

Panel Discussion

1. Alan Bollard

First, I would like very much to thank the Reserve Bank of Australia for the invitation to contribute to today's Symposium. Congratulations on the 50th Anniversary and thank you for a long period of great cooperation between our institutions, which has certainly helped us. I should also say that it is quite insightful to put a supply-side topic onto an agenda like this, its inclusion is not automatic, but it underpins so much of what we care about.

What I would like to do is not critique the paper, which I enjoyed very much, but rather to say 'so what?' from a central banking perspective. Inevitably, the answer I will provide is coloured by my own experiences. In my previous job as Treasury Secretary, and before that as head of our competition authority, I was deeply involved in supply-side issues, and in the 1980s we undertook a sort of deregulatory 'big bang', so I have been involved with a key part of these policy debates for a long time.

1.1 Why should central banks care about supply-side issues?

Basically because of the importance of potential output and output gaps in the way we think about, model and measure inflation and its relationship to the real economy. It is important, not just in a measurement sense, but more conceptually as well. Of course we attempt to measure potential output despite the great difficulties of quantifying, even *ex post*, just what it is. So while I enjoyed the paper's definition of supply-side issues, measurement is something additional to think about and right at the moment is exceptionally hard.

1.2 How have supply-side developments impacted potential output?

From a monetary policy point of view, potential output tends to be thought of as fixed in the short term. However, the global financial crisis is currently making us question that sort of assumption. Policy-makers do, of course, learn to distinguish carefully between demand-side and supply-side shocks. If we get them wrong in the case of productivity shocks, commodity price shocks, or trade and financial liberalisation shocks, the result will invariably be that the wrong policy response is implemented. Those sorts of shocks to the supply side do very much impact monetary policy calibrations and monetary policy decisions. Deeper still, we have now seen a graphic example, in the crisis, of how supply shocks can impact the interaction of macroeconomic and financial systems.

1.3 What have supply-side developments and deregulation in general meant for monetary policy transmission?

The obvious thing that comes out of the paper is that supply-side developments have affected the flexibility of markets, and that generally this has occurred in terms of both prices and quantities, and not just domestically but also in terms of the transmission of shocks internationally. In principle, it can be assumed that there is now much more reliance on price mechanisms and much less on rationing mechanisms. National policy-makers are also now more attuned to the impact of actions of private agents and policy-makers in other countries.

1.4 Do supply-side developments help reduce cycles in the domestic economy? Do they generally help stabilisation?

I would say in a guarded way, yes, but once again we have just had a vivid example of how apparently successful use of this added flexibility of markets, manifest in the Great Moderation, can be so successful that it encourages public overindulgence, ill-disciplined markets, and excessive tolerance by regulators. Furthermore, despite this being something that many central bankers had seen unfolding, and publicly articulated over the past few years, they have not necessarily been able to act against it. The Great Moderation and the associated problems I have just described clearly fostered global imbalances. While this process was also able to deliver a measure of medium-term prosperity, it has also seen spillovers arising from those imbalances. In New Zealand, the carry trade has been a classic example. In other cases we have seen a failure of adjustment – problems have built up behind a dam so to speak – such as the rapid growth of current account deficit in New Zealand.

1.5 What have we learnt through this?

We have learnt how to treat and look through supply-side asset price shocks, particularly given our improved understanding of inflation expectations. I think we have learnt something about the degree of international spillovers of other countries' domestic monetary policy decisions – especially if they are large economies. The paper's focus on emerging markets has a resonance for us as we look at particular issues of globalisation, especially of emerging market economies that have partially deregulated but are still relying a lot on various control mechanisms. A key lesson for a small open economy like New Zealand is the limitations of our own national monetary policies when they are out of sync with the G3 economies, or in danger of being so.

1.6 What can we say about exit from the global financial crisis?

This is arguably the first really big crisis in an era of considerable supply-side flexibility. A key question we have to examine is just how much this has been a supply-side or a demand-side shock. I believe there are elements of both.

What does a 'supply-side shock' mean in terms of transmission of the crisis? Well, it is great to be on the other side of the world from Lehman's but when the news hits, this distance only gives you about 30 seconds of respite. In that sense everyone is in the same boat. We are confident that we are beginning to understand the loss of potential output in New Zealand and around

the world in a short-term transitional sense; however, we are not at all confident about what it means for the medium term. Where consensus on this issue falls is going to be absolutely crucial for monetary policy decisions and for getting these things right *ex post*. It is also impacting on the speed of recovery. It may be a generalisation, but probably a fair one, to say that countries with very flexible markets, like the United States, have been able to put in place recovery mechanisms much faster than other more tightly regulated economies.

