

**Review**  
**of the New Zealand Productivity Commission's**  
**2014/15 Research**

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**September 2015**

# **Independent Review of Productivity Commission Research undertaken and published during the 2014/15 year**

## **Executive Summary**

During 2014/15, the Productivity Commission's small Economics and Research Team (ERT) of five have published six applied research papers of commendably high quality and relevance.

Putting this judgement in the context of the OECD's categorisation of firm-level productivity performance being at global or domestic frontier-levels or being laggard, the designated package of applied research is as a whole clearly at the domestic frontier level, and each of the firm-level research papers on Innovation and Reallocation would fit somewhere within the top half of the global frontier spectrum.

In different ways, each paper has provided valuable evidence-based findings capable of underpinning recommendations and policies designed to improve New Zealand's productivity performance and future economic wellbeing. In particular, the papers on innovation provide very valuable evidence towards improved understanding of New Zealand's innovation processes.

At this stage, the 2014/15 designated package of research papers must still be seen as early contributions within a well-designed but far from complete jigsaw. It is therefore crucial that the momentum now under way through the Productivity Hub not be lost.

The Hub currently has an ambitious carefully focussed forward research program, which is being further refreshed during 2015/16 in the context of the ERT's forthcoming "Narrative" publication (Conway (2015b)).

The Commission has a sequence of quality assurance procedures which are worked through prior to publication of each ERT Working Paper. These procedures are well understood internally, but do not yet seem to have been formally documented; nor does there seem to be significant awareness externally of those procedures. Moreover, while submission of a particularly influential Working Paper for refereeing and publication in a high quality economics journal is likely to be encouraged by the ERT Director, there does not yet seem to be any formal recognition that this next step could be additionally valuable.

Also under the 'good process' heading, small New Zealand units like the ERT and the Productivity Hub are potentially vulnerable to key person risk. Ongoing attention to succession planning for the roles currently performed by each of the individuals within the ERT, the Hub's Governance Board and the Research Leaders (or expert) Group, will therefore continue to be important.

The ERT has put very considerable time during 2014/15 into its engagement, coordination and collaboration roles, and overall its performance has been outstanding. There is clear evidence that to date there has been a very good rate of return from the ERT spending that time. But whether there should continue to be commitment of that amount of time relative to the time required to be spent on undertaking and publishing the Team's high quality research will need ongoing careful assessment.

2014/15 has seen the Productivity Commission's ERT able to move beyond its set up phase, and lead development of the Productivity Hub into a very effective vehicle for engagement, coordination and collaboration.

The existence of the Hub has been vital in helping advance the relevance and effectiveness of the ERT's research. During 2014/15, this has been especially so for work under the Innovation and Reallocation themes, and in helping guide development of a well-focussed research agenda for 2015/16 and beyond.

During 2014/15 the ERT has gained considerable Longitudinal Business Database (LBD) experience and intellectual stimulation through the Motu Economic and Public Policy Research Partnership with the Hub. This has had the not inconsiderable benefit of stretching considerably further the ERT's modest research resources.

The standard of presentation of each of the research papers is very good. Overall, the Abstracts were concise and clear, and technical methodology was presented succinctly and in a manner that I could assimilate quickly. The illustrative Figures were presented to a very high standard and conveyed important messages quite clearly, and there was judicious balancing of Tables of results between inclusion in the text and in Appendices. I was also very impressed with the careful exposition of data sources, and the information provided on how information from the LBD was accessed and used. The latter information should be particularly enlightening for those not yet familiar with this very valuable resource.

Recent firm-level Working Papers have concluded with evidence-based thought provoking comments, raising issues and implications for further consideration and wider debate. I commend this recent development as an important further step in assisting wider understanding of the complex network of issues underpinning the productivity improvement process.

The effectiveness of communication of messages from the 2014/15 Working Papers and Research Notes is enhanced considerably by the accompanying 'Cut to the chase' and Blog releases that I sighted.

The ERT has carried out and contributed jointly to a particularly impressive range of very well received communication activities during 2014/15.

In this communications context, it can also be noted that while across all events the great majority of attendees were from central government, it is pleasing that there were also significant numbers attending from economic consultancy, education and business organisations.

An ongoing challenge for the Commission, the ERT Director and the small Economics and Research Team will be to maintain the right balance of time to be spent on production of research, chairing and coordinating Productivity Hub activities and, with the Commissioners, effectively communicating their key research messages.

## 1. Key Terms of Reference and Some Conditioning Factors

This review provides an independent expert evaluation of the New Zealand Productivity Commission's function to undertake and publish research about productivity related matters.

### Terms of Reference

Specific requirements for this review are to evaluate a designated 'package' of research work undertaken by the Commission's Economics and Research Team (ERT) during the 2014/15 year, the Commission's work with the Productivity Hub, and the effectiveness with which research is used to influence policymaking and enhance the Commission's reputation.

Within these requirements, the Commission has selected six areas for particular focus. These are:

- the relevance and materiality of selected Commission Working Papers/Research Notes in advancing understanding of New Zealand's productivity issues;
- the quality of the economics and analysis in the selected package of research papers;
- the extent to which good process management has been followed in production of the research papers;
- the effectiveness of the Commission's engagement with the productivity research community and its effectiveness in improving the coordination and collaboration among public sector agencies working on productivity;
- the effectiveness of the Commission's presentation of research findings and recommendations; and
- the wider impact of the Commission's research work.

The Terms of Reference are attached in detail as Annex A.

### Some Conditioning Factors

My review of the ERT's 2014/15 performance should be seen in the context of the Commission having been established in April 2011, and the not inconsiderable time it takes to build a high quality research team and associated research infrastructure. In that context, the 2013/14 high-level review of ERT performance largely covered the period when the research function was being established (Fancy, 2014). Two key time-consuming elements of that establishment phase, crucial to enhancement of the relevance and quality of the Team's research output, have been the Team's role in:

- developing the Productivity Hub (2013) and its tightly-focussed Forward Looking Research Agenda (FLARE) (Nolan, 2014); and
- developing and operationalising the Motu Partnership Agreement with the Productivity Hub.

