favour (by those who do vote) is sufficient for the levy to come into being. The performance of such a process deserves ongoing scrutiny, as does its rationale. Here Lauren Brazier investigates the merits of compulsory membership of student associations.

The Education (Freedom of Association) Amendment Act 2001 made membership of a tertiary-institution student association voluntary. Before this, students at every New Zealand tertiary institution other than the University of Auckland were compelled to join their association.¹

This situation was known as compulsory student membership (CSM). The alternative, the voluntary student membership introduced under the amending Act of 2001, is known as VSM.

Institutions and incentives

The CSM and VSM arrangements are institutions. Institutions are 'systems of established ... rules that structure social interactions'.² They are the 'rules of the game' that incentivise or constrain individual actions. The law itself is an institution that provides incentives and constraints for social interaction.

Incentives matter because people evaluate costs and benefits in order to make decisions.

CSM provided a set of incentives that led to an inefficient allocation of resources. Because associations were able to compel students to pay annual levies, there was little incentive for them to discover or provide services that students actually wanted. The associations knew they would get the students' money regardless of the nature or quality of services they provided. Further, the cost of obtaining information about services the students desired provided a disincentive to engaging widely with them.

Misaligned incentives and weak monitoring led to various instances of waste, fraud and mismanagement. Notable instances include a former president's draining \$750,000 from the Whitireia Polytechnic student association and \$20,000 being spent on fitting out the Victoria University of Wellington association's van with

tinted windows and speakers. The resources that students were compelled to contribute to their associations were not being allocated to their highest-value uses because there were no incentives to find out what those uses were, let alone implement them. Rather, resources were applied in ways that best suited a small number of individual members.

Solidarity is not what it seems

Supporters of CSM argued that student associations provide valuable services to students. However, value is a relative concept determined by supply and demand. A good or service does not, and cannot, have an intrinsic value: its value is determined relative to other options available. Under CSM students did not have the opportunity to 'value' the association's services relative to alternatives because they were not able to 'vote with their feet' and apply their membership fees to other uses.

CSM supporters also argued that if association membership was made voluntary then some students would free-ride on the provision of services paid for by others. If it stands, this argument provides strong support for CSM. It is used to justify similar arrangements in the agricultural sector.

However, for this argument to stand the services provided by associations must satisfy the requirements for public goods. That is, they must be *non-excludable* and *non-rival*.

Non-excludability means that it is impossible to stop someone who is not a member from using or benefiting from the good or service. Few of the services provided by student associations fall within this category. For example student media, entertainment and clubs are excludable – as are most student advocacy services. By providing membership cards, student associations could easily restrict the benefits to those who have paid for them. The exception to this is political advocacy, which is non-excludable in that all members 'enjoy' the outcomes it achieves.

What about non-rival? This means that one person's consumption of a good does not affect another person's consumption of that good – but, for the most part, goods and services provided by associations are rival. For example if an association's employees are doing advocacy work for one student, they cannot at that very same moment be undertaking advocacy work for another student. So political advocacy is rival, because the use of resources to support one political viewpoint is done at the expense of other political viewpoints.

Thus the free-rider argument is by itself insufficient for justifying CSM.

Voluntary benefits

VSM, unlike CSM, aligns an association's incentives more closely with its members' interests. The association does not get guaranteed access to students' resources; instead, there is an incentive to gain information on what students require and to provide what is desired. The resources that students contribute to their association will then move to their highest-valued use, which will encourage students to join (or remain in) the association.

The literature on public choice theory discusses benefits to be gained from voluntary association.³ Its concept of clubs focuses on voluntary organisations that provide 'excludable' public goods – goods where

'exclusion is possible, but the addition of a new member lowers the average cost of the good to all other members: that is, there are economies of scale'.⁴ Its concept of 'voting with the feet' deals with a situation where 'individuals express their preferences via entry and exit decisions'.⁵ Freedom of association is a related feature, describing VSM more accurately than CSM and reinforcing VSM's efficiency benefits. These benefits apply whether or not there is competition among providers.

In addition, VSM allows for the competition that is required for these efficiency benefits to be realised. For example, a university campus with several different associations competing for students would lead to clearer delineations of students' preferences, and thus greater efficiency.

Shouting loudest ...

The debate that accompanied the law change highlights how the preferences of self-interested individuals can affect the efficiency of politically determined outcomes. The New Zealand Union of Student Associations (NZUSA) stated that over 4800 submissions were received by the Select Committee on the Education (Freedom of Association) Amendment Bill, and that 98% of these were in favour of CSM.⁶ According to NZUSA there are approximately 270,000 students in New Zealand. So fewer than 2% of students made a submission on the Bill (since doubtless there were some submissions that were not made by students).

