Comment on paper by John Mayo

PREPARED BY PHILIP WILLIAMS FOR THE ACCC REGULATORY CONFERENCE

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1 Results-based regulation

1.1 What is it?

The theme of John Mayo's paper is that regulation works best if it is based on empirically-verifiable results. The paper advocates a particular model of regulation: results-based regulation.

RBR requires regulators to address the question "… of whether proposed or extant regulations affirmatively can be shown to benefit economic welfare relative to the alternative of resource allocation that relies more heavily on market-based transactions."[1]

The method involves the placing of an onus on regulators only to regulate if they can prove that regulations (proposed or extant) do better than the market. Furthermore, this onus can only be discharged by the use of "… serious empirical analysis that examines economic results in the industry and seeks, in counterfactual fashion, to establish how economic metrics of the industry compare with those that would prevail in alternative states of the world."[2]

It is hard to dispute the proposition that empirical evidence should be used where it can be found. Both inside and outside the United States, the move to deregulate maintained a growing crescendo throughout the 1980s. Margaret Thatcher was elected Prime Minister of the UK in 1979 – a position she held until 1990. Roger Douglas became Finance Minister in New Zealand in 1984. Perhaps the climax of this crescendo was the fall of the Berlin Wall in 1989. This was widely seen as a dramatic symbol of the collapse of communism and the triumph of the market.

A personal story will illustrate the mode of regulatory discourse at the time. In 1989 I was a member of the Victorian Law Reform Commission. We were asked by the government to review the legislation that governed the regulation of some 14 occupations (such as surveyors, pawn brokers, used car dealers and so on). The review was to be undertaken jointly by the Law Reform Commission and the State Regulation Review Unit.

We had a meeting with the RRU to kick-off our work and we decided to start by producing a paper outlining the principles that should govern the regulation of occupations. We would then proceed to examine each occupation according to the principles outlined in our principles paper. I volunteered to do a first draft of the principles paper.

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[1] Mayo p 4.

[2] Mayo pp 4-5.

When we met with the RRU to discuss my draft, it quickly became clear that there was a stark disagreement between the representatives of the RRU and members of the Commission. Things were getting a little tense at the meeting. Then a member of the RRU lost it completely. He thumped the table and demanded of me: "Look, are you in favour of deregulation or not?" I replied that I was neither in favour of regulation or deregulation, rather I was in favour of an optimal degree of regulation. I am sure this reply struck the representatives of the RRU as a complete cop out.

Debates over regulation have moved well past this point in the last 20 years. Regulators naturally want to know whether there is evidence – not only whether regulation is good or bad, but they also wish to know the extent to which it matter if a particular regulatory decision was right or wrong. These questions can only be answered by sound empirical research. This raises the question as to why empirical methods are not used more widely by regulators – a question that I shall turn to shortly.

1.2 Two quibbles

Before I look at the question why regulators do not use empirical methods more than they do, I want to express two (perhaps minor) quibbles that I have with John's very stimulating paper.

My first qualification is illustrated by my story concerning the difficulty that I faced in 1989. Much of John's paper is framed around the binary question: regulate or rely on the market? In fact, the choice is rarely so stark. John's second principle of RBR states:

> Given the imperfections of alternative governance mechanisms, advances in technology and presence of evolving legal institutions, regulators must be vigilant to the possibility of improved regulatory or deregulatory designs.

This principle rightly points to the fact that regulation can be better or worse – and systems of regulation can be better or worse. This does not mean that we should dispense with empirical analysis of alternative systems. Rather it means that the empirical analysis may need to be applied to alternative systems of law and regulation.

My second qualification is that John restricts much of his paper to systems of regulation. In my opinion, the principles that he advocates should be applied to all those who are responsible for the introduction or maintenance of legal or regulatory constraints that are imposed on business activity: the onuses should be imposed on regulators, governments, law reformers and courts.

I suspect that John would be quite happy for the onuses he proposes for regulators to be applied to the other institutions that I mention. Indeed, his references to Mill's Essay on Liberty seem to suggest as much.

1.3 Don't we do it already?

On 11 April 1995, the governments of Australia ratified the *Competition Principles Agreement*. This Agreement committed each jurisdiction to a review of legislation. Clause 5(1) would appear to have reflected John's RBR. It stated:

> The guiding principle is that legislation (including Acts, enactments, Ordinances or regulations) should not restrict competition unless it can be demonstrated that:
>
> (a) the benefits of the restriction to the community as a whole outweigh the costs; and
>
> (b) the objectives of the legislation can only be achieved by restricting competition.