Accordingly, the 2014/15 year has probably been the first full year in which the ERT's small team of five persons has had the capacity to operate to full potential.

The ERT's responsibilities extend beyond the primary one of developing and publishing relevant high quality research on productivity. It also has important responsibilities for:

- contributing research-based findings to the Commission's Inquiries;
- chairing and ensuring the effectiveness of the Productivity Hub; and
- along with the Commissioners, effectively communicating to the productivity research and wider communities its key research findings and their implications for policymaking.

On implications for policymaking, my view is that the role of the ERT is primarily to undertake and publish the research-based evidence necessary for credible policymaking. Then, where that evidence is able to sustain it, Team members should lead research community and wider discussion on implications of that research for policymaking. The Team itself should not be expected to make policy recommendations, as that responsibility should lie with Commission Inquiry recommendations and the policy advisers within Ministries such as Treasury and MBIE, ahead of Ministerial decision-making.

My review has also benefited from having access to an early stage draft of the Team's forthcoming "Narrative" (Conway, 2015b), and to preliminary summary information for ERT's range of communications activities over 2014/15.

My approach to the Review is set down in section 2. The relevance, materiality and quality of the ERT's six publicly released research papers are covered in Section 3. Effectiveness of engagement, communication of research findings, and contribution to wider understanding is then addressed in section 4.

## **2. Approach to the Review**

### **2.1 Documents reviewed and consulted**

The designated 'package' of research work undertaken by the Commission's Economics and Research Team during the 2014/15 year is attached as Annex C. The designated package consists of three Working Papers and three Research Notes, but I have also considered it appropriate to review the associated Working Paper on R&D subsidy published by Motu Economic and Public Policy Research under its Partnership Agreement with the Productivity Hub. A number of other Productivity Commission documents and published research papers on productivity were also consulted for the purposes of this review. These are listed in Annex D.

### **2.2 The Interview Process**

As documented in Annex B, I interviewed 13 people, eight within the Productivity Commission, and five external to the Commission, i.e. 'external stakeholders'.

For those external to the Commission in particular, I prefaced each interview with communicating the above listed terms of reference, and then invited each of the 13 to provide comment on:

- what they considered the Economics and Research Team had done particularly well;

- how the Team's performance might be further improved; and
- any specific concerns they might have about Team performance.

None of the 13 expressed material concern about aspects of the Team's performance.

### **3. Relevance, materiality and quality of the designated 2014/15 research package**

#### **3.1 Perspective**

I have read carefully each of the six Productivity Commission Working Papers and Research Notes, and the associated Motu Working Paper. What follows are summary comments on their relevance, materiality and quality, rather than comments to the level of detail I would provide when refereeing for a quality economics journal. I have also benchmarked my comments against the quality of comparable applied economic research material published in recent years by the OECD (2015a, 2015b), two relevant Australian Productivity Commission Working Papers (Parham, 2013; Australian Bureau of Statistics and Australian Productivity Commission, 2011), and several specialist journal publications (i.e., individual country applied studies in the *Journal of Productivity Analysis*, 2015; also Syerson, 2011).

Criteria for assessing the Working Papers need to be somewhat different from those for the Research Notes. The Working Papers reflect more substantial bodies of research, are more tightly focussed through the Productivity Hub's FLARE framework, and have been subject to a further level of quality assurance, i.e. have been subjected to scrutiny through at least one external referee report. The Research Note papers are more in the category of providing substantial underpinnings or background information for future research work of the Team and other researchers using New Zealand data. For both types, though, the Productivity Commission and Motu Disclaimers make it clear that the opinions, findings, recommendations and conclusions are the views of the authors and do not necessarily reflect the views of the New Zealand Productivity Commission or Motu.

It is also pertinent that, prior to the setting up of the Productivity Commission, quality New Zealand research on productivity had been primarily at aggregate and sectoral/industry levels, with minimal focus on the type of firm-level research potentially of comparatively greater value in providing evidence-based findings to underpin microeconomic level policymaking.

#### **3.2 Relevance, materiality and quality of the seven publicly released research papers**

##### **3.2.1 Research Working Papers**

#### **Who benefits from productivity growth? - The labour income share in New Zealand.**

Working Paper 2015/1, February 2015.

Paul Conway, Lisa Meehan & Dean Parham.

This 51-page Working Paper provides substantial evidence of the key fact type on:

- how the shares of income going to the owners of labour and capital have moved over the 1978-2010 period at aggregate and industry levels; and
- the extent to which movements in the labour income share (LIS) in particular have been associated with its underlying labour productivity and real product wage components.

The updating and improving of New Zealand's understanding of these issues has had to be confined to what Statistics New Zealand (SNZ) has termed the 11-industry 'measured sector' (MS-11), and so results provide implications only for MS-11 labour productivity-real product wage relationships, and for real product wage and real consumer wage effects on movements in national wellbeing. The measured sector covers all industries in the primary and goods-producing sectors, but not all service sector industries.

The paper uses well-established decomposition methodology, including enhancements developed recently for industry contributions by Parham (2013) in an Australian context. Appendix B of the paper provides a useful succinct summary of the Parham methodology.

Key insights from the paper are:

- growth over time in real product wages has been closely associated with productivity growth, and in particular high real wage increases have been more likely in those industries with high productivity growth;
- there is no systematic relationship between strong productivity growth and the overall fall in LIS. That overall fall in LIS has been substantially associated with falls in the LIS over three short periods of time reflecting specific economic circumstances; and
- the strength of the labour productivity-real product wage relationship has varied across MS-11 industries, and there have also been material variations in LIS movements for these industries.