Public choice theory can explain why so few students submitted, and why most of those who did were in favour of CSM. A traditional inefficiency of decisionmaking is that individuals who receive the concentrated benefits of a policy whose costs are dispersed over many people will be the ones who lobby for that policy. This is exactly what happened in debate about the amendment: student leaders and the small number of students who received the bulk of CSM's benefits strongly advocated for it to continue.

Evidence from a number of associations suggests that the benefits of CSM went to small groups of students. At the Tai Poutini Polytechnic student association, for example, large amounts of student funds were given to selected groups of students in order to hold parties – and in other student associations leaders received salaries and (often large) bonuses. So the marginal benefit of opposing

the Bill outweighed the marginal cost for the special interests involved.

By contrast, the costs to individual students of sourcing information in support of the Bill were concentrated and outweighed the individual benefits they would receive were it to pass. This was a disincentive to actively supporting VSM.

Of course, public choice theory does not explain why anyone would actively support VSM. It fails to take ideology into account; and no doubt ideology motivated some students. However, public choice theory does help explain why support for CSM was more evident.

Further, lobbying by student politicians against the Bill can be seen as a form of rent-seeking. The policy of CSM had created an economic rent: by compelling students to join just one association at each tertiary institution, it had given that particular association a monopoly (rent) over student funds. The student politicians were pursuing that rent. This offers another explanation for why there were more submissions against the Bill than for it – and the fact that there was a rent being sought is, of course, another indicator of inefficiency.

... but not longest

Despite those who received the concentrated benefits of CSM actively opposing the Bill, it was passed and the law is more efficient for the better incentive structure that VSM provides. None of the economic arguments were able to establish CSM as more efficient. The law relating to associations has evolved to become more efficient, despite the best efforts of special interest groups.

1 There were two exceptions: a referendum could be initiated by 10% of students to decide as a collective whether the association at their institution should be voluntary; and individual students could opt out of their association in limited circumstances. But the first was never successfully implemented and the second affected only a very few students.

2 GM Hodgson (2006) 'What are Institutions?' *Journal of Economic Issues* 40(1) pp2-4.

3 See: DC Mueller (2003) *Public Choice III* Cambridge University Press (Chapter 9); and D Seymour (2009) 'A Public Choice Analysis of Compulsory vs Voluntary Student Membership' (at www.actoncampus.org.nz/blog).

4 DC Mueller op.cit. p183.

5 *ibid.* pp182, 187.

6 These figures have been questioned because of NZUSA's use of postcard submissions.

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how not to promote green energies: *a Tale from Absurdistan*



Justus Haucap provides a tourist's guide through the quagmire of Germany's 'green energy' policies.

One of the most successful travel guides of the last decade has been the Australian-authored *Molvania: A Land Untouched by Modern Dentistry*.¹ While being hilariously funny and utterly absurd, *Molvania* is an utter figment of the imagination. This contrasts with real life Germany, where the Government has embarked on a journey towards greener energies – a venture which has nevertheless more in common with the imaginary country of Absurdistan than one may think, given that Germany is not well known for its sense of humour.

A tsunami of subsidies

Following the March 2011 tsunami and consequent nuclear disaster at the Fukushima nuclear power station in Japan, the German Government decided to turn away from nuclear

energies. By 2022, all electricity production from nuclear power plants is to be replaced with electricity from renewable energies. Moreover, the Government has legislated that 50% of Germany's electricity consumption should be produced from renewable energy sources by 2035 and 80% by 2050, largely replacing all fossil energies in the electricity sector.

However, as electricity from renewable energies is not competitive on its own, the four transmission-line companies that operate within Germany are required by law to purchase all electricity from renewable energies at rates (so-called 'feed-in tariffs') set by Parliament and to on-sell this electricity on the wholesale electricity market (line companies may not directly sell to consumers). The difference between the costs of the feed-in tariffs and the wholesale revenues is passed on to consumers

in the form of a renewable energy levy, which is currently 5.3 eurocents per kWh.

The underlying philosophy is one of cost-based regulation: producers should be entitled to have their cost reimbursed, including an appropriate rate of return. As a consequence, there are now around 4000 different feed-in tariffs, depending on the technology used (solar, wind, geothermal, hydro and so on), the size of the plant, its year of construction, and location (for example on-shore versus off-shore wind, solar panels on roofs versus solar panels in fields).