Clause 5(3) committed each jurisdiction to review all existing legislation by 2000 to ensure that it abided by this principle. Clause 5(5) committed each jurisdiction to require proposals for new legislation that restrict competition to be accompanied by evidence that the legislation is consistent with the principle. The National Competition Council was charged with the task of ensuring that the jurisdictions fulfilled these (and other) obligations.

Like most OECD countries, Australian and New Zealand governments require Regulation Impact Statements (RISs) for significant regulations. Currently, the Commonwealth Government has the Office of Best Practice Regulation in the Department of Finance and Deregulation ensuring that RISs satisfy the Government's criteria for adequacy.[3]

These criteria again seem to reflect best-practice RBR. A RIS is required to have seven elements, setting out:

a. the problem or issues which give rise to the need for action;

b. the desired objective(s);

c. the options (regulatory and/or non-regulatory) that may constitute viable means for achieving the desired objective(s);

d. an assessment of the impact (cost, benefits and, where relevant, levels of risk) on consumers, business, government and the community of each option;

e. a consultation statement;

f. a recommended option; and

g. a strategy to implement and review the preferred option.[4]

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[3] http://www.finance.gov.au.au/obpr/ris/gov-ris.html

[4] http://www.finance.gov.au.au/obpr/ris/gov-ris.html

Although our procedures might seem to follow John's principles for best regulatory practice, I suspect that if John were to undertake a detailed empirical study of our practices in Australia and New Zealand he would not be entirely pleased with the results. In particular, I suspect he would conclude that our legislators, regulators, law reformers and judges give too little weight to what he characterises as 'granular empirical evidence collected from actual markets'. And I would agree with this assessment.

John's paper has prompted me to ask: why? Why do legislators and regulators appear to give less weight to 'granular empirical evidence collected from actual markets' than most economists outside these categories would think optimal?

2 Why don't we do it?

When pondering John's paper, it occurred to me that there is no single reason for the neglect of empirical evidence by legislators and regulators. In the remaining time available to me, I am going to suggest some reasons that might explain some of the non-RBR behaviour that I have observed. Some of you may have encountered non-RBR behaviour that has other explanations.

Some of the most egregious non-RBR behaviour that I have observed seems to have been attributable to the following causes:

a. lack of humility on the part of the regulator/policy adviser;

b. incompetence;

c. some relevant effects cannot be quantified; and/or

d. giving a heavy weighting to non-quantifiable effects.

I shall say a little about each of these and give some examples.

2.1 Lack of humility

The application of RBR requires humility in the face of the facts. It requires that the regulator or policy adviser be sufficiently humble that they be prepared to admit that the policy they were considering has been shown to be unmeritorious.

See Keynes on Marshall on dentists. Or in Pigou Memorials.

An example of non-RBR behaviour that resulted from a lack of humility seems to have been the Advanced Metering Infrastructure (AMI) project that was approved by the Government of Victoria in February 2006.[5] AMI involves smart

[5] All my information about this project comes from the report of the Victorian Auditor-General, "Towards a 'smart grid' – the roll-out of Advanced Metering Infrastructure, November 2009. Frontier Economics advised VAGO on the robustness of the cost-benefit analysis upon which the Victorian Government's decision was based.

electricity meters that communicate between the place of consumption and the electricity supplier, enabling the supplier to offer new services to consumers. These services might include time-sensitive pricing and reading usage without costly visits to the premises.

In February 2006, the decision was taken to mandate the roll-out of AMI to all residences and small business in Victoria. This was to be a large project. It was to involve the replacement of meters in 2.4 million homes and small businesses between 2009 and 2013 at an initially projected installation cost of $800 million. By 2008, the projected costs had increased to $1.56 billion and, by the time of the report of the Auditor-General in November 2009, an industry estimate was putting the full metering services costs at $2.25 billion. The costs are to be borne directly by consumers.

The decision in February 2006 was taken on the advice of the former Department of Infrastructure (DOI). This advice was based on a cost-benefit study undertaken in 2005. That study had found that, in the best case, the project would yield a marginal net benefit. The study concluded that there was enough net economic value from the smart meters; and it recommended that the government proceed with an accelerated roll-out.

