

Discussion

1. William R White

In keeping with the organisers' desire to provide a broad international backdrop to the other papers that deal more directly with the Australian economy, my presentation will be in three parts. I begin by commenting directly on Professor DeLong's paper, which focuses exclusively on the supply side of the US economy. This is an important issue given the relative size of the US economy and the lessons that it may imply for the growth of economic 'potential' elsewhere. While I find some things to agree with in the paper, I generally feel that his conclusions are not borne out by the evidence he musters.

Richard Nixon once famously said 'We are all Keynesians now', indicating his recognition that any economy has a demand side as well as a supply side. Moreover, all transactions on the real side have their counterpart in financial developments which can feed back in various ways on the real economy. Such considerations are entirely absent from Professor DeLong's current paper, though central to many other articles he has authored, and will form the basis of my second set of comments. In contrast to his rather rosy view of the future, I think that prudent policy-makers should be open at least to the possibility of a significant economic setback in the United States as various excesses and imbalances are unwound. Let me emphasise that this is not a forecast, rather an assessment of the downside risks.

Finally, my third set of comments will have to do with developments elsewhere in the global economy and the implications for others of faster trend growth in the United States (supply side) as well as a possible near-term contraction (demand side). Of particular interest to an Australian audience, I would emphasise the recent similarity of economic performance across the major English-speaking countries. While correlation is not causation, it may be that these countries will be particularly affected by what happens in the United States.

Comments on the DeLong paper

To summarise briefly, DeLong argues that the rate of growth of productivity has risen significantly in the United States and that this higher growth will continue for the foreseeable future. Moreover, he feels there is no reason to believe that the phenomenon will not spread to other countries. The underlying reason for this optimism is that the process is driven by new information processing and communications technology. Capacities will continue to expand in accordance with Moore's Law and such advances are internationally highly fungible. Underlying these processes, and justifying continuing high levels of investment, are relatively high profits for both the makers and users of such equipment.

Considering first the issue of whether trend productivity has risen in the United States, I think the Scottish judicial verdict of 'not proven' is most apt here. In fact, the average annual rate of growth in the United States in the 1990s upswing has been

smaller than in the upswing of the 1980s, and average growth in the last four years (1995:Q4–1999:Q4) has only just matched that of the 1980s (around 4.4 per cent annually). While both labour productivity and total factor productivity (TFP) have risen in the last few years, it is extremely difficult, viewed from a longer historical perspective, to conclude that this is the beginning of a new trend rather than being due to some cyclical or other temporary disturbance. It is interesting if not conclusive to note that the same maxims of a New Era in productivity growth were expressed in Japan in the late 1980s.¹ While DeLong does not always distinguish clearly between producers and users of IT equipment, the evidence for a trend upturn in TFP for the former seems much stronger. The evidence concerning TFP is less clear for users of such equipment even if recent capital deepening does seem to have raised labour productivity somewhat.² In the final analysis, it is how users benefit from new technology that will primarily determine the degree of welfare enhancement. The fact that companies can buy more millions of instructions per second (MIPS) per dollar is one thing, their efficient use is another.

As for the assertions of enhanced profits accruing to the ‘owners of computer and communications capital’, this must have economy-wide implications since all companies are such ‘owners’. Again, I would suggest the case is not proven. The share of profits in GDP did rise sharply from 1991 to 1997 in the United States in response to the cyclical rebound and a sharp fall in interest rates. However, the share of profits has fallen from this earlier peak even as measured labour productivity has increased. This has been due to more competitive markets along with sharply higher depreciation charges reflecting the shorter life of IT investments relative to more traditional machinery and equipment and especially structures. In effect, it appears that consumers are quickly getting the benefits of whatever productivity gains might have occurred.³

Finally, it is worth asking whether the suspected benefits of higher IT spending will be easily transferred to other countries. To date, even in countries like Canada and Australia, there is only little evidence of a recent increase in productivity growth linked to higher levels of IT investment.⁴ On the one hand, this may be circumstantial evidence that the US improvements stressed by Professor DeLong are more ephemeral than real. On the other hand, it could be that only the United States currently has the labour market flexibility to allow the full capture of the benefits of the new technology. In this case, structural reforms will be required in other economies before the US ‘miracle’ can be exported.

