Themes from the Treasury’s Guest Lecture Series: *Productivity in a Changing World*

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The Treasury is very grateful to the speakers in our Treasury Guest Lecture Series on Productivity in a Changing World. We thank them for sharing their insights in the seminar series, as well as their help in reviewing summaries of their presentations.

The Treasury also acknowledges and thanks Hamed Shafiee for leading the development of the Productivity in the Changing World theme and speaker agenda.

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Executive Summary

This paper provides a summary of the Treasury’s Guest Lecture Series (TGLS) on the theme of *Productivity in a Changing World*, which ran over 2023-24.

The purpose of the TGLS is to bring the latest research and cutting-edge thinking into the Treasury, and to foster public engagement and debate. We chose the theme of *Productivity in a Changing World* in recognition that lifting our productivity performance continues to be central to improving New Zealanders’ wellbeing, but that we are facing this challenge in the context of significant economic, social and environmental shifts.

It has been a fascinating and thought-provoking series. We heard from a range of excellent speakers, exploring the implications of the changing world we find ourselves in and what this means for productivity growth in New Zealand and around the world. The Treasury has already been drawing on the insights from the series to inform its work, particularly in a recent Treasury Paper that explores trends in New Zealand’s productivity performance to inform our economic forecasts.

This paper draws out themes that emerged across the seminar series, as well as providing a summary of the presentation from each speaker. There were many insights and different perspectives. Our speakers, and their discussions with audiences, have highlighted the wide-ranging and complex interaction between global trends and productivity. However, the following themes emerged through the series:

- Most of the speakers recognised the global productivity slowdown, and that New Zealand has not been exempted. While there were different degrees of optimism for the future, several speakers signalled that there are challenges ahead.

- Many speakers highlighted the importance of innovation and technological change, as well as the debate on the extent to which innovation will contribute to future productivity.

- Linked to the role of innovation, the importance of skills and capabilities which support the diffusion and adoption of new technologies, was highlighted by many speakers. The role of management capabilities was particularly emphasised.

- Last, but not least, many of our speakers explored the theme of climate change and productivity, including the compatibility of climate change and productivity goals.

This paper aims to capture the key lessons from the series and help others to access them. If you want to delve deeper into the presentation of any of the speakers, you can find video, transcripts and slides on the Treasury website.
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Introduction

This paper summarises the Treasury’s Guest Lecture Series on the theme of Productivity in a Changing World, which ran between May 2023 and May 2024.

Purpose of the Treasury Guest Lecture Series

At Te Tai Ōhanga – The Treasury, we want to facilitate learning and debate on the important issues facing New Zealand. To support that objective, our Treasury Guest Lecture Series invites leading academics and other thought leaders, from New Zealand and overseas, to present at the Treasury.

The lectures are intended to be intellectually stimulating and to foster debate within the Treasury. These seminars also seek to encourage public engagement and debate, and they attract a wide range of participants from universities, research institutes, other public sector agencies, and the private sector.

In recent years we have been organising the seminar series under a theme to bring a range of different insights into our work on an important policy challenge. Following a successful seminar series to support our work on the Treasury’s first wellbeing report, Te Tai Waiora, we choose the theme of Productivity in a Changing World.

Why Productivity in a Changing World?

This theme recognises that lifting our productivity performance continues to be central to improving New Zealanders’ living standards and wellbeing. For workers, real wages tend to grow more rapidly when labour productivity growth is strong and are more likely to increase in high-productivity growth industries. Higher productivity means higher incomes, cheaper and better-quality goods and services, expanded choices across leisure and work, and, at a societal level, greater spending towards social and environmental goals. Higher productivity can also protect future wellbeing by providing more income to invest in our national wealth and by enabling us to use existing wealth less intensively.

Yet, New Zealand’s productivity growth has been low since the 1960s. Not only does New Zealand have a long-standing productivity gap with other advanced economies, but our productivity has also been slowing significantly. Productivity for the whole economy averaged 1.4% p.a. between 1993 and 2013 but averaged only 0.2% p.a. over the last ten years. We are not alone in the productivity slowdown, which is playing out across the world. Raising our productivity performance remains one of the biggest economic challenges facing New Zealand in the decades to come.
However, we are facing this challenge in the context of significant economic, social and environmental shifts. Climate change means that the New Zealand economy is going to have to learn to operate in a warmer, wetter world at the same time as emitting less carbon. The global and New Zealand populations are ageing. Changing technology, such as the rapid advancement of artificial intelligence, will have massive implications for how we work, and the global geopolitical environment is becoming more fractured raising economic security concerns. Whether the changes are positive or negative, these shifts will require significant changes in our economy if we are to sustain and improve our productivity and economic performance.

**Purpose of this paper**

Therefore, our *Productivity in a Changing World* theme invited a range of speakers to reflect on the challenge of lifting productivity in the context of the global challenges and opportunities that our economy faces.

It has been a fascinating and thought-provoking series. We heard from a range of excellent speakers, exploring the implications of the changing world we find ourselves in and what this means for productivity growth in New Zealand and around the world. The Treasury has already been drawing on the insights from the series to inform its work, particularly in a recent Treasury Paper that explores trends in New Zealand’s productivity performance to inform our productivity forecasts.1

This paper draws out themes that emerged across the seminar series, as well as providing a short summary of the insights from each speaker.2 It aims to capture the key learnings from the series and help others to access them. If you want to delve deeper into the presentation of any of the speakers, you can find video, transcripts and slides on the Treasury website.3

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1  The productivity slowdown: implications for the Treasury’s forecasts and projections | The Treasury New Zealand

2  In keeping with the theme of *Productivity in a Changing World*, the Treasury used Paerata, our internal AI tool, to help in preparing summaries of each presentation. The tool provided some good ideas for summarising the presentations, but there was still an important role for us, as authors, to ensure the accuracy of the summaries and that the most salient or relevant points were captured. While we acknowledge our vested interest, AI still seems a complement, rather than substitute, to policy analysts.

3  Check them out here: Guest lectures | The Treasury New Zealand
Themes from the Productivity in a Changing World series

We have heard from a range of excellent speakers, exploring the implications of the changing world we find ourselves in for productivity in New Zealand and across the world.

There were many insights and different perspectives. Our speakers, and their discussions with audiences, have highlighted the wide-ranging and complex interaction between global trends and productivity. However, the following themes emerged throughout the series:

- Most of the speakers recognised the global productivity slowdown, and that New Zealand has not been exempted. While there were different degrees of optimism for the future, several speakers signalled that there are challenges ahead.
- Many speakers highlighted the importance of innovation and technological change, as well as the debate on the extent to which innovation will contribute to future productivity.
- Linked to the role of innovation, the importance of skills and capabilities which support the diffusion and adoption of new technologies, was highlighted by many speakers. The role of management capabilities was particularly emphasised.
- Last, but not least, many of our speakers explored the theme of climate change and productivity, including the compatibility of climate change and productivity goals.

We explore these themes more in the following sections.

Productivity and potential growth

Across the seminars, there was unanimous recognition that productivity is important to the long-run sustainability of economic performance, wages, living standards and wellbeing. Therefore, the global slowdown in productivity is an important challenge faced by countries across the globe.

Several speakers highlighted that the rate of productivity growth has been slowing across the world since about the mid-2000s. Dr Kose and Dr Ohnsorge from the World Bank highlighted that productivity and potential growth was slower in the last decade (2011-2021) than for the previous decade. Michael Brennan pointed out that the last decade has seen the slowest productivity growth that Australia has experienced over the last 60 years. While some of the slowdown might reflect challenges in measuring increasingly digital economies, Professor Syverson argued that measurement issues are not large enough to explain the productivity slowdown that the world is current experiencing.

Dr Philip Stevens and Matthew Galt brought the New Zealand context of these international trends to the seminar series. Both speakers highlighted New Zealand’s distinctive position as a small country, distant from global economic hubs, but with a skilled workforce, and strong institutions. While these strengths have not translated into productivity performance, Matthew Galt highlighted that our strong terms of trade and labour force participation has meant that New Zealanders’ incomes have been increasing more than would have been expected based solely on our productivity. This may be inter-related with our productivity performance. Matthew Galt suggests
that New Zealand might have successfully chosen to specialise in products that were rising in price rather than specialising in products that were experiencing productivity improvement, particularly by exiting manufactures with falling prices and shifting resources to other sectors.

While acknowledging that there is no single determinant, the speakers highlighted a variety of factors that may be contributing to the productivity slowdown. These included weak investment, diminished returns from innovation, a slowdown in trade, and declining education performance. The broad range of views suggests that the influences on New Zealand’s productivity are multifactorial and complex. Professor Rostam-Afschar highlighted that while worldwide productivity growth has been on the decline for decades, there are substantial differences in labour productivity – and the hours worked - across countries. Insights from the operation of product and labour markets can provide new insights on these divergences and how they contribute to the worldwide productivity decline.

There were also different degrees of optimism for the future. However, our speakers from the World Bank and the International Monetary Fund (IMF) both expected global productivity growth to slow further in the coming years in the absence of significant policy change. In a summary of the IMF’s World Economic Outlook, Dr Rui Mani highlighted that the IMF are forecasting a continued reduction in the contribution of MFP to global economic growth from the 2000 to 2019 average of 1.0 percentage points to 0.9 percentage points by 2030.

