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Response to Stakeholder comments on comments on
“A Regulatory economics assessment of the proposed
Western System asset valuation approaches” and “The
economic impact of QR’s proposal not to include an
adjustment to refund or recoup differences in tariffs:
Stage 1 Report.”

Author

Professor Flavio Menezes

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Response to Stakeholder comments on “A Regulatory economics assessment of the proposed Western System asset valuation approaches” and “The economic impact of QR’s proposal not to include an adjustment to refund or recoup differences in tariffs: Stage 1 Report.”

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1. INTRODUCTION

I have been engaged by the Queensland Competition Authority (QCA), through UniQuest, to respond to issues raised in stakeholders' submissions on its October 2015 draft decision on the Queensland Rail (QR) 2015 DAU relating to the following issues:

- a. The initial asset value and matters related to the following report that I have written: F. Menezes (2015b), *A Regulatory economics assessment of the proposed Western System asset valuation approaches*, Report for the Queensland Competition Authority, UniQuest Project no. C02173.¹
- b. The impact of the change in QR's position on refunding/recouping any difference between the tariff that is yet to be approved and the interim price as discussed in my report: F. Menezes (2015c), *The economic impact of QR's proposal not to include an adjustment to refund or recoup differences in tariffs: Stage 1 Report*, prepared for the Queensland Competition Authority, UniQuest Project no. C02344.²

Queensland Rail was the only stakeholder who responded directly to these two reports. They engaged PwC to independently review the reports. PwC (2015b)'s review, *Response to Professor Menezes' Reports*, is set out in annexure 3 of QR's submission.³ This report addresses the issues raised in PwC (2015b).

Section 2 of this report provides a summary of my conclusions on asset valuation, and a brief description of the process that lead to Menezes (2015b), which address PwC (2015a)'s criticisms⁴ of the preliminary report I wrote on asset valuation.⁵ However, the key contribution of Section 2 is to address PwC (2015b)'s criticisms of Menezes (2015b). As it will become clear, many of PwC's criticisms of the preliminary report were repeated in their response to the updated

¹ Available at <http://www.qca.org.au/getattachment/78d5d1c9-56fe-4671-ae99-3145218f51a3/Economic-regulatory-opinion-on-western-system-asse.aspx>.

² Available at <http://www.qca.org.au/getattachment/cee047b2-a3f0-4abb-ba88-b5c6d5071049/The-economic-impact-of-QR-s-proposal-not-to-includ.aspx>.

³ Submission – Queensland Rail's Draft Access Undertaking 1 (December, 2015). Available at <http://www.qca.org.au/getattachment/83104821-27c5-49f3-a9ba-8a90162cc386/Qld-Rail-Submission-on-QR-2015-DAU-Draft-Decision.aspx>.

⁴ PwC (2015a), *Asset Valuation of the West Moreton "Explanatory Submission – Queensland Rail's Draft Access Network, Appendix 2 of QR's Undertaking 1 (May 2015)*, Volume 2, May 2015. Available at <http://www.qca.org.au/getattachment/b966441c-39df-486d-bb31-0b544d6c4159/Queensland-Rail-2015-DAU-Submission-Volume-2.aspx>.

⁵ Menezes, F. (2015a), *A preliminary view: Regulatory economics assessment of the proposed Western System asset valuation approaches*. Report for the Queensland Competition Authority, UniQuest Project no. C02173. Available at <http://www.qca.org.au/getattachment/04761325-9cf4-442e-b6b4-1b524228d68a/A-preliminary-view-Regulatory-economics-assessmen.aspx>

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version of the report and did not seem to take into account the replies provided in Menezes (2015b). For completion, I will answer every key point raised in PwC (2015b) but will also refer to answers provided in Menezes (2015b) whenever relevant.

Section 3 of this report addresses PwC (2015b)'s criticisms of Menezes (2015c). It was originally intended for Menezes (2015c) to be reviewed to reflect any substantive points made by stakeholders subsequent to its release by the QCA along with its October 2015 Draft Decision. However, in my view, which is expounded in Section 3 below, PwC (2015b) does not raise any significant issues that require the analytical framework, and the conclusions, of Menezes (2015c) to be reviewed. For completion, I will summarise the conclusion of Menezes (2015c) in Section 3 alongside my responses to PwC (2015b).

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2. THE ASSET VALUATION REPORTS

I was engaged to provide an independent opinion on the extent to which the asset valuation approaches that have been canvassed for Queensland Rail's Western System network were consistent with the economic principles of allocative, productive and dynamic efficiency that are implicitly embedded in the QCA's legislative framework.

This work was undertaken in two stages. A report, with my preliminary view (Menezes 2015a), was made available to stakeholders⁶ alongside QR's 2015 Draft Access Undertaking (DAU). The report was then reviewed in light of QR's 2015 DAU and stakeholder submissions. The revised report (Menezes, 2015b), which was published alongside the QCA's draft decision in October 2015, took into account factual issues and addressed comments raised by consultants engaged by QR to independently review the preliminary report.

In terms of content, Menezes (2015b) considered the DAC (Depreciated Actual Cost) and DORC (Depreciated Optimised Replacement Cost) approaches proposed in the QCA's Consultation Paper⁷, and the DORC approach proposed in the QCA's Draft Decision (October 2014). A key difference between the DORC approaches in the Consultation Paper and in the 2014 Draft Decision is that the latter proposes to place zero value on assets whose actual life has exceeded their expected useful life. The DORC approach in the Consultation Paper is also similar to that proposed by QR in its 2015 DAU, and its previous DAUs.

⁶ Available at <http://www.qca.org.au/getattachment/04761325-9cf4-442e-b6b4-1b524228d68a/A-preliminary-view-Regulatory-economics-assessmen.aspx>.

⁷ Available at <http://www.qca.org.au/getattachment/4e292b85-3670-46e6-9ef9-f691f64865b2/QCA-Consultation-paper-on-western-system-coal-tari.aspx>.

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In its 2015 Draft Decision⁸, the QCA describes its approach to asset valuation as follows:

- 'a. giving value to assets such as rail, concrete sleepers and concrete bridges that have been replaced as capital items and have not been fully depreciated*
- b. assigning no additional value beyond the allowed maintenance expenditure to assets such as wooden sleepers and fences that have been replaced through maintenance expenditure, or ballast and wooden bridges that require so much maintenance to keep them in service that they are effectively worthless without that high maintenance spending*
- c. not giving tunnels, cuttings and embankments any additional value beyond that given to other assets and hence the network as a whole.'*

While the 2015 QCA Draft decision does not describe its approach as a DORC approach, it is still the case, as in its 2014 Draft Decision, that under the proposed QCA approach assets with an expired expected useful life will not be allowed to earn any positive return. In this reply, I will continue to refer to the QCA proposed approach as a DORC approach that does not allow QR to earn a return on assets with an expired expected life.

Menezes (2015b) reaffirmed the view, expressed in Menezes (2015a), that both the proposed DAC approach and the DORC approach that does not allow QR to earn a return on assets with an expired expected life are likely to promote the economically efficient operation of the Western System, to provide incentives for QR to efficiently invest in the network and to promote competition in relevant markets.

Both approaches, however, have advantages and disadvantages and there is no clear-cut way to choose between them based only on economic efficiency criteria. The DAC approach is simple and transparent. It ensures that there is no over-recovery of costs. While the proposed 1995 cut-off date may be considered arbitrary, treating the pre-1995 assets as sunk promotes allocative efficiency and allowing recovery of 100% of the post-1995 assets from access fees, provided that there is accurate data, provides incentives to invest in the network. As the proposed DAC valuation is below the DORC valuation, it should avoid inefficient bypass.

⁸ QCA, Draft Decision, Queensland Rail's 2015 Draft Access Undertaking, October 2015, p. 177. Available at <http://www.qca.org.au/getattachment/dfcf0cda-40c6-4a8e-b945-930a97a4f135/QCA-QR-2015-DAU-Draft-Decision.aspx>.

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The proposed approach in the QCA’s Draft Decision, in contrast, may improve investment incentives and prevent inefficient bypass. DORC approaches⁹ have been applied extensively, but not exclusively, by Australian regulators including the QCA. Moreover, not allowing QR to earn a return on assets with expired expected useful lives mitigates the risk that DORC-based prices will adversely impact competition in relevant markets. In contrast, a DORC approach that provides a positive return on longstanding assets with expired expected useful lives would increase the risk that prices are sufficiently high to impact competition in relevant markets.

I now turn to Section 2 of PwC (2015b), which provides a response to Menezes (2015b). PwC (2015b, pages 3-8) makes three points, which I address below in turn.

‘Evidence of windfall gains’

PwC (2015b) argues that:

The fundamental premise of Professor Menezes’ argument is that an investor would have:

- *made efficient investments only on the basis of a clear commercial motivation to earn a return on and recover its invested capital*
- *known with precision the useful life and technical performance of the relevant assets, and*
- *factored this knowledge into setting a cost-recovery arrangement which, based on forecasts at that time, would have allowed for full recovery of incurred costs, including a risk-based return on investment, over the asset’s then-expected useful life.*

If any of these conditions is not met, then Professor Menezes’ conceptual model breaks down, and the claim of a ‘windfall gain’ cannot be supported.¹⁰

⁹ It is appropriate to refer to DORC approaches rather than to a single DORC approach. As explained in Menezes (2015b, p. 8), any DORC valuation process involves a number of arbitrary choices, many of which are specific to the assets being valued.

¹⁰ PwC (2015b, p. 5).

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This statement does not accurately reflect my view. To be more precise, here is what I say:

*the notion that allowing a return on assets with expired expected useful lives yields windfall gains. This is a proposition based on economic principles. These are windfall gains as they could not have been anticipated at the time of the investment decision.*¹¹

In explaining why allowing a return on assets with expired expected useful lives yields windfall gains, I only relied on a weak version of the second dot point in PwC’s comments above. That is, for windfall gains to exist it is not necessary that the entity making the original investment had a commercial motivation and that it expected to recover the full costs of the investment, including the return on capital, during the expected useful life of the asset.

To understand this, consider the entity’s decision making process over a century ago. That entity, whether commercially motivated or not, would have had some expectation about the useful life of the assets. This is either because assets physically deteriorate and, as a result need to be replaced over time, or even in the absence of physical deterioration, because the present monetary value of any benefits (whether financial in nature or not) that will accrue over a century in the future is small.¹²

Thus, regardless of whether the investment was made on a commercially sound basis or based on some other criteria, the entity at the time would not have expected to be able to earn any revenue beyond the expected useful life of the asset. That is, regardless of whether the entity making the investment over a century ago expected to recover the cost of the investment over the life of the asset, it would not have expected to earn any revenue past its expected useful life of the asset. This simply results from the definition of an expected useful life.

It follows then that conditions set out in the first and last dot points are not being met but nevertheless allowing a firm to earn revenue on assets with expired useful lives entails windfall gains. To be clear, this argument does not depend on the nature of the firm’s expectations at

¹¹ Menezes (2015-b, p. 10-11).