Will this sort of flexibility also help the transition from public sector stimulus to more sustained private sector growth? Again I think you would assume that the answer, on balance, is yes, but with a lot of uncertainty. There is now, and always will be, more to do. We must not forget that Doha is still unfinished. It is well through its cycle with goals only half achieved. Let us look at the lessons of Copenhagen and the supply-side implications of climate change more generally. And let us also remember, as we talk about what might loosely be called Basel III, that the overhaul of the regulatory system will have implications for the supply side as well as prudential soundness.

2. Warwick McKibbin

The paper by Professor Krueger provides a comprehensive overview of the important supply-side issues we have learned over the past half century. A recurring theme is that history shows that people respond to price signals.

There are two parts to these comments. First, I have some suggestions on the core of the discussion in the paper and second, I attempt to draw out lessons for the design of climate policy, which is touched on in the paper under challenges for the future.

There is considerable discussion in the paper on the role of the World Trade Organization (WTO) in reducing tariffs. While the WTO established the overarching framework for trade liberalisation, when you look at the Australian experience, national institutions (such as the Industries Assistance Commission, which is now the Productivity Commission) and a body of academic research were also very important in achieving tariff reductions. These contributions came from transparently quantifying the costs and benefits of trade liberalisation and identifying the potential winners and losers. This work was able to sway public opinion in favour of the unilateral tariff reductions in Australia and other countries.

A second key issue, which is discussed in the paper but I think it is worth stressing, relates to the role of the real exchange rate on the supply side of the economy. An undervalued exchange rate stimulates external demand, but it also plays a critical role in restricting the production possibility frontier. Most countries are large importers of intermediate and capital goods. With an undervalued exchange rate, those imports become more expensive and the production possibility frontier can be dragged inwards substantially. This supply-side effect is critical in all but the largest economies.

Professor Krueger also identifies the key challenges for the future. One of these issues is climate change policy. There are important lessons from this paper for how we move forward from the Copenhagen negotiations at the end of 2009 in designing the global climate policy architecture.

The theme of this Symposium is the lessons that policy-makers have learned over recent decades for policy design. We have learned a lot about how not to design climate policy and there is a

lot to be reconsidered in this area. Economics has a critical role to play in designing the global climate architecture, although it is not the role of economists to calculate national emissions targets; indeed the focus of some economists on targets and timetables has held back sensible policy for many years. The use of targets and timetables as embodied in the Kyoto protocol, and as embodied in the failed attempt at Copenhagen, to push national climate change policies forward, along with the failure of national cap and trade legislation in many jurisdictions, demonstrates that even if national emissions targets were a good idea in theory, they are not easily implementable in practice in key countries.

Like monetary policy, climate change policy is about risk management. It is also about providing strong price incentives over long time horizons. In the case of climate change policy, this will encourage a substantial change on the supply side of the economy that will bring forth technological innovations to help reduce carbon dioxide emissions over time.

It is important to stress that it is not the emissions per year of any country that matters for climate change; it is the global concentrations of carbon dioxide in the atmosphere. These concentrations result from emissions of all countries. This is what we know from science; what science does not address is how to design schemes to meet national emissions targets. There are many different emission profiles that will allow the world to hit a given longer-term concentration target. It is economics that can help to design the least-cost strategy to hit such targets. Economists can design mechanisms for achieving long-term targets in the most efficient way through creating incentives to innovate via price signals.

A common misperception is that equal national targets for emission reductions represent equality of effort. This belief is partly why the international negotiations have failed. A large number of commentators and politicians appear to believe that if all countries have the same target they are all undertaking the same effort. The evidence is that this is far from correct. Countries have different endowments of energy, different types of energy, different economic structures, are at different stages of development, have different capacities to respond and different rates of population and productivity growth. A common emissions target clearly does not imply common effort across countries. So what does? An economist would say a better measure of equality of effort is equality of the cost of carbon across different societies. If we start with that premise, we would be inclined to design a system around common carbon prices. This could be adapted to allow for differentiation between countries at low and high levels of development. Less-developed economies could have a lower carbon price profile and wealthier countries could afford a higher carbon price profile. Focusing on prices, just as the world focuses on tariff rates rather than trade volume in the trade policy area, would provide a way forward for global negotiations on climate policy.