The Auditor-General's report on the project was highly critical of the recommendation and the study on which the recommendation was based. It appears that the enthusiasm of the authors of the report for the project blinded them to inherent risks of the project:

> The AIMRO 2005 study did not address the issue of risks in considering the potential costs or expected benefits. The communications technologies being considered in 2006 for a mass roll-out were not mature and accordingly were inherently risky. This led to the likely costs of the project being underestimated. …
>
> Given the low benefit-cost ratio found in the AIMRO 2005 study and the high-end estimate of demand response benefits [on which that study was based], as well as the results across all scenarios being highly sensitive to input costs and other assumptions, it is not certain that the net benefits case was as clearly positive as the former DOI advised government prior to their 2006 decision to roll-out the AMI program.[6]

The problem seems to be that the authors of the report were blind to the fragility of the data on which their report was based. A little humility in dealing with the data might have improved the chances of RBR.

[6] Auditor-General's Report, p 28.

2.2 Incompetence

John's paper draws attention to the use of rigorous before-and-after methods for assessing the merits of changes in regulatory policies.[7] As he observes, to isolate the effects of regulation may require the investigator to rigorously account for changes in market conditions if the effects of regulation are to be accounted for.

The use of econometric techniques in an event study of this kind requires some econometric skills. If regulators or policy advisers are to undertake work of this kind, they must acquire these skills themselves or outsource the work.

New Zealand has two major supermarket chains: Progressive/Woolworths and Foodstuffs. In 2006 a successful general merchandise chain, the Warehouse, started an experiment to place fresh produce in a few of its stores. Woolworths and Foodstuffs each bid for the Warehouse to expand their operations in general merchandise; and each applied to the Commerce Commission for clearance of the acquisitions.

The Commission had the advantage of a before-and-after experiment in supermarkets because the acquisition of Woolworths NZ by Progressive in June 2002 had reduced the major competitors from three (Progressive, Woolworths NZ and Foodstuffs) to two (Progressive/Woolworths and Foodstuffs). Woolworths (the Australian company) subsequently acquired Progressive. During the course of its enquiries, the Commission was provided with studies of the effect of the 2002 acquisition on supermarket prices.[8] These studies suggested that the earlier acquisition had little or no effect on prices.

The Commission decided to undertake its own empirical analysis. The Commission's interest focused on five regions where the 2002 acquisition reduced the number of supermarkets in the local area from three to two. The regions were West Auckland, North Shore, Nelson, Tauranga and Hawera. To undertake its empirical work, the Commission requested data from Progressive/Woolworths of "the aggregate sum of unit retail prices for the 200 best selling (by volume) items for each calendar month in the period from January 2000 until April 2007 (inclusive) in respect of each of the [five] regions."

Progressive/Woolworths warned the Commission that such a price series was worthless for three reasons:

a. Selecting items for the basket of a price index on the basis of unit sales will skew the basket towards large-volume times with no regard to the contribution that those items make to the total bills of customers. It will favour items that sell a large number of units at low prices.

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[7] Mayo, p 21.

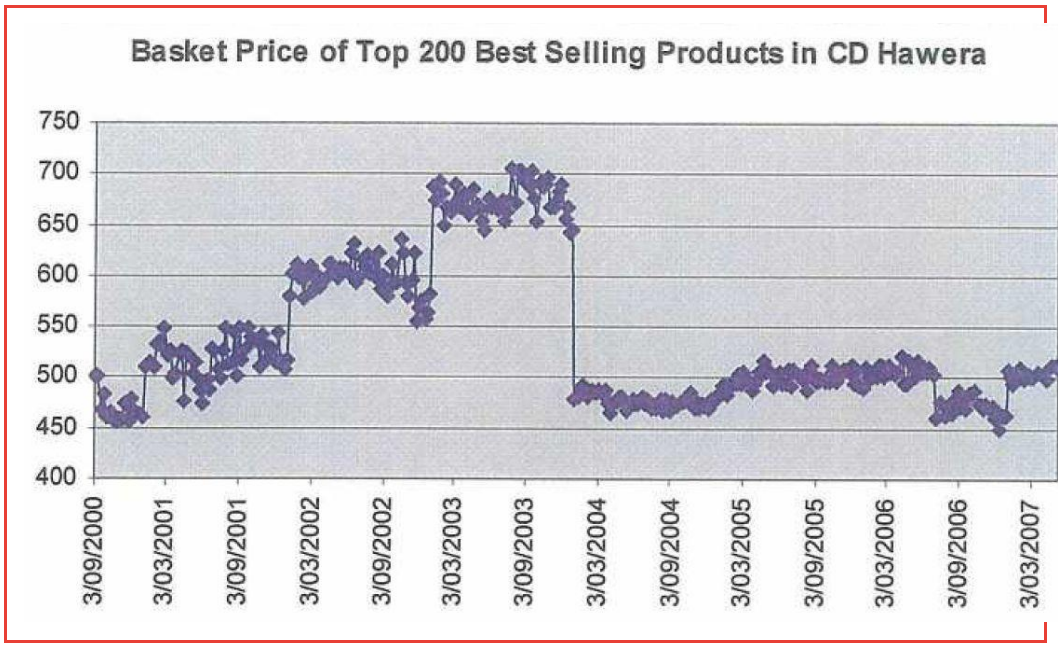
[8] The studies submitted by Woolworths had been undertaken by Frontier Economics. I was the contact person in Frontier for this project.