Accordingly, this set of MS-11 industry results can be seen as providing potentially useful perspective for Commission sectoral and industry-level Inquiries which need to take into account the strength and variations over time of associations between labour productivity, and real product wage and real consumer wage movements. But if one's goal is to establish a full set of implications of productivity and real wage movements for national wellbeing, then the 'measured sector' results presented in this paper will need to be supplemented by results for the so-far hard-to-measure sectors which comprise around 40 per cent of the economy. The latter include the public sector.

The accompanying 'Cut to the chase' release is also valuable in providing a much more succinct perspective on key results, as well as drawing out some broader implications for policy.

### **Measuring the innovative activity of New Zealand firms.**

Working Paper 2015/2, June 2015.

Simon Wakeman (NZPC) and Trinh Le (Motu).

This Productivity Commission Working Paper is evaluated in conjunction with:

**The impact of R&D subsidy on innovation: a study of New Zealand firms.**

Motu Working Paper 15-08, June 2015.

Adam Jaffe and Trinh Le.

**Productivity Commission Working Paper 2015/2**

Innovation is a key driver of productivity growth, and according to top-level OECD innovation indices New Zealand has not ranked well overall on innovation and has ranked even less favourably in terms of fully commercialising innovation.

But to date there has been limited New Zealand research-based evidence on innovative activity at the level of the firm. Nor has there been widespread understanding of the full nature of the innovation process, which covers the often lengthy period from new discoveries and other innovation inputs through to innovation outputs in the form of finished products and services.

This 52-page Working Paper, jointly with Motu, provides an initial contribution within the Productivity Hub's Innovation Ecosystem theme, and is aimed at providing considerably enhanced foundation-type understanding of New Zealand's firm-level innovation processes.

It utilises firm-level LBD data firstly to develop a range of input and output innovation measures. From these measures, and depending on the measure chosen, it is established that the proportion of New Zealand firms engaged in innovation ranges between 0.2 and 40 per cent. The measures are then utilised to assess the extent to which there are relationships between the various innovation measures and to provide analysis of variations in the measures by firm characteristics such as age, employment size, exporting status, foreign ownership, industry/sector, geographic location and persistence with innovation.

Some key findings are that:

- firm-level measures of R&D intensity are only very weakly correlated with output innovation measures, and there is therefore more to innovation than just R&D;
- the extent and type of innovation varies considerably by industry;
- the degree of a firm's persistence with a particular type of innovation can be important; and
- firms that are exporting and/or have foreign ownership are more likely to be involved in input and output innovation.

Overall, the paper makes a very valuable contribution towards enhancing New Zealand's understanding of the full innovation process. Its carefully assembled and described LBD data set, and its comprehensive analysis of the extensive range of input and output innovation measures in the context of firm characteristic measures provide a very important foundation for follow-up specific-issue research on firm-level innovation and on the extent to which the particular innovation can help generate improved productivity growth.

It was an excellent idea to highlight the key findings and implications from this paper jointly with its associated Motu Working Paper through a well-focussed 'Cut to the chase'

release, and to draw further attention to this strand of work through the short Blog piece of 3 July 2015, entitled 'Innovation – how do Kiwi firms stack up?' (Wakeman, 2015).

### **Motu Working Paper 15-08**

This 33-page 'specific issue' Working Paper, funded through the Productivity Hub under its Productivity Partnership with Motu, is the second major publication within the FLARE Innovation Ecosystem theme. Its aim is to examine the impact of R&D grants on New Zealand firm innovation outputs. There are relatively few studies internationally that assess whether R&D subsidies affect innovation outputs rather than innovation inputs, and there is no directly comparable study for New Zealand.

The paper postulates a generic reduced-form model, to assess the differential effects of R&D grant receipt on seven innovation output measures. These innovation output measures are drawn from the Business Operations Survey (BOS), Government Assistance Programmes (GAP) and Intellectual Property (IP) components of the LBD data set. Established Propensity Score Matching (PSM) methodology is used to assess the effects on BOS and IP innovation outcomes. Careful attention has also been paid to robustness of the empirical results, including through the conduct of 'placebo' tests.

Three key findings reported are that:

- receipt of an R&D grant has significantly increased the probability of a firm in the manufacturing and services sectors applying for a patent during 2005-2009, but has not increased the probability of the firm applying for a trademark;
- receipt of an R&D grant has almost doubled the probability of a BOS firm introducing new goods and services to the world, but R&D grant receipt has had a relatively much weaker effect on operational process innovation and on any product innovation; and
- also for BOS firms, R&D project grants have had much larger effects on measures of innovation outputs than have R&D capability building grants.

Overall, therefore, the paper provides new research-based evidence specifically related to R&D grant receipt. That evidence, along with the paper's concluding thought-provoking implications for public policy, provides valuable input of a partial nature to assist in the formulation of sustainably-effective policy influencing innovation. Also, as foreshadowed in the accompanying joint 'Cut to the chase' piece, an important further step towards providing evidence-based research underpinnings will be assessment of the effects of R&D project grant (and other input innovation) measures on firm performance measures such as productivity growth.

It is further the case that the standard and clarity of write-up of this paper's research work, and the new findings that it develops for New Zealand firms are such that it could be submitted in the near future for refereeing at a strong quality economics journal.

### **Do New Zealand firms catch up to the domestic productivity frontier?**

Working Paper 2015/3, June 2015.

Paul Conway, Lisa Meehan & Guanyu Zheng.

This 37-page Working Paper provides a third significant ERT contribution to the FLARE Innovation Ecosystem theme. The paper can also be set in the context of:

- the OECD's recent major report entitled *The Future of Productivity* (OECD, 2015a, 2015b) categorising a firm's productivity growth as at international frontier levels, at their country/domestic frontier level, or as a productivity laggard; and
- New Zealand having had, at least since the 1980s, a poor aggregate-level productivity record by OECD standards, and having made little sustained progress in catching up to OECD top-level international productivity growth frontiers (Conway and Meehan, 2013).