¹² For example, a recent report of the Inland rail implementation Group (Report to the Australian Government, August 2015, p. 69) refers to a 100 years as the maximum useful life of rail infrastructure: ‘From an economic perspective, the business case uses 100 years as the maximum useful life of rail infrastructure, noting that its actual usage will extend over much longer periods via a maintenance plan and replacement of key assets.’ (Available at https://infrastructure.gov.au/rail/inland/files/Inland-Rail-Implementation-Group-Report_0915.pdf). While the quote refers to a ‘business case’, a similar reasoning can be made in terms of any decision making process that compares costs and benefits, whether the latter are pecuniary only (as in a commercially made decision) or of a different nature (e.g., involving public benefits that are captured by society at large rather than by the entity making the investment).

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the time of the investment; it is true whether the investment was made on a commercial basis – and the entity expected to recover the full costs of the investment throughout the useful lives of the assets – or on some other basis in which the entity did not expect to recover its costs during the useful lives of the assets. This is the context of the statement that it is ‘neither possible nor necessary to consider the mindset of the investment at the time of the investment’ (Menezes, 2015b, p. 13).

In sum, it is not that expectations are unimportant, rather it is simply the case that the argument that allowing a firm to earn a return on assets with expired useful lives yields windfall gains is true irrespective of the nature of expectations regarding the prospect of cost recovery during the expected useful lives of the assets and regardless of the motivation that underpinned the original investment decision.

‘Excluding assets from the DORC valuation may increase regulatory risk’

PwC (2015b, p. 6-7) repeats the argument in PwC (2015a, p. 14) that excluding assets with expired useful lives from a DORC valuation will increase regulatory risk. To examine this issue, consider the impact on regulatory risk of a regulatory decision not to allow a regulated entity to earn a return on assets with expired useful lives. A rational investor will take this decision into account when making an investment today. This means that a rational investor will take into account that it will not be allowed to earn a return beyond the expected useful lives of the assets. This will not affect investment today as the rational investor will invest only if it can recover its costs, including the return on capital, during the expected useful lives of the assets.

Therefore, it follows that excluding assets with expired useful lives from a DORC valuation does not increase regulatory risk and, as I have explained in Menezes (2015b, p. 12-13), does not impact negatively on dynamic efficiency.

Let me turn now to the following statement that PwC (2015b) made regarding Menezes (2015b, 2015c) that is inaccurate:

We observe an inconsistency between the second and third Menezes reports. In the second Menezes report, Queensland Rails’ reasonable expectations are set aside as a matter on which Professor Menezes, as an economist, cannot comment upon nor factor into his analysis. However, in the third Menezes report, the reasonable expectations of access seekers in respect to Queensland Rail’s prior proposal to adjust Reference Tariffs

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*are core to that report’s claim that access seekers are now exposed to greater regulatory uncertainty, and hence risk.*¹³

To explain why this statement is inaccurate, I first repeat below the text that PwC (2015b) is referring to, which is in the context of the choice between a DAC approach and a DORC approach:

*Indeed, if QR reasonably expected a DORC valuation to set initial asset values, then a different asset valuation may indeed create the perception of an increase in the instability of the regulatory system and an increase in regulatory risk. However, establishing whether such an expectation was reasonable is not a matter that I can comment on as an economist. As such it is not factored into my analysis, which assumes that no such expectation existed. This is based on what I assumed to be a regulatory economics principle well-understood in Australia that the choice of valuation method is purposive and asset specific. Nevertheless, if such expectations were found to be reasonable, then the choice of DAC would involve the additional disadvantage of being associated with an increase in regulatory risk.*¹⁴

The issue here is that I cannot, as an economist, conclude whether or not it was reasonable for QR to expect a DORC valuation rather than a DAC valuation. QR may well have expected that a DORC valuation would be adopted to set initial asset values and, in this case, the choice of a DAC valuation would indeed increase regulatory risk as I have acknowledged.

To put it differently, while there may be no clear-cut way to choose between a DAC and DORC approach based only on economic efficiency criteria, the regulator, perhaps based on past submissions or other material, may come to the view that QR did indeed hold an expectation that a DORC approach would be used. The existence of such expectation may then justify the choice of a DORC approach over a DAC approach by the regulator.

Note that I go on to say that I did not expect such expectation to exist, and as such it was not factored into my conclusion that both DAC and DORC approaches may be yield efficient outcomes, based on a regulatory economics principle well-understood in Australia that the choice of valuation method is purposive and asset specific.

¹³ PwC (2015b, footnote 15, p. 6).

¹⁴ Menezes (2015b, p. 14).

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While I did not note this explicitly, I referred to the expectation of the choice of a DORC approach in general and not the expectation that the particular DORC approach favoured by QR, which allows it to earn a return on assets with expired useful lives, would be accepted by the regulator.

The reason I only considered the DORC approach in general is that, as I have explained, ‘a DORC valuation process involves a number of arbitrary choices, many of which are specific to the assets being valued.’¹⁵ In particular, in the case of the Western System, which was not built for the purpose of providing heavy-haul coal services, it is not clear that modern equivalent assets would provide the same services that are currently provided, which makes the implementation of a DORC approach challenging. Thus, while it is possible that QR may have held the expectation that a DORC approach, to be determined through the regulatory process, would be chosen by the regulator, I find it unreasonable for QR to have the expectation that its favoured DORC approach would be accepted by the regulator exactly as proposed.

In contrast, when analysing the impact of Queensland Rail’s prior proposal to adjust Reference Tariffs in Menezes (2015c), I was explicitly instructed to consider that access seekers should have reasonably expected that tariffs would be either refunded or recouped through the inclusion of an adjustment. My understanding is that these expectations were considered reasonable by the QCA based on a range of factors including past regulatory practice. I will return to this issue in Section 3.

In summary, Menezes (2015b,c) appropriately considers the expectations of QR and access seekers and there are no inconsistencies between the two reports.

‘No Impact on allocative efficiency or competition in other markets’

PwC (201b, p. 7-8) raises two issues regarding my argument that access prices based on a DORC valuation that allows QR to earn a return on assets with expired expected useful lives exhibit a higher risk of adversely affecting allocative efficiency than, for example, a DORC valuation that does not allow QR to earn a return on those assets.

The first issue raised by PwC is that I do not ‘offer any evidence to justify these claims’.¹⁶ My statement, however, is correct as a matter of economic theory. A DORC valuation that allows QR to earn a return on assets with expired expected useful lives yields a higher access price than a DORC valuation that does not allow such return. A higher access price, by definition,

¹⁵ Menezes (2015b, p.8)

¹⁶ PwC (2015b, p. 7).

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entails a higher risk that this price will be sufficiently high to impact negatively on allocative efficiency.

In principle, to establish whether the risk to allocative efficiency of a higher access price is significant or material it may be necessary to examine the economics of West Moreton coal including users' operating costs, which are not publicly available. It follows that users themselves are best placed to provide evidence that a higher access price may have adverse impacts on allocative efficiency and on competition in particular markets.¹⁷

I do not, however, examine any such evidence in my report. The reason is that I do not need such evidence to conclude that allowing QR to earn a return on assets with expired useful lives is not appropriate from the viewpoint of economic efficiency. First, as I have explained in Menezes (2015 a,b), allowing QR to earn a return on such assets is not necessary to ensure dynamic (and productive) efficiency. Second, as explained above, allowing QR to earn a return on expected life expired assets risks impacting negatively on allocative efficiency. That is, there are no gains from the viewpoint of efficiency from allowing QR to earn a return on such assets, but there are possible losses.

The second point raised by PwC is that I ignore 'Queensland Rail's proposal to de-couple the setting of reference tariffs for the West Moreton from the 'ceiling' revenue limit that otherwise would be determined using a properly-determined DORC valuation.'¹⁸

As I explained in my report:

*'...it is not clear what the 'de-coupling' approach is trying to achieve. For the purpose of this report, I continue to focus on the determination of the initial asset base as a means of establishing a maximum revenue that a regulated business may be able to recover over the life of the assets.'*¹⁹

To be more specific, QR's proposed tariff in its 2015 DAU implies that it is recovering less revenue than the maximum amount of revenue that it would be allowed to recover under a

¹⁷ For example, Yancoal's submission states that 'the current access charges and impact on above rail services does not, in our opinion, promote effective competition as our competitive position shifts significantly from low cost at mine to high cost on arrival at the port due to excessive and inefficient rail costs.' (Available at <http://www.qca.org.au/getattachment/f06f0d18-b7f7-4c0a-810d-ab42e432b8c5/Yancoal-Submission-on-QR-2015-DAU-June-15.aspx>). As the current access price is lower than what would be an access price based on a DORC valuation that values assets with expired useful lives, it stands to reason that the latter will have a larger negative impact.

¹⁸ PwC (2015b, p. 8).

¹⁹ Menezes (2015b, p. 11).

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DORC valuation that allows QR to earn a return on assets with expired useful lives. However, as this asset valuation is rolled over to the next regulatory period, QR will still be able to charge a higher tariff, based on the higher DORC valuation, which will be associated with a risk that allocative efficiency will be negatively impacted.

In summary, the argument that a DORC valuation that allows QR to earn a return on assets with expired useful lives is associated with a higher risk of a negative impact on allocative efficiency than a DORC valuation that does not allow QR to earn such a return is a matter of economics. Moreover, the analysis in Menezes (2015b) considered that the determination of the initial asset valuation will impact on the maximum revenue that QR will be allowed to recover over future regulatory periods. Therefore, the proposed de-coupling by QR does not ensure that allocative efficiency will not be adversely impacted in the future.

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3. THE ECONOMIC IMPACT OF THE PROPOSAL NOT TO INCLUDE AN ADJUSTMENT TO REFUND OR RECOUP DIFFERENCES IN TARIFFS

Menezes (2015c) provided an independent opinion to the QCA on the economic impact of Queensland Rail’s (QR’s) proposal not to include an adjustment to refund or recoup any differences between the interim tariff and the new tariff to be approved by the QCA. The analysis is based on the assumption that access seekers expected the inclusion of such adjustment in the Access Undertaking.

My analysis assumed that access seekers expected that differences between these tariffs would be either refunded or recouped through the inclusion of an adjustment. I was instructed by the QCA to consider this assumption in my analysis. While there are in my view sound reasons for this assumption to hold – for example, in its 2013 DAU, QR proposed an increase in tariffs and to back-date the changes to 1 July 2013 – it is ultimately a factual issue whether this assumption is appropriate and it involves ascertaining what were the actual expectations of access seekers on the existence of a refund or recoupment mechanism.

The focus of Menezes (2015c) is on whether the change proposed by QR can have a future impact on economic efficiency and in particular on future investment (dynamic efficiency) and on the operation and use of the network (productive and allocative efficiency). As I have explained in the report, the analysis provided is necessarily prospective, as any foregone payments from access to QR are essentially transfers.

Using economic principles, Menezes (2015c) explains that QR’s proposal not to include an adjustment to refund the difference between the interim and the new tariffs can adversely impact on future investment. Under the assumption that access seekers expected the inclusion of the adjustment charge, a change in policy by QR can create asymmetric risk; a perception that the regulatory process favours QR so that in the event that access prices increase, there will be recoupment, but in the event that access prices decrease, there will not be a refund.