A range of policy responses were identified to reverse the downward trends in productivity. Many speakers emphasised the importance of a strong and stable macroeconomic and business environment as a foundation for productivity growth. Professor Sunstein suggested productivity gains could be realised through reducing administrative burdens (sludge) and adopting insights from behavioural science to support more effective policies. Many speakers also highlighted the importance of investing in skills and enabling innovation. There was also agreement on the imperative to strengthen New Zealand’s international connections as important to overcoming our geographic constraints. The Chief Economist at the OECD, Clare Lombardelli, encouraged New Zealand to proactively foster global ties for trade, investment, and knowledge to raise productivity of both frontier firms and diffusion to firms behind the frontier. Amongst other speakers, Clare Lombardelli also highlighted that smart adaptation to climate change will be essential for protecting standards of living while fostering productivity.

**Innovation and technological change**

Several of our speakers highlighted the importance of innovation and technological change to productivity, as the ultimate driver of multi-factor productivity.

The potential of new emerging technologies, including digital innovation, was a common theme across the seminars, with many speakers recognising the diverse views between techno-optimists and techno-pessimists around the extent to which innovation will contribute to future productivity. Professor Webster, Clare Lombardelli and Dr Mano highlighted the significant potential of emerging technologies, particularly artificial intelligence (AI) to enhance productivity growth, especially for small, remote economies like New Zealand. Clare Lombardelli cited recent OECD research which suggests that AI has the potential to completely change business processes and deliver big efficiency gains.
Speakers typically agreed with the importance of governments’ role in fostering an environment conducive to innovation if productivity benefits are to be realised. Professor Webster suggested that this includes robust intellectual property policies and regulatory frameworks that support contestable markets and can accommodate rapid technological changes. Professor Webster and Professor Fox both emphasised the importance of collaboration between government, academia and industry. Clare Lombardelli referenced OECD research which emphasises the importance of skills, competition, and regulation.

There were differential views, however, over the extent to which governments should actively seek to support innovation, particularly around targeting support to specific firms or sectors. For example, Dr Stevens, Michael Brennan and Professor Fox proposed driving innovation through broad-based approaches, like R&D tax incentives. However, Professor Rodrik argued that there is a clear rationale for government interventions to support dynamic changes in the economy and increasing empirical evidence of the effectiveness of industrial policy. He argued that it is important to not see industrial policy as just about tariffs and subsidies but about a portfolio of government supports, services and inputs.

Many speakers emphasised that diffusion of new ideas was as important as innovation itself. For example, Professor Fox’s analysis suggested that the role of inefficiency is very large for many industries, suggesting scope for policies that support reducing inefficiencies rather than innovation per se. Speakers, such as Michael Brennan, saw an important role for government in enabling the diffusion of innovation through appropriate regulation and effective data use, as well as through policies that foster knowledge transfer, enhance firm scalability, and encourage competitive markets.

**Skills and capabilities**

Many of our speakers also emphasised that enhancing skills and competencies amongst the workforce is integral to productivity growth, and the importance of capabilities to support the diffusion and adoption of new technologies. Professor Webster, Professor Teece and Michael Brennan highlighted that the ability to leverage innovation takes time, requires complementary investment and the ability to apply new ideas and process.

Several presentations reinforced the important role of skills, and an adaptable labour force, in the context of a changing labour market. Professor Maani demonstrated how five generations of study have established the strong link between skill and productivity, but also the importance of the efficiency with which the labour market matches people and their skills to jobs. Professor Maani highlighted that New Zealand has high levels of people in jobs that they are under-qualified for relative to other OECD countries, which can directly impact on productivity.

The downward drag of New Zealand’s relatively lacklustre management capability on its productivity was highlighted by many speakers, including Professor Syverson, Professor Webster, Dr Stevens, Michael Brennan, Clare Lombardelli and Professor Teece. Professor Teece emphasised the need for firms to have the dynamic capability to be constantly thinking about whether they are doing the right things in the right way to drive innovation and adaptation in a rapidly evolving environment. Professor Teece argued that the public sector should also cultivate dynamic capabilities, prioritising innovation and change management over efficiency, especially in times of uncertainty and rapid technological advancement.
Several speakers also raised challenges around future human capability. Clare Lombardelli flagged the potential adverse impact of declining educational achievement on future productivity. Many of the speakers highlighted the need for adaptive education and skills systems to support works to adapt to a changing labour market, particularly in the content of the emergence of AI. Speakers, including Michael Brennan and Professor Maani, emphasised a focus on teaching adaptable skills and on lifelong learning.

**Sustainability and climate change**

Last, but not least, many of our speakers explored the theme of climate change and its productivity impacts.

Dr Pilat, Professor Pinkse and Dr Paltsev particularly focussed on the intricate interplay between climate change, productivity, and innovation. They argued that there has not been enough work in academia and policy to broaden out the discussion on productivity and climate change. Those working on productivity issues need to consider the role of natural capital and use measures adjusted for environmental externalities, which is becoming increasingly feasible due to measurement improvements. This work is crucial to design policies for net zero that, to the best possible extent, also support innovation and productivity growth.

Amongst other speakers, Dr Pilat and Professor Pinkse argued that addressing productivity in the era of climate change is not just desirable but necessary. Both speakers emphasised the need to see productivity and environmental sustainability as intertwined or symbiotic and requiring integrated and forward-thinking strategies. Mitigating climate change will be disruptive to some existing business models, suggesting an important role for Government in enabling and driving change. This includes carbon pricing mechanisms but also policies specifically directed at low-carbon innovation. However, green growth is possible and climate change policies need not necessarily hamper productivity but can support it if implemented thoughtfully.

Dr Pilat also highlighted the important of energy productivity to reducing carbon emissions and decoupling emissions from GDP, arguing that further technological progress is essential to drive down emissions. Professor Pinkse was optimistic about the potential of technological advancements, like AI and smart grids, in managing intermittent renewable energy sources and improving energy efficiency across sectors. Dr Paltsev discussed the role of hydrogen as a low carbon solution in reducing emissions across various sectors of the economy including transportation, industrial uses, and for energy storage. There are opportunities for New Zealand to absorb and diffuse existing renewable technologies from abroad, while encouraging investments in local innovation that aligns with our strengths, such as agriculture.

The seminars collectively underscore the necessity to adapt policies and practices in response to the changing reality of climate change, with a focus on sustainable productivity that enhances living standards while protecting the environment.
Speaker summaries

Dr Ayhan Kose and Dr Franziska Ohnsorge

Falling long-term growth prospects: trends, expectations, and policies

The opening seminar for the Productivity in a Changing World series explored themes from the guest speakers’ recent book Falling Long-Term Growth Prospects: Trends, Expectations, and Policies.4

Dr Kose and Dr Ohnsorge argued that global economic growth is slowing based on their analysis of a comprehensive database of a large sample of countries. They found a decline in potential growth in the 2011 to 2021 period compared to the previous decade across a variety of potential growth measures. For example, using the production function approach, world potential growth fell from 3.5% to only around 2.6% between the two decades. Declines in the growth rates of total factor productivity, capital and labour appear to have contributed almost equally to the slowdown in potential growth.

At current trends, the global potential growth rate is expected to fall to a three-decade low over the remainder of the 2020s (see Figure 1). The speakers argued that nearly all the forces that have powered growth and prosperity since the early 1990s have weakened. The growth rates of investment and total factor productivity are declining. The global labour force is aging and expanding more slowly. International trade growth is much weaker now than it was in the early 2000s. In addition, a series of shocks has roiled the global economy over the past three years.

The speakers called for comprehensive policy changes both within countries and internationally to address these challenges. They acknowledged the potential of advanced technologies, such as artificial intelligence, to significantly boost productivity, though economists disagree on how much. They suggested that if countries emulate their most successful policies from recent years, including large-scale investments supported by cautious economic management, it might be possible to reverse the current slowdown by the end of the 2020s. They emphasized that achieving this will require bold national policies alongside greater international collaboration.

4  Falling Long-Term Growth Prospects (worldbank.org)
Professor Chad Syverson

Productivity in a Changing World, challenges and opportunities

Professor Syverson put his seminar in the context of the global productivity slowdown since about the mid-2000s. Average world productivity growth has fallen from a little over 2% p.a. to about 1% p.a. Despite having slower productivity growth than most mature economies, New Zealand has also experienced a productivity slowdown. However, the productivity slowdown did not hit New Zealand’s productivity growth rates as much as it did some of the faster growing economic areas and our growth rates have been close to parity with the G7, the United States and the European Union since the slowdown started.

The Professor highlighted several potential productivity drivers in his presentation including management, business dynamics and the potential for measurement error.

Analysis of the World Management Survey has shown that higher scores in management practice evaluation were correlated with productivity and there is some evidence of causal links. New Zealand is in the middle of the pack in terms of management practices as measured and codified by this survey.
The reallocation of resources towards more efficient businesses plays an important role in improving aggregate productivity. Professor Syverson highlighted that there has been an improvement in many different measures of “churn”, which support reallocation towards more productive businesses and jobs, after a long-term decline for a few decades before the pandemic. The high quit to layoff rates in the United States also suggests that workers are going to better, higher-paid jobs, which are likely to be more productive. While these measures have not reversed the decades long slowdown, the Professor sees them as an encouraging sign.