Bring me sunshine

A major problem with the feed-in tariff system has arisen from the fact that input costs have been falling faster than politicians had expected. Moreover, feed-in tariff levels have become an election issue, because the solar industry (and other industries) have been quite

active in the sponsoring of political parties. As a consequence, the feed-in tariffs for solar energy have not only been the highest by far but have also included the most generous rate of return: as of 2013, the average subsidy for solar power is 246 euro/MWh; for on-shore wind it is 49 euro/MWh.² As a consequence, solar power has, at least since 2005, attracted most of the investment in Germany.

Today more than 40% of the worldwide solar capacity is installed in Germany, a country not well known for its sunshine. From a wider European or even world perspective this is a gigantic misallocation. The same panels could generate between two and three times as much electricity had they, for example, been installed in Spain.

Because solar power (the most costly form of green electricity production) was blessed with an increasing rate of return,³ the average subsidy that German consumers have to pay per kWh of green electricity has increased from 8.5 eurocents per kWh in 2000 to 18.4 eurocents per kWh in 2011 – that is, the subsidy per unit has more than doubled. The main reason for this is the *falling* price for solar panels, which led to an increase in the rate of return on solar energy and changed the technology mix more and more from wind towards solar. Hence, thanks to the German Parliament, German consumers have been 'suffering' from falling input prices that made the most expensive form of green technology also the most attractive.

Paying for one's own Christmas present

A side effect of the feed-in tariff system with its requirement on lines companies to purchase all green electricity is that wholesale prices in the German electricity exchange are more and more frequently turning negative. In the early hours of Christmas Day 2012, for example, one MWh of electricity commanded a price of -473 euro/MWh. In other words, consumers were *paid* 473 euro for every one MWh of electricity they were willing to consume.

The reason for the negative price was that the wind was blowing heavily on Christmas Day, creating a good supply of electricity, but demand was low because there is little industrial production on public holidays. Still, lines companies were required to purchase the green electricity and inevitably they tried to get rid of it, so that the price reached a negative 473 euro. The difference is borne by consumers as part of their green electricity levy; the green electricity producers can simply

enjoy the profits of their fixed feed-in tariff. Naturally, the producers have developed a 'produce-and-forget' mentality as they do not need to be concerned whether the electricity they produce is needed or not.

In addition to carrying the direct costs of green electricity production (plus subsidising the decent profit enjoyed by green electricity producers), consumers also have to bear the massive indirect costs resulting from the required network investment.

Most wind capacity is located in the northern and eastern parts of Germany, but electricity consumers are mainly located in the southern and western parts. Consequently, substantial investments into both transmission and distribution networks are necessary. In contrast to New Zealand, Germany does not operate a nodal pricing system nor do producers face a so-called G-component. Therefore there are no price signals to guide decisions on the location of green electricity production. As a result, consumers have to pay for all network extensions. In addition, the costs for re-dispatching electricity (as a result of network bottlenecks) have also risen significantly.

The exercise has become unnecessarily expensive. And now a new policy debate has just begun on whether gas-fired power plants also need to be subsidised through so-called 'capacity mechanisms', because these plants are needed as back-up facilities to wind and solar power (which are inherently unstable) but are no longer profitable (having been squeezed out by green electricity production).

All of that may be seen as forgivable if the green electricity boom had at least a positive impact for climate change. However, as the expansion of green electricity production is not connected at all to the European emissions trading system (EU-ETS), the German 'energy turnaround' does not even help to reduce emission levels, which are fixed under the EU-ETS. The (tradable) emissions rights that are not used for electricity production in Germany are on-sold either to electricity generators elsewhere in Europe or to firms in other industries. Hence, German consumers are currently forced to spend about 20 billion euro per year on fostering green electricity without changing emission levels in Europe at all.

Travelling the 'green route': from Absurdistan to Scandinavia

Economists have made several suggestions how to replace this rather absurd system.

The first-best solution would be to rely completely on the emissions trading system, which could be complemented with aid for research and development. However, given the massive lobbying power of green energy producers, this proposal is currently not politically viable.

A quota-based system, such as those successfully implemented in Sweden and Norway, has been suggested as a second-best solution. In these systems, electricity retailers are required to purchase a certain quota of green electricity (or, alternatively, the relevant green certificates) but can make their own decision on how to contract for green electricity and what kind of green electricity they wish to purchase. Hence, competition between various forms of green electricity emerges and more-efficient forms of technology, size and location (rather than the most expensive ones) are rewarded. While the second-best option would still not have any effects on climate change, it would at least be less costly to foster green electricity.⁴

Unfortunately, though, distributional concerns dominate the current debate. This is because the existing arrangements induce transfers between the states in the German federal system (with Bavaria being the major winner) as well as towards farmers (who operate large-scale wind and solar farms).

