

HOW READY IS AUSTRALIA TO IMPROVE PRODUCTIVITY?

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Interest in lifting Australia's productivity performance has been ignited of late by evidence of drifting, perhaps falling, living standards. National productivity growth over the past decade or so has been at historical lows. Barring the luxury of another terms of trade boom – and who in the current uncertain global environment would bank on that – nothing other than stronger productivity growth can sustain the improvements in living standards that Australians expect.

Productivity is a measure of the rate at which inputs are transformed into outputs. More national productivity means a country is leveraging more and higher-value goods and services from its inputs and endeavours. National productivity growth reflects the ability of a nation to generate additional income from the same inputs. That is why productivity growth is central to lifting living standards.

The Government's elevation of productivity as a second term policy priority is very welcome. The Government is convening an Economic Reform Roundtable to canvass new ideas and build consensus on reforms to improve productivity, economic resilience and budget sustainability.

In this note, we offer a brief perspective on how Australia is placed to improve its productivity performance. The assessment comes from research we undertook for the Asian Productivity Organization (Parham and Breunig 2021; Breunig, Parham and Rose, forthcoming), which analysed the factors that have brought productivity success and failure in countries around the world. While our reports have focused on the countries under the Asian Productivity Organization (APO) umbrella, the quantitative analysis undertaken was based on data from 118 countries, including Australia. This work therefore gives us the opportunity to comment on what matters for productivity performance globally and what might need attention specifically in the Australian context.

Measuring 'Productivity Readiness'

The essence of the quantitative analysis was, first, to assemble indicators of countries' performances on a range of factors that affect productivity, and then to amalgamate these indicators into higher-level indices that represent the key foundations of strong productivity performance. Strong productivity performance is evidenced by high *levels* of national productivity and strong and sustained productivity *growth* over time.

As the ratio of outputs to inputs, productivity is determined in the most direct and immediate sense by producers' decisions on what to produce (output selection) and how to produce it (input selection). Their decisions are influenced by the strength and pattern of demand, the availability of technologies, labour and skills, capital, management systems and so on. These factors are shown as 'Immediate determinants' in Figure 1.

But what drives the immediate determinants? What determines whether the factors facing businesses encourage and enable them to be productive and encourage and enable them to improve their productivity performance over time?

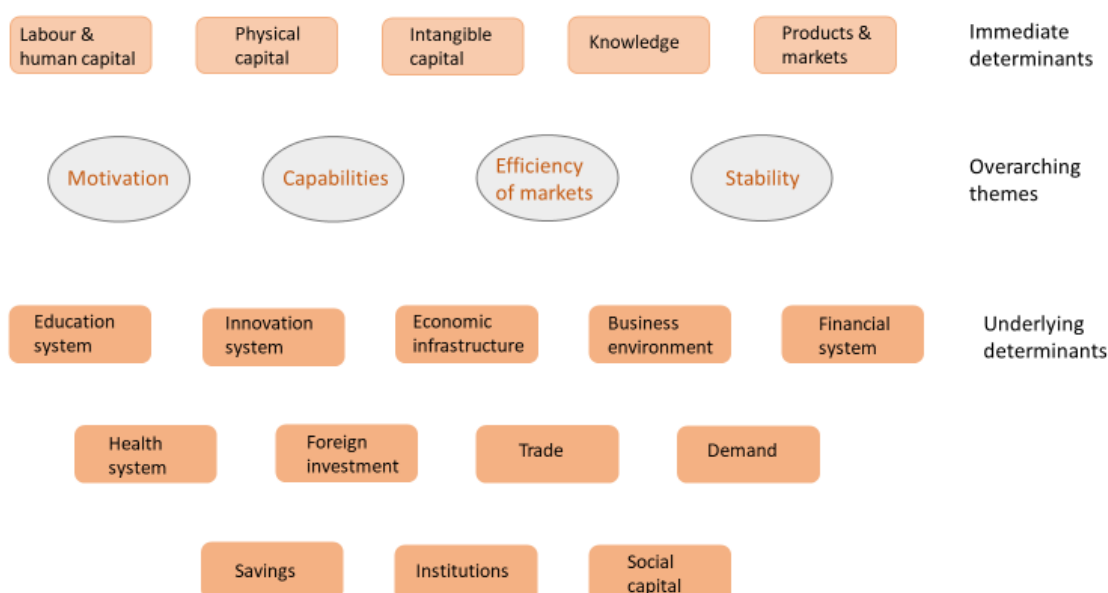


Figure 1: Key determinants of national productivity performance

This is where ‘Underlying determinants’ and policy interest come into play. Governments cannot affect national productivity directly (except by improving the productivity of their own activities). But they can influence the underlying determinants to help drive and enable better productivity performance in the economy.