Professor Syverson highlighted that increasing digitalisation of goods and services can lead to both an under- and over-estimation of productivity. Productivity is underestimated when the intangible capital is first being built, as it is an unmeasured output. It is then over-estimated when that capital is used as an (unmeasured) input to produce outputs, leading to a J-curve impact on measured productivity. Computer intangibles appear to have had this J-curve effect, which lasted from about the mid-1990s to the mid-2010s (see Figure 2). However, Professor Syverson argued that AI investments were too small five years ago to explain the current productivity slowdown and that other general-purpose technologies also do not appear to be responsible.

Figure 2: The J-Curve: IT Hardware in the U.S


Note: $\lambda/z$ is the value for the intangible multiplier.

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The Productivity J-Curve: How Intangibles Complement General Purpose Technologies - American Economic Association (aeaweb.org)
New Zealand’s unique challenges associated with its small size and remoteness were discussed – these factors potentially inhibit knowledge diffusion, reduce competition, and allow suboptimal management practices to persist. To overcome such challenges and improve productivity, adopting appropriate and targeted public policy interventions was proposed. These could include policies that foster knowledge transfer, enhance firm scalability, and encourage competitive markets.

Professor Jonatan Pinkse
Towards a net zero economy while improving productivity: pipe dream or realistic outlook?

In his presentation, Professor Jonatan Pinkse explored the relationship between improving productivity and addressing the climate emergency within the context of reaching a net-zero economy. The lecture provided insights into the intertwined nature of productivity, policy, and environmental sustainability, emphasising that these are not isolated silos but part of a broader systemic challenge requiring careful balance and forward-thinking strategies.

Professor Pinkse highlighted the struggle to adopt low carbon solutions across various sectors, including building and construction, agriculture, steel making, aviation, emphasising the challenges that industries face when shifting towards more sustainable practices. He used multiple examples from across sectors to showcase how traditional productivity enhancements are at odds with modern methods that promise reduced emissions.

The Professor outlined a framework he developed to help understand the options and challenges companies may face while addressing climate change within their business models (depicted in Figure 3). The centre of the framework is the core business model of a firm, the primary method by which a company makes money and which most firms try to protect. Moving outward, the next circle represents the company's internal business processes that may need to change in response to climate imperatives. Beyond that lies the ecosystem of a firm, encompassing its supply and value chains and the broader market environment. Professor Pinkse argued that changes need to happen on all these levels, but it can be challenging to drive companies towards sustainability when their current models are profitable.

The speaker emphasised the need for policies that facilitate the transition to a net-zero economy, including the adoption of effective carbon pricing mechanisms, such as emissions trading schemes or carbon taxes, albeit their political sensitivity. The main policy implications presented in Professor Pinkse’s talk were the urgency for a comprehensive, multi-sector approach to carbon emissions mitigation and the need for governments and companies to set ambitious climate change mitigation goals tied to the Paris Agreement. The lecture also pointed to the complex task governments have in reconciling environmental concerns with economic growth. Professor Pinkse questioned to what extent governments are willing to destabilise existing businesses to enforce green policies, aware of the resistance such actions might provoke. Nonetheless, he pointed out that environmental considerations are essential for the long-term survival of the economy, making it less a choice between economy and environment, but a matter of integrating the two.
For New Zealand, the lecture implied the importance of cross-sector, comprehensive climate policies that consider the ‘emissions gap’ and the need for society-wide transitions to achieve sustainability goals. The policies should support technological innovation, facilitate a just transition to low carbon technologies, and harmonise productivity with environmental sustainability, ensuring a future that is both economically robust and ecologically sound.

Lastly, Professor Pinkse explored the potential of digital technologies to assist in the transition to a net-zero economy. He suggested that technological advancements, like AI and smart grids, could offer significant help in managing intermittent renewable energy sources and improving energy efficiency across sectors.

Matthew Galt and Dr Philip Stevens

Reviewing the drivers of New Zealand’s productivity and income growth and implications for the future

This seminar, hosted jointly by the Treasury, the Productivity Commission, and Motu Research, examined the unique features of New Zealand’s economic context and their impacts on productivity and income growth. The speakers, Matthew Galt (The Treasury) and Dr Philip Stevens (Productivity Commission), highlighted New Zealand’s distinctive position as a small country, distant from global economic hubs, but with a skilled workforce and strong institutions. Given this set of economic characteristics, the seminar discussed trends in productivity and income growth over the past decades, exploring the divergence between the two and the future implications for New Zealand’s economy.

Presentation slides: Slides - Towards a net zero economy while improving productivity: pipe dream or realistic outlook? - Jonatan Pinkse - June 2023 (treasury.govt.nz)
Matthew Galt outlined his analysis in a Treasury Analytical Note[^7] that suggests New Zealand has witnessed an increase in its income growth rate from the late 1990s to 2019, despite our low productivity growth. The impact of weak productivity growth on New Zealand’s incomes has been offset by other factors, particularly strong growth in our terms of trade and labour force participation. These factors have translated into strong income growth in New Zealand relative to OECD comparators (see Figure 4). New Zealand’s strong, broad-based employment growth and the contribution of the changing import mix to the terms of trade suggests that the New Zealand economy has been performing better than an assessment of real GDP per hour worked on its own would imply. This may be inter-related with our productivity performance. Matthew Galt suggests that New Zealand might have successfully chosen to specialise in products that were rising in price rather than specialising in products that were experiencing productivity improvement, particularly by exiting manufactures with falling prices and shifting resources to other sectors.

**Figure 4: Contribution to growth in real NNI per capita between the 1995-2002 average and 2019**

![Chart showing contribution to growth in real NNI per capita between the 1995-2002 average and 2019](source)

Source OECD, World Bank, and authors’ calculations.

Notes: SMCs are Australia, Belgium, Canada, Denmark, Finland, Ireland, Korea, Luxembourg, the Netherlands, Norway, Portugal, Spain, and Sweden. The 19 OECD Countries are the 13 SMCs plus France, Germany, Italy, Japan, the UK and the USA.

[^7]: Examining New Zealand’s increased rate of income growth between the late 1990s and 2019 (AN 23/04) | The Treasury New Zealand
Dr Philip Stevens presented highlights from the Productivity Commission’s latest edition of *Productivity by the Numbers* outlining the challenges and opportunities for New Zealand’s productivity performance.

Key areas of discussion were the underlying determinants of productivity and the implications for policies to improve our productivity performance. Dr Stevens identified the necessity for continued innovation in policy and regulation and the importance of business investment, including through foreign direct investment, to stimulate growth. While we have a business-friendly environment, our management capability is low and requires businesses to focus on enhancing the productivity of their existing workforce.

The seminar concluded with several lessons for New Zealand’s approach to productivity and economic growth drawing on the recommendations of past Productivity Commission inquires. These were outlined under two themes. First, investment in our physical, intangible, human, social, cultural and environmental capital, as well as in governance and institutions. Second, driving innovation through balancing broad-based approaches, such as tax incentives for research and development (R&D), with focused and integrated innovation policy.

New Zealand should place an emphasis on smart policy-making that leverages the country’s unique economic advantages. Dr Stevens also recommended that there should be more focus on enabling well-informed public debate on productivity-related issues supported by investment in robust analysis and evidence.

**Michael Brennan**

**Advancing prosperity through faster productivity growth**

In this lecture, Michael Brennan, at the time the Chair of the Australian Productivity Commission (APC), discussed the Commission’s latest Productivity Report released in March 2023, *Advancing Prosperity: The 5-year productivity inquiry*. The presentation outlined five key reform pillars: building an adaptable workforce, harnessing data and digital technologies, promoting a dynamic economy, improving productivity in the non-market sector, and attaining net-zero emissions at the least cost.

Michael Brennan highlighted the need to modernise education systems to better align with advancements in technology and the evolving job market. He emphasised that policy needs to focus on the quality, not just the quantity, of education. This is not only a focus on years in school but also on vocational training and lifelong learning to meet the demands of modern work environments that require adaptable skills. Skilled migration also has a role and requires a more nuanced approach than occupational lists. Michael Brennan recommended utilizing market indicators like wage thresholds to accurately define skill shortages and capabilities required in the modern labour force.

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8  Productivity by the Numbers | Productivity Commission (2011 - 2024) | The Treasury New Zealand
9  Advancing Prosperity - 5-year Productivity Inquiry report - Productivity Commission (pc.gov.au)
Innovation should focus on broad technology diffusion and government can play a productive role in facilitating the diffusion of technology through appropriate regulation and effective data use. The APC report stresses the importance of an economy that fosters competition and efficient resource allocation, with recommendations for policy openness to international trade and investment and tax system reforms to encourage business growth.

Climate change policy will also require smarter strategies to guide investments towards achieving net-zero emissions and expanding existing mechanisms to cover a wider range of sectors for better environmental outcomes.

The report identifies reforms to capitalise on global technological advancements and to address productivity challenges especially in the services sector. This is significant for Australia's economy given a considerable percentage of the workforce is employed in services, which is also the case in New Zealand. Many of the presentation themes are relevant to New Zealand, highlighting that we share many of the same challenges and opportunities and can draw valuable insights from the Australian experience.

**Professor David Teece**

**Recent developments in the dynamic capabilities approach and their implications for public management and private sector innovation**

In a conversation with Tim Ng, the Treasury’s Strategic Economic Advisor, Professor Teece shared his insights regarding the role of dynamic capabilities in enhancing productivity and competition.