b. The selection of the 200 best selling items for each month was required to be selected from a 300-item 'super basket' of largest-selling items that was to be selected each year. Because the items differed from year to year, the 'price series' showed huge discontinuities from year to year.

c. The 200 items for any month had to be selected from the 300-item super-basket. These top 200 items differed from month to month.

The problems with the Commission's indices is apparent from a plot of one of them reproduced below.

Figure 1: Commerce Commission's Basket Price of Top 200 Best Selling Products in CD Hawera



Source: Frontier Economics

The Commission's written reasons for its decisions[9] reported its empirical work. The Commission found results that it said generally supported its qualitative assessments, although it also found what it termed 'inexplicable issues with the data'.[10] For this reason it decided to place no weight on its own empirical analysis.[11] Instead, it relied on its qualitative assessments and refused to grant the clearance.

[9] Decisions Nos 606 and 607.

[10] Decision Nos 606 & 607, para 331.

[11] Decision, Nos 606 & 607, para 333.

The Commission's decisions were appealed to the High Court (Mallon J and Dr Stephen King as lay member). The Commission retained an expert econometrician (Jerry Hausman) who undertook his own study of the effects of the 2002 merger and came to conclusions very similar to those that Progressive/Woolworths had previously put before the Commission. The High Court allowed the appeal although it did not place great weight on the study of the effects of the 2002 acquisition. It stated:

> The evidence before us is not inconsistent with Woolworths and Foodstuffs being involved in reasonably vigorous and workable competition. In this sense we agree with Dr Williams. However, we consider that the nature of existing competition should not be overstated. As Dr Bamberger notes, the Court cannot determine the exact level of competition. Importantly, the evidence does not show that the current level of competition between Woolworths and Foodstuffs could not be made more vigorous through the presence of a successful Extra as an effective third competitor. As such, the acquisition of the Warehouse by either Foodstuffs or Woolworths may still represent a substantial lessening of competition. The key question is not how competitive are Woolworths and Foodstuffs today but rather, in light of this evidence of existing competition, how competitive will the relevant markets be in the future in the absence of the acquisition.[12]

The litigation ended with a decision of the Court of Appeal which reinstated the original decision of the Commerce Commission. The Court of Appeal found that it was confronted with conflicting decisions from two expert bodies – the Commission and the High Court. The Court of Appeal considered that it preferred the decision of the Commission.[13]

The point behind this sorry tale (I hope this does not sound too like sour grapes!) is that if regulatory authorities are to attempt RBR, they need to acquire competence in the analysis of data. We shall never know what would have been the effect, if any, on the original decision of the Commission had it had access to empirical analysis in the form that their own expert presented to the High Court. If they had access to that material, the Commission could not have said that the material 'generally supported [their] qualitative assessments'. It is even possible that the Commission may have given serious weight to the evidence from the real-world experiment and cleared the merger.

2.3 Some relevant effects cannot be quantified

The analysis of the effects of proposed acquisitions on competition is generally classified as taking the form of either unilateral effects or coordinated effects.

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[12] Appeal against a determination of the Commerce Commission between Woolworths Limited, Foodstuffs, the Warehouse Group and the Commerce Commission, 29 November 2007, para 197.

[13] Commerce Commission v Woolworths, Foodstuffs and the Warehouse Group, [2008] NZCA 276.