To end on a positive note: at least other countries can learn how they should not ruin their electricity markets, which Germany is currently about to do.

1 S Cilauro, T Gleisner & R Sitch (2003) *Molvania: A Land Untouched by Modern Dentistry*. Hardie Grant Books. South Yarra.

2 BDEW (2013) *Erneuerbare Energien und das EEG, Zahlen, Fakten, Grafiken* p55.

BDEW (Bundesverband der Energie- und Wasserwirtschaft) is the German Federal Association of Energy and Water Industries.

3 This is because cost decreases of solar panels, which are decisive for the adjustment of feed-in tariffs, turned out not to be aligned to the election cycles of Germany's federal states.

4 M Frondel, C Schmidt & C Vance (2012) 'Germany's Solar Cell Promotion: An Unfolding Disaster' Ruhr Economic Paper No. 353 (at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2122527).

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Much Ado About ... Telco Regulation

Bronwyn Howell looks at the origins of yet another inquiry into the operations of New Zealand's telecommunications regulatory regime.¹

On 3 December 2012, the Telecommunications Commissioner announced draft prices to apply from 1 December 2014 for wholesale bitstream (broadband) services supplied by Chorus on its copper infrastructure.² The price for this service, through which the vast majority of residential broadband customers access the internet, was to fall by nearly 30% from the current \$44.98 to \$32.45 per month.

The announcement was followed by an immediate 20% collapse in the Chorus share price during a feverish period of trading (see Figure 1). The fall would undoubtedly have been greater had the Commissioner not simultaneously announced that the geographically averaged price for wholesale unbundled local loops (LLU) from the same date would be \$23.52 rather than the \$19.75 proposed by the previous Commissioner in May.³ The May announcement had accounted for a slightly less dramatic 15% reduction in Chorus's share price, but a similar volume of trading.

A midsummer nightmare

There has been much political and media commentary on the 'rights and wrongs' of the Commission's proposed price and its impacts on Chorus's financiers (including, in effect, taxpayers) as a consequence of the government's partial underwriting of Chorus's share of the ultra-fast broadband (UFB) network.

The Prime Minister expressed concern that the bitstream price fall would slow the uptake rate of UFB connections, and said

that he would not rule out government intervention in the Commerce Commission's telecommunications regulatory activities⁴ (which led to the partial recovery of the share price in late December). The Opposition communications spokesperson and the former Telecommunications Commissioner accused the Prime Minister of contemplating unprecedented and unnecessary political intervention in the activities of an independent regulatory agency.^{5,6} The CEO of the Telecommunications Users Association of New Zealand (TUANZ) argued that the regulatory processes under which the decision would be made were well known to all in the industry when the deal was done to structurally separate Telecom (so that Chorus could be awarded government fibre contracts). Ergo, Chorus stakeholders ought to have known that this would happen, or should have factored it into the agreements made at the time, and so had nothing to complain about.

The Communications Minister had the next word on 8 February, when she announced a review to begin immediately of the regulatory framework for telecommunications services. Until that review is completed, regulated wholesale prices will remain at their current levels.⁷ Once again, the responses were predictable. Chorus's share price underwent a slight rally (up 9%, but still 7% below its 2 December price), the Opposition spokesperson accused the Minister of 'taking almost \$400 out of the pockets of Kiwi households',⁸ and TUANZ's CEO claimed that the industry

would be 'left in limbo' with a 'half-house regulatory regime in place until after this new review has been completed'.⁹

A house divided

There is a touch of irony in the words of TUANZ's CEO, because the underlying 'problem' giving rise to the current events is that the New Zealand telecommunications industry has been operating under a 'half-house' regulatory regime since the 2010 amendments to the Telecommunications Act 2001 that took account of the government's investment in the UFB and the structural separation of Telecom. Under these amendments, the Telecommunications Commissioner is charged with regulating activity solely on Chorus's copper network. Whilst charged with overseeing performance to the terms agreed between the Crown (via Crown Fibre Holdings) and UFB providers, he has no powers to intervene in the fibre market. Nor has he been instructed to take account of any of the implications of the agreements between Crown Fibre Holdings and UFB operators on the copper network, even though Chorus has been chosen as the supplier of around 70% of the UFB infrastructure.