In corporate governance Professor Teece advocated for developing an entrepreneurial mindset, diversified skills among board members and a shift away from the predominant focus on finance and accounting towards a balanced approach that values innovative thinking and improves adaptability to dynamic market conditions. He argued for a heavier focus on long-term strategic thinking over routine governance tasks, with 80% of time devoted to considering changing markets and dynamic environments. He called for an increased sense of urgency among leaders.

Professor Teece highlighted the importance of skill upgrades, new ideas, and cultivating organisations that can grow to global significance. The Professor identified the ability to scale businesses as a critical gap in New Zealand’s economic landscape. In his view, to increase productivity and scale up operations, New Zealand companies must access the most advanced technologies and foster stronger dynamic capabilities, which would boost both profits and wages.

Professor Teece also elaborated on the changing nature of work and its impact on economies, suggesting that New Zealand can capitalise on new work arrangements to bring in not only capital but also ideas and talent. He identified opportunities for New Zealand’s key industries, such as tourism, to innovate, even proposing concepts like ‘workcations’ to attract people who can contribute to the local innovation ecosystem. He recognised improvements in entities like Callaghan Innovation as having potential to strengthen innovation ecosystems but emphasised the need to go beyond merely funding research and development (R&D).
In a discussion on the evolving nature of competition driven by technology and geopolitics, Professor Teece underscored the need for firms to be prepared for unexpected market entrants and employ management tools, such as scenario planning, to navigate this uncertainty effectively. Professor Teece also explained that competition policy should shift its focus from static to dynamic competition, advocating for an innovation-first approach. He emphasised the importance of incorporating a capabilities approach into competition policy, paying attention to the potential role of nascent competitors in the business landscape.

While the public sector does not face the same competitive pressures as the private sector, Professor Teece argued that the principles of dynamic capabilities still apply, albeit in a different manner. Given that public agencies primarily contend for budget rather than customer market share, the impulse to develop dynamic capabilities may seem less immediate. He advocated for prioritising innovation and change management over efficiency, especially in times of uncertainty and rapid technological advancement. For the public sector to cultivate dynamic capabilities, there needs to be deliberate emphasis on strategic adaptability and innovation.

Dr Dirk Pilat

Climate Change, productivity and innovation

Dr Dirk Pilat’s presentation focused on the intertwining themes of climate change and productivity, with an emphasis on how these issues relate to policymaking and innovation. Dr Pilat addressed the multifaceted nature of the productivity debate, highlighting the need for comprehensive analysis that encompasses factors such as resource and materials productivity, the role of natural capital and measures adjusted for environmental externalities. This approach involves consideration beyond GDP, encompassing living standards and wellbeing into the productivity conversation.

Dr Pilat’s discussion of policy underlined the possibility of creating a symbiotic relationship between climate change policies and productivity considerations, thereby contributing to sustainable economic development. He suggested that we need supporting private investments, maintaining competitive markets, ensuring market openness, providing stable and predictable policies, and fostering international collaborations. Such considerations are particularly important as some industries might need to shrink or transform to meet climate objectives. Recognising the complexity of achieving net zero emissions, the speaker also noted the issues of water scarcity, biodiversity loss, and soil degradation that should be addressed alongside climate policies.

Embracing energy productivity is vital, as it contributes to improvements in carbon emissions productivity (see Figure 5). Carbon pricing mechanisms could also play a role in inducing necessary innovations but need to be complemented with policies specifically directed at low-carbon innovation. By fostering innovation, it is possible to accelerate productivity growth in climate change mitigation, reduce the costs of mitigation and help achieve decoupling from GDP more rapidly.

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10 The presentation was based on Dr Pilat’s paper: Climate Change and Productivity: Exploring the Links - The Productivity Institute
Dr Pilat engaged with the concept of degrowth, indicating scepticism about its overall efficacy as a strategy towards achieving net-zero emissions. He acknowledged that while the idea involves reducing GDP and increasing circularity in production, it may not be a suitable approach, particularly because significant emission growth is occurring in emerging economies where poverty remains high. Reducing GDP in advanced economies might not have a substantial impact on global emissions. He pointed to a more nuanced approach, which includes addressing wider environmental issues alongside climate change and promoting growth in sustainable sectors.

**Figure 5: Contribution to changes in carbon emissions productivity, annual averages, 1990-2021**

To achieve net zero, our guest speaker underscored the need for a massive system-wide technological shift, as highlighted by the work of the International Energy Agency (IEA). Dr Pilat pointed to the variety of technologies that need to be developed and adopted, including electric vehicles, hydrogen energy, as well as wind and solar power, to counterbalance increasing activity with declining emissions levels. He noted that some technologies are already accessible, affordable, and on the market, but not all the ones required to bring us to 2050 goal of achieving net zero. Further technological progress is essential to drive down emissions as part of transitioning to climate neutrality.

The presentation suggested that New Zealand’s policies should absorb and diffuse existing renewable technologies from abroad, while encouraging investments in local innovation that aligns with our strengths, such as agriculture, where New Zealand could contribute to frontier innovation due to our significant share of emissions. This could bolster productivity and aid in addressing New Zealand’s lagging productivity performance.
Professor Kevin Fox – Auckland lecture

What do we know about the productivity slowdown? Exploring different industry experiences

In the first Treasury Guest Lecture in Auckland, Professor Kevin Fox discussed the productivity slowdown observed in most industrialised countries and seen in New Zealand over the 2000s. There has been a widespread slowdown in growth rates globally, both in labour productivity and multifactor productivity, and across similar timeframes (see Figure 6). This suggests there are likely to be common drivers across countries.

Figure 6: The Productivity Slowdown

Total Economy Multifactor Productivity, Annual Percent Change

One possible driver is that productivity growth is equated with technical progress, suggesting that a fall in innovation could explain the observed slowing in productivity. Professor Fox argued that despite some economic models using technological regress as a cause for falling productivity, there is no evidence of this and modern technology preserves knowledge effectively. He also argued that mismeasurement can explain some, but not all, of the slowdown. Output would have to have become massively mismeasured across multiple countries at around the same time for mismeasurement to be the cause, and this is unlikely.

Notes: Trend calculated by the author using a fifth order polynomal.
Professor Fox then looked at trends in productivity growth across Australian industries. While some exhibit robust productivity growth, others have lagged or experienced a slowdown. These disparities across industries coupled with a rise in productivity in the financial services sector, where the appropriate definition of “output” can be debated, point towards a need for more nuanced understanding of how productivity is generated in different parts of the economy.

However, while industries have experienced different productivity growth profiles since 1989–90, they all experienced a slowdown after 2003–04. That is, the slowdown is common across very diverse industries, from Agriculture, Forestry and Fishing, to Finance and Insurance, making it hard to identify a single cause that could have had this impact. Professor Fox also decomposed productivity by industry into the level of the technology, efficiency, and the input mix. The role of inefficiency in dragging down productivity is very large for many industries, suggesting that policy responses for increasing productivity in the short run should perhaps be targeted at removing the inefficiency, such as through investments in business management education and practices, rather than supporting the development of new technologies and products. Investments of the latter type are risky and may not lead to higher productivity growth even in the long run. Also, industries that have huge amounts of inefficiency should be investigated for possible mismeasurement of the underlying inputs and outputs.

Furthermore, the government should refrain from trying to direct innovation or choose where to apply scientific efforts, focusing instead on creating a supportive infrastructure for innovation. This entails fostering education, research and an entrepreneurial culture to facilitate an environment where organic growth in productivity and innovation can be realized across various sectors.

Professor Kevin Fox – Wellington lecture

**Impacts of public R&D funding on innovation and productivity**

The seminar addressed the role of government in fostering innovation through policy options that allocate public funds for research and development (R&D). The focus was on assessing the effectiveness of these public R&D funds, particularly in the context of New Zealand's lagging productivity and the variance in public and private spending on R&D across industries.

Professor Fox presented his research around the impact of different types of public funding on innovation and productivity growth. By decomposing productivity growth into technological change and efficiency change components, the analysis demonstrated varying outcomes from different public R&D funding strategies. His latest research on public R&D spending effectiveness, investigated what government expenditure on public R&D can do for a country’s economic performance. This is relevant for New Zealand in the context of New Zealand’s longstanding low levels of R&D expenditure.

The results suggest that universities should play a more central role in innovation, with Professor Fox recommending increased investment and stronger industry-university collaboration. He found that public funding for university R&D leads to technological progress and higher productivity growth. This is not the case for business R&D tax incentives, which can even result in lower productivity growth. He argued that the gradual decline in research funding in Australia could have adverse impacts on productivity over time and emphasised the importance of sustaining and potentially
increasing investments in this area. The productivity challenges linked to R&D investments require sound policies that more effectively use public funds to drive innovation. It is critical to acknowledge the problems with R&D incentive schemes and that it takes time to realise the benefits from investments in university research.

The results could prompt New Zealand policymakers to reevaluate and intensify their focus on R&D policies, particularly the collaboration between public funding, universities, and industry for long-term productivity gains.

Professor Valentin Zelenyuk
The performance of public hospitals and activity-based funding reform: the case of Queensland

The seminar presented preliminary findings of a recent study in progress, undertaken by Valentin Zelenyuk, alongside co-authors Bao Hoang Nguyen, Shawna Grosskopf, and Jongsay Yong, to assess the impact of the introduction of an activity-based funding (ABF) model on the efficiency of public acute hospitals in Queensland, Australia.