The underlying determinants of productivity performance go both wide and deep. We have insufficient space in this note to address in detail the determinants depicted in Figure 1. A few brief illustrations will have to suffice (see Parham and Breunig (2021) and Breunig, Parham and Rose (2025) for full elaboration). The quality of the health and education systems affects the abilities of citizens to participate in work and the type of work they can undertake. The education and innovation systems affect the diffusion and development of production technologies and knowledge. Firms’ ability to be productive and improve productivity depends on how well transport, communications, energy, water and related infrastructure serve them. The environment for doing business, with rules on taxation, regulation, industrial relations and governance, influence the incentives and abilities for businesses to be productive. The quality of the financial system affects the extent to which investments are allocated to productive endeavours. Foreign investment and trade affect the degree of competition that domestic producers face, as well as the transfer of technology and know-how to the local economy. The strength and pattern of demand influences what producers decide to make, while the level of domestic savings affects the availability of finance for investment and production. Ultimately, the nature and quality of institutions determines the ‘rules of the game’ for business and how

easy it is for them to improve productivity. Social capital affects the priority a nation gives to productivity and the enthusiasm with which its citizens engage in productivity improvement.

From our research, we drew four over-arching themes from the underlying determinants:

- **Motivation:** Producers must be motivated to improve productivity. Change can be costly, so something like market pressures (competition) is required to encourage producers to go beyond making do with the way things are. On the other hand, unnecessarily restrictive regulation and taxation arrangements can sap the incentive to be more productive.
- **Capabilities:** Producers must have access to the resources they need to improve productivity. Even if they are motivated, they will not be able to improve productivity without access to the requisite skills, infrastructure, technologies and so on.
- **Efficiency of markets:** Product and input markets need to operate in ways that provide appropriate signals for an economy to encourage investment in skills, capital and knowledge and to allocate resources to activities where they are engaged productively.
- **Stability:** Long-term productivity growth is underpinned by economic, social and political stability. Investments that lead to strong and sustained productivity growth can be undermined by uncertainty.

A key part of the project for the APO was to measure the extent to which countries had the foundations for strong productivity performance in place. Measurement proceeded in three steps.

First, indicators of the underlying determinants were collected for each of 118 countries. As many countries as possible were included to bring global depth to the analysis. The indicators were drawn from international sources: the World Bank, the Heritage Foundation, the United Nations and the International Monetary Fund. They provided quantitative measures, for example, of the quality of education systems and infrastructure, exposure to trade and foreign investment, regulatory quality, financial development, political stability and the rule of law.

Second, values for the indicators were amalgamated into indices representing the performance of countries in each of the above four theme areas. Factor analysis revealed a parsimonious set of indicators of productivity determinants to capture variations in the theme indices. With the nature of the indicators used, the theme indices capture the extent of dynamism in an economy, the strength of capacity building, the degree of flexibility and responsiveness to changes in economic circumstances, and the level of national stability that supports productivity-enhancing investments for long-term gain.

Third, the four theme indices were amalgamated into an overall Productivity Readiness Index (PRI). Principal components analysis was used to find the weighted combination of the four theme indices that explained the most variation in total across 118 countries. The PRI captures the extent to which countries are oriented towards current and ongoing productivity performance. Countries with a higher PRI score are more likely to have a higher productivity level and to experience stronger productivity growth over the long term. Because their economies are more flexible and responsive to change, high-PRI countries are more resilient to economic shocks.

Appendix A presents the individual indicators that are used, their mapping into the four theme areas and Australia's ranking on each indicator relative to the 118 countries that we use to calculate the Productivity Readiness Index.