The Working Paper does not address the question of how many New Zealand firms might be at or close to their global technological frontier; rather it presents logically prior research findings on the question of whether there is evidence of firms in New Zealand sectors and industries having converged towards their domestic technological frontier.

The paper applies the model of Griffith *et al.* (2009), firstly in base-model form, to establish the extent to which New Zealand laggard firm multifactor productivity (MFP) growth has been catching up to domestic MFP frontiers. Importantly for a small open economy, the model is then applied in extended form to assess the extent to which MFP growth and speed of catch up might be different for exporting firms and for firms with foreign ownership. In doing this the model is explained clearly, and careful attention is paid to 2000-2011 LBD data selection and to measurement error issues. The estimation work and interpretation of results have been professionally carried out and importantly, results have been assessed for robustness to Ordinary Least Squares (OLS) versus fixed-effects estimators. There is also detail in the paper's Appendix C on the underlying production function estimation, which is likely to be valuable for other LBD researchers.

Three key findings from the research are:

- convergence of laggard firms to their domestic productivity frontier is statistically significant and economically meaningful, which is consistent with there having been some degree of technology diffusion from high- to low-productivity firms;
- firms in the services sector have had slower convergence speeds than those in the primary and goods-producing sectors; and
- firms that are more open internationally have recorded faster MFP growth and speeds of convergence, but these faster speeds at industry level may also have been associated with increasing the average 'distance to frontier' and hence result in slower convergence speeds for low-productivity firms.

In summary, this paper provides an important early contribution to improving understanding of the role of productivity diffusion at New Zealand sector and industry levels. It does this by establishing key descriptive statistics for New Zealand's laggard and frontier firms, the size of distances to productivity frontier levels, the speeds of convergence to frontiers, and the extent to which being categorised as an internationally connected firm affects conclusions for sectors and industries.

I note that to date there has been no accompanying 'Cut to the chase' piece for this paper, and suggest that sufficient key messages have emerged from this work to warrant further publicising, perhaps through an eye-catching Blog piece.

### 3.1.2 Research Notes

#### **Reform of the UK's decumulation market**

Research Note 2014/2, December 2014.

Patrick Nolan.

This 28-page Research Note was provided as background for the Decumulation Retirement Savings Forum, Auckland, 21 November 2014. So why should it be a relevant ERT research output? The answer is provided firstly in the first two paragraphs of its Introduction (though not in its Overview). It fits within the fifth theme of the Productivity Hubs' FLARE framework, entitled "Skills, migration and demographic change". Secondly, Guest (2014) has surveyed, with implications for New Zealand, the potential impacts of population ageing for labour productivity growth, and OECD work (2015b, e.g. p 3) has concluded that over coming decades global inclusive growth, productivity and living standards will be affected by population ageing. In this context, the role of decumulation markets is to provide financial products which can help people convert the assets they have accumulated during their lifetime into retirement incomes.

This very comprehensively researched and clearly written Research Note succinctly summarises the key economic concepts and categories of risk requiring assessment when designing policy for private and government provision of financial pension and annuity instruments. It also draws implications from UK experience for New Zealand's relatively undeveloped decumulation instruments and markets, which include Kiwisaver and other schemes. The Note is not of immediate or direct importance for improved productivity growth; rather it provides valuable conceptual and data set information, and broad policy implications for when the impact of population ageing on productivity might be investigated in depth by the Commission.

#### **Firm dynamics and job creation in New Zealand: A perpetual motion machine.**

Research Note 2015/1, May 2015.

Lisa Meehan & Guanyu Zheng.

This 21-page Research Note utilises the LBD database and a methodological approach tracking cohorts of New Zealand firms over time to establish key facts for firm dynamics and employment growth over the 2000-2012 time-period. It builds on previous work for New Zealand by Carroll *et al.* (2002), through use of considerably updated data which also reflects substantial data improvements recommended by Carroll *et al.* (2002).

The Note should also be regarded as an initial foundation-like contribution within the FLARE Efficiency of Reallocation theme.

Some key facts it establishes are that:

- many new, mostly small firms are established in New Zealand each year, but many disappear relatively quickly; and
- the new firms that survive provide reasonable employment growth on average over their first decade of life, but the majority of these small firms do not grow

significantly. The average net employment growth is therefore accounted for by a very small number of firms.

Data work in the Note is thorough, the statistical work is soundly described and carried out, presentation of its wide range of key facts is well-structured, and the Figures send clear messages. A number of these messages are further reinforced in the Research Note's accompanying short Blog entitled 'Firm dynamics and job creation: A perpetual motion machine' (Conway, 2015a).

Grounded in its key facts, the Note also provides a valuable contribution towards advancing understanding, by raising for debate an important issue having implications for policy aimed at or potentially indirectly affecting small and medium-sized enterprises. That issue is whether targeting high employment growth firms would have the benefit of additionally leading to the development of high productivity growth firms. Or put another way, whether focussing policy too narrowly on high growth or high employment growth firms would not be taking sufficient account of the wider firm-dynamic and reallocation key facts assessed in the Note.

This foundation-level work is currently being extended to understand better the relationships between employment growth and productivity growth in New Zealand's LBD firms.

### **New Zealand's productivity growth: Component and industry decompositions.**

NZPC Research Note 2015/2, May 2015.

Athene Laws & Lisa Meehan.

This compactly presented 23-page Research Note reports empirical results for the 1978-2011 period which:

- decompose aggregate labour productivity growth into industry labour productivity growth, changes in industry level (labour and capital) input shares and changes in industry real output prices; and
- decompose aggregate MFP growth into industry MFP growth, changes in industry factor input shares, and changes in industry real output and reciprocal input prices.