Under ABF, hospitals are paid using a fixed rate for each patient care episode they provide, and the fixed rate for each episode is pre-determined based on the diagnosis-related group (DRG) to which the episode belongs. Therefore, ABF is expected to provide financial incentives for hospitals to decrease unit costs and to simultaneously increase the number of episodes being treated, which in turn (and ceteris paribus) should lead to efficiency improvement. The research sought to unveil empirical evidence on this question, utilizing data on public acute hospitals in the state of Queensland, Australia, from the financial year 2005–06 to 2016–17.

The research utilised a measure of how efficiently a hospital converts its inputs into outputs, the Farrell-type technical efficiency measure, which is estimated from the data using the data envelopment analysis (DEA) method under different assumptions of the reference technology.

Professor Zelenyuk outlined how the research used the natural quasi-experiment in Queensland, with hospitals implementing ABF at different times. The study then used a difference-in-differences approach within the two-stage DEA framework to analyse causal inferences.

The preliminary results suggested that ABF was found to increase the technical efficiency of public hospitals in Queensland. The modelling also found associations between hospital characteristics and the efficiency levels of individual hospitals. Specifically, remote and regional hospitals were, on average and ceteris paribus, less efficient than hospitals located in cities. Moreover, occupancy rate, the ratio of outpatient volumes to inpatient volumes, and the proportion of producing personnel to total staff were positively correlated with hospitals’ efficiency. Meanwhile, the relationships between hospital efficiency and hospital size, as well as between the hospital efficiency and case–mix index, were found to depend on the assumption about the returns to scale of the reference technology.
**Professor Beth Webster**

**Impact of digital innovation on new products, processes and competition**

Professor Beth Webster’s lecture focused on the implications of digital innovation on new products, processes and competition. She highlighted two distinct characteristics of current digital technologies compared to historical developments. First, modern digital technologies are non-rivalrous, have minimal marginal costs and near limitless economies of scale, enabling companies like Google or Microsoft to command vast markets with singular core products. Second, she pointed out how the latest digital innovations are having more impact than previous technological changes on high-skilled professions, such as medical fields, accounting, journalism, and even economic forecasting.

Professor Webster said that there are surprisingly few studies of the overall effect of digital technology on productivity. There are four major ways in which digital technology impacts productivity. It can lead to cost savings by optimising various aspects of operations and energy use. It can replace certain human labour activities with automated processes, reducing the need for manual work. It enhances information flows to make operations timelier and more accurate. And finally, digital technologies can widen the market by enabling businesses like those in New Zealand and Australia to overcome geographic isolation and facilitate entry into global value chains. Although there is a correlation between digitalisation and GDP per capita across different economies, Professor Webster argued that it is challenging to ascribe causation as it may be because wealthy countries can afford to invest in digitisation rather than that digitisation increases GDP per capita. One piece of evidence that supports a positive impact of digitisation on GDP was her study (with Alfons Palangkaraya and Antonio Balaguer) that found ICT and computer sciences had greater knowledge spillovers than investments in other types of technologies.

Professor Beth Webster emphasised that policies need to accelerate the creation and diffusion of digital technologies. Governments should foster an environment conducive to innovation, which includes robust intellectual property policies and regulatory frameworks that can accommodate rapid technological changes. One of the challenges highlighted by Professor Webster was the archetype of ‘rent-seeking’ behaviour, where incumbent firms can stifle innovation. To counter this, she advocated for contestable markets, regulating digital giants, and introducing fair use doctrines into copyright laws that benefit research and study. The Professor suggested that governments can also actively support innovation. She referred to partnerships between researchers and industry, such as Australia’s Grain Corporation, as models for effectively translating new ideas into practical applications. This approach could prove beneficial for New Zealand as well, through institutions such as Callaghan Innovation.
Dr Sergey Paltsev
Role of hydrogen in low-carbon energy transition

Dr Sergey Paltsev discussed the role of hydrogen as a low carbon solution in reducing emissions across various sectors of the economy including transportation, industrial uses, and for energy storage. He acknowledged hydrogen’s potential benefits, but also noted substantial challenges, such as the high costs and infrastructural demands associated with its production and use.

Dr Paltsev recognised the unique context of New Zealand, noting that with our light vehicle fleet, hydrogen may not be the ideal solution for transportation decarbonisation, suggesting instead that New Zealand’s air and maritime traffic sectors might benefit from alternative strategies. Considering factors like New Zealand’s energy security and high electricity costs, Dr Paltsev highlighted the need for significant financial backing and thoughtful consideration before focusing on hydrogen in the energy transition.

Dr Paltsev presented the key findings of the latest Global Change Outlook, one of Massachusetts Institute of Technology’s (MIT) signature publications, providing an update of the direction the planet is heading in terms of economic growth and its implications for resource use and the environment. Using predominantly the Economic Projection and Policy Analysis (EPPA) model, Dr Paltsev’s team at MIT presents an integrated look at food, water, energy and climate, as well as the oceans, atmosphere and land that comprise the Earth system. This publication can be used as a resource to support understanding of international patterns that could impact economic and investment planning (see an example of scenario analysis from the report in Figure 7).

Figure 7: Global Energy Use in the Current Trends and Accelerated Actions scenarios

Source: Massachusetts Institute of Technology.

Note: Global primary energy use in the Current Trends scenario grows to about 650 exajoules (EJ) by 2050, up by 15% from about 560 EJ in 2020. The share of fossil fuels drops from the current 80% to 70% in 2050. Wind and solar experience an 8.6-fold increase in EJ. In the Accelerated Actions scenario, global energy use is reduced due to efficiency and demand response. The fossil fuel share drops to 39%. Wind and solar energy grow more than 13 times from 2020 to 2050 (to 25% share).
Dr Paltsev elaborated on financial stability risks associated with climate change. He stressed the integration of environmental externalities into economic calculations, advocating for economic tools like Emission Trading Schemes and carbon taxes to avoid fossil fuels being artificially cheaper than eco-friendly solutions. Dr Paltsev supported the need for economy-wide, relatively high, and consistent carbon prices to foster fair competition between different fuel sources and achieving substantial emission mitigation goals.

Dr Paltsev also underscored the need for a well-informed and strategic approach to investment and policy decisions considering global economic trends, environmental challenges, and the complexities of technological advancements. Dr Paltsev advised that realistic assessments of these factors are crucial for maintaining the stability and progress of the economy.

**Professor Sholeh Maani**

**Skills and labour market policies**

The lecture delivered by Professor Sholeh Maani provided crucial insights relevant to policy discussions around education, labour markets, and productivity in New Zealand.

Professor Maani’s emphasis on the high share of labour in national income for New Zealand and Australia underscores the importance of investing in human capital, a concept popularised by Gary Becker, to enhance a nation’s economic prosperity. The empirical evidence she cited showed the substantial benefits of tertiary education, particularly higher returns to tertiary education for women, and how these education-based returns outpace those derived merely from innate ability or possessing qualifications (signalling effects). However, degree choices and educational quality matter, as does the match between a person’s skills and the job skill requirements of the job they hold.

New Zealand aligns with the OECD average in terms of the proportion of people with tertiary education, but the distribution is skewed toward bachelor’s degrees rather than higher-level qualifications. The bigger concern is the degree of under-qualification in the New Zealand workforce, which can directly impact on productivity.

Research suggests that over-education results in earnings that are higher than not having a degree, but the returns are lower than if a person could have a job that is aligned closely with their qualification. Professor Maani’s own research identified that younger workers, immigrants and women are more likely to be over-qualified.

Crucially, Professor Maani’s research foregrounds the importance of continuous education and on-the-job training, particularly in light of an ageing population and the rapid technological changes exemplified by the burgeoning development of artificial intelligence. Professor Maani’s analysis shows that on-the-job training and lifetime learning can also help improve the job satisfaction of both over-educated and under-educated workers and foster a more stable workforce.
Professor Davud Rostam-Afshar

Productivity in a changing world – insights from product and labour markets

Professor Rostam-Afshar highlighted new perspectives for policy makers and researchers from studying product and labour markets. Worldwide productivity growth has been on the decline for decades, however, there are substantial differences in labour productivity across countries, which may be due to differences in the organisation of markets (see Figure 8). Defining labour productivity as the ratio of real GDP to hours worked per person, countries such as Norway, the Netherlands and Germany are more productive than New Zealand with fewer hours worked, whereas China and Singapore have higher productivity with more hours worked. To understand these divergences and how they contribute to the worldwide productivity decline, insights from product and labour markets provide new perspectives.

Figure 8: Cross-country differences in labour productivity

Productivity growth depends on innovative ideas and new technologies, but it also requires new business models entering product markets to see connections, spot opportunities, and to take advantage of them. Often new startups do not have an environment to grow because they prematurely enter markets or are acquired to soon by incumbents. New Zealand sees quite a few new companies starting up each year but just as many closing-down, with only two-fifths making it past four years. In the Netherlands, business survival rates have been 1.5 times higher. Entry regulations, market segmentation and taxation shape product markets and can help in striking a balance between competition and economies of scale in which new ideas can grow and flourish but they also have consequences for employment and wages on the labour market.