How can a common price be achieved? One way is to have a global carbon tax, and there are advocates of that approach.¹ But it is not practical. We do not have the global institutions; we do not have time to develop the global institutions to have a global carbon tax.

What about 'cap and trade' at a global level? Emissions could be capped in each country and markets allowed to trade the rights across borders to generate a common price through

1 See Nordhaus (1994), Cooper (1996) and papers in Aldy and Stavins (2007).

a global market in emissions permits. This is sensible in theory, but it is not practical because the global institutions do not exist, the national institutions do not exist, and the monitoring and enforcement mechanisms do not exist to make this possible. The basic problem in trading emissions permits globally comes down to understanding what an emissions permit really is. An emissions permit reflects the promise of a government to hit a carbon target. This commitment is equivalent to the promise of a government to maintain the purchasing power of its national currency. The fact that an emissions trading scheme is a trade in promises rather than physical commodities means that it is similar to a global currency. The reason we do not see a common global currency, the reason that central banks around the world print their own currencies, is that different countries have different degrees of credibility. That basic insight from international monetary economics rules out the real possibility of developing an international carbon trading system that would last any longer than attempts to create a global common currency have historically.

So what is left? What is left is to coordinate policies globally that are perceived to be in the national interest of the key participants. Can economists devise such a system? I believe that we can.² The focus should be on national policies coordinated within the framework of a common carbon price across the globe. There is, I believe, an increasing acceptance of the need to have an approach based on a carbon price 'collar' in different countries.³ In the world of price collars, a country like China would start with a low carbon price, but one which is rising over time. A country like the United States could start with a high carbon price and the global price would be somewhere on average between these extremes. To implement a policy around this idea you need to create the technical capability to calculate the carbon price equivalence for different policies, in a similar fashion to calculating the tariff equivalence of different international trade policies. The idea is that all distortions are converted into an equivalent tariff so that negotiations can be based on reducing the size of these trade barriers. We can do the same thing in the world of carbon emissions by calculating the carbon price equivalent of regulations in the United States that govern emissions. The same can be done for the Chinese policies, which have already substantially reduced emissions relative to business as usual. Given these calculations, countries can negotiate over the convergence of these efforts over time in terms of equivalent carbon prices; the European trading system already implies a price for carbon, so there is no need to calculate the carbon equivalent price of their efforts.

Monetary experience has powerful lessons for climate policy in another dimension. Instead of a supranational organisation, I argue that we need national central banks of carbon that control the short-term carbon price along an internationally agreed rising threshold.⁴ It is the long-term carbon price that matters, but the short-term price should not be too volatile. This has parallels with the lesson that we should not target the stock of money. Instead, we should target the interest rate because volatility in the interest rate has no benefit, and so too volatility in the short-term carbon price has no benefit.

2 See McKibbin and Wilcoxon (2002).

3 See McKibbin, Morris and Wilcoxon (2009).

4 See, for example, the 2007 Shann Memorial Lecture by McKibbin (2009).

So what are the relevant lessons for climate policy from Professor Krueger's paper, as well as from the recent financial crisis and from monetary history more broadly? First, it is crucial to tie down expectations. In the monetary arena, expectations of inflation matter; in the climate arena, expectations of where the global concentration target is heading matter. It is important and fundamental to get the prices right since, as Professor Krueger points out, people respond to price incentives. Second, it is important not to destroy balance sheets. We know from the financial crisis that those companies whose balance sheets have contracted will not undertake long-term investment. So whatever policy you undertake, make sure that those who need to undertake the investment do not end up with their capacity to invest destroyed by the policy. This requires a careful allocation of property rights over the revenue from carbon policies. And third, it is important to build on the national institutions that we have; central banks in different countries are different and similarly, we should not be concerned about having different central banks of carbon across countries. International coordination around national realities is absolutely fundamental to ensure that the world can move forward.

In contrast to many commentators, I believe that the outcome of the Copenhagen negotiations was a good one. It cleared the way to move in the right direction on climate policy. Once the ruins of the targets and timetables strategy have settled, I hope policy-makers, under the influence of good economics and an understanding of the lessons of the past 50 years in global trade and monetary policy design, will move in the right direction. The paper by Professor Krueger contributes to that understanding.