Such a change in policy can also lead to a perception of an unstable regulatory process, which may be translated into an increase in regulatory risk. Under both cases, investment projects that would go ahead under the expectation of an adjustment to refund/recoup may not go ahead if there is a change in policy.

Menezes (2015c) also explains why the lack of an adjustment is unlikely to impact adversely on future allocative or productive efficiency (static efficiency). The reason is that any additional

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amount paid by access seekers will essentially be a sunk cost and should not impact on the future efficient use of the existing network. While Menezes (2015c) presents an example where static efficiency can be negatively affected by QR’s proposal, the knife-edge nature of the example is such that it makes it very unlikely to be of concern.

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4. THE PWC RESPONSE

PwC (2015b) makes a number of comments, some of which do not accurately reflect the analysis in Menezes (2015c). This section responds to each of PwC (2015b)’s comments. For ease of reference, I have numbered PwC’s main comments, and reproduced them below alongside my response.

1. *‘The fundamental failing in Professor Menezes’ conceptual model is that:*

- *The 2013 DAU was not an ‘interim’ tariff, in the sense that the tariffs proposed in the 2015 are ‘final’ tariffs – these are two completely separate regulatory instruments, one replacing the other and changed in several material ways, not just by the omission of a tariff adjustment option.*
- *Queensland Rail cannot simply ‘choose its policy’ as suggested by Professor Menezes; the QCA remains the jurisdictional regulator with power to approve or refuse to approve access undertakings.²⁰*

In the context of the conceptual framework in Menezes (2015c), the ‘interim’ tariff refers to a tariff that is applied temporarily, until a ‘final’ tariff is determined. This is based on the assumption that access seekers expected that differences between the current tariff and the new tariff would be either refunded or recouped through the inclusion of an adjustment. Given this expectation, the current tariff can be seen as interim or temporary.

In the modelling, an access seeker faces either a higher or lower final access tariff compared to the interim access tariff. The difference between the high and low possible final access tariffs is meant to capture the fact that there may be a number of reasons for the interim tariff to be different from the final tariff. The omission or not of the tariff adjustment is not related to the difference between the two possible final tariffs captured in the simple model in Menezes (2015c). Instead, the model is developed to examine, conceptually, what would happen to the incentives for investment faced by access seekers resulting from a single change in the regulatory regime;²¹ i.e., the difference between the temporary (or interim) tariff and the final tariff is not recovered from or refunded to access seekers. As explained in Section 2 above, the

²⁰ PwC (2015b, p. 10).

²¹ That is, the analysis in Menezes (2015c) implicitly assumes that there is no mechanism (implicit or otherwise) in the DAU to refund or recover any differences between the new and current tariffs.

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analysis assumed that access seekers expected any differences between the final and the temporary access tariffs to be either recouped or refunded by the access provider.

The second dot point is as far as I can tell a question of semantics. The analysis in Menezes (2015c) does not change if one replaces any references to QR ‘choosing its policy’ to ‘QR making a proposal and the regulator approving QR’s proposal’. As the title of the report suggests, Menezes (2015c) examines QR’s proposal and not its ‘choice of policy’.

2. *‘Relevant too is whether the adverse outcomes suggested in the third Menezes report have actually occurred. Looking at the specific circumstances of Queensland Rail and the West Moreton Network, the third Menezes report presents no information to suggest that:*

- *Any access seekers have investment proposals that they have ‘delayed or cancelled’ on account of Queensland Rail’s 2015 DAU, and specifically its omission of any adjustment provision, and*
- *Any access seeker investments were made with an expectation of a tariff adjustment, which have then proven to be uncommercial without this adjustment’.*²²

As explained in Menezes (2015c), the economic analysis of the impact of QR’s proposal is necessarily prospective in nature. To be clear, Menezes (2015c) points out that the impact of QR’s proposal on investment may go beyond the impact on existing investment or current investment proposals and affect future investment decisions. The mechanisms discussed in Menezes (2015c) include the creation of asymmetric risk – the perception that the regulatory process favours QR – and a perception of an unstable regulatory process. Both mechanisms may adversely impact future investment. The analysis is indeed theoretical in nature. It was aimed at identifying what the impact of the proposal will have on future investment based on what economic theory would predict.

3. *‘The conclusions of regulatory risk posited in the third Menezes report are therefore academic, and not grounded in any factual analysis. As with the second Menezes report, no data or analysis is presented on the economics of coal minimising and rail transport, to evidence whether the risks as theorised are material, or trivial.’*²³

²² PwC (2015b, p. 10).

²³ PwC (2015b, p. 10).

Re: Response to Stakeholder comments on comments on “A Regulatory economics assessment of the proposed Western System asset valuation approaches” and “The economic impact of QR’s proposal not to include an adjustment to refund or recoup differences in tariffs: Stage 1 Report.”

As discussed above, Menezes (2015c) shows, using economic principles, that QR’s proposal not to include an adjustment to refund or recoup differences in tariffs may deter future investment. Indeed, the mechanisms through which QR’s proposal may deter future investment are conceptual in nature, grounded on well-known economic principles, and not on an empirical or factual analysis. This is common in regulatory economics, as the impact of a particular measure on future investment is difficult, if not impossible, to estimate. I note that PwC (2015b, p. 6-7)’s own report argues that excluding assets from the DORC valuation may contribute to regulatory risk but does not provide data or any factual analysis to ground their claim.

4. *‘Whether access seekers had a reasonable expectation of a refund/recoupment is subjective. Whilst it is correct that Queensland Rail did propose in the 2013 DAU an adjustment mechanism, this was part of a package of financial and non-financial access terms. Queensland Rail’s withdrawal and resubmission of its 2015 DAU introduced a raft of other changes, and to consider one component in isolation is misleading’.*²⁴

I was instructed to consider that access seekers would expect a refund/recoupment but, as I have indicated above, determining whether these expectations are reasonable is ultimately a factual issue. It involves ascertaining what the actual expectations of access seekers were and whether there were reasonable grounds to hold such expectations.

It follows that determining whether QR had a reasonable expectation that a DORC valuation, the details of which would be determined through the regulatory process, rather than a DAC valuation would be used to set initial asset values is also subjective, as discussed in Section 2 above.

PwC also argues that because the 2015 DAU contains a number of other changes vis-à-vis the 2013 DAU, it is misleading to consider the proposed elimination of the refund/recoupment in isolation of other changes. I disagree with this statement. The refund/recoupment mechanism has some particular characteristics – it is a risk-sharing mechanism that ensures that differences between interim tariffs and final tariffs are either recouped or refunded. This mechanism ensures that the access provider is able to recover the required revenue over the duration of an access undertaking in the event that the final tariff is higher than the interim tariff. It protects access seekers in the event the final tariff is lower than the temporary or interim tariff. I am unaware of any other mechanism in the 2015 DAU that fulfils this role. It follows that it is appropriate to examine the impact of this particular change in the 2015 DAU vis-à-vis the 2013 undertaking.

²⁴ PwC (2015b, p. 10).

Re: Response to Stakeholder comments on comments on “A Regulatory economics assessment of the proposed Western System asset valuation approaches” and “The economic impact of QR’s proposal not to include an adjustment to refund or recoup differences in tariffs: Stage 1 Report.”

5. *In the context of assessing a change in asset valuation approach for Queensland Rail, Professor Menezes is dismissive of Queensland Rail’s expectations, yet for access seekers he accepts unequivocally the same premise for access seekers in the context of a tariff adjustment. We find these two positions inconsistent.*²⁵

There is no inconsistency. As explained in my response to (4) above, and in Section 2, I consider that determining whether both QR’s and access seekers’ expectations are reasonable is a factual matter that involves ascertaining what the actual expectations of access seekers and QR were and whether there were reasonable grounds to hold such expectations. Moreover, I have indicated that if indeed QR had a reasonable expectation that a DORC valuation approach would be used, then adopting a DAC valuation instead may increase regulatory risk.

In summary, none of the points raised by PwC (2015b) led me to change in any material way the analysis and conclusion in Menezes (2015c).

²⁵ PwC (2015b, p. 10).

Flavio M. Menezes – Curriculum Vitae
Professor of Economics
School of Economics, The University of Queensland
Brisbane, QLD, 4072, Australia
Email: f.menezes@uq.edu.au

CAREER SUMMARY

- ❑ Over 75 peer reviewed articles and book chapters in market design, competition and regulatory economics, a major book in auction theory and a number of policy publications that are cited in regulatory proceedings and in submissions to government reviews in competition and regulation.
- ❑ Supervision of over 25 RHD students.
- ❑ Successful track record in attracting ARC and industry funding.
- ❑ Shortlisted for the 2017 ARC Centre of Excellence Round.
- ❑ Regularly contributes to public policy debate and provides advice to public and private organisations on market design issues in defence, communications, banking, transport, health, environment, energy, and water.
- ❑ Leadership roles in the university sector (ANU and UQ), private sector (CRA International), and the not-for-profit sector (Economic Society of Australia), member of the Economics and Commerce Panel of the Australian Research Council’s 2015 ERA, past member of the Executive Committee of the ARC Economic Design Network and of the Board of the Centre for Market Design at the University of Melbourne, current member of the standing committee of the Econometric Society (Australasia).
- ❑ As foundation director of the Australian Centre of Regulatory Economics, developed a suite of new postgraduate programs, funded by industry and government, which trained regulatory economists who are now at key positions in regulated companies and regulators. He also established the Centre’s research program that resulted in two ARC Discovery grants and a number of publications.
- ❑ Menezes completed his second term as Head of School in January 2015. During his tenure, the School experienced considerable growth and change and became the top economics department in Australia according to RePec (<https://ideas.repec.org/top/top.econdept.html>).
- ❑ Plenary or invited speaker at over 40 national or international conferences and workshops over the past ten years.
- ❑ Associate Editor and current membership on editorial boards of the leading Australian journal and international journals. Co-editor of the Economic Record from January 2016.

CURRENT AND PREVIOUS SUBSTANTIVE POSITIONS

2006 -	Professor of Economics, University of Queensland.
2009-2015	Head of the School of Economics, University of Queensland.
2004-2006	Foundation Director, Australian Centre of Regulatory Economics, ANU.
2005-2006	Vice-President (part-time), CRA International.
2003-2006	Professor of Regulatory Economics and Professor of Economics, ANU.
2003	Deputy Head, School of Economics, ANU.
1993-2002	Lecturer, Senior Lecturer and Reader, School of Economics, ANU.

AWARDS, HONOURS, PROFESSIONAL RECOGNITION

- 2015- Senior Research Fellow, Australian Institute of Business and Economics.
- 2015- Member of the Economics Society of Australia National Economic Panel.
- 2015- Elected member of the Standing Committee of the Econometric Society (Australasia)
- 2015 Excellence in Research for Australia, Member of the Economics and Commerce Panel.
- 2014- Fellow, Centre for Policy and Market Design, UTS.
- 2014 Board Member, Centre for Market Design, The University of Melbourne.
- 2011- Vice-President, Economic Society of Australia.
- 2004 Economic Society of Australia Prize for best paper.
- 1995- Visiting appointments: Graduate School of Economics (FGV), NUS, ANU, University of Auckland, University of Melbourne, Harvard University, Oxford University, University of Sydney, University of Alabama, Institute for Pure and Applied Mathematics (IMPA), University of Texas-Austin, University of Oregon, ISCTE (Portugal), University of Gothenburg, and Universidad de Chile.
- 1993 Premio Adriano Romariz Duarte – Best paper in the Brazilian Review of Econometrics, the Journal of the Brazilian Econometric Society.