Some global patterns

Before looking at results, note that all four themes were found to be equally important for determining productivity readiness. The data-driven estimation process found that most variation in PRI scores across countries was explained when approximately equal weights were assigned to Motivation, Capabilities, Efficiency of Markets, and Stability. This suggests that, according to global experience, strength is necessary in all four areas for a country to be ready for long-term productivity success.

Unsurprisingly, high-income countries were more productivity ready than middle- and low-income countries (Table 1). For 2022, high-income countries (according to World Bank classification) had an average PRI score of 75 (out of 100), compared with other countries, with scores of 48 or less.¹

Table 1: Average values of productivity readiness indices by World Bank income classification, 2022

	Motivation	Capabilities	Efficiency of markets	Stability	PRI	Sample size
High income	74	77	65	72	75	52
Upper middle income	46	53	42	42	48	31
Lower middle income	35	39	31	34	36	26
Low income	26	28	25	27	28	9

Countries are generally weakest in the efficiency of their markets, due to lower scores on the Heritage Foundation (HF) Financial Freedom measure, the IMF Financial Development measure and measures of tax burden. Wealthier countries have increased regulation and inappropriate interference in markets over the last two decades, lowering their market efficiency.² Lower-income countries were also found relatively weak in stability, an outcome driven by poor governance and corruption.

¹ Note that we scale each of the indices from 0-100 independently so the overall PRI is based upon the weighted average of the four indices but may be greater than each of the indices in the final, scaled version (e.g. Luxembourg in Table 2 below).

² <https://moneyweek.com/economy/global-economy/ruchir-sharma-capitalism> and <https://www.ft.com/content/87683676-7de6-4642-bcea-bdf1a62ea34a> and references therein.

While productivity readiness has generally increased over the past two decades, slower growth and even some decline in productivity readiness has emerged in more recent years. Dropping off in growth in productivity readiness likely followed COVID, as countries withdrew, at least in part, from global supply chains and moved to prop up local industries.