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3. Zhou Xiaochuan

3.1 Thirty years of China's 'reform and opening': Chinese-style supply-side economics

I would like to start by thanking the Reserve Bank of Australia for inviting me to attend this Symposium and participate as a panellist in this session. I would also like to thank Professor Krueger, a well-known specialist in the field of international economics, for a wonderful paper. Her paper uses many vivid examples as she reviews the course of global economic growth in the 50 odd years after World War II, describing the contribution of developments in international trade to increasing the efficiency of global economic growth and emphasising the importance of an increase in supply-side efficiency more generally for the promotion of global economic growth. She also analyses some important supply-side challenges facing global economic growth in the wake of the global financial crisis.

I am not convinced about the idea that developing countries derived relatively more benefits from globalisation and trade expansion than developed economies, nor with the view that developing countries are hoping to gain a 'free ride' in the ongoing process of global trade liberalisation. However, the essay correctly emphasises the importance of factors such as free trade, market prices and structural reform in strengthening economic incentives and promoting economic growth. These conclusions undoubtedly support the case for promoting international trade liberalisation and sustainable economic growth. They also support China's efforts to deepen reform and promote scientific development.

Looking back on economic development in the 30 years since China initiated a program of economic reforms and began opening up its markets to foreign trade and investment, it is not difficult to find evidence of the importance of 'supply-side economics' in driving China's rapid economic growth. The economic reforms beginning in the late 1970s, and the 'opening-up' embarked upon in the mid 1980s, both stimulated the vitality of the economy, and together became the great force driving more than 30 years of sustained and rapid economic growth in China. Looking at future developments, China will continue to promote structural reforms on many levels so as to increase supply-side efficiency and promote economic growth. Next I would like to explain specific economic growth policies in China from a supply-side perspective.

3.2 China will continue to expand opening-up and promote trade and investment facilitation

Over the past 30 years, maintaining 'openness' has been an important driving force in China's sustained economic growth. The facts prove that industries which were 'opened' relatively early have all gained relatively strong competitiveness, and have made a substantial contribution to China's economic growth in the process of globalisation. In contrast, industries under prolonged protection have been relatively slow to improve their efficiency and the quality of the goods and services they produce. China will continue to expand opening-up and promote trade and investment facilitation. First, this is a broad strategy for expanding domestic demand and speeding up the transformation of the economy. Second, continuing to encourage the opening-up of domestic markets, so as to raise competitiveness, will reduce the disparities

between markets, increasing supply-side efficiency in domestic industries that are lagging. Third, encouraging enterprises, under the right circumstances, to expand abroad will not only improve the international trade balance, but also assist in China's development on a broader scale.

3.3 China will further intensify economic reform and promote private investment and financial market deepening to raise supply-side efficiency

Economic reform and the establishment of a market economy are the foundations of China's sustained rapid economic growth since the 'reform and opening'. In the past 30 years, the establishment of market mechanisms and reform of the state sectors' property rights have provided a powerful force for China's economic growth. In the next phase of reform, China will focus on promoting and guiding the healthy development of private investment and, through measures such as the further relaxation of access restrictions for private capital markets and an increase in public resources for private capital, stimulate the vitality of private capital investment. Importantly, this will increase the efficient use of resources, bolster innovation and promote market-based competition. At the same time, China will continue to push forward with financial reforms, speeding up commercialisation of the financial sector and the liberalisation of interest rates and the exchange rate, fully utilising the signalling effect of interest rates and the exchange rate, and increasing the efficiency of resource allocation.

3.4 Enhance energy conservation and emissions reduction, promoting sustainable economic growth in China

In recent years, China has done a lot of work in energy conservation and emissions reduction, and in 2007 tabled China's 'National Climate Change Program',¹ the first of its kind in the world. During the Copenhagen summit, China offered to reduce its emissions per unit of GDP by 40–45 per cent on 2005 levels by 2020. Actually, between 2006 and 2008, China's emissions per unit of GDP fell by 1.8, 4.0 and 4.6 per cent in each of the three years respectively, a cumulative decline of 10.1 per cent.

Although China has made obvious achievements in energy conservation and emissions reduction, the absolute level of energy consumption and emissions for economic growth remains relatively high, and the constraints of energy resources, natural resources and the environment are becoming increasingly obvious. In the course of future development, through measures including adjustments in the prices of resources products, reasonable taxes and the establishment of a carbon market, China will limit industries which are intense energy consumers and polluters, and encourage the development of tertiary and high-tech industries. On the one hand these measures can reduce per unit GDP energy consumption and emissions, while on the other, they can assist in the adjustment of industry structures and ensure that economic growth is more sustainable.

¹ This was issued by the National Development and Reform Commission on 4 June 2007; for details, see <<http://www.china.org.cn/english/environment/213624.htm>>.