The distinction is reflected in the ACCC Merger Guidelines. The Guidelines define unilateral effects as follows:

> Mergers have unilateral effects when they remove or weaken competitive constraints in such a way that the merged firm's unilateral market power is increased. That is, as a result of the merger the merged firm finds it profitable to raise prices, reduce output or otherwise exercise market power it has gained, and can do so, even given the expected response of other market participants to the resulting change in market conditions.[14]

The Guidelines define coordinated effects as follows:

> Mergers have coordinated effects when they assist firms in the market in implicitly or explicitly coordinating their pricing, output or related commercial decisions. A merger may do so simply by reducing the number of firms among which to coordinate, by removing or weakening competitive constraints or by altering certain market conditions that make coordination more likely. Effects may occur in addition to unilateral effects so that the merged firm is able to achieve even higher prices than it would on its own. In some cases, coordinated effects, either alone or in conjunction with unilateral effects, may amount to a substantial lessening of competition.[15]

Submissions to antitrust regulators for the clearance of mergers are dramatically different in the way they address possible unilateral effects from the ways they address possible coordinated effects. In particular, there is a well-established set of techniques by which RBR can be applied to the assessment of the likely unilateral effects of the merger. These may involve the analysis of natural experiments (what can one learn from a comparison of prices before and after the last merger in this industry?), estimation of cross-price elasticities of demand in differentiated product industries, the simulation of the effects of the merger on prices – given information about cross elasticities of demand, and so on… Reports containing studies of this kind are regularly put to the ACCC and the New Zealand Commerce Commission by parties who are applying for clearance of mergers.

The contrast between the submissions on unilateral effects and those on coordinated effects could hardly be greater. Submissions on coordinated effects generally consist of a run-through of a set of factors that may make collusion more or less likely and a conclusion with respect to each factor that consideration of this factor indicates that collusion is unlikely in the industry affected by the merger.[16]

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[14] ACCC, *Merger Guidelines,* November 2008, para 5.1.

[15] ACCC, *Merger Guidelines,* November 2008, para 6.1.

[16] These lists are never particularly enlightening – in part because the direction of influence of some of the factors that are found on these lists is rarely unambiguous. See Massimo Motta, *Competition Policy, Theory and Practice,* Cambridge University Press, 2004, pp 142-166.

Bill Kovacic and others have recently proposed a method for quantifying the change caused by a merger in the incentive to collude.[17] They propose the method for differentiated products markets. It involves quantifying the increase in profits if the merger were to occur and perfect collusion (that is, a pure monopoly) would result. They also examine the sustainability of perfect collusion by calculating the payoffs from unilateral deviations from the collusive outcome.

This proposal seems to add little of any worth to our range of empirical techniques. The proposed method assumes that coordination will occur if perfect collusion generates more profits for each firm than does its unilateral deviation from the pure collusion price. The profitability of deviation will depend on the punishment strategy of the other firms. This must be assumed in order to make the calculations.

The result of the calculations proposed by Kovacic et al is that the proposed merger (which may do very little to affect market structure) is assumed to change prices from uncoordinated oligopoly prices to those of a pure monopoly. This is to attribute to a single merger increases in prices as if the merger involved every producer in the market. The method is unable to distinguish mergers that are more likely to result in coordination from those that are less likely to do so.

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2.4 Heavy weighting of non-quantifiable effects

John's proposed Principle 4 seems designed to deal with the problem arising when some of the effects relevant to consideration of a regulatory decision cannot be quantified. His Principle 4 states:

> In assessing the merits of alternative market governance mechanisms, policymakers should heavily weight granular empirical evidence collected from actual markets.

The problem of a comparison of quantifiable and unquantifiable considerations arises frequently in regulatory decisions. It comes to the fore whenever the regulatory authority believes that non-quantifiable factors are important. An example was the decision of the ACCC not to clear the proposed acquisition by Caltex Australia of the retail assets of Mobil Oil Australia.[18]

The Commission analysed the effect of the proposed acquisition in both local retail markets and in metropolitan retail markets. The effects of the proposed

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[17] William E Kovacic, Robert C Marshall, Leslie M Marx and Steven P Schulenberg, "Qantitative Analysis of Coordinated Effects, *Antitrust Law Journal,* Vol 76 (2009), pp 397-430.

[18] See ACCC, Public Competition Assessment, *Caltex Australia Limited – proposed acquisition of the retail assets of Mobil Oil Australia Pty Ltd,* 9 February 2010. Frontier Economics was retained to advise solicitors acting for Caltex in its application for clearance.

acquisition in local retail markets (roughly a 3-5 km radius) were analysed under the heading of unilateral effects. The Commission formed the view that the acquisition by Caltex of 53 of Mobil's retail sites would be likely to substantially lessen competition in local retail fuel markets. This problem could have been cured had Mobil been prepared not to acquire these sites.