The effect is that the industry is governed by two completely separate and independent technology-specific regulatory systems. One is the Commission: it regulates the copper network with a view to increasing competition between retailers providing services on it. The other is Crown Fibre Holdings: it sets the terms under which the government-subsidised fibre networks are deployed and services on it are sold, with a view to deploying and promoting the uptake of fibre services as rapidly as

possible in order to safeguard and recover the taxpayers' investment in the networks. The UFB network connections are to be wholesaled in large part to exactly the same retailers who buy connections on the copper network.

Given the fundamentally different objectives of the two regulatory regimes, it was inevitable that at some time a conflict would arise. That is precisely what has occurred with the bitstream decision (although it was also presaged in the May LLU draft prices). Increasing competition for the copper connections by lowering their price can only delay the uptake of UFB connections. Furthermore, it is naive to presume that the government would be an 'independent bystander' in the regulatory processes that affect its interests as an investor.

Tragedy or comedy?

At the nub of the conflict is the fact that the Act as amended fails to take account of the fact that the copper and fibre networks compete directly with each other. They are not separate natural monopoly infrastructures operating in isolation from each other, capable of being regulated separately. Yet that is precisely what the Act presumes when prescribing a set of arrangements for regulating the copper network which are nearly identical to those prevailing before the government fibre investment. Yet the competitive environment is fundamentally different precisely *because* of that investment.

At the retail level at least, consumers purchase *broadband* connections – not the underlying infrastructures on which that service is delivered. The rate at which consumers will substitute from copper to fibre fixed-line broadband connections (or even forgo fixed-line connections altogether in favour of mobile connectivity) is the outcome of a set of complex interactions between the relative price and capabilities of each, and the needs of consumers.

To ensure the existence of a relatively level playing-field on which all of these technologies could compete for retail customers, a single regulatory body is normally given oversight of the (oligopolistic) market(s) for the supply of all broadband infrastructures supplying those connections. This is the case in the vast majority of OECD countries. Finland's FICORA, for example, is charged with regulating the industry in a manner that is agnostic to the technologies on which broadband services are actually supplied. The regulator is also given access to a range of remedies that can be applied, depending upon the particular nature of the competition problem found and the identity of the parties concerned.

Figure 1: Chorus's share price and trading volume over the last 12 months



The New Zealand Telecommunications Act is agnostic to neither network technology nor ownership. It names the specific firm (Chorus) and infrastructures (copper) which are its targets and makes no provision for the presence of competing infrastructures. This is most unusual in orthodox OECD regulatory practice, where it is recognised that infrastructure-based competition between two or more network operators (the ultimate objective of access regulation and LLU in particular) requires a different set of regulatory tools from those designed to promote investment that's intended to develop competing infrastructures in the first place. There is no provision for oversight or intervention in local geographic markets where infrastructure competition means that Chorus may not be the dominant provider of residential broadband services – for example, in Wellington and Christchurch, where the market share of TelstraClear's cable service has long exceeded that of Telecom's ADSL.

Furthermore, the precise methodologies used to determine the relevant prices and conditions under which services are to be supplied are also prescribed in the legislation, and apply only to Chorus's copper infrastructure. The bitstream conflict has emerged because the Act requires the Commission to use an international benchmarking process to strike a single nationwide averaged price for copper bitstream connections. This pricing methodology provides no means of factoring in the New-Zealand-specific consequences of the government's investment in a fibre network that is already competing for customers (for example, in Whangarei). The Act also provides no tools to deal with the inevitably different competitive dynamics that will emerge in different geographic regions. Chorus undoubtedly faces different strategic challenges in Northland, the central North Island and Christchurch (where it is not the

government's chosen UFB partner) from what it faces in the rest of the country. However, the Act still requires the firm to sell connections at a single nationwide price.

Better late than never

It is unfortunate that, despite submissions highlighting the problems,¹⁰ the 2010 amendments failed to provide a robust regulatory environment for governing the industry through the realities of infrastructure competition. However, turning a blind eye to its already-evident flaws is neither wise nor sustainable. The proposed review provides one last chance to get the settings right before the UFB rollout begins in earnest.

1 This article is based on: B Howell (2012) 'Competition and Regulation Policy in Antipodean Government-Funded Ultra-Fast Broadband Networks' (at www.iscr.org.nz/f777,21321/TPRC_2012_Antipodean_Competition_and_Regulation_policy_B_Howell.pdf).