QUALIFICATIONS

- 1993 Ph.D. in Economics, University of Illinois at Urbana-Champaign
- 1988 Master of Economics, Graduate School of Economics, FGV
- 1985 Bachelor of Economics, Universidade Estadual do Rio de Janeiro

SIGNIFICANT RESERCH CONTRIBUTIONS

Professor Menezes research on multiple unit auctions is cited to explain low revenue in some spectrum auctions in the USA and in Europe. His research has also been cited in patents for clock auctions. His work on entry in auctions and on corruption and auctions is recognised as providing important insights into market design across a range of sectors. His research on pooled auctions is also regarded as providing an attractive alternative design for the sale of multiple objects. His work on the private provision of public goods has also attracted a large number of citations in the field of fundraising and his research on the holdout problem in the context of land assembly has attracted a number of citations in law and economics and urban studies. His more recent research on regulation and competition economics is regularly cited in regulatory proceedings both in Australia and overseas.

TEACHING AND ITS SCHOLARSHIP, PUBLIC LECTURES AND RHD SUPERVISION

Teaching

- ❑ Auctions and Tenders, (Corporate Education, UQ Business School)
- ❑ Competition and Regulatory Policy (University of Queensland)
- ❑ Regulatory Economics (University of Queensland)
- ❑ Public Finance (University of Queensland)
- ❑ Economics of Regulation (Intensive Course, ANU)
- ❑ Competition Policy (Intensive Course, ANU)
- ❑ Introduction to Regulatory Economics (Intensive course, ANU)
- ❑ Industrial Organisation (ANU and EPGE/FGV)
- ❑ Economics of Information and Uncertainty (ANU and EPGE/FGV)
- ❑ Microeconomics (Diploma level, ANU)
- ❑ Microeconomics IV (Honours, ANU)
- ❑ Microeconomics III (Graduate Game Theory Course, EPGE/FGV)
- ❑ Microeconomics II (Honours Component)
- ❑ Public Economics (Pass, Honours, and Graduate Components, ANU)
- ❑ Mathematics for Economists A and B (ANU)
- ❑ Mathematical Economics (ANU and IMPA)

Public Lectures, Workshops and Short Courses

- ❑ OECD and FGV/CERI Workshop on Regulatory Governance, FGV, Rio de Janeiro, December 2015.
- ❑ FGV/CERI Workshop on Public-Private Partnerships and Risk Allocation, Rio de Janeiro, December 2015.
- ❑ CCEE (The Brazilian Market Clearing House for the Electricity Sector). Market Design: Some Insights, Sao Paulo, December 2015.
- ❑ Regulatory Economics: Theory and Practice in Australia. Lecture at the Federal Treasury, October 2015.
- ❑ Chaired the Competition Policy Panel at the Australian Conference of Economics in Brisbane, July 2015. <http://ace2015.org.au/policy-panels/>.
- ❑ The Australian Economy, Logan Rotary Club, QLD, April 2015.
- ❑ Public Private Partnerships in Transport Infrastructure: Lessons for Developing Countries. Public event organised by the Instituto Brasiliense de Direito Aplicado, Brasilia, March 2015.
- ❑ Public Private Partnerships in Transport Infrastructure: Lessons for Developing Countries. Keynote Speech at the Foreign Trade University Conference on PPPs, Hanoi, August 2014.
- ❑ The Global Economy and International Education, UQ International Global Symposium, August 2014.
- ❑ The Economics of Climate Change, AMUNC (Asia-Pacific Model United Nations Conference, July 2014, Brisbane; UQ Open day in Singapore and Vietnam (HCMC) and various junior colleges in Universities in Singapore, Malaysia and Vietnam, August 2014.
- ❑ The 2014 Asia-Pacific Productivity Conference Round Table on Productivity, Regulation and Public Policy, July 2014, Brisbane.
- ❑ Infrastructure Investment in Brazil: Challenges and Solutions, Australian-Brazil Chamber of Commerce, 2013.
- ❑ Market design – a key application of game theory, QLD Economic Society of Australia, August 2013. Presentation available at <http://www.esaqld.org.au/events/market-design-flavio-menezes/>.
- ❑ Public-Private Partnerships for Transport Infrastructure, Public-Private Partnerships: Building Infrastructure for the Future, ISCR, Wellington, NZ, August 2013.

- ❑ Market Design for the real world, NSW Treasury, January 2013; Shandong University and Sichuan University, March 2013; UQ Open day in Hong Kong and Guangzhou, May 2013, UQ Economics Schools Day, July 2013, University of Economics (HCMC, Vietnam), August 2014.
- ❑ The Economist of Public and Private Partnerships, Sydney's Rail Future 2013 Conference, February 2013.
- ❑ Auctions and Public Policy, Center for studies in Social Sciences, Calcutta, India, November 2012; NSW Treasury, January 2013.
- ❑ DSM and Electricity Regulation, University of Melbourne, 2012.
- ❑ Allowance for Corporate Equity, Federal Treasury, Canberra, August 2012 and Center for Studies in Social Sciences, Calcutta, India, November 2012.
- ❑ The Economics of Sustainability, UQ Economics Schools day, July 2012.
- ❑ Capacity Extensions for Essential Facilities Subject to Access Regulation, QCA, Brisbane, May 2012.
- ❑ Understanding Regulation, presentation at Guangdong University of Foreign Studies, Guangdong, China, March 2012.
- ❑ Has the new economics of regulation made any difference to regulation?, Connect: Economics and Policy Workshop, University of Wollongong, February 2012.
- ❑ Understanding the Economics of Auctions and Tenders, UQ Corporate Education Program, February 2012.
- ❑ Defence Spending and Economic Growth, presentation at the Royal United Service Institute Queensland Seminar, Brisbane, November 2011.
- ❑ The Business of Physiotherapy: An Economist's Perspective, presentation at The Business of Physiotherapy Conference, Brisbane, October 2011.
- ❑ Australia: The Land of Duopoly? Australian Economic Forum, Sydney, September 2011.
- ❑ Engaging with Industry, Uniquet Experts' Exchange, September 2011.
- ❑ The Economics of Flood Insurance, presentation at the UQ workshop organized in conjunction with the Disaster Insurance Review Panel, May 2011.
- ❑ Floods, Earthquakes and Tsunamis: How Can Natural Disasters Affect the Global Economy in the Wake of the GFC? Presentation at various Junior Colleges, Singapore, May 2011.
- ❑ International Economics: What is it? Who do we need to study it? Presentation at various high schools, Singapore, May 2011.
- ❑ Tendering for Pathology Services, National Pathology Forum, Sydney, December 2010.
- ❑ The Role of Competitive Federalism in Contemporary Regulation, Treasury, Canberra, November 2010.
- ❑ MC at various University functions including the Colin Clark Lecture, the public lecture at UQ by Joseph Stiglitz in August 2010, and the UQ Faculty of Economics, Business and Law Alumni Lecture Series.
- ❑ Presentation to High School and University Students in Latin America and in the Asia Pacific Region on the role of economists and the future of economics.
- ❑ Climate Change: How Can Economists Help, QETA Conference, Brisbane, July 2010.
- ❑ The Sale of Queensland Rail's Coal Assets, Customs House, the University of Queensland, Brisbane, July 2010.
- ❑ Overview of the RSPT (mining tax), CEDA lunch, Brisbane, June 2010.
- ❑ Cartel Criminalisation: Some Economic Insights, UQ Alumni Debate on Cartel Criminalisation, April 2010.
- ❑ The Economics of Aged Care: An Introduction, The University of Queensland, November 2009.
- ❑ Market Design Issues in Electricity, OSINERG, Peru, September 2009.
- ❑ The Future of Infrastructure Regulation, Foreign Trade University, Hanoi, Vietnam, April 2009.

- ❑ Invited Speaker at 52nd Australian Agricultural and Resource Economics Society Meetings, February 2008.
- ❑ Market Design Issues in Emissions Trading, Expert Workshop on Auctioning Greenhouse Gas Permits, November 2007, Australian School of Business, UNSW, Sydney.
- ❑ Procuring Health Services: Some Policy Issues, October 2007, ARC Economic Design Network Health Policy Roundtable, UTS, Sydney.
- ❑ Empirical Approaches for Identifying Maverick Firms, Invited Speaker at the 2007 Australian Law and Economics Association Meeting and at the 2007 Australasian Econometric Society.
- ❑ CRAI Short Courses on Telecommunication Economics (Canberra, April 2006), Infrastructure Economics (Sydney, May 2006), Competition Economics (Melbourne, June 2006 and for BDW Competition team on August 2006) and Defence Economics (November 2006).
- ❑ Copyrights, Clean Air and Bazaars: The Economics of Market Making, 12th Biennial Copyright Law and Practice Symposium, Sydney, 2005.
- ❑ Exclusionary Conduct: Theory, Tests and Some Relevant Australian Cases, 3rd South Australian Trade Practices Workshop, October 2005.
- ❑ Bundling in the context of procurement, internal CRAI Seminars, 2005 Industry Economics Conference and University of Adelaide, September, 2005.
- ❑ Electricity Retail Regulation, ACCC Regulatory Conference, July 2005 and ESV VIC, A Presentation to the Filipino Regulations, August 2005, and the 2005 ACORE Forum on Introducing Competition in Infrastructure Industries.
- ❑ New Communications Technology and Policy Reform: Prospects and challenges, Australian-Japan Research Centre, ANU, August 2005.
- ❑ Assessing Price Regulation in Australia, Forum on Price Cap Regulation, ANU, August 2004.
- ❑ Access Pricing: A Primer, ANU House, Melbourne, August 2004.
- ❑ Regulatory Economics: A Presentation to the new Indonesian oil and gas regulators, Canberra, June 2004.
- ❑ Regulatory Economics for non-Economists, workshop delivered to individuals from regulatory agencies and regulated companies, Adelaide, May 2004.
- ❑ The Water Industry in Victoria: Working in the New Regulatory Regime, workshop delivered to the water utilities in Victoria, Ballarat, April 2004.
- ❑ Regulatory Economics for Economists, Workshop delivered to individuals from regulatory agencies and regulated companies, ANU House, Melbourne, February 2004.
- ❑ Roundtable on regulatory reform: What remains to be done?, Forum on Postgraduate Economics, ANU, 2003.
- ❑ Short Courses on (1) Understanding Auction Theory and Applications; (2) Price Discrimination (Monopoly and Imperfect Competition); (3) Product Differentiation; and (4) Monopoly Regulation to consultants employed by NECG and their clients (Sydney and Canberra), 2000-2004.
- ❑ Short Course on “Understanding Auctions” at the 1999 Meeting of the Brazilian Econometric Society, December 1999.
- ❑ Short course on auction theory to Treasury officials as part of a refresher course, February 1999.
- ❑ Short Course on the economics of corruption given to students enrolled in the NCDS unit Corruption and anti-corruption, October 1998 and July 1999.
- ❑ Invited Lecture, Australian Econometric Society Meetings, “Auctions of Single Objects”, 1998.
- ❑ Public Lecture on “Understanding Auctions” organized by the Real Estate Institute of Australia, 1997.