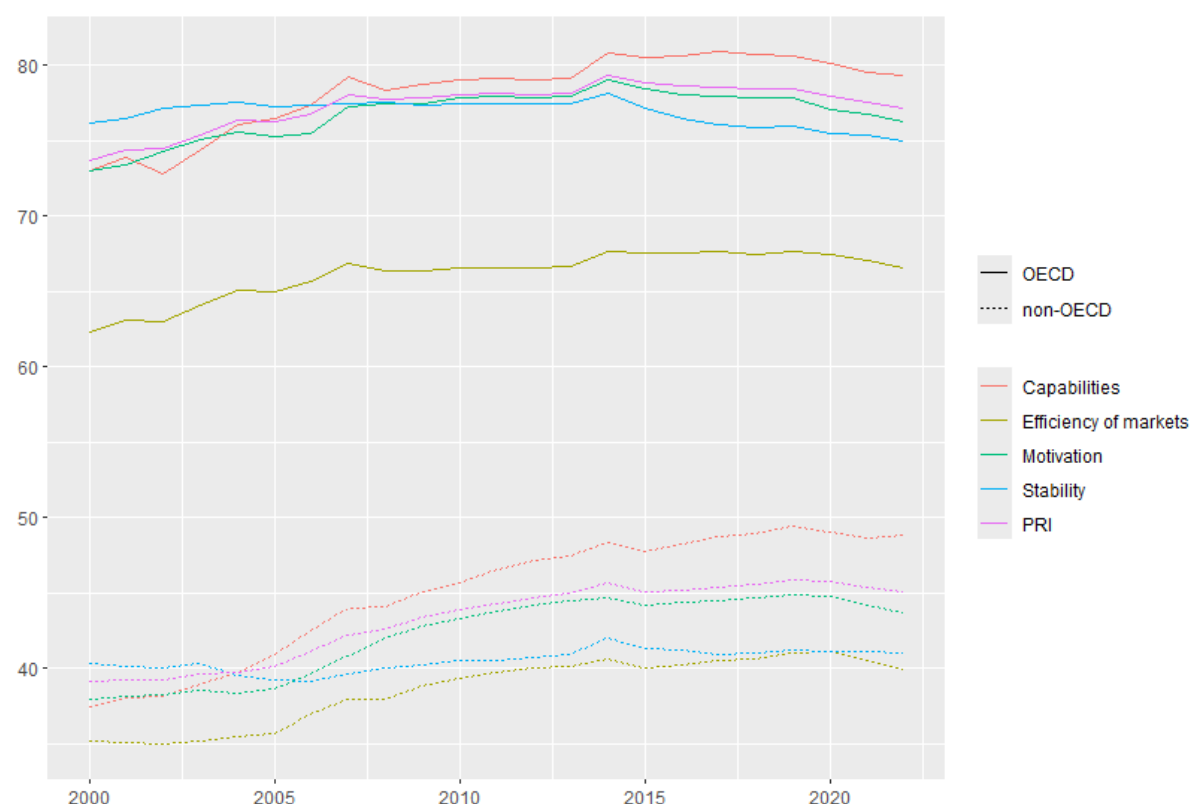


Figure 2: Average values of theme indices and PRI for OECD and non-OECD countries, 2000-2022

Our APO study also confirmed that better productivity performance follows increased productivity readiness. Through regression analysis, countries' PRI scores were found to have a significant effect on the level of labour productivity (output per person) and growth in total factor productivity (output per combined input of labour and capital). In other words, productivity readiness leads to higher labour productivity (and therefore higher living standards) and higher rates of improvement in productivity growth.

Turning to individual underlying determinants and remembering that all contribute to productivity readiness, Institutional Quality was found to play a particularly important role. Indicators of Regulatory Quality, Government Effectiveness and Rule of Law (all indicators of the Institutional Quality determinant) were amongst indicators with the largest impact on the overall Productivity Readiness Index across 118 countries.

Strong institutional quality is a unifying feature of those countries that have maintained consistently high productivity readiness and productivity performance. On the other hand, corruption, lack of rule of law, poor government effectiveness, bureaucratic inefficiency and poorly functioning tax systems are common features of countries that have not performed so well.

Exposure to trade and foreign investment also emerged as important determinants. Indicators of financial and trade globalisation and the extent of foreign direct investment also appear amongst indicators with the largest impact on overall PRI.

Australia's productivity readiness

On PRI scores for 2022, Australia ranked 11th globally, behind Asian neighbours such as Singapore, and behind countries including Luxembourg, Switzerland, Denmark, the Netherlands and Canada. Its score of 87 was well behind those of the productivity readiness leaders, in the high 90s.

Australia scored lowest (74) on Efficiency of Markets, compared with its consistent score in other theme indices (87). Its Efficiency of Markets score was also low by comparison to other high-ranking countries, reflecting its relatively stringent labour regulation environment and increasing government involvement in the economy. Improving the regulatory environment and allowing more labour market flexibility are obvious areas for reform.

Looking at the individual indicators that make up the theme indices in 2022, Australia ranks particularly low globally on FDI stock/GDP – inward (rank 60), KOF Trade globalisation (rank 78), and HF Tax Burden (rank 103). Inward FDI stock/GDP and trade globalisation are known for their relatively large impact on productivity readiness. Tax burden on its own has a relatively small effect on productivity readiness, compared to the overall efficiency of fiscal policy. Nonetheless, the analysis suggests significant improvements could be made in this area that would enhance productivity readiness.

Table 2: Values of productivity indices for top 10 countries ranked by PRI, plus Australia and other comparison countries, 2022

	Motivation	Capabilities	Efficiency of markets	Stability	PRI	Ranking
Singapore	98	98	88	94	98	1
Luxembourg	91	95	95	92	97	2
Switzerland	92	98	80	94	95	3
Denmark	93	91	78	97	93	4
Finland	91	87	77	95	91	5
Netherlands	89	90	79	89	90	6
Sweden	89	91	76	90	90	7
Hong Kong	86	90	81	80	88	8
Norway	88	83	74	93	88	9
Canada	86	89	75	87	88	10
Australia	87	87	74	87	87	11
Ireland	84	85	77	87	87	12
UK	84	89	74	83	86	13
New Zealand	84	77	70	91	84	18
USA	82	87	70	79	82	19
China	48	51	55	36	45	66

Australia's productivity readiness improved in the 2000s but has since declined (Figure 3). While the Stability index remained high in the 90s and 00s, the other theme indices improved substantially. The overall PRI improved from 84 in 2000 to nearly 90 by 2010. Since then, all bar the Efficiency of Markets index have fallen and the PRI score has declined to 87. The decrease in Stability came from lower performance on the World Governance Institute's indicators of control of corruption, rule of law, government effectiveness, and voice and accountability.