3.5 Actively and stably promote urbanisation, improving the structure of Chinese industries and supply-side efficiency

Urbanisation is a necessary process in economic development, as demonstrated by the large movements of the rural population towards non-agricultural industries and into cities. In the short term, the process of urbanisation raises economic growth mainly through an increase in aggregate demand. And in the long term, urbanisation will have a positive impact on the productive capacity of the economy. In the process of urbanisation, there will be a large movement of workers from the primary sector to the secondary and tertiary sectors, which will change the overall structure of aggregate supply and promote the upgrading of industries. At the same time, the longer-run decline in the share of the population in rural areas will increase the efficient use of human capital and bring about an overall increase in people's welfare.

3.6 Improve China's income (re)distribution mechanisms, enhancing economic incentives and human capital accumulation

The excessive reliance of China's economic growth on physical capital investment has generated an unreasonable income distribution. Some monopolist industries and owners of physical capital have unfairly gained substantial rewards from economic development. In order to shift the mode of economic development, improve supply and raise social welfare, there must be reform of the existing income (re)distribution system that increases returns to labour. Against the current economic background, it is difficult to rely on market forces to adjust the ratio of physical and human capital investment. Rather, this should be done through other measures such as taxation to adjust the relative returns to capital and labour. By redistributing a portion of the income of enterprises and individuals in industries that primarily depend on returns from capital investment towards industries that are intensive in human capital, as well as increasing expenditure on research and development and the development of human capital, we can progressively enhance the model of economic development.

Thanks to you all.

4. General Discussion

Discussion in this session centred on three themes: the possible links between productivity growth and monetary policy and financial regulations; the scope for ongoing trade liberalisation; and the potential for further regulatory reforms to boost the supply side more generally.

The role of central banks in affecting productivity was raised by several participants. A number of ways in which central banks and/or financial regulators could influence productivity were suggested. If monetary policy is used to lean against financial imbalances, higher interest rates could influence credit allocation and therefore have an effect on productivity. In particular, it was suggested that policies that were too loose could allow inefficient producers to stay in business longer than would otherwise be the case, while excessively tight policies, including any unwillingness to help resolve financial crises, could reduce the potential output over time. Finally, maintaining a stable inflation environment is a key way for central banks to contribute to

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longer-term growth, reducing the incentives for investors to waste time and energy worrying about how to avoid the deleterious effects of high and variable inflation. One panellist suggested that this point was an important factor in explaining the strong economic growth over the past decade or so.

There was some discussion of the positive influence of supply-side flexibility on the effectiveness of monetary policy, based on the notion that more flexible labour and product markets may make the task of monetary policy easier in the face of various shocks. Some participants went so far as to suggest that central banks might be served well by expressing their support for appropriate microeconomic reforms. However, the view from the panel was that central bank independence required them to avoid straying from their core mandate. Finally on this topic, in response to a question about the influence of higher productivity growth on interest rates, one panellist noted that higher productivity growth may imply a rise in the neutral real interest rate rather than the other way around.

The inability of the World Trade Organization to finalise the Doha round of negotiations was discussed at some length. One panellist noted that multilateral liberalisation would be more likely if there was a representative executive council which made trade decisions. It was suggested that the current system, which requires consensus from a multitude of countries, is 'unwieldy'. Another panellist stressed that all trade liberalisation is beneficial in the long run and, because of this, trade negotiations need to move away from a mercantilist and adversarial mindset. The appropriateness of this view for some emerging economies was disputed, with the suggestion that such economies may require greater incentives in order to liberalise trade. The problem, it was argued, is that the short-term adjustment costs inherent in reducing trade barriers need to be offset by the mutual reduction of trade barriers by other countries. Another concern raised by a panellist was the proliferation of regional or bilateral free trade agreements, which can lead to constituencies within countries that have an incentive to work against more widespread, multilateral liberalisation.

The scope for more general regulatory reforms, particularly in developed economies, was explored. One concern that was voiced was whether this would be impeded by an apparent resurgence in populism, particularly in light of weak growth prospects in the developed world. The panel had little to add on this point beyond noting the difficulties of dealing with narrow vested interests.

Finally, several participants and panellists emphasised that, in formulating the regulatory response to the financial crisis, we must not forget that a well-developed financial system was, for many years, the lifeblood of a strong global economy. Hence, while regulatory reform is required, it should not unduly impinge upon the benefits to society which efficient financial markets provide.