2 www.comcom.govt.nz/telecommunications-media-releases/detail/2012/commission-announces-proposed-wholesale-price-for-broadband-bitstream-service

3 This new price replaced the current de-averaged prices of \$19.08 (urban) and \$32.50 (rural). See www.comcom.govt.nz/telecommunications-media-releases/detail/2012/commerce-commission-releases-draft-price-for-the-unbundled-copper-local-loop-for-consultation

4 While New Zealand has a Telecommunications Commissioner, it doesn't have a Telecommunications Commission. Decisions under the Telecommunications Act 2001 are made by a Commerce Commission panel that includes the Telecommunications Commissioner.

5 www.parliament.nz/en-NZ/PB/Business/QOA/0/c/a/50HansQ_20121211_00000012-12-Broadband-Wholesale-Pricing.htm

6 www.stuff.co.nz/business/industries/8058715/Patterson-slams-Govt-broadband-interference

7 www.beehive.govt.nz/release/review-provide-certainty-consumers-industry

8 www.clarecurran.org.nz/speeches2.php?speech_id=291

9 tuanz.org.nz/blog/2013/2/8/the-industry-left-in-limbo

10 D Heatley & B Howell (2010) 'Regulatory Impacts of Structural Separation' (at www.iscr.org.nz/f607,17391/Heatley_Howell_Regulatory_Implications_Final.pdf).

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TAKE YOUR PARTNERS carefully

The Government has clearly signaled its intention to make greater use of the public-private partnership (PPP) model in the procurement of public infrastructure. Late last year, it announced New Zealand's first PPP for a major transport project – the Transmission Gully highway northwards from Wellington. Matthew Ryan considers the proposed arrangements in light of international PPP theory and experience.

New Zealand is a latecomer to a growing global trend. Having weathered the Global Financial Crisis virtually unscathed, the PPP model is flourishing internationally: after a small dip in 2009, a record volume of deals was registered in 2010. The Asia-Pacific region and the Asian subcontinent exhibited particularly strong growth in the value of PPP deals between 2010 and 2011.¹

Correspondingly, research into the economics of PPPs has burgeoned. The Association for Public Economic Theory (APET) devoted its 2012 annual workshop to the topic. Worryingly, the majority of presentations at the workshop focused on why PPPs do – or are likely to – perform below expectations. Even more worryingly, transport projects seem to be amongst the most difficult to manage successfully under a PPP model. Australia offers a number of cautionary tales: Sydney's Cross-City Tunnel and Airport Rail Link and Brisbane's Clem 7 Tunnel, amongst others. The international PPP landscape is littered with bankruptcies and bailouts.

Getting the mix right

While PPPs come in many forms, most share two features: whole-of-life contracting and private provision of finance. A single entity, usually a special purpose vehicle (SPV), is contracted to construct, maintain and operate the facility for a fixed period, usually 25-30 years. It is also contracted to finance the initial construction. The SPV earns revenue by charging user fees such as tolls for the completed facility, or by receiving debt payments from the Government after construction. The Transmission Gully PPP involves debt payments rather than user charges (an important point that I'll come back to later).

The advantages of whole-of-life contracting are clear. To the extent that construction exerts externalities on maintenance and operation, it is efficient that these be internalised by having the same firm undertake all tasks. This structure also maximises the scope for innovation.²

But whole-of-life contracting does not necessitate the privatisation of finance.

Economic arguments are scarce; but unless the public entity faces some exogenous budget constraint (which is not the case in New Zealand) the general consensus is that privatising finance is innocuous at best and more probably harmful.

Dicey finance

As the NZTA acknowledges, private firms face higher borrowing costs than the Government. This difference can be partially explained as remuneration for the transfer of risks that the Government would otherwise have to bear. But even so, problems with private financing remain.

Three important factors underpin the economics of private finance.

First, much of the private finance is in the form of debt, and precisely how much is (somewhat) within the control of the private partner.

Second, contracts of 25-30 years' duration entail many uncertainties. In roading projects, one of the main uncertainties – future traffic

volume – is notoriously difficult to predict. Data on 49 international transport PPPs³ (roads, tunnels and bridges) show the winning bidders' forecasts exceeded actual traffic volumes by an average of 25%. (The direction of the bias reflects a standard 'winner's curse' problem.)

Third, the private partner can declare bankruptcy if it gets into financial difficulty; the public partner cannot. Furthermore, when the private partner gets into trouble, the Government may prefer to bail it out than go to the expense of re-tendering the contract – provided the cost of the bailout is less than the cost of replacing the private partner.