There has been considerable previous work for New Zealand in this vein at aggregate and industry levels, most recently by Treasury (2008-2010), and by Meehan (2014). But this paper differs from that earlier work in two ways:

- by presenting results for MFP to complement those reported for labour productivity in Meehan (2014), and
- by applying Diewert's (2014) decomposition method which additionally investigates whether there has been any additional role for real output prices in affecting labour productivity, and whether reciprocal input prices might have had a significant additional role in affecting MFP.

Some of its key high-level conclusions are that:

- aggregate labour productivity and MFP have been primarily associated with industry productivity growth rather than industry input shares and real (output) prices;
- reciprocal input price changes may, however, have been a material influence on MS-11 'measured sector' MFP during the 2008-11 period; and
- for some of New Zealand's key industries, there is evidence that real output and input prices have been materially influential in affecting labour productivity and MFP.

The paper is valuable in several specific ways. It sets out succinctly and clearly the Diewert decomposition methodology and associated SNZ data sources, and assesses results in the context of productivity growth cycles published by SNZ. With the assistance of well-crafted Figures, it also does a very good job of communicating its key industry-level results which are always challenging to present succinctly.

More broadly, the key facts and specific results it establishes have the potential to provide useful particular industry/sector underpinnings and implications for future Commission Inquiries.

### **3.3 Process management**

In considering the extent to which the 2014/15 research papers have been "delivered to schedule or within assumed planning considerations", it does not surprise me that five of the six research papers were published during the final two months of the period and that all were published in the second half of the period. This would not be uncommon for fledgling research units, and especially at this stage of the ERT's development it is important that papers be released only when they have met required quality assurance standards. Research units of greater longevity and maturity, and especially those of medium to large size clearly have the luxury of being able to release research at more regular within-year intervals.

It is particularly important, therefore, that the Commission's processes for its published research be to very high standards. This is so, not only for the credibility of Commission recommendations but also for the reputation of the output of its Economics and Research Team.

At present there is in place internally a well-understood sequence of quality assurance procedures, which are worked through prior to publication of each ERT Working Paper. As a minimum, these involve ERT research paper proposals being put initially to the Productivity Hub and to Commissioners, presentations of drafts at Productivity Hub Roundtables, and a penultimate draft being subject to refereeing by at least one external expert.

Those internal QA processes do not yet seem to have been formally documented, nor does there seem to be significant awareness externally of those processes. Moreover, while some papers have received wider feedback through presentation externally at domestic and international conferences, and while submission of a particularly influential Working Paper for refereeing and publication in a high quality economics journal is likely to be encouraged by the ERT Director, there does not yet seem to be any formal recognition that this next step would be additionally valuable. The additional specific benefits would be in the form of:

- a higher level test of the quality of the research;
- further enhancement of the reputation of the ERT, the Productivity Commission's research output, and the author(s) of the work; and
- bringing further international attention to the quality of the Team, the Commission and the New Zealand policymaking process directed to productivity improvement.

Finally under the 'good process' heading, small New Zealand units like the ERT and the Productivity Hub are potentially vulnerable to key person risk. Ongoing attention to succession planning for the roles currently performed by each of the individuals within the ERT, the Hub's Governance Board and the Research Leaders (or expert) Group, will therefore continue to be important.

### 3.4 Summary judgements

During 2014/15, the Productivity Commission's small research team of five, in association with Motu and within the Productivity Hub's tightly focussed FLARE framework, have published six applied research papers of commendably high quality.

Putting this judgement in the context of the OECD's (2015a, 2015b) categorisation of firm-level productivity performance being at global or domestic frontier-levels or being laggard, I suggest that this designated package of applied research as a whole is clearly at the domestic frontier level, and that each of the firm-level research papers within the Productivity Hub's FLARE Innovation and Reallocation themes would fit somewhere within the top half of the global frontier spectrum. It is also anticipated that the final report being developed during 2015/16 for the public sector productivity project will lead over time to a series of well-focussed outputs that should be able to be placed within the global frontier research spectrum.

In different ways, each paper has provided valuable evidence-based research findings capable of underpinning recommendations and policies designed to improve New Zealand's productivity performance and future economic wellbeing.

Six is a relatively small number of research publications, but rightly in my view the emphasis has been on producing a small number of high quality, substantially non-overlapping papers rather than running the risk of spreading principal findings and messages too thinly over more papers of somewhat lower quality.

The firm-level papers on innovation, grounded in SNZ's LBD and guided through the Productivity Hub in Partnership with Motu, provide very valuable evidence towards improved understanding New Zealand's innovation processes. But at this stage, these papers must still be seen as the initial pieces within a well-designed, but far from complete jigsaw. It is therefore crucial that the momentum now under way through the Productivity Hub not be lost.

The Hub currently has an ambitious carefully focussed forward research program. This includes:

- continuing to draw on the LBD to help build economy-wide evidence on key firm- and higher-level drivers of productivity growth; and

- striving for better definition and understanding of productivity movements in the substantial so-called 'hard-to-measure' sectors of the New Zealand economy, and in particular for public sector productivity.

This forward research program is being further refreshed during 2015/16 in the context of the ERT's forthcoming "Narrative" (Conway, 2015b)

### **Interviewer feedback**

None of the 13 persons interviewed expressed concern about either the relevance or the quality of the research produced to date.

Individual comments on quality from those external to the ERT ranged from a conservatively expressed "comfortable" through to "very, very happy".