Many highly productive countries, such as Germany, the Netherlands and Norway, have seen substantial reductions in the average hours worked per person in recent decades with ambiguous effects on productivity growth. Labour markets are increasingly characterized by higher wage uncertainty and flexible work arrangements including work time banking, working from home and moving abroad more frequently. Recent changes that reduce uncertainty in wages, for example because of minimum wage policies, has led to fewer work hours and thus
have potential to increase productivity. Working some days of the workweek at home might increase productivity by reducing commute times and lowering costs for firms, but too much detachment from the workplace can backfire. Moving across countries is being debated as another important factor for productivity in the European Union. Migration could lower wages for locals, but it might also push productivity up and help even out wages across Europe, particularly if migrants have opportunities to contribute to innovation. Europe’s diverse policies on entry restrictions, market segmentation, and tax incentives may offer interesting lessons for New Zealand.

New technologies, such as artificial intelligence (AI), can foster productivity growth but they may have ambiguous effects on labour productivity. To understand the role of AI, reliable and more detailed measures of productivity are necessary. The Professor explored possibilities of separately measuring the contribution of AI to productivity with an example of using AI to optimize the response rate to survey invitations. While AI can increase productivity, there is also a role for policy to manage the risks of AI, such as job displacement, creation of monopolies or monopsonies, and perpetuation of biases.

**Dr Rui C Mano**

**The International Monetary Fund’s latest World Economic Outlook – insights for New Zealand**

Dr Rui C. Mano delivered an overview of the International Monetary Fund’s 2024 World Economic Outlook (WEO), focusing on the global economic outlook and the transmission of monetary policy through housing and mortgage markets.

The WEO highlights that global economic activity has been surprisingly resilient and has been accompanied by rapid disinflation across many countries. This reflects robust government and private consumption, as well as some unclogging of supply chain constraints and strong labour force participation. Global risks seem balanced, with potential benefits from artificial intelligence (AI) for economies that can leverage it, but concerns over commodity price volatility, China’s recovery, and geo-economic fragmentation persist. Medium-term priorities are to ensure that inflation touches down smoothly and that fiscal buffers are rebuilt. However, the presentation indicated a downward trend in medium-term growth projections due to declining productivity and an aging population, potentially dropping to around 3% annually.

Dr Mano delved deeper into the analytical chapter of the WEO on monetary policy and housing. While we have seen similar levels of monetary policy tightening across countries, there have been very different impacts on nominal house price growth and consumption. House prices have fallen more in New Zealand than in other countries, albeit off high previous growth, but consumption has been steady (see Figure 9).

The transmission of monetary policy through the housing market varies widely internationally, reflecting different mortgage finance characteristics, housing supply constraints and the extent of over-valuation in house prices. New Zealand has strong channels of monetary policy transmission mainly because of supply constraints and the high degree of household debt. However, strengthening of our regulatory limits on loan-to-value ratios and an increasing share of fixed rate mortgages have reduced the transmission over time. While strengthened macro-prudential policies may weaken the impact of monetary policy, Rui emphasised the importance of these policies to reduce financial sector risks.
Rui highlighted that understanding the housing channels of monetary policy transmission can help calibrate the extent of monetary policy tightening. Macroprudential measures are also important to “free the hands of monetary policy”, allowing it to focus on aggregate demand management without fear of precipitating a financial crunch.

**Figure 9: House price and consumption after interest rate tightening, cumulative change since first hike in response to COVID**

![Figure 9: House price and consumption after interest rate tightening](image)

Source: Bank for International Settlements; Haver Analytics; and IMF staff calculations.

Note: Whiskers indicate the minimum and the maximum; the bars show the 25th and the 75th percentiles; black squares within each box indicate the median. The left (right) box plot represents the distribution for country-level changes in nominal house price (real consumption) between 2023 Q2 and the quarter of the first country-level rate hike. Data labels in the figure use International Organization for Standardization (ISO) country codes.

**Professor Cass Sunstein**

**Nudges: past, present, future**

In his lecture, Professor Cass Sunstein discussed the application of behavioural science to policy design, emphasising the importance of considering regulatory approaches that maintain flexibility and freedom of choice for the public, referred to as ‘nudges’.

Nudges can take various forms. Some are educative, and these can be friendly to economic growth and smart regulation (eg, warnings instead of mandates), while others are architectural and designed to promote one form of behaviour over another (eg, opt in/opt out systems). According to Professor Sunstein, the cost-effectiveness of nudges compared to other types of interventions is relatively high.

Professor Sunstein’s presentation highlighted the potential productivity gains that can be achieved by reducing administrative burdens or ‘sludge’. Evidence suggests that conducting sludge audits and setting challenges to reduce time-consuming processes, can deliver significant time savings and improved efficiency. Nudges also align with
strategies that promote economic growth as they can be used to enhance tax compliance while maintaining flexibility, which in practice have proven to be low-cost with potentially substantial impacts on productivity.

Professor Sunstein touched upon the concept of ‘time taxes’, regarded as the most significant behavioural intervention from the United States Government to date. He also listed several frameworks and regulations endorsed by Presidents Obama, Trump and Biden, advocating the use of behavioural science for policy creation to reduce the unnecessary burdens on individuals and organisations.

Professor Sunstein stressed the universality of behavioural science’s application, mentioning its adoption by multiple governments, including Ireland, Singapore and the United Arab Emirates. He addressed criticism by George Loewenstein regarding nudges possibly hindering systematic reforms, contending that in countries like the United Kingdom, behavioural science has complemented, not replaced, structural interventions.

The lecture suggested that there are valuable lessons from behavioural science that can inform and enhance policymaking. The main implications for the public sector include the need of conducting thorough cost-benefit analyses, reducing sludge, and understanding behavioural economic principles to inform policymaking. Professor Sunstein emphasised the need to cut down on time taxes and increase efficiency, thereby giving people more time – the most valued commodity.

Moreover, the public sector should be aware of cognitive biases such as status quo bias and loss aversion when implementing changes or reprioritising spending. By understanding these behaviours, the public sector can soften opposition to losses by bundling them with compensatory gains. Policies can be more effectively communicated and accepted if they are designed to align with systematic, predictable behaviours, rather than being grounded solely in rational choice theory.

**Professor Dani Rodrik**

**Industrial Policy: The Old and the New**

Professor Rodrik explored the resurgence of industrial policy in academic and policy circles, providing a productive overview of how this complex policy works drawing from the recent paper he co-authored with R. Juhasz and N. J. Lane.12

While there is talk of a resurgence of industrial policy, Professor Rodrik argued that there is a long tradition of government intervention to motivate and incentivize longer term dynamic changes in the structure of the economy. The practice of industrial policy continued even in the post-1980s period when it is perceived as having been out of fashion. The resurgence is that industrial policy is now being undertaken in a more self-conscious fashion, which increases the chances that it will be done well.

The three broad rationale for government intervention are externalities, co-ordination failures and missing public inputs. While public inputs are often seen as not being sector-specific, there are often particular inputs that are critical to a collection of firms.

12  The New Economics of Industrial Policy (harvard.edu)
that might be under-provided in the absence of government action. Industrial policy can support multiple objectives, such as the green transition, innovation, security of supply chains and good jobs – but not all these objectives at once. Professor Rodrik emphasised the need to think more about how technological change can be reoriented to enhance the productivity of lower-qualified workers rather than to replace them.

In Professor Rodrik’s view, the critiques of industrial policy are not so much about the rationale for intervention but about practical considerations. These include concerns that governments do not have adequate information to effectively intervene or that governments will be captured by vested interests. However, Professor Rodrik argued that the recent wave of empirical studies, which takes a more sophisticated approach to attribution of impacts to policy, provides encouraging evidence of the effectiveness of industrial policy.

Professor Rodrik suggested that the more useful debate is about what makes industrial policy effective. His recipe for success is that industrial policy should provide a portfolio of government supports, services and inputs. It is not just about tariffs and subsidies, but also government efforts to coordinate investments, to change regulations, and to provide specific public inputs, such as specific types of infrastructure or customised training. It should also be a collaborative process with the private sector and flexible in implementation with learning and changes in policies when they are not working.

Clare Lombardelli

Reviving productivity growth – Evidence and policies

The lecture, presented as the closing session of the Productivity in a Changing World series, aimed to shed light on the role productivity plays in sustainable improvements to living standards in New Zealand. Clare Lombardelli, Chief Economist of the OECD, presented an overview of the lessons drawn from the latest literature on productivity growth and its policy dimensions. In the context of the global productivity slowdown, Clare Lombardelli reflected on the determinants of productivity growth and its dispersion between leading and laggard firms, the role of technology diffusion, and in particular artificial intelligence (AI) diffusion, in the context of an aging population, and the role of human capital, skill mismatches and labour shortages for productivity dynamics.

Clare Lombardelli was optimistic about the potential impact of digitalisation and AI on productivity growth but highlighted that those firms that are already performing very well on productivity tend to gain the most from new technology, potentially further increasing the productivity gap between leading and laggard firms. Recent OECD research on some of the macro considerations around generative AI suggests scope for some big efficiency gains, as it has the potential to completely change business processes. However, OECD research also emphasises the importance of skills, competition, and regulation for these benefits to be realised.