Notably, the stagnation and decline in Australia's productivity readiness index has been associated with the stagnation and decline in measured productivity performance. Australia's relative ranking has not changed much over the past two decades. It was 10th in 2011 but slipped as low as 14th in 2015 and 2016.

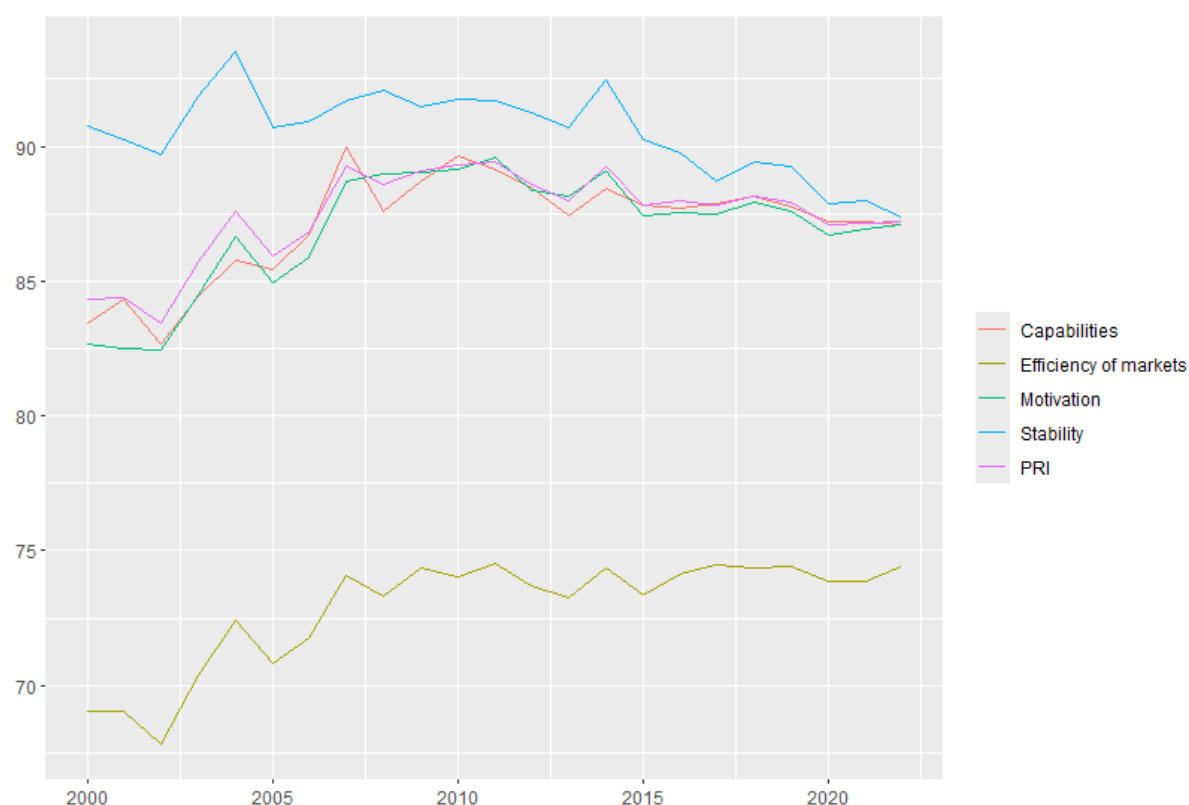


Figure 3: Values of theme indices and PRI for Australia, 2000-2022

Implications for the Economic Reform Roundtable

The global perspective suggests that governments need to go wide, deep and long to implement policies that will foster sustained national productivity performance. They need to go wide because so many inter-related factors affect productivity. The four theme areas we identify provide touchstones for governments to develop a multifaceted approach. Governments need to go deep because the underlying influences on productivity go deep. Ultimately, productivity readiness depends on the fabric of a country's institutions and polity. Governments also need to go long because it takes time to implement changes that improve productivity readiness. In

summary, a comprehensive, consistent and continuing commitment to productivity-enhancing reform from governments is essential for success in raising productivity.