Since debt servicing is a substantial part of the SPV's costs, it figures prominently in potential bankruptcy scenarios. A rational private partner will therefore choose its leverage, so far as it is able, to maximise its prospects of being bailed out. In Williamsonian terms, it will 'hold up' the public partner to obtain insurance against as much of its downside risk as possible. The Government needs to make a realistic assessment of the scenarios in which it would be willing (on economic or political grounds) to bail out a financially distressed provider. The private partner will no doubt be doing so! The expected cost of any bailout should be borne in mind when assessing bids, or comparing the winning bid to a public-sector alternative.

Asymmetric access to bankruptcy protection will always limit the Government's ability to transfer downside risk. The privatisation of finance is likely to exacerbate this problem. It raises the financing costs carried by the private partner (and therefore its bankruptcy risk); and it creates opportunities for the SPV to arrange its financial structure strategically, with potential future bailouts (or re-negotiations) in mind.

If it's too good to be true ...

Ironically, the competitive tender process for allocating PPP contracts only makes matters worse. When the Government procures a private partner for a 25-year contract, it is not buying the completed job – it is buying some *probability* of completion.⁴ The winning bid reflects not only the efficiency or innovative spirit of the winning bidder, but also its estimated default probability and expectation of any Government bail-out.

Inefficient or financially fragile firms, which hope to make money when the going is good but default on obligations when times are

tough, can afford to make attractive-seeming bids. The presence of such firms forces higher-quality bidders to reduce their performance expectations in order to compete effectively on price. The result may be a 'market for lemons'.

My research (with Professor Flávio Menezes of the University of Queensland) shows how serious this problem can be. In some circumstances, the most efficient firms will be induced to structure their affairs such that they face a higher bankruptcy probability – and extort a *higher* bailout from the Government – than their weaker competitors.

When the NZTA anticipates 'PPP bids that are lower than the cost under traditional procurement processes', it may be right; but for all the wrong reasons. It should be wary of what might be called a 'procurer's curse'.

Sidestepping the procurer's curse

The root of the 'procurer's curse' is the inherent difficulty in fully transferring downside risk from a Government to a private partner. The solution is to transfer only those risks that are best managed by the private firm, and only to the extent necessary to provide cost-effective incentives for the firm to manage them.

Traffic-volume risk is not in this category. The Government has far greater control over future traffic volumes along the Transmission Gully highway (through its broader transport policy) than does the private contractor. Not surprisingly, PPPs that allow the private partner to cover its costs by tolling the road are particularly vulnerable to the 'procurer's curse'.

The toll rate is typically fixed by the initial bid. Since traffic volumes are hard to predict (and frequently over-estimated by the winning bidder) and since there is little the private firm can do to manage demand for the road, toll revenue will be highly uncertain and probably below expectations. This is a significant and unmanageable downside risk.

It is clearly preferable to avoid transferring demand risk to the private partner, and the NZTA has wisely acknowledged this.

There are at least two common PPP structures which avoid this risk transfer.

The solution proposed by Yale University's Eduardo Engel⁵ is designed for public agencies that face restrictions on the financial liabilities they can put on their balance sheet and that therefore require the private partner to recover its costs through user charges. Engel proposes using a least present value of revenue (LPVR)

tender. Rather than firms bidding the toll rate they would impose on road users for the fixed period of the concession, the Government specifies the toll, and the firms bid the present value of revenue they require. The winning bidder's concession remains in place until it has realised its PVR.

The LPVR format eliminates demand risk from the private partner's revenue.⁶ It has been gaining in popularity and is now standard practice in Chile, for example.

The alternative is to avoid user charges altogether. This is what the NZTA has proposed for the Transmission Gully PPP: an 'availability contract' in which the private partner will receive regular debt payments from the Government once the highway has been constructed and has met all performance standards. The private firm will not be allowed to toll the road (though the Government does not rule out doing so on its own account). The contract therefore has a fixed duration; but because the private partner is remunerated using debt payments rather than toll revenue, it does not face any demand risk.

The New Zealand Government has clearly learned from mistakes made across the Tasman. Its approach to the Transmission Gully PPP should mitigate much of the 'procurer's curse', and hence the size of subsequent claims on taxpayers from derelict contractors.

The elephant in the room

However, if the Government is prepared to make debt payments, then why not borrow the money itself and take advantage of its lower cost of borrowing? A positive case for private finance has yet to be made.

1 www.oecd.org/gov/budgetingandpublicexpenditures/49945473.pdf

2 The New Zealand Transport Agency (NZTA) cites the benefits from private-sector innovation as one of the key reasons for choosing the PPP model for Transmission Gully.