Current Student Supervision

- ❑ Ph.D. Supervision: Xuimei Zheng (UQ, School of Economics), “Essays on energy efficiency and regulation.”
- ❑ Ph.D. Supervision: Jorge Pereira (UQ, School of Economics), “Dynamic R & D Competition.”

Past Supervision

- ❑ Honours Supervision: Christopher Heard (UQ, School of Economics), “Capacity Expansion under Access Regulation,” 2014.
- ❑ Master Supervision: Sam Forbes (UQ, School of Economics), “Towards the Market Design of Two Congestion Trading Schemes,” 2014.
- ❑ Ph.D. Panel: Octavio Dame (EPGE/FGV): “Share Bidding Auctions, Sliding Scale Royalty rates and the new Brazilian framework for the Pre-Set Areas,” 2014.
- ❑ Ph.D. Supervision: Craig Malam (UQ, School of Economics), “Competition Issues in Two-Sided Markets: An Application to the Media Industry,” 2013.
- ❑ Ph.D. Supervision: Fernando Camacho (UQ, School of Economics), “Regulation and Investment,” 2011.
- ❑ Ph.D. Supervision: See Fong (UQ, School of Economics), “The Performance of the Malaysian Electricity Supply Industry and the Effects of Competition Policy,” 2011.
- ❑ Honours Supervision: Steven Hamilton (UQ, School of Economics), “The Economics of Aged Care,” 2009.
- ❑ Honours Supervision: David Rogers (UQ, School of Economics), “Price Determination in the Iron Ore Industry,” 2009.
- ❑ M.Phil. Supervision: Don Burt (UQ, School of Economics), “The Role of Energy Retailers,” 2009.
- ❑ Honours Supervision (with John Quiggin): Sheannal Obeyesekere (UQ, School of Economics): “Firm Interactions in the Presence of State Capture Opportunities,” 2009.
- ❑ Honours Supervision: Kathryn Mulhouse (UQ, School of Economics). “Incentives and Bargaining in the Pharmaceutical Benefit Scheme,” 2008.
- ❑ Honours Supervision: Tom Gole (UQ, School of Economics), “The Regulation of Taxis in SE Queensland,” 2007.
- ❑ Ph.D. Panel: Thanh Quang Le (ANU, School of Economics). Topic: “R&D Competition and Growth,” 2007.
- ❑ Ph.B. Supervision: Various students (ANU, mathematics and economics). Topic: Bidding Behaviour in Auctions, 2004.
- ❑ Honours Supervision: Gerard Burg (ANU). Topic: “For the Good of the Game: Competitive Reforms for European Football,” 2003.
- ❑ MEc Supervision: Heleno Pioner (EPGE/FGV). Dissertation Topic: “Numerical Techniques in Antitrust Economics with Applications to some Recent Cases in Brazil,” 2003.
- ❑ MEc Supervision: Fernando Camacho (EPGE/FGV). Dissertation Topic: “The Regulation of the Gas Industry in Brazil,” 2002.
- ❑ Ph.D. panel for Takaharu Eto, ANU, 2002.
- ❑ Honours Supervision: Sean Alexander (ANU). Topic: “Network Competition and the Australian Mobile Services Market,” 2002.
- ❑ Honours Supervision: Brook Dixon (ANU). Topic: “Information Trading Relationships,” 2002.
- ❑ Honours Supervision: Paul Barnsley (ANU). Topic: “Modelling the NBA Draft: Determining the Expected Value of the 1st Overall Picks,” 2001.
- ❑ Ph.D. Supervision: Joisa Companher Dutra (EPGE/FGV). Dissertation Title: “Three Essays on Hybrid Auctions,” 2001.
- ❑ MEc Supervision: Adriana Perez (EPGE/FGV). Dissertation Topic: “Federalism: A Principal-Agent Model,” 2001.
- ❑ MEc Co-Supervision: Samantha Dart (EPGE/FGV). Dissertation Topic: “Participation Constraints in the Brazilian Public Pension Fund”, 2001.
- ❑ Honours Supervision: John Asker (ANU) — University Medallist. Topic: “Bidding up, Buying out and Cooling-off: An examination of auctions with withdrawal rights,” 1998.

- Ph.D. Panel: Humberto Moreira (IMPA). Dissertation Title: “Optimization Problems in Economics,” 1996.
- Honours Supervision: Jon Cheshire (ANU) — University Medallist. Topic: “An Empirical Study of the Auction and Secondary Markets for Australian 13-Week Treasury-Notes,” 1995.

ADMINISTRATION AND ENGAGEMENT

University Administration

- Head, School of Economics, University of Queensland (UQ), January 2009–January 2015.
- Board Membership
 - Academic Board, UQ, January 2009 – January 2015.
 - ACORE, from 2004 to 2006.
 - Regulatory Institutions Network (Regnet), from 2004 to 2006.
- Membership of Committees
 - Student Survey Project Steering Committees, UQ, 2013.
 - Selection Committee to appoint Dean of the Faculty of Business, Economics and Law, University of Queensland, 2012.
 - Committee of Review, UQ, 2011–2014.
 - UQ Latin American Reference Group (2009/2010).
 - UQ Vietnam Reference Group (from 2009).
 - Member and Chair, Selection Committees for Levels B to E and a range of Professional staff, University of Queensland, School of Economics, 2006–2013.
 - Marketing Committee, University of Queensland, School of Economics, from 2007.
 - Executive Committee, Member and Chair, University of Queensland, School of Economics, from 2006.
 - Evaluation of tenure and promotion, Oxford University, Melbourne University, University of New South Wales, Tulane University, University of Saskatchewan, and the University of Sydney.
 - Selection Committee, Visiting Professorship (Level E), Economic Theory Centre, University of Melbourne, 2005.
 - Selection Committees for levels B to E, ACORE, ANU, 2003.
 - Selection Committees for levels B and C, School of Economics, ANU, 2004.
 - Research Advisory Committee, Faculty of Economics and Commerce, ANU, 2003–2006.
 - Committee to define majors, School of Economics, ANU, 2002.
 - Selection committees for levels B and C, School of Economics, ANU, 2002.
 - Committee to devise a point system for allocation of research funds based on publications, School of Economics, ANU, 1995.
 - Ph.D. Restructuring Committee (EPGE/FGV), 2000.
 - Visitor’s Committee (EPGE/FGV), 2000.
 - Strategic Planning, FGV Management, 2000.
- Previous Administrative Responsibilities
 - Foundation Director, ACORE, ANU, December 2003 – April 2006.
 - Deputy Head, School of Economics, ANU, 2003.
 - Interim Deputy Director, ACORE, 2003.
 - Visitor Coordinator, School of Economics, ANU, 1996–2003.
 - Honours Coordinator, School of Economics, ANU, 2001–2002.

Professional Affiliations and Appointments

- Excellence in Research for Australia, Member of the Economics and Commerce Panel, 2015.
- Senior Research Fellow, Australian Institute of Business and Economics.
- Visiting Professor at the University of Oxford, ISTCE (Portugal), University of Gothenburg, Universidad Nacional de Chile, Fundacao Getulio Vargas, the University Melbourne and at the Australian National University, 2015.

- ❑ Centre for Market Design, University of Melbourne, Board Member, 2014.
- ❑ Centre for Policy and Market Design, University of Technology Sydney, Fellow, from 2014.
- ❑ Economic Design Network, 2007-2009. Member of the Executive Committee.
- ❑ National Tax Forum, Canberra, 4-5 October 2011.
- ❑ Australian Economic Society
 - Vice President (Queensland Branch) – from 2011.
 - Editorial Board Member (Economic Record and Economic Papers) – from 2007.
- ❑ Public Economic Theory Association
 - Associate Editor (Journal of Public Economic Theory) – from 2007.
- ❑ Econometric Society.
- ❑ Western Economic Association.
- ❑ Graduate of the Australian Institute of Company Directors.

Selected Consulting and Applied Work

Australian Energy Market Commission

- ❑ Advice on auctions of access transmission rights.

Geraldton Fishermen’s Co-operation Ltd.

- ❑ Advice on auction design for the selling of live lobsters.

Port of Brisbane

- ❑ Forecasting container traffic and motor vehicle imports.

Department of Resources, Environment and Tourism, Federal Government

- ❑ Advice on the design of auctions for the allocation of oil and gas exploration licences.

Department of Climate Change, Federal Government

- ❑ Selected as part of panel of advisers assisting the Australian Government with the design and implementation of Australia's Emissions Trading Scheme (ETS).

Defence Materiel Organisation

- ❑ Advice on defence procurement.

Queensland Competition Authority

- ❑ Selected for an expert panel of advisors on regulatory economics.
- ❑ Advice on the impact of the form of regulation on risk and the cost of capital.
- ❑ Advice on capacity expansion and access pricing for rail and ports.
- ❑ Advice on incentive regulation.
- ❑ Advice on asset valuation matters.

Victorian Government

- ❑ Evaluation of timber auctions.
- ❑ Advice on auction design.

Fuel Subsidy Commission of Inquiry – Queensland Government

- ❑ Provided expert report for the inquiry.

Independent Pricing and Regulatory Tribunal of New South Wales

- ❑ Advice on market design issues in the port sector.

Australian Competition and Consumer Commission

- ❑ Application of auction theory to regulatory environments.
- ❑ Market design issues in digital TV.

CRA International Assignments

- ❑ Competition and regulatory issues in the following sectors: defence, telecommunications, energy and Water, transport, pharmaceuticals, health, banking and insurance, and the dairy industry.

Productivity Commission

- ❑ Referee’s report for Staff Paper: “The Role of Auctions in Allocating Public Resources.”

Network Economics Consulting Group (NECG)

- ❑ Advice on mergers cases.
- ❑ Advice on regulatory matters in telecommunications, energy and transport.
- ❑ Advice on competition policy issues.
- ❑ Advice on auction design.

Vodafone Hutchison Australia

- ❑ Application of auction theory to regulatory environments.

The Australian Communications Authority

- ❑ Provided advice on auctioning of phone numbers.

Others

- ❑ BZW Australia: Game Theory and Access.
- ❑ Furnas (Brazil): A privatization model for Furnas.
- ❑ Ministry of Finance (Brazil): A Review of Government Procurement.
- ❑ ANEEL (Brazil): Electricity Market Design: Theory and Two Relevant Experiences.
- ❑ UNDP (United Nations Development Program): “The impact of the Uruguay Round of GATT negotiations on the Brazilian exports.”