With that in mind, to expect the coming Economic Reform Roundtable alone to generate an extended list of reforms is unrealistic. Inevitably, there will be discussion of priorities, especially if any degree of consensus is sought from participants. Productivity is an ongoing, long-term pursuit. There are no quick fixes.

If the Roundtable is to set priorities, they should highlight reforms to underlying determinants that will bring long-term gain.

But the Roundtable should also acknowledge there will always be a need to cycle back to consider further reforms.

Our analysis of productivity readiness indicators suggests that, while Australia scores reasonably well on productivity readiness in the global context, policy attention should be directed to the following areas:

- Australia's biggest weakness is in Efficiency of Markets. Improving the regulatory environment and labour market flexibility stand out as areas ripe for reform.
- While Australia scores well for the quality of its regulation, the OECD and others point out that the quantity of regulation stifles productivity.
- Enhancing competition, investment freedom and government effectiveness would all contribute to improvement in the Motivation score.
- Barriers to trade and foreign investment also warrant ongoing attention. Reform here would positively impact both Motivation and Efficiency of Markets scores.
- The Capabilities score has slipped, suggesting opportunities for improvements in Education, Savings Rates, R&D spending, global exposure and Government Effectiveness.
- The decline in Stability, which has been a common pattern globally, is of concern. The indicators suggest improvements to Rule of Law, Control of Corruption and Government Effectiveness.

References

Breunig, R., D. Parham and T. Rose (2025). *APO Productivity Readiness 2025*. Asian Productivity Organization. Forthcoming

Parham, D. and R. Breunig (2021). *APO Productivity Readiness 2020*. Asian Productivity Organization. Available at: <https://www.apo-tokyo.org/wp-content/uploads/2021/11/APO-Productivity-Readiness-2020.pdf>

Appendix: Indicators of underlying productivity determinants for Australia, 2022

Indicator	Range	Value	Ranking in PRI data (out of 118 countries)	Theme indices contributed to			
				Motivation	Capabilities	Efficiency of markets	Stability
KOF Informational globalization, de facto (2021)	0-100	95.2	9	X	X	X	
HF Business Freedom	0-100	84.6	13	X		X	
HF Tax Burden	0-100	62.5	103			X	
Regulatory quality (World Bank WGI)	-2.5 to 2.5	1.9	2	X		X	X
HF Financial Freedom	0-100	90	1			X	
IMF Financial Development (2021)	0-1	0.9	3	X	X	X	
Life expectancy at birth (years) (UN)	Open	82.8	7		X		
KOF Financial globalization (2021)	0-100	77.1	35		X	X	
KOF Financial globalization, de jure (2021)	0-100	75.0	31		X	X	
FDI stock/GDP – inward (%) (UNCTAD)	Open	42.7	60			X	
FDI stock/GDP – outward (%) (UNCTAD)	Open	37.2	25			X	
HF Investment Freedom	0-100	80	15	X	X	X	
HF Trade Freedom	0-100	90.0	3	X	X	X	

KOF Trade globalization (2021)	0-100	52.7	78	X	X	X	
KOF Trade globalization, de jure (2021)	0-100	77.9	43	X	X	X	
HF Monetary Freedom	0-100	83.2	23		X	X	
Gross savings/GDP (%) (World Bank)	Open	24.9	53		X		
IMF Financial Institutions (2021)	0-1	0.9	3		X		
Political stability (World Bank WGI)	-2.5 to 2.5	0.9	11				X
Rule of law (World Bank WGI)	-2.5 to 2.5	1.5	16	X			X
Control of corruption (World Bank WGI)	-2.5 to 2.5	1.8	11	X		X	X
Government effectiveness (World Bank WGI)	-2.5 to 2.5	1.5	14	X	X	X	X
Voice and accountability (World Bank WGI)	-2.5 to 2.5	1.3	14				X
R&D expenditure/GDP (%) (UNSDG) (2021)	Open	1.9	22	X	X		