Other individual comments on quality and relevance are that:

- the high quality firm-level research, developed from New Zealand's exceptionally valuable LBD data base, provides very important but still early-stage building block-type evidence;
- the Productivity Hub and Motu Partnership roles in assisting research relevance and the attainment of high quality outputs have been particularly valuable;
- development and wide dissemination of the Productivity Hub's FLARE agenda has ensured the Team's research has gained considerably better focus than previously;
- in a dynamic world economy, it is crucial that Productivity Hub's FLARE agenda is regularly updated and further developed;
- also in the relevance domain, the Productivity Commission and its external stakeholders can take broad lessons from the best international research, but particularly in the context of 92 per cent of New Zealand's firms being either single employee or sole proprietor, the continuing production of high quality firm-level New Zealand research will remain crucial for assisting evidence-based policymaking;
- several of those external to the Commission stressed that the authors of Working Papers making particularly innovative contributions to either international or New Zealand productivity knowledge should give strong consideration to submitting their work for publication in high quality economics journals.

## **4. Effectiveness of engagement, communication of research findings, and contribution to wider understanding**

### **4.1 Effectiveness of engagement with the productivity research community, and in improving coordination and collaboration among public sector agencies working on productivity**

Prior to the establishment of the Productivity Commission and its Economics and Research Team, research into New Zealand's productivity performance had been concentrated primarily at the aggregate and industry levels, e.g. Philpott (1995), Hall (1996a, 1996b), and Treasury (2008-10). Moreover, with the exception of the substantial body of research published and promoted by the Treasury during the 2008-2010 period, and apart from some pioneering papers on specific micro-level topics using SNZ's LBD, e.g. Fabling (2009, 2011), Fabling and Maré (forthcoming), research contributions on

productivity from academia, other institutions and individual Ministries had been relatively few and piecemeal in nature.

The 2013/14 evaluation of the Productivity Commission's research function considered the Productivity Hub to have been a good development with considerable potential, though still at an early stage (Fancy, 2014, p 2). That evaluation also concluded that a major achievement during that year was the development of the "Forward Looking Agenda of Research" (FLARE), regarded as having produced a "useful and workable" coordinating framework for the Productivity Hub's five-theme research program (Fancy, 2014, pp 9-11).

Against that background, 2014/15 has seen the Productivity Commission's small ERT able to move beyond its set up phase, and lead development of the Productivity Hub into a very effective coordination and collaboration body.

#### **4.1.1 The Productivity Hub**

The Productivity Hub had been set up to engage and collaborate on productivity research with key public sector agencies, including the Treasury, the Ministry of Business, Innovation and Employment (MBIE), SNZ and the Productivity Commission. Operationally, its governance structures include a Board to provide oversight and strategic direction, a Research Leaders (or experts) Group to ensure research focus and guide collaboration, and the Productivity Commission's Secretariat and Chair.

Throughout 2014/15, the existence of the Hub has been vital in helping advance the effectiveness of the ERT's research focus on its designated industry-level and firm-level outputs. This has been especially so for work under the Innovation and Reallocation themes, and in helping guide development of a well-focussed research agenda for 2015/16 and beyond.

Also key to the effectiveness of the Commission's/ERT's performance in this area has been Paul Conway and Patrick Nolan having provided strong leadership through chairing and managing the Hub.

The Productivity Hub is one of several Hubs which have been set up within the Government Economics Network's (GEN) umbrella website for Knowledge Hubs. However, I note that as at the time of this Review the GEN "Productivity Community" and "Research and Analysis" website components are no longer up to date. It is also probably the case that most of those searching for productivity information would now go direct to the Commission's Productivity Hub website component anyway, so perhaps the material in the "Research and Analysis" component of the GEN website could be replaced by simply providing a link to the Commission's regularly up-dated site.

#### **4.1.2 The Motu/Productivity Hub Partnership**

Through the considerable experience of Motu researchers in LBD research, and against the background of the high level academic qualifications and research experience of Motu's Director and Senior Fellows, the designated roles for Motu in this Partnership arrangement are, in a broad sense, to:

- provide expert support to the ERT and to other Hub agencies in their use of the LBD;
- contribute to the building of knowledge across Hub agencies; and
- assist with informing on productivity matters, including in particular other external stakeholders and the academic research community.

However, as was the case with the setting up and bringing of the Hub to full effectiveness, and as could reasonably have been expected when aiming to effect a 'partnership with a partnership' agreement, so it has taken considerable time to set up the Productivity Hub Partnership arrangement with Motu and establish ideally-focussed momentum.

During 2014/15, specific output involving Motu published under the FLARE innovation theme has been joint authorship of Commission Working Paper 2015/2 and publication of Motu Working Paper 15-08. An ambitious forward work program has also been established, which can be classified into two categories: Motu-led projects, and projects led by Productivity Hub agencies with Motu support.

More broadly, already during 2014/15 the ERT has gained considerable LBD and intellectual experience through the Motu partnership. This has had the not inconsiderable benefit of stretching considerably further the ERT's modest research resources.

#### **4.1.3 Summary Comment**

The ERT has put very considerable time during 2014/15 into its engagement, coordination and collaboration roles, and overall its performance has been outstanding.

There is clear evidence that to date there has been a very good rate of return from the ERT spending that time. But whether there should continue to be commitment of that amount of time relative to the time required to be spent on undertaking and publishing the Team's high quality research will need ongoing careful assessment.

#### **4.1.4 Interviewer feedback**

Overall, those interviewed were highly complementary about the effectiveness of the ERT's role in improving coordination and collaboration among public sector agencies working on productivity. Their feedback also provided strong endorsement of the ERT's ongoing effort to engage with the productivity research community as a whole.

Individual comments received are:

- the mandate for the Productivity Commission/ERT research program is now well set up;
- the ERT, in conjunction with the Productivity Hub, are now producing what no individual Ministry or combination of Ministries had previously been doing;
- through the Productivity Hub, its FLARE framework, and the Motu Partnership, the focus on relevant, high quality research is now very good. It is important that this strong foundation and momentum is now maintained and further enhanced;
- coordination and collaboration has been commendable during the past twelve months;

- the value of the Productivity Hub should not be underestimated; and
- the quality of ERT input to the Inquiry Teams during the 2013/14 year was very good. The nature of the 2014/15 Inquiries is such that the need for ERT input has not been as great as during 2013/14. Communication between the Inquiry Teams and the ERT has remained very good.