Media

- ❑ Interview to GovernmentNews on PPPs. Published in January 2016. Available at <http://www.governmentnews.com.au/2016/01/public-private-partnerships/>.
- ❑ Increasing GST to cut income tax would be a zero sum game. The Conversation, November 2015.
- ❑ Why Labor should come to the party on the competition review, The Conversation, October 2015.
- ❑ Interview on Turnbull’s election, The Conversation, September 2015.
- ❑ FactCheck: Is the GST as efficient but less equitable than income tax? The Conversation, July 2015.
- ❑ Press conference on the establishment of an iron ore parliamentary inquiry – Reuters, The Australian, Fairfax, May 2015.
- ❑ TV Interview to ABC 24 hours and radio interview to ABC Rural on the establishment of an iron ore parliamentary inquiry, May 2015.
- ❑ Competition the wrong test for iron ore inquiry, The Conversation, May 2015.
- ❑ Why Twiggy Forrest should have got behind a super profits tax, The Conversation, April 2015.
- ❑ Interview to Radio Australia, Budget or Bust, 13 February 2015, available at <https://radio.adelaide.edu.au/budget-or-bust/>.

- ❑ Governments paying price for ‘do it now or die’ approach to reform, The Conversation, February 2015.
- ❑ Interview for the ABC Radio, Drive with Rob Mailer Program, on the lease of assets in Queensland, 21 January 2015.
- ❑ Iron Ore race to the bottom not in the interests of Australians, The Conversation, November 2014.
- ❑ Making the case for selling off Queensland’s Power Assets, The Conversation, October 2014.
- ❑ Interview for the Conversation on the proposed break-up of the NBN, October 2014.
- ❑ Hockey’s fairness lecture won’t help him fix the budget, The Conversation, June 2014.
- ❑ Interview for the Conversation on the federal budget, May 2014.
- ❑ Capital Recycling plan good in theory, difficult in practice, The Conversation, May 2014.
- ❑ Interview for Canal Energy on market design in electricity in Brazil, www.canalenergia.com.br, January 2014.
- ❑ Abbott’s ‘open for business’ honeymoon is over, The Conversation, November 2013.
- ❑ Business lobby yearns for a long-term view, but offers a contradictory wish list, The Conversation, April 2013.
- ❑ Applying new thinking to alleviate rural debt - See more at: <http://www.beefcentral.com/news/news-archive/article/2564/#sthash.i206x653.dpuf>. December 2012.
- ❑ Why setting the floor price for digital dividends auction is the right approach, The Conversation, November 2012.
- ❑ Spotlight back on PPPs as BrisConnections falters, The Conversation, November 2012.
- ❑ The ‘curse’ of the resources boom: could our wealth be our ultimate weakness?, The Conversation, September 2012.
- ❑ “Public Private Partnerships”, Australian Policy Online, 23 July 2012.
- ❑ Interview for Radar Magazine, Comparing Australian and Brazilian economies, July 2012. (www.redarmagazine.com.au)
- ❑ Interview for Channel 10 news on the decrease in the number of ATM cash withdrawals, June 2012.
- ❑ Interview for the Australian Financial Review on the tax treatment of losses, 25 November 2011.
- ❑ Interview for the Australian Financial Review on the introduction of an Allowance for Corporate Equity and on the tax treatment of losses, 27 October 2011.
- ❑ Reduce the corporate tax rate? Not so fast, 27 October 2011, published on theconversation.edu.au.
- ❑ Interview for the Australian Financial Review on the National Tax Forum, 6 October 2011.
- ❑ Interview for ABC (Southern Queensland and Brisbane) on the National Tax Forum, October 2011.
- ❑ Interview for freshfruitportal.com on the impact of exchange rate on fruit exports, February 2011.
- ❑ Interview to the BBC News on the mining tax. 24 June 2010. Available at <http://www.bbc.co.uk>.
- ❑ “Climate Insurance.” Brisbane Business News Vol. 2. 9 October 2009.
- ❑ Interview for 612 ABC Brisbane on the sale of assets in Queensland. 13 October 2009.
- ❑ “Nothing Exceeds Like Success.” Australian Policy Online. 9 August 2009.
- ❑ “Plastic Policies” (with Rohan Alexander). Australian Policy online. 25 May 2009.
- ❑ “Subsidising fuel won’t deal with long-term problems”. Australian Policy online. 19 June 2008. Available at <http://www.apo.org.au>.
- ❑ Interviews for Drive 936 ABC Hobart Radio, June and July 2008, on fuel prices and competition.
- ❑ Interview for ABC Radio National’s Rear Vision, 27 August 2006, on the sale of Telstra. Transcript available at <http://www.abc.net.au>.

- ❑ Interview for ABC Radio World Today program on the award of the 2005 Nobel Prize in Economics to Robert Aumman and Thomas Schelling. Transcript available at <http://abc.net.au>.
- ❑ “Dispute to affect costs of flying to Sydney.” Canberra Times, 8 June, 2005.
- ❑ “Give colluders and inch, they’ll take a mile.” AFR, 24 February 2005.
- ❑ “Power pricing review must look beyond consumer.” AFR, 4 February 2005.
- ❑ Interview for the AFR on the establishment of the Australian Centre of Regulatory Economics, 31 July 2003.
- ❑ Interview for the Bulletin on the use of auctions in the sale of collectibles, 16 July 2003.
- ❑ Work on the economics of corruption has attracted attention in Brazilian media with interviews published in “O Globo.” (18 March 2001) and a major feature on the news site www.no.com.br.
- ❑ Interview on the use of auction in the real estate market published in The Weekend Australian. (25-26 October 1997).

Submissions to public inquiries

- ❑ Submission to the Productivity Commission Review of the Gas Access Regime (with L. Collis), April 2004.
- ❑ Submission to the Department of Climate Change on its Carbon Pollution Reduction Scheme Green Paper (with John Quiggin and Liam Wagner), July 2008).
- ❑ Open Letter on the sale of assets in Queensland, November 2009.
- ❑ Submission to the Department of Health and Ageing on its “Review of the Funding Arrangements for Pathology Services” Discussion paper, April 2010.
- ❑ Open letter on the Resources Super Profits Tax, May 2010.
- ❑ "Improving the Taxation of Capital Income." Statement of priorities for tax reform at the National Tax Forum in Canberra, October 2010.
- ❑ Submission to the Business Tax Working Group on the Allowance for Corporate Equity, September 2012.

RESEARCH

Grants

- ❑ ALA Fellowship, “Developing Best Practice Economic Regulation under Technological Innovation (Brazil).” Visit by Professor Dutra (Center for Regulation, FGV) from 31 January to 3 March 2013. (\$12,518)
- ❑ ARC Discovery Grant 2012/2014: “Games and Decisions with Bounded rationality: Theory and economic implications” (jointly with Simon Grant, Jeffery Kline, Mamoru Kaneko and John Quiggin). (\$351,515)
- ❑ ARC Discovery Grant 2006/2008: “The Consistency of Price Regulation of Infrastructure Businesses across Australian Jurisdictions” (jointly with Bob Breunig). (\$255,000)
- ❑ ARC Discovery Grant 2005/2007: “Economy wide consequences of regulation and privatisation policy regimes” (jointly with Rod Tyers). (\$382,000)
- ❑ ARC, 2000/2003, “To reveal or not to reveal: An investigation into the role of secret reserve prices in auctions,” (jointly with Simon Grant). (\$194,000)
- ❑ ARC, 1999 calendar year: “Uniform versus Discriminatory-Price Treasury Bill Auctions.” (\$9,600)
- ❑ ARC, 1995/1996: “An Empirical Investigation of Prices in Wool Auctions,” (jointly with Chris Jones) (\$13,000).

Publications – Refereed Academic Journals

- ❑ Dynamic and static asking prices in the Sydney housing market (with P. Khezr). Forthcoming in the *Economic Record*.
- ❑ Price Regulation and the Incentives to Pursue Energy Efficiency by Minimising Network Losses (with J. Dutra and X. Zheng). Forthcoming in the *Energy Journal*.
- ❑ Introduction to the Special Issue on Public-Private Partnerships (with D. Martimort), *Journal of Public Economic Theory* 17(1): 1-3, 2015.
- ❑ Default and Renegotiation in PPP Auctions (with Matthew Ryan). *Journal of Public Economic Theory* 17(1): 49-77, 2015.
- ❑ Public-Private Partnerships for Transport Infrastructure: Some efficiency risks (with M. Ryan). *New Zealand Economics Papers* 49(3): 276-295, 2015.
- ❑ Assessing the Impact of Blended Learning on Student Performance (with C. Sherwood and D.W. Kwak). *Economics Record* 91(292), 91-106, 2015.
- ❑ Network Regulation and Regulatory Institutional Reform: Revisiting the Case of Australia (with R. Nepal and T. Jamasb). *Energy Policy* 73:259–268, 2014.
- ❑ Optimal Access Regulation with downstream competition (with Tina Kao and John Quiggin). *Journal of Regulatory Economics* 45:75-93, 2014.
- ❑ Price regulation and the Cost of Capital (with F Camacho). *Annals of Public and Cooperative Economics* 84 (2), 139 – 158, 2013.
- ❑ More competitors or more competition? Market concentration and the intensity of competition (with John Quiggin) *Economics Letters* 117(3), 712-714, 2012.
- ❑ An Empirical Investigation of the Merger Decision Process in Australia (with R. Breunig and K. Tan) *Economic Record* 88, 456-475, 2012.
- ❑ The National Tax Forum: The Evolving Tax Reform Agenda (with Harry Clarke). *Economic Papers* 31 (1): 1-2, 2012.
- ❑ The Business Tax Reform Agenda. *Economic Papers* 31 (1): 3-7, 2012.
- ❑ Embedded Incentives in the Funding Arrangements for Residential Aged Care in Australia (with S. Hamilton). *Economic Papers* 30 (3): 326-340, 2011.
- ❑ Testing Regulatory Consistency (with B. Breunig). *Contemporary Economic Policy* 31 (1), 60-74, 2012.