Clare Lombardelli also discussed a policy framework to increase productivity. Key areas included the importance of a strong and stable macroeconomic and business environment as a foundation for productivity growth. A streamlined and coherent regulatory system was underscored, along with the urgency to address declining student achievement. International connections were highlighted as important to overcome New Zealand’s geographic constraints, with both exports and imports...
being important for productivity. Additionally, smart adaptation to climate change is essential for protecting standards of living while fostering productivity. Supporting firms to address global challenges, such as climate change, aging population and managing the rapid digitalisation of the economy from AI, will be essential in the future.

New Zealand should focus on maintaining a robust and conducive environment for businesses to thrive. This includes investing in skills and workforce composition, particularly in improving our poor managerial practices (see Figure 10). Priority should also be on increasing research and development (R&D) expenditure and proactively fostering global ties for trade, investment and knowledge, all essential to raise productivity of both frontier firms and diffusion to firms behind the frontier.

**Figure 10: Distribution of management quality**


Note: The figure depicts the Kernel distribution of scores in the World Management Survey conducted against firms in New Zealand, Sweden and the United States. The survey captures the quality of management practices in operations management, performance monitoring, target setting, leadership management and talent management (see the source for more information). The longer left tail in New Zealand’s distribution indicates the existence of firms with a very low score (poor managerial practices), which are less or not found in Sweden or the United States.
# Appendix: List of Treasury Guest Lecture presenters in the Productivity in a Changing World theme