3 L Athias & A Nuñez (2008) 'The Winner's Curse in Toll Road Concessions' *Economics Letters* 101(3) pp172-174.

4 DF Spulber (1990) 'Auctions and Contract Enforcement' *Journal of Law, Economics and Organization* 6(2) pp325-344.

5 Eduardo Engel is a leading expert on PPP economics and the 'procurer's curse'.

6 Demand risk will still affect maintenance costs. But if over-estimation of traffic volumes is the norm, this is likely to be a positive surprise.

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drowning publishing's 'baby' in judicial bathwaters?

On 11 April 2012, the US Attorney-General filed a lawsuit against Apple and five of the 'big six' book publishers, seeking to end their 'anticompetitive' agency-pricing model. William Steel explains why the US Justice Department's actions may be misconceived.

The release of the Kindle e-reader in 2007 revolutionised the book industry. Consumers could select from hundreds of thousands of books without leaving their living room. Although e-books faced a radically different cost structure from the traditional book industry, market participants could not agree on an appropriate pricing model. Eventually, e-books were sold through the traditional wholesale model that prevailed for physical books.

Under the wholesale model, publishers sold books to retailers at a discount to their recommended retail price. Retailers then had complete freedom over in-store prices. Taking advantage of this freedom, Amazon began selling e-books at a loss in order to gain market share. Bestsellers and new releases usually purchased for \$12 to \$15 were being sold by Amazon for \$9.99. This strategy proved enormously effective: by 2010, Amazon controlled approximately 90% of the e-reader market.

However, publishers were not happy. Although they derived substantial revenue from Amazon's e-book sales, they feared that consumers would regard \$9.99 as an appropriate price for new releases and that eventually Amazon might exert its monopoly position to force publishers to accept a lower price for their e-books. If this happened, publishers would no longer be able to afford to act as venture capitalists; new authors would struggle to gain advances against royalties as publishers retrenched. At the same time, the publishers' traditional market would collapse: independent bookstores and large 'bricks and mortar' chains such as Barnes & Noble, unable

to compete with Amazon's low prices, would eventually be forced to close.

When Apple developed the iPad in 2010, it offered to sell e-books through the iBookstore under the agency model. Publishers would set each e-book's price; and Apple, acting as their agent, would receive a 30% commission on any sale. Apple was protected by a 'most favoured nation' clause, which allowed it to match any competitor's lowest price. However, Apple was only prepared to launch the iBookstore if four¹ of the 'big six' publishers agreed to sell through Apple. In a relatively clear example of horizontal collusion, five of the big six agreed.

John Sargent, CEO of MacMillan, then confronted Amazon. Sargent argued that agency pricing would dramatically improve Amazon's revenue. However, if Amazon refused, Sargent would withdraw MacMillan's books from Amazon. In response, Amazon preemptively stopped selling MacMillan's books. Sargent refused to back down. Two days later, Amazon capitulated and adopted the agency model.

On 11 April 2012, the US Attorney-General filed an anti-competitive lawsuit against Apple and the five publishers. Hachette, HarperCollins and Simon & Schuster immediately settled. Under their settlement, approved by US District Judge Cote in September 2012, they were forced to terminate their agency agreements immediately and were prohibited from entering into a contract restricting a retailer's discretion over pricing for at least two years. In addition, the three settling publishers agreed to pay \$51 million dollars to settle all civil liabilities.

In December, Penguin settled on similar terms. Some six weeks later MacMillan also

settled. Only Apple will contest the charges.

In approving the original (April) settlement, Judge Cote held that: 'The purpose of the Sherman Act is not to protect businesses from the working of the market; it is to protect the public from the failure of the market'. This statement, however, does not take account of the long-term implications of settlement.

The US Justice Department's short-term approach fails to appreciate that the publishers' adoption of agency pricing was a tough decision in response to an unsustainable market. By taking a long-term view, publishers sacrificed over \$100 million in revenue per annum. In doing so, they stabilised the price of e-books, providing competition to Amazon and reducing its market share to 60% in two years. Small independent bookstores selling Kobo e-readers were able to compete with Amazon. Barnes & Noble's Nook tablet gained a 25% market share. Although bestsellers and new-release prices rose, the average price of e-books fell. Amazon no longer needed to 'cancel out' loss-leading bestsellers with higher prices for other e-books.

The resumption of the wholesale market provides a platform for Amazon to regain its dominant position. If that happens, it may not be possible to reinstate competition in the e-book market.

Much rests on the outcome of Apple's trial later this year.

¹ Four was the number specified by Apple.

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