#### **4.2 Effectiveness of presentation of research findings and recommendations**

As it is the direct responsibility of the Commission and Commission Inquiries to make recommendations, I confine my comments under this heading to the effectiveness of the ERT's presentation of research findings.

I found the standard of presentation of each of the six research papers to be very good. Overall, the Abstracts were concise and clear, and technical methodology was presented succinctly and in a manner that I could assimilate quickly. The illustrative Figures were presented to a very high standard and conveyed important messages quite clearly, and there was judicious balancing of Tables of results between the text and Appendices.

I was also very impressed with the careful exposition of data sources, and the information provided on how information from the LBD was accessed and used. The latter information should be particularly enlightening for those not yet familiar with this very valuable LBD resource, which has been available along with Motu support not only to the Commission but also to Hub agencies that have contributed funding to the Partnership.

Recent firm-level Working Papers have concluded with evidence-based thought-provoking comments, raising issues and implications for further consideration and wider debate. I commend this recent development, as an important further step in assisting wider understanding of the complex network of issues underpinning the productivity improvement process.

This recent development, along with the now steadily building body of 2014/15 and earlier year research evidence, should also be seen as able to provide:

- valuable input to the ERT's forthcoming "Narrative" (Conway, 2015b), aimed at:
  - assessing the reasons why New Zealand has struggled to lift its productivity performance;
  - setting down some broad directions that would then follow for policy; and
  - contributing updated input for further refreshed Productivity Hub/ERT research agendas; and
- a guide to future Productivity Commission Inquiry topics.

The effectiveness of messages from the 2014/15 Working Papers and Research Notes is enhanced considerably by the accompanying 'Cut to the chase' and Blog releases that I sighted.

#### **4.3 Wider impact of the Economic and Research Team's research work**

While the ERT has a primary responsibility to communicate its research findings effectively to the public sector research and policymaking communities, to private sector researchers and decision makers, and to researchers in academia, it also has important

roles to play in assisting the Commission to inform and enhance New Zealand's media and the wider public understanding of productivity issues.

The ERT has carried out and contributed jointly to a particularly impressive range of communication activities during 2014/15. These activities include:

- the publication of six flagship research papers. The cumulated total of website downloads (as of 2 August 2015) is very impressive. For example, there have been 513 downloads and 282 clickthrus from Twitter for the "Who benefits" paper released in February, 177 downloads for the very recently released "Measuring innovative activity" paper, and 65 downloads for the "Component and industry decompositions" Research Note. I expect there will be also be steadily increasing downloads for the two other innovation theme Working Papers and the "Firm dynamics" Working Paper released in June;
- the organisation of 20 Productivity Hub Roundtable presentations on a wide range of productivity-relevant topics, with an average attendance of over 20;
- the organisation during 2015 of five events co-branded with GEN, culminating in an attendance of 108 at the 29 June 2015 ERT/Motu presentation on "R&D expenditure and innovation by Kiwi firms";
- the release of five short attention catching Blog pieces, which have attracted many reads and clickthrus from Twitter; and
- presentations at New Zealand universities, to New Zealand regional audiences, and to a range of New Zealand and international conferences. The conferences have included: the Annual Conference of the New Zealand Association of Economists, the 2014 GEN Annual Conference, the 11<sup>th</sup> Western Economics Association International Conference, a 2014 Asia-Pacific Productivity Conference, the 5<sup>th</sup> Asia-Pacific Innovation Conference, and the joint OECD-NBER Conference in Paris on productivity growth and innovation in the long run.

In this context, it can also be noted that while across all events the great majority of attendees were from central government, it is pleasing to note that there were also significant numbers attending from economic consultancy, education and business organisations.

It is also pleasing to record under this wider impact heading that the quality of the Productivity Hub's research program and published Working Papers, together with the global network connections of Productivity Hub and Motu individuals has led to the next co-branded Symposium to be held on 1 December 2015. The focus of the Symposium is to be on innovation, and it is a compliment to the globally increasing standing of the Commission and its research output to have confirmed keynote roles from leading European, American and Australian presenters.

### **Interviewer feedback**

In the context of being complimentary on the quality of key firm-level research findings to date, and the fact that some of the papers have additionally begun to raise issues and implications for more in-depth and wider discussion, several of the experienced economists interviewed considered that it is still too soon to pass judgement on the effectiveness with which the research is able to influence policymaking directly.

Individual comments received are:

- overall, I am comfortable with the media and other impacts to date;
- there is increasing global interest in the work of the New Zealand Productivity Commission;
- it is vital that the research output of the ERT is of such ongoing relevance and quality that policymakers remain convinced of the value of that research for their policymaking;
- consistent with there now being important but still early stage evidence-based findings for the Hub's firm-level Innovation and Reallocation themes, a next useful stage in a policy context would be to have the ERT brief experienced policy advisers within the Productivity Hub's expert group (say twice a year) as to key research findings to date and their potential implications for policymaking.

#### **4.4 Summary judgement**

The overall performance of the five-person ERT in the above three areas has been very impressive.

An ongoing challenge for the Commission, the ERT Director and the small Economics and Research Team will be to maintain the right balance of time to be spent on ERT's production of research, chairing and coordinating Productivity Hub activities, and with the Commissioners effectively communicating their key evidence-based research findings and their implications.

## Terms of Reference

### Purpose

Undertake an independent expert evaluation of the Commission's function to undertake and publish research about productivity related matters. This includes evaluating a 'package' of research work undertaken by the Commission during the 2014/15 year. Where appropriate and useful the evaluation will also cover the Commission's work with the Productivity Hub and the effectiveness with which research is used to influence policymaking and enhance the Commission's reputation.