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<thead>
<tr>
<th>Speaker</th>
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<tr>
<td>Dr Ayhan Kose &amp; Dr Franziska Ohnsorge, World Bank</td>
<td>Dr Kose is the World Bank Group Deputy Chief Economist and Director of the Prospects Group. He is a member of the Chief Economist’s leadership team overseeing the Bank’s analytical products and policy advice. He also leads the Bank’s work on global macroeconomic outlook, financial flows, and commodity markets. Under his management, the Prospects Group produces the Bank’s corporate flagship report, Global Economic Prospects, in addition to other analytical and policy publications. Prior to joining the World Bank, he was Assistant to the Director of the Research Department and Deputy Chief of the Multilateral Surveillance Division in the IMF. Dr Kose is a Nonresident Senior Fellow at the Brookings Institution, a Research Fellow at the Center for Economic Policy Research (CEPR), and a Dean’s Fellow at the University of Virginia’s Darden School of Business. He taught at the University of Chicago’s Booth School of Business, INSEAD, and Brandeis International Business School.</td>
<td>Falling long-term growth prospects: trends, expectations, and policies</td>
<td>4 May 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-falling-long-term-growth-prospects-trends-expectations-and-policies">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-falling-long-term-growth-prospects-trends-expectations-and-policies</a></td>
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<td>Professor Chad Syverson, University of Chicago Booth School of Business</td>
<td>Chad Syverson is the George C. Tiao Distinguished Service Professor of Economics at the University of Chicago Booth School of Business. His research spans several topics, with a particular focus on the interactions of firm structure, market structure, and productivity. Syverson has authored or co-authored dozens of scholarly articles and is the co-author of intermediate-level textbook, <em>Microeconomics</em>. Syverson is a former editor of the Journal of Political Economy, a research associate of the National Bureau of Economic Research, has served on multiple National Academies committees, and currently sits on the Census Scientific Advisory Committee. He teaches classes in competitive strategy and industrial organization.</td>
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<td><strong>Professor Jonatan Pinkse, Manchester University / Productivity Institute UK</strong>&lt;br&gt;Jonatan Pinkse is Professor of Strategy, Innovation, and Entrepreneurship at the Manchester Institute of Innovation Research, Alliance Manchester Business School, the University of Manchester and theme lead of Social, Environmental &amp; Technological Transitions of the UKRI-funded the Productivity Institute. His passion is innovation and sustainability. Jonatan has authored more than 60 scholarly and practitioner articles in journals. In 2020, he was included in the prestigious Highly Cited Researcher list. Before moving to Manchester, he held positions at the Universiteit van Amsterdam and Grenoble Ecole de Management. He is also deputy editor for the journal Organization &amp; Environment.</td>
<td>Towards a net zero economy while improving productivity: pipe dream or realistic outlook?</td>
<td>20 June 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-towards-net-zero-economy-while-improving-productivity-pipe-dream-or-realistic-outlook">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-towards-net-zero-economy-while-improving-productivity-pipe-dream-or-realistic-outlook</a></td>
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<td><strong>Dr Philip Stevens, New Zealand Productivity Commission &amp; Matthew Galt, The Treasury</strong>&lt;br&gt;Dr Philip Stevens was the Productivity Commission’s Director, Economics &amp; Research. He was GM of Analysis, Research and Evaluation at the Ministry of Education and at MBIE. Before coming to New Zealand, he was a Research Fellow at the National Institute of Economic and Social research in London. Philip has published in leading peer-reviewed international journals on subjects such as: productivity analysis; employment; competition; evaluation; the measurement of performance in the public sector; broadband; R&amp;D and human capital. He has a Doctorate in Economics from the University of Oxford.</td>
<td>Reviewing the drivers of New Zealand’s productivity and income growth and implications for the future</td>
<td>6 July 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-reviewing-drivers-new-zealands-productivity-and-income-growth-and-implications-future">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-reviewing-drivers-new-zealands-productivity-and-income-growth-and-implications-future</a></td>
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<td>Matthew Galt</td>
<td>Matthew Galt is a Senior Analyst in the Macroeconomic and Fiscal Policy team at the New Zealand Treasury. Matthew started his career at the Reserve Bank of New Zealand, analysing the New Zealand and international economies and the banking sector. He has since worked on housing, monetary, and fiscal policy issues. He is the author of an upcoming Treasury Analytical Note: Examining New Zealand’s increased rate of income growth from the late 1990s to 2019.</td>
<td>Advancing prosperity through faster productivity growth</td>
<td>31 July 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-advancing-prosperity-through-faster-productivity-growth">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-advancing-prosperity-through-faster-productivity-growth</a></td>
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<td>Michael Brennan, Australian Productivity Commission</td>
<td>Michael Brennan is the CEO of e61, a non-partisan economic research institute. In 2018-2023 he chaired the Australian Productivity Commission. Previously Michael was Deputy Secretary, Fiscal Group, in the Federal Treasury with responsibility for Budget Policy, Retirement Incomes, Commonwealth-State Relations, Social Policy and Infrastructure Financing. Before that he was Deputy Secretary, Economic in the Victorian Department of Treasury and Finance. Michael has worked as an Associate Director in the economics and policy practice at PricewaterhouseCoopers. He holds a Bachelor of Economics (Hons) from the ANU.</td>
<td>Advancing prosperity through faster productivity growth</td>
<td>31 July 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-advancing-prosperity-through-faster-productivity-growth">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-advancing-prosperity-through-faster-productivity-growth</a></td>
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<td>Professor David Teece, Berkeley’s Hass School of Business, University of California</td>
<td>David J. Teece is the Thomas W. Tusher Professor at the Institute for Business Innovation at the University of California, Berkeley’s Haas School of Business. He is also the faculty director of the school’s Tusher Initiative for the Management of Intellectual Capital. He has authored over thirty books and two hundred scholarly papers. David has received eight honorary doctorates and has been recognized by Royal Honours. David has a PhD in economics from the University of Pennsylvania and has held teaching and research positions at Stanford University and Oxford University. He received his Master of Commerce degree from the University of Canterbury in Christchurch. David has over thirty years of experience as an active consultant performing economic, business and financial consulting services to businesses and governments around the world.</td>
<td>Conversation with Professor David Teece: recent developments in the dynamic capabilities approach and their implications for public management and private sector innovation</td>
<td>25 October 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-recent-developments-dynamic-capabilities-approach-implications-public-private-innovation">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-recent-developments-dynamic-capabilities-approach-implications-public-private-innovation</a></td>
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<td>Dr Dirk Pilat, Productivity Institute UK</td>
<td>Dirk Pilat is a Research Fellow of The Productivity Institute, an Associate Researcher at the Valencia Institute of Economic Research and a Senior Research Fellow at the Lisbon Council. Until recently, he worked at the OECD as Deputy Director for Science, Technology and Innovation, with the responsibility to manage OECD analysis and policy advice in areas such as innovation and technology policy, entrepreneurship, digital economy, productivity, global value chains and green innovation. He is currently a member of the UK Productivity Commission and was also a member of Ireland’s National Competitiveness and Productivity Council.</td>
<td>Climate change, productivity, and innovation</td>
<td>23 November 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-climate-change-productivity-and-innovation">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-climate-change-productivity-and-innovation</a></td>
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<td><strong>Professor Kevin Fox, University of New South Wales</strong></td>
<td>Kevin Fox is a Professor of Economics and Director of Centre for Applied Economic Research at the UNSW Business School. He works primarily in the field of economic measurement, with a focus on productivity and prices. His research on the use of scanner data in price indices has changed inflation measurement in multiple countries, including New Zealand. He has worked extensively with firm-level data and his current research interests include the valuation of free digital goods and the effectiveness of public R&amp;D funding. He is a Fellow of the Academy of Social Sciences in Australia and advises multiple agencies, including the Australian Bureau of Statistics, Productivity Commission, and the United Nations.</td>
<td>Impacts of public R&amp;D funding on innovation and productivity</td>
<td>29 November 2023</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-impacts-public-rd-funding-innovation-and-productivity">Link</a></td>
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*Note this seminar was not recorded.*
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<td>Professor Valentin Zelenyuk, University of Queensland</td>
<td>Valentin Zelenyuk is a Professor at the School of Economics at the University of Queensland (Australia) and was an ARC Future Fellow (2017–2022), working on the project of Improving productivity: theory and application to Australian hospitals. He is an elected member of the Conference on Research in Income and Wealth group of the National Bureau of Economic Research. Valentin’s research focuses on economic theory of production, productivity and efficiency and related aggregation issues; econometric/statistical estimation; and econometric applications mainly in healthcare, banking and cross-countries economic growth analysis. He has been active in engagement with governments and industries to help them employ the analytical methods. Prof. Zelenyuk has co-authored over 70 international peer-reviewed publications. He also co-authored (with Robin Sickles, Rice University) 2019 book, “Measurement of productivity and efficiency: theory and practice”, published by Cambridge University Press, which was highly endorsed by top experts in the field.</td>
<td>The performance of public hospitals and activity based funding reform: the case of Queensland, Australia</td>
<td>8 February 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-performance-public-hospitals-and-activity-based-funding-reform-case-queensland-australia">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-performance-public-hospitals-and-activity-based-funding-reform-case-queensland-australia</a></td>
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<td>Professor Beth Webster, Swinburne University</td>
<td>Professor Beth Webster is the Director of the Centre for Transformative Innovation at Swinburne University of Technology and Pro Vice Chancellor (Research Translation). Her research interests cover several areas of applied economics including innovation; intangible capital; intellectual property; firm performance and public policy for the translation of science. Under the name Elizabeth Webster she has authored over 100 articles on the economics of innovation and firm performance.</td>
<td>Impact of digital innovation on new products, processes, and competition</td>
<td>13 February 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-impact-digital-innovation-new-products-processes-and-competition">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-impact-digital-innovation-new-products-processes-and-competition</a></td>
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<td>Dr Sergey Paltsev, Massachusetts Institute of Technology</td>
<td>Dr Sergey Paltsev is a Deputy Director of the MIT Joint Program on the Science and Policy of Global Change, a Senior Research Scientist at the MIT Energy Initiative and MIT Center for Energy and Environmental Policy Research (CEEPR), and a Director of the MIT Energy-at-Scale Center, Massachusetts Institute of Technology (MIT), Cambridge, USA. He is the lead modeler in charge of the MIT Economic Projection and Policy Analysis (EPPA) model of the world economy. His research covers a wide range of topics including energy economics, climate policy, taxation, advanced energy technologies, and international trade. Sergey is an Advisory Board Member for the Global Trade Analysis Project (GTAP) Consortium and a Member of the Economy-Wide Modeling Panel for the US Environmental Protection Agency (EPA) Science Advisory Board. Dr Paltsev is an author of more</td>
<td>Role of hydrogen in low-carbon energy transition</td>
<td>19 February 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-role-hydrogen-low-carbon-energy-transition">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-role-hydrogen-low-carbon-energy-transition</a></td>
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<td>Professor Sholeh Maani, University of Auckland</td>
<td>Sergey was a Lead Author of the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC). Professor Sholeh Maani is the Disciplinary Area Lead for Econometrics and Applied Economics at the University of Auckland. Her research focuses on applied microeconomics, in particular the economics of the labour market. Sholeh has held visiting professor positions at Harvard, NBER, Oxford, Cornell and Melbourne Universities. She has served as a member of the Royal Society of New Zealand, Social Science Advisory Committee, and as the President of the New Zealand Association of Economists. She serves as a research advisor on economic research and policy in New Zealand and overseas including the OECD, as well as on international academic boards. Her published work includes studies on skills, productivity and wage determination; academic performance; income distribution; ethnicity, gender, inter-generational analyses, and group network effects. Her current research is on labour market outcomes of increased education; skill-occupation mismatches; and the economic impacts of skilled immigration.</td>
<td>Productivity and skills – progress and policy learnings from five generations of research</td>
<td>12 March 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-productivity-and-skills-progress-and-policy-learnings-five-generations-research">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-productivity-and-skills-progress-and-policy-learnings-five-generations-research</a></td>
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<td>Professor Davud Rostam-Afschar, University of Mannheim</td>
<td>Davud Rostam-Afschar is Associate Professor at the University of Mannheim and Academic Director of the German Business Panel. Before joining the faculty of the University of Mannheim, he was a visiting scholar at UC Berkeley and Queen May University of London, and worked at the University of Hohenheim, the Freie Universität Berlin and the University of Potsdam. His research spans several topics, with a particular focus on the interaction of product and labour markets, the regulation of entry, taxation, investments, and productivity. Rostam-Afschar has led several projects funded by third parties such as the German Research Foundation and has authored or coauthored dozens of scholarly articles. Rostam-Afschar is a research affiliate of IZA and GLO, an advisor to the European Commission and the OECD, and on the editorial review board of Small Business Economics. He teaches courses on economic policy, econometrics and machine learning.</td>
<td>Productivity in a changing world – insights from product and labour markets</td>
<td>27 March 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-productivity-changing-world-insights-product-and-labour-markets">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-productivity-changing-world-insights-product-and-labour-markets</a></td>
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<td>Dr Rui Mano, International Monetary Fund</td>
<td>Dr Rui C. Mano is a Deputy Division Chief in the International Monetary Funds’ Research Department. He previously worked in the Research, Asia Pacific, Strategy, Policy and Review, and Western Hemisphere Departments. He contributed to the Fund’s framework on external sector assessments, was a desk or SPR economist in several country teams (China, DR Congo, Grenada, Hong Kong SAR, Jamaica, Korea, Mongolia, the Philippines, and the United States), and participated in the formulation and review of fund-wide policies (notably the Integrated</td>
<td>The International Monetary Fund’s latest World Economic Outlook – insights for New Zealand</td>
<td>29 April 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/international-monetary-funds-latest-world-economic-outlook-insights-new-zealand">https://www.treasury.govt.nz/news-and-events/our-events/international-monetary-funds-latest-world-economic-outlook-insights-new-zealand</a></td>
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<td><strong>Professor Cass Sunstein, Harvard Law School</strong></td>
<td>Cass R. Sunstein is currently the Robert Walmsley University Professor at Harvard. He is the founder and director of the Program on Behavioral Economics and Public Policy at Harvard Law School. In 2020, the World Health Organization appointed him as Chair of its technical advisory group on Behavioural Insights and Sciences for Health. From 2009 to 2012, he was Administrator of the White House Office of Information and Regulatory Affairs, and after that, he served on the President’s Review Board on Intelligence and Communications Technologies and on the Pentagon’s Defense Innovation Board. Professor Sunstein has testified before congressional committees on many subjects, and he has advised officials at the United Nations, the European Commission, the World Bank, and many nations on issues of law and public policy. Professor Sunstein is author of hundreds of articles and dozens of books, including Nudge: Improving Decisions about Health, Wealth, and Happiness (with Richard H. Thaler, 2008). He is now working on a variety of projects involving the regulatory state, “sludge” (defined to include paperwork and similar burdens), fake news, and freedom of speech.</td>
<td>Nudges: past, present, future</td>
<td>1 May 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-nudges-past-present-future">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-nudges-past-present-future</a></td>
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<td>Professor Dani Rodrik, Harvard University</td>
<td>Dani Rodrik is Ford Foundation Professor of International Political Economy at the Harvard Kennedy School. He has published widely in the areas of economic development, international economics and political economy. His current research focuses on employment and economic growth, in both developing and advanced economies. He is the recipient of numerous awards, including the inaugural Albert O. Hirschman Prize of the Social Science Research Council and the Princess of Asturias Award for Social Sciences. Professor Rodrik is co-director of the Reimagining the Economy Program at the Kennedy School and of the Economics for Inclusive Prosperity network. He was President of the International Economic Association during 2021-23 and helped found the IEA’s Women in Leadership in Economics initiative.</td>
<td>Industrial Policy: The Old and the New</td>
<td>7 May 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-industrial-policy-old-and-new">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-industrial-policy-old-and-new</a></td>
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<td>Clare Lombardelli, Organisation for Economic Co-Operation and Development</td>
<td>Clare Lombardelli is the OECD’s Chief Economist and G20 Finance Deputy. As the Chief Economist and Head of the Economics Department Ms. Lombardelli ensures that the Department is at the forefront of Economic thinking, coordinates the work of the Country and Policy Studies branches to create new opportunities, and enhances synergies and cooperation with the whole of the OECD, including through contributions to horizontal projects. Prior to joining the OECD, Ms. Lombardelli was the Chief Economic Advisor to the UK Treasury and joint head of the Government Economic Service since 2005. Her role was to deliver the</td>
<td>Reviving productivity growth – evidence and policies</td>
<td>8 May 2024</td>
<td><a href="https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-reviving-productivity-growth-evidence-and-policies">https://www.treasury.govt.nz/news-and-events/our-events/productivity-changing-world-seminar-series-reviving-productivity-growth-evidence-and-policies</a></td>
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<td>UK government’s macroeconomic objectives, promoting sustainable economic growth and setting and implementing fiscal policy. She managed the Economics and Fiscal areas in the Treasury and jointly led the professional body for economists in the public sector. She started her career at the Bank of England and has also worked in 10 Downing Street as the Private Secretary for Economic Affairs to the Prime Minister. Ms. Lombardelli has also worked as a technical advisor for the International Monetary Fund.</td>
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