- ❑ Markets for Influence (with J. Quiggin). *International Journal of Industrial Organisation* 28: 307-310, 2010.
- ❑ Good and Bad Consistency in Regulatory Decisions (with C. Roessler). *Economic Record* 86 (275): 504-516, 2010.
- ❑ Welfare Enhancing Mergers under Product Differentiation (with T. Kao). *Manchester School* 78(4): 290-301, 2010.
- ❑ Endogenous Merger under Multi-Market Competition (with T. Kao). *Journal of Mathematical Economics* 45: 817-829, 2009.
- ❑ Coasian Dynamics in Repeated English Auctions (with M. Ryan). *International Journal of Game Theory* 38: 349-366, 2009.
- ❑ Access Pricing and Investment: A Real Options Approach (with F. Camacho). *Journal of Regulatory Economics* 36: 107-126, 2009.
- ❑ Retail Price Regulation and the Option to Delay (with F. Camacho). *Annals of Public and Cooperative Economics* 80(3): 451-468, 2009.
- ❑ Consistent Regulation of Infrastructure Businesses: Some Economic Issues. *Economic Papers* 28(1), 2-10, 2009.
- ❑ Grandfathering and greenhouse: the role of compensation and adjustment assistance in the introduction of a carbon emissions trading scheme for Australia (with J. Quiggin and L. Wagner). *Economic Papers* 28(2), 82-92, 2009.
- ❑ Empirical Approaches for Identifying Maverick Firms: An Application to Mortgage Providers in Australia. *Journal of Competition Law and Economics* 4(3), 811-836, 2008.
- ❑ Games without Rules (with John Quiggin). *Theory and Decision* 63(4), 315-347, 2007.
- ❑ Cheap Talk, Efficiency and Egalitarian Cost Sharing in Joint Projects" (with Murali Agastya and Kunal Sengupta). *Games and Economic Behaviour* 60, 1-19, 2007.
- ❑ Strategic Interaction amongst Australia's East Coast Ports (with M. Pracz and R. Tyers). *Australian Economic Papers* 40(3), 267-278, 2007.
- ❑ Exclusionary conduct: Theory, Tests and some Relevant Australian Cases (with J. Fallon). *Competition and Consumer Law Journal* 13, 197-240, 2006.
- ❑ Copyrights, Clean Air and Bazaars: The Economics of Market Making. *Copyright Reporter* 24, 110-123, 2006.
- ❑ Auctions with Options to Re-Auction (with Simon Grant, Atsushi Kajii and Matthew Ryan). *International Journal of Economic Theory* 2, 17-39, 2006.
- ❑ Duplication of R&D and Industry Concentration (with Akram Temimi and Sami Dahlia). *Manchester School* 74(1), 52-63, 2006.
- ❑ Binary Games with Many Players (with Rohan Pitchford). *Economic Theory* 28 (1), 125-143, 2006.
- ❑ Price Regulation in Australia: How Consistent has it been (with R. Breunig, S. Stacey and J. Hornby). *Economic Record* 82 (256), 67–76, 2006.
- ❑ Corruption and Auctions (with Paulo Monteiro). *Journal of Mathematical Economics* 42, 97–108, 2006.
- ❑ Electricity Auctions in Brazil (with Joisa Dutra). *The Electricity Journal*, Volume 18, Issue 10, Pages 11-21, 2005.
- ❑ Reserve price commitments in auctions (with Matthew Ryan). *Economic Letters* 87, 35-39, 2005.
- ❑ A note on duplication of R&D and R&D subsidies (with Sami Dakhli and Akram Temimi), *Economic Bulletin* 12(7), 1-5, 2004.
- ❑ Auctions with synergies and asymmetric buyers (with Paulo Monteiro), *Economic Letters* 85(2), 287-294, 2004.
- ❑ Auction Price Anomalies: Evidence from Wool Auctions in Australia (with C. Jones and F. Vella), *Economic Record* 80(250), 271-288, 2004.
- ❑ A Model of Seller Holdout (with Rohan Pitchford), *Economic Theory* 24(2), 231-253, 2004.

- ❑ The Land Assembly Problem Revisited (with Rohan Pitchford), *Regional Science and Urban Economics* 34/2, 155-163, 2004.
- ❑ Synergies and Price Trends in Sequential Auctions (with Paulo Monteiro), *Review of Economics Design* 8, 85-98, 2003.
- ❑ An Auction Theoretical Approach to Fiscal Wars. *Social Choice and Welfare* 20, 155-166, 2003.
- ❑ Hybrid Auctions (with Joisa Dutra), *Economics Letters* 77, 301-397, 2002.
- ❑ Private Provision of Discrete Public Goods with Incomplete Information, (with Paulo Monteiro and Akram Temimi). *Journal of Mathematical Economics* 35(4), 493-514, 2001.
- ❑ Why Do Bidders Drop Out from a Sequential Auction, (with Richard Engelbrecht-Wiggans). *Revista Brasileira de Economia* 55(1), 33-51, 2001.
- ❑ Why should the government favour domestic firms in procurement auctions? (with Paulo Monteiro). *Revista Brasileira de Economia* 55(4), 453-466, 2001.
- ❑ Auctions with Endogenous Participation, (with Paulo Monteiro), *Review of Economic Design* 5(1), 71-89, 2000.
- ❑ A Simple Analysis of the U.S. Emission Permits Auctions (with Jeff Kline), *Economics Letters* 65, 183-189, 1999.
- ❑ Sustainable Clubs under Variable Participation (with Emilson Silva), *Brazilian Review of Econometrics* 19(2), 405-419, 1999.
- ❑ Simultaneous Pooled Auctions (with Paulo Monteiro), *Journal of Real Estate Finance and Economics* 17(3), 219-232, 1998.
- ❑ Sequential Asymmetric Auctions with Endogenous Participation (with Paulo Monteiro). *Theory and Decision* 43, 187-202, 1997.
- ❑ Ascending-Price Multiple-Object Auctions, *European Journal of Political Economy* 12(4), 467-481, 1996.
- ❑ Cointegration Tests of Purchasing Power Parity for the Brazilian Economy: 1870-1906 (with Marcelo Resende) *Estudos Econômicos* 26(1), 51-62, 1996.
- ❑ Existence of Equilibrium in a Discriminatory Price Auction,” (with Paulo Monteiro), *Mathematical Social Sciences* 30(3), 285-292, 1995.
- ❑ On the Optimality of Treasury Bill Auctions, *Economics Letters* 49(3), 273-279, 1995.
- ❑ Strategic Behavior in Ascending-Price Multiple-Object Auctions, *Brazilian Review of Econometrics* 13(2), 1-42, 1994. This article won the prize for best paper published in the *Brazilian Review of Econometrics* 1993/1994.
- ❑ “Dynamic Inconsistency of Performance-Based Wages in Tax Collection: An Example”, *Public Finance* 49(2), 111-118, 1994.
- ❑ Sequential Auctions with Delay Costs: A Two-Period Model, *Economics Letters* 42, 173-178, 1993.
- ❑ Leilões de privatização: uma análise de equilíbrio (“Privatisation Auctions”) *Revista Brasileira de Economia* 47(3), 317-348, 1993.
- ❑ Leilões sequenciais com custo de permanência *Brazilian Review of Econometrics* 12(2), 125-165, 1992.

Publications – Books and Chapters in Books

- ❑ An Introduction to Auction Theory (with Paulo Monteiro). Oxford University Press, January 2005; www.oup.com. Second (paperback) edition published in 2008.
- ❑ The Microeconomics of Corruption: The Classical Approach, in *Corruption Prevention: Theory and Practice*, Ed. Peter Larmour, Asia Pacific Press, 2001.
- ❑ Market Design for New Leaders. In *So You want to be a leader*. Edited by P. Crisp, 2015. See <http://www.soyouwanttobealeader.com/>.
- ❑ Regulação e Concorrência em Concessões Rodoviárias no Brasil (with Joisa Dutra and Patrícia Sampaio) (*Regulation and Competition in the tender of highway concessions in Brazil*) in A. Pinheiro and

C. Frischtak, Gargalos and Soluções na Infraestrutura de Transportes (*Bottlenecks and Solutions for Transport Infrastructure*), FGV Editora, 2014.

Publications — Policy Pieces

- ❑ The role of competition in Australian defence procurement (with Henry Ergas). *The Melbourne Review*, Vol. 3(1), 41-48, May 2007.
- ❑ Guest Editor’s Foreword, Special Issue on Vertical Integration on Network Industries, *Review of Network Economics*, Vol. 4 (1), March 2005.
- ❑ The Economics of Weapons Systems Acquisitions (with Henry Ergas). *Agenda* 11(3), 247-264, 2004.
- ❑ Tendering and Bidding for Access: A Regulator’s Guide to Auctions (with Rohan Pitchford and Andrew Wait), *Australian Journal of Management* 28(3), 345-370, December 2003.
- ❑ Improving Selling of Treasury Bills? *Agenda* 7(2), 143-152, 2000.
- ❑ Price Stabilisation and Microeconomic Reforms in Brazil, *Agenda* 6(3), 237-250, 1999.
- ❑ Entendendo Leilões ("Understanding Auctions"). *Conjuntura Econômica* 52(3), 1998.
- ❑ Privatização no Setor Elétrico: A Estratégia Australiana ("Privatising the Electricity Sector: The Australian Model") *Conjuntura Econômica* 50(6), 1996.
- ❑ O Acesso à INTERNET no Brasil: Aspectos Econômicos (The Economics of Internet Access in Brazil") *Conjuntura Econômica* 49(9), 1995.
- ❑ Como Leiloar Canais de Rádio e Televisão ("How to Auction Radio and TV Licences") *Conjuntura Econômica*, 49(4), 1995.

Publications — Survey Articles

- ❑ Multiple-Unit Auctions with Single Demand: A Survey, *Brazilian Review of Econometrics* 18(2), 1-32, 1998.
- ❑ Uma Introdução à Teoria dos Leilões, ("An Introduction to Auction Theory") *Brazilian Review of Econometrics* 14(2), 231-250, 1995.
- ❑ Repeated Games Played by Finite Automata: A Survey, *Brazilian Review of Econometrics* 12(1), 93-111, 1992.

Publications — Book Reviews

- ❑ "The Failure of Judges and the Rise of Regulators" by Andrei Shleifer, MIT Press, 2012. *Economic Record* 89(287), 577-580, 2013.
- ❑ "Individual Behaviour, Social Interactions and Crime," a review of *Delinquent-Prone Communities* by D. Weatherburn and B. Lind, Cambridge University Press, 2001. *Agenda* 8(4), 369-372, 2001.
- ❑ *Mathematics for Economic Analysis*, by K. Sydsaeter e P. J. Hammond (Prentice Hall, 1995); *Mathematics for Economics*, by M. Hoy, J. Livernois, C. McKenna, R. Rees and T. Stengos (Addison-Wesley, 1996); *Mathematics for Economists*, by C. P. Simon and L. Blume (W.W. Norton, 1994), and *Mathematical Economics*, by J. Baldani, J. Bradfield and R. Turner (Dryden Press, 1996). *Brazilian Review of Econometrics* 17(2), 1997.
- ❑ *Latin America’s Economic Future*, eds. Graham Bird and Ann Helwege (Academic Press, London, 1994), *Canadian Journal of Development Studies* XVII (3), 555-558, 1996.
- ❑ *Multilateral Development Banks*, a review of *Multilateral Development Banks: The Caribbean Development Bank*, volume 3, by Chandra Hardy, The North-South Institute, 1995, and *Multilateral Development Banks: The Inter-American Development Bank*, volume 4, by Diana Tussie, The North-South Institution, 1995. *Canadian Journal of Development Studies* XVII (2), 344-347, 1996.

- Mathematics for Economists, by C.P. Simon and L. Blume (W.W. Norton, New York, 1994). Economic Record 71, 106-108, 1995.
- Equilibrium Theory in Infinite Dimensional Spaces, eds. M. A. Khan and N. C. Yannelis, New York: Springer-Verlag, 1991, in Brazilian Review of Econometrics 13(1), 105-111, 1993.

Manuscripts under Preparation/Submission

- Dealership Equilibria in Oligopoly (with T.Kao and J.Quiggin).
- Regulatory behaviour under threat of court reversal (with Magnus Söderberg and Miguel Santolino).
- Emissions Abatement R&D and Dynamic Competition in Supply schedules (with Jorge Pereira).
- Sharp and Diffuse Incentives in Contracts (with John Quiggin).
- Reduced intensity of competition makes mergers profitable (with John Quiggin).
- Inferring the strategy space from market outcomes (with John Quiggin).
- Auctions with an Asking Price (with P. Khezr). Submitted to *Games and Economic Behavior*.
- Electricity Market Design in Brazil: An Assessment of the 2004 Reform (with J. Dutra).