### Context

An independent expert evaluation of the Commission's research work programme performance is a key component of the Commission's overall performance measurement and a further way of identifying how the Commission can improve its performance.

### Scope

Undertake an evaluation of the Commission's performance in delivering on its function to undertake and publish research about productivity related matters. This evaluation will focus on:

#### ***The relevance and materiality of selected Commission Working Papers/Research Notes in advancing understanding of New Zealand's productivity issues:***

- ⇒ This scope area would evaluate and comment on the extent to which the selected package of research work sourced all relevant research and information, engaged with the right people, framed research questions, focused on the issues most significant to the topic (or topic area across papers if relevant), and went into sufficient depth on the issues covered.

#### ***Good process management:***

- ⇒ This scope area would evaluate and comment on the extent to which the papers in the selected package of research work were delivered to schedule or within assumed planning considerations.

#### ***The quality of the economics and analysis in the selected package of research papers:***

- ⇒ This scope area would evaluate and comment on the quality of the information analysis and findings of the selected package of research work and how quality is being assured. The scope area recognizes that research can be undertaken for different purposes and therefore may have different quality expectations associated with those different purposes. The evaluation could comment on the consistency of approach and presentation across different papers, whether conclusions follow from analysis and findings, whether the research recognizes larger bodies of work or wider debates and their relevance, the clarity & robustness of analytical and methodological frameworks, as well as the use of quality review processes (peer or independent).

***The effectiveness of the Commission's engagement with the productivity research community and its effectiveness in improving the coordination and collaboration among public sector agencies working on productivity:***

⇒ This scope area would evaluate and comment on the ways in which the selected package of research work sheds light on the quality of engagement by the Commission with the productivity research community and if it is making a positive contribution toward improved levels of coordination and collaboration in productivity research.

***The effectiveness of the Commission's presentation of research findings and recommendations.***

⇒ This scope area would evaluate and comment on whether the findings and recommendations in the selected package of research work were clear, if the style of writing and language used was clear, and if the papers provided clarity about the steps leading on from the research (how future questions might be defined as an example).

***Commenting on the wider impact of the Commission's research work***

⇒ There is also scope for the evaluation to provide broader commentary on the impact of the Commission's research work to inform both Commission reports and the Commission's contribution to the wider debate and promotion of understanding around the drivers of productivity in New Zealand to derive greater productivity performance. In this regard the evaluation could consider the extent to which the research work evaluated:

- helped to lift the standard in New Zealand for high-quality analysis and advice on productivity issues;
- contributes to future work on the topic areas in the selected package of research work being better focused and to use resources more effectively;
- contributes to increased understanding of the topic areas in the selected package of research work; and
- increases understanding of the importance of productivity more generally.

**Deliverable**

A report summarising the independent expert evaluation, in the key areas of scope above, which the Commission can publish or quote in reporting its performance (such as in any inquiry assessment the Board may publish, or in the Annual Report), and use to improve its performance.

**Approach**

Evaluate the Commission's performance based on a review of the relevant research papers, key supporting documentation and communications material. Where necessary, discussion with key staff and Commissioners may also be used in the evaluation. There will also likely be a need to consult with key external stakeholders.

The independent expert reviewer is not required or expected to be an expert on the subject matter of the package of research work, but rather to use their experience and judgment of developing and presenting advice to Government and external audiences.

### **Key references**

The key reference documents for completing the evaluation include:

- Selected research reports/paper published by the Commission and other key documentation (including any relevant communications material published by the Commission in conjunction with its research work). The selected package of research outputs is listed as Annex C.
- As background and context for the independent evaluation - the Commission's performance framework and research output performance measures.

## People Interviewed

### **New Zealand Productivity Commission**

Murray Sherwin	Commission Chair
Professor Sally Davenport	Commissioner
Dr Graham Scott	Commissioner
Geoff Lewis	Inquiry Director
Paul Conway	Director, Economics and Research
Patrick Nolan	Economics and Research Team
Dr Grant Scobie	Economics and Research Team
Catherine Jeffcoat	Communications Adviser

### **External to the Commission/External Stakeholders**

Dr Adam Jaffe	Director, Motu Economic and Public Policy Research
Dr David Maré	Senior Fellow Motu Economic and Public Policy Research
Dr Girol Karacaoglu	Chief Economist and Deputy Secretary, Economic System, New Zealand Treasury
Roger Procter	Chief Economist Ministry of Business, Innovation and Employment
Professor Robert Buckle	Pro Vice-Chancellor and Dean of Commerce Victoria Business School Victoria University of Wellington

## **The 'Package' of 2014/15 Economics and Research Team Papers designated for evaluation**

### **Working Papers**

Who benefits from productivity growth? - The labour income share in New Zealand.  
Working Paper 2015/1. Paul Conway, Lisa Meehan & Dean Parham. February 2015.

Measuring the innovative activity of New Zealand firms.  
Working Paper 2015/2. Simon Wakeman (NZPC) and Trinh Le (Motu). June 2015.

This New Zealand Productivity Commission Working Paper 2015/02 is evaluated in conjunction with:

The impact of R&D subsidy on innovation: a study of New Zealand firms. Motu Working Paper 15-08 (funded by the Productivity Hub under the Productivity Partnership programme). Adam Jaffe and Trinh Le. June 2015.

Do New Zealand firms catch up to the domestic productivity frontier?  
Working Paper 2015/3. Paul Conway, Lisa Meehan & Guanyu Zheng. June 2015.

### **Research Notes**

Reform of the UK's decumulation market  
Research Note 2014/2. Patrick Nolan. December 2014.

Firm dynamics and job creation in New Zealand: A perpetual motion machine.  
Research Note 2015/1. Lisa Meehan & Guanyu Zheng. May 2015.

New Zealand's productivity growth: Component and industry decompositions.  
Research Note 2015/2. Athene Laws & Lisa Meehan. May 2015.

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