However, the Commission had a second objection to the acquisition. This is that it would result in a substantial lessening of competition because of coordinated effects in metropolitan retail markets. Because these markets embraced whole metropolitan areas the acquisition could not be saved by carving out particular assets.

The Commission argued that the regular weekly cycles in retail petrol prices covered metropolitan areas and that the repeated interaction of major retailers over time has led them to recognise that it is in their mutual interest to raise prices during the restoration phase of cycles across a broad number of sites at the same time.

The Commission argued that this pattern of uniform and rapid restoration of prices each week was more likely to be upset if the acquisition were stopped because some or all of the Sale Sites would be acquired by retailers who lag in restoring prices:

> … the ACCC's inquiries have shown that where failed restorations have occurred, this has been due to one or more parties lagging for extended period of time. Under either of the likely counterfactual scenarios, the ACCC considers it likely that more lagging will occur and that this will lead to more failed restorations, compared with the situation under the proposed acquisition.
>
> The ACCC consider that even a few additional failed restorations in a year may have a significant impact on the average retail price for petrol over the year.
>
> As a result, the ACCC formed the view that the proposed acquisition would substantially lessen competition in retail petrol markets by creating a greater risk of more stable and more effective coordinated pricing behaviour in the restoration phase of the weekly price cycles than would be the case when compared to any of the likely counterfactual scenarios.[19]

The ACCC's decision in Caltex-Mobil is an example of a decision that relied entirely on an argument that, in principle, could not be subjected to any empirical testing – either ex ante or ex post. The decision was clearly inconsistent with John's definition of RBR because the Commission was unable to discharge its onus only to regulate if it can prove by means of serious empirical analysis that regulations (proposed or extant) do better than the market. It was unable to discharge its onus because it relied entirely on a concern that was not capable of serious empirical analysis.

[19] Catlex-Mobil PCA, paras 88-90.

The Commission has responsibilities under the law. It cannot say that a merger is not likely to substantially lessen competition if it believes that it will. However, there is a danger in a regulator relying on arguments that are not capable of empirical falsification. That danger is that the decision of the regulator becomes immune from any constraints:

- it cannot be constrained by the courts because (as the aggrieved parties and the regulator both realise) if an argument cannot be tested empirically, the result of a court decision is extraordinarily difficult to predict – and businesses are reluctant to devote heavy resources to what inevitably must be a 50:50 gamble; and
- it cannot be constrained by rational argument because its logic is impeccable and the heavy weighting it gives to non-quantifiable considerations is also immune from falsification.

The problems associated with giving a heavy weight to non-quantifiable considerations is not confined to the Mergers Branch of the ACCC. It is also true of the RIS process within governments. The Annual Reports of the Victorian Competition & Efficiency Commission report in Appendix H the extent to which regulations have been able to be justified on the basis of net quantifiable benefits. For most projects, the quantified costs exceed the benefits and the last annual report showed that the quantifiable costs aggregated over all RISs exceeded the quantifiable benefits.[20] As VCEC reports: "In these cases, regulations have been implemented on the basis of qualitative judgements, making it more difficult to judge whether the best option was selected and will indeed yield net benefits."[21]

3 Conclusions

John's paper contains much to commend. In particular, the discipline of RBR is great. The problem seems to be how to implement it. The key implementation problems seem to be:

- lack of humility among regulators/policy advisers;
- incompetence;
- impossibility of quantifying important effects; and
- heavy weighting of the unquantifiable.

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[20] Victorian Competition and Efficiency Commission, *Improving the Performance of Regulators: Annual Report 2009-10, Appendix H, pp 113-115.*

[21] Victorian Competition and Efficiency Commission, *Strengthening Foundations for the Next Decade, An Inquiry into Victoria's regulatory framework, A draft report for further consultation and input,* February 2011, p 45.

Some of these problems seem to be easier to overcome than are others.

FRONTIER ECONOMICS NETWORK
BRISBANE | MELBOURNE | SYDNEY | BRUSSELS | COLOGNE | LONDON | MADRID
Frontier Economics Pty Ltd 395 Collins Street Melbourne Victoria 3000
Tel: +61 (0)3 9620 4488 Fax: +61 (0)3 9620 4499 www.frontier-economics.com
ACN: 087 553 124 ABN: 13 087 553 124