Seminar and Conference Presentations

2015: The University of Melbourne, SAET Conference (Cambridge University), WEAI Conference (Honolulu), University of Gothenburg, ISCTE (Portugal), UCP (Lisboa), UCP (Porto), Universidad de Chile.

2014: University of Technology Sydney, 2nd ATE Symposium on Antitrust Economics and Competition Policy, (UNSW).

2013: Society for Advancement of Economic Theory-SAET (Paris), Shandong University (Jinan).

2012: FGV/EPGE (Rio de Janeiro), University of Calcutta, Universidade Católica de Brasília (UCB), Association for Public Theory Conference (Taipei), Shandong University (Jinan), Econometric Society Australasian Meeting (Melbourne), Association for Public Economic Theory Workshop (Brisbane), Society for Advancement of Economic Theory-SAET (Brisbane).

2011: Monash University, Deakin University, University of Sao Paulo (USP), Universidade Federal do Rio Grande do Sul (UFRGS), Universidade Federal de Santa Catarina (UFSC), Society for Advancement of Economic Theory-SAET (Portugal), Far East Econometric Society Meetings (Seoul), Singapore Economic Review Conference.

2010: Brookings/CAMA/Lowy Conference on the Economics of Infrastructure, The University of Hong Kong, National Bureau of Economic Research (NBER)-Japan, National University of Singapore, IPEA/Brazil, IMPA, FUCAPE Business School, SAET Meeting (Singapore), NTU (Singapore), ANU (RSE). Discussant at the ANU/UQ/UWA PhD Conference at the ANU.

2009: Instituto de Pesquisa Economica Aplicada (IPEA), Instituto de Matematica Pura e Aplicada (IMPA), Australian National University (RSSH and School of Economics), PUC-Chile, Universidad de Chile (Joint CMM and CEA seminar), Auckland University (Economics) and the University of Melbourne (Economics).

2008: Invited speaker: 52nd Australian Agricultural and Resource Economics Society Meetings. Speaker: PET 2008 Conference in Seoul, Deakin University, EARIE 2008 in Toulouse, IAEE 2008 Asian Conference in Perth, and CRNI Conference in Brussels.

2007: Invited speaker: Australian Law and Economics Conference, Australian Econometric Society, Economic Design Network Health Economics Forum, Expert Workshop on Auctioning Greenhouse Gas Permits. Seminar Presenter: Melbourne University, Department of Economics.

2006: Presenter: Deakin University, ANU (ACORE), Australasian Meetings of the Econometric Society 2006, CRA International Off-Site, Latrobe and Auckland Universities. Discussant, PhD Conference, ANU. Keynote address at the 2007 Australasian Law and Economics Conference.

2005: Chair, Discussant and Presenter: Australian Economic Theory Meeting (Auckland). Organiser and Presenter, ACORE Forum on Introducing Competition in Network Industries (ANU); University of Adelaide, Department of Economics. University of Queensland, Department of Economics. ACCC Regulatory Economics Conference; Australian Industry Economics Conference; 2005 World Meeting of the Econometric Society (University College-London); CRA International Internal Seminars; The 12th Biennial Copyright Law and Practice Symposium; The 3rd South Australian Trade Practice Workshop.

2004: Organiser, Chair and Presenter: Price Cap Forum (ANU); ACORE Seminar, Melbourne, ANU House; University of Sydney; RSSS (ANU); Discussant and Chair: Australian Economic Theory Workshop (Melbourne University). Discussant: The Performance of Air Transport Markets Conference, ANU. Discussant, PhD Conference, ANU.

2003: University of Melbourne; EPGE/FGV; PUC/RJ; Australian National University; Australian Economic Theory Workshop (University of Sydney); Australasian Meeting of the Econometric Society (UNSW); International Industrial Organization Conference, Boston. Discussant: International Industrial Organisation Conference, Boston; National Workshop of the Economics and Environment Network (ANU) Chairing; Australian Economic Theory Workshop; Australasian Meeting of the Econometric Society.

2002: Public Economic Theory Conference (Sorbonne, Paris); Australasian Meetings of the Econometric Society (QUT); University of Sydney; AGSM; University of Melbourne; ANU (School of Economics, RSPAS, Theory Workshop).

2001: Australasian Meetings of the Econometrics Society, Auckland New Zealand; University of Wollongong; Bond University; ANU (NCDS, RSSS, School of Economics, Theory Workshop); University of Sydney; Adelaide University, University of Queensland, University of New South Wales.

2000: North American Meeting of the Econometric Society (Boston); Brazilian Econometric Society Meeting, Brazilian Economic Association Meeting, Graduate School of Economics, FGV, Rio, Brazil; Catholic University, Rio, Brazil; IPEA, Rio, Brazil; Universidade de São Paulo, Brazil; Public Economic Theory Meeting, University of Warwick.

1999: Institute for Pure and Applied Mathematics, Rio, Brazil; Australian Economic Theory Workshop (Melbourne University); ANU (School of Economics and RSSS); Far Eastern Meeting of the Econometric Society (National University of Singapore); University of New South Wales; Meeting of the Brazilian Econometric Society.

1998: Australian Economic Theory Workshop (ANU); Australasian Econometric Society Meetings (ANU); Universidade de Brasilia, Brazil.

1997: University of Alabama (twice); Australian Economic Theory Workshop (University of Wollongong); University of Melbourne; North American Summer Meeting of the Econometric Society (CALTECH); University of Alabama; Institute for Pure and Applied Mathematics (twice), Rio, Brazil; Meeting of the Brazilian Econometric Society.

1996: Institute for Pure and Applied Mathematics, Rio, Brazil; ANU (Theory Workshop and RSSS); Australasian Meetings of the Econometric Society (UWA); University of Sydney.

1995: North American Winter Meeting of the Econometric Society (Washington); ANU (School of Economics and Theory Workshop); New Zealand Economics Association Meeting; University of Southern California; University of California — Santa Barbara; Meeting of the Brazilian Econometric Society.

1994: Australian Economic Theory Workshop (University of Tasmania), Australasian Meeting of the Econometric Society (UNE); ANU (School of Economics).

1993: University of Illinois; North Carolina State University; Catholic University, Rio, Brazil; 19th Colloquium of Mathematics, Institute for Pure and Applied Mathematics, Rio, Brazil; Graduate School of Economics, FGV, Rio, Brazil; Universidade Federal Fluminense, Rio, Brazil.

Conference Organisation

2016: The Australasian Meeting of the Econometric Society (Sydney). Society for the Advancement of Economic Theory (Rio de Janeiro), Association for Public Economic Theory Meetings (Rio de Janeiro).

2015: Latin American Econometric Society Meetings (Colombia), Society for the Advancement of Economic Theory (Cambridge), and the Australian Conference of Economists (Brisbane).

2014: Association for Public Economic Theory Meetings (University of Washington).

2013: Association for Public Economic Theory Meetings (Portugal) and organising session at the Society for the Advancement of Economic Theory (Paris).

2012: Association for Public Economic Theory Workshop on Public Private Partnership (Chair), Society for the Advancement of Economic Theory (Chair), Australasian Meeting of the Econometric Society (Melbourne), Public Economic Theory Meeting (Taiwan).

2011: Public Economic Theory Meetings (Indiana University), SAET (Portugal).

2010: Public Economic Theory Meetings (Turkey).

2009: Public Economic Theory Meetings (Ireland).

2008: Public Economic Theory Meetings (Seoul); Selection Committee for the Brazilian Econometric Society Meetings.

2007: ESAM 07; Symposium on competition and regulatory economics; Public Economic Theory Meetings (Vanderbilt University).

2005: Forum on Introducing Competition in Network Industries (ANU). Organisational Committee for the Public Economic Theory Meeting in Hanoi.

2004: Forum on Price Cap Regulation, organizer; ACORE/Regnet/School of Economics Seminar Series, ANU, Organiser; Acore Public Lecturers Series, ANU, Organiser; Regulatory Economics for Economists, Organiser; Regulatory Economics for Non-Economists, Organiser; The Water Industry in Victoria: Working in the New Regulatory Regime, Organiser. NERA-MIGAS Workshop in Regulatory Economics, Organiser.

2003: Economic Theory Lunch (Workshop), ANU.

2002: Public Economic Theory Meeting, Sorbonne, Paris (Organisational Committee). Latin American Meeting of the Econometric, São Paulo (Organisational Committee); Economic Theory Workshop, ANU (Co-chair).

2000: Organised special Session on Auctions at the Latin America Economic Association Meeting, Rio, Brazil. Organisational Committee for the Meeting of the Brazilian Econometric Society.

1998: Australasian Meeting of the Econometric Society, ANU (Organisational Committee); Organised special Session on Auctions at the ESAM Meetings.

Refereeing

Research and Public Agencies and Publishers

Guggenheim Foundation; Deutsche Forschungsgemeinschaft (Germany); FTC (Portugal), Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO, Belgium), Bank of England; Australian Research Council; Academic Press; Oxford University Press; CNPQ (Brazil); Productivity Commission (Australia); and Routledge.

General Economics and Public Policy Journals

American Economic Review; Journal of Political Economy; European Economic Review; Economic Record; Canadian Journal of Economics; Pesquisa e Planejamento Econômico; Revista Brasileira de Economia; Agenda; Economics Bulletin; Australian Economic Papers; Australian Journal of Public Policy; Journal of Institutional and Theoretical Economics; Economic Inquiry and Economics Letters.

Economic Theory Journals

Games and Economic Behavior; International Economic Review; Review of Economic Design; Brazilian Review of Econometrics; Mathematical Social Sciences; and International Journal of Game Theory.

Field Journals

Journal of Law and Economics, Rand Journal of Economics, International Journal of Industrial Organisation; Journal of Public Economics; Journal of Public Economic Theory; Energy Journal; Energy Policy, Journal of Regulatory Economics; Journal of Economic Behavior and Organization; Australian Journal of Agriculture and Resource Economics; Public Finance; and Social Choice and Welfare.

Editorial Responsibilities

- ❑ Editorial Board Member: **Economic Record**, from 2008; and **Economic Papers**, from 2009. Co-editor of the **Economic Record** from January 2016.
- ❑ Associate Editor, **Journal of Public Economic Theory**, from 2007.
- ❑ Associate Editor, **Mathematical Social Sciences**, 2010-2011.
- ❑ Associate Editor, **BE Asia Pacific Law and Economics Review**, from 2007.
- ❑ Guest Editor, Special Issue on Vertical Integration in Network Industries, **Review of Network Economics**, 2005.
- ❑ Guest Editor, special issue on Australia's National Tax Forum, **Economic Papers**, 2012.
- ❑ Guest Editor, special issue on Public Private Partnerships, **Journal of Public Economic Theory**, 2014.
- ❑ Associate Editor, **Brazilian Review of Administration**, from 2013.