1. See Yamaguchi (1999).

2. See Gordon (2000).

3. Insofar as profits accruing to the makers of IT equipment are concerned, these industries appear highly competitive and generally incapable of generating economic rents. And to the extent they did, the recent antitrust case directed against Microsoft Corporation indicates that governments would be disinclined to allow this to continue for a long time.

4. In Australia, productivity growth has in the 1990s been unusually strong, especially in retail and wholesale trade and construction, but this seems more likely to have been driven by structural reforms. See the paper by Gruen and Stevens in this volume.

Professor DeLong also considers whether the reduction in the 1990s of the US government's structural deficit has played a role in 'crowding in' higher levels of IT investment with its associated productivity benefits. He draws a negative conclusion noting that 'The lever is too small and the rock to be moved too large'. Intuitively, I am inclined to agree with him although more formal proofs in this area are bedevilled by many uncertainties. First, simply measuring changes in the structural deficit is very difficult when the underlying rate of growth of potential is itself in question.⁵ Second, whether increased government saving will lead to increased national savings will depend largely on the extent to which private savings will decline in consequence (the 'Ricardian equivalence' effect). It is a striking fact that in recent years the negative correlation between these two types of savings does seem to have been very high⁶ in a number of countries including the United States. Third, there must be growing doubts, given the emergence of a sustained and large current account deficit, that national investment in the United States (and indeed Australia) is constrained by the availability of national savings.

Professor DeLong also notes that estimates of the NAIRU in the United States have fallen and 'One possibility is that the fall... is also a consequence of the IT revolution'. He refers sympathetically to Blinder (2000), who suggests that faster productivity gains can for a time cause real wage increases to lag behind warranted wages. With cost pressures under control, inflationary pressures also diminish, leading to lower estimates of the NAIRU. The only problem with this story is that, as noted above, the share of profits in GDP has actually fallen over the last two years when the gains in labour productivity have actually been the greatest. Moreover, it should be noted that the United States has benefited from a number of other disinflationary shocks that would also give the appearance of a lower NAIRU.⁷ Commodity prices have been very weak in recent years, even if oil prices have rebounded somewhat. The US dollar has strengthened sharply from its trough in early 1995, and the domestic prices of many manufactured goods (especially electronics) weakened after the East-Asian crisis.

Finally, DeLong asserts that 'the short-term inflation-unemployment trade-off in the United States now appears to be more favourable than at any time since World War II'. If he is referring to the short-term slope of the Phillips curve, there is indeed growing evidence that the trade-off became flatter in the United States in the 1990s. However, a similar observation can be made for many other countries where the IT

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5. If the ultimate variable of interest is productivity growth, the source of the increase in government spending must also be relevant. Cuts in bridge maintenance or, over a longer period, health care and education will not have the same positive impact on productivity growth as lower transfer payments.
 6. See BIS (1998), Graph II.5.
 7. According to Rich and Rissmiller (2000), the behaviour of US inflation during the 1990s can easily be explained by conventional factors, such as demand inertia and, above all, relative import prices, and does not require a new model having a larger impact from increased productivity growth. Andersen and Wascher (2000) come to a similar conclusion, finding that the fall in relative import prices has reduced US inflation by nearly one half of a percentage point per year during the 1990s.

revolution⁸ seems much less well advanced. Whether due to the widespread commitment of central banks to maintain low inflation, or some other factor, a flatter short-run Phillips curve has both an upside and a downside. A sticky inflation rate is good, allowing potential output gains to be more easily harvested, as long as inflation stays at desired levels. However, should inflation be shocked upwards by a reversal of previously favourable shocks, an extended period of reduced demand might then be required to bring inflation back down to the required range.

Macroeconomic imbalances in the United States

While recent IT advances may well have augured in a ‘New Era’ of economic growth in the United States, some commentators (particularly in Europe) have come to a different conclusion. What they see is a credit-driven asset price boom, particularly in equities but spreading as well to property,⁹ that is contributing to various imbalances and vulnerabilities in the US economy. Consistent with the traditional Austrian form of reasoning, they expect the nature of these imbalances to determine both the depth and the length of any resulting downturn in the US economy. While many developments could act as the catalyst to end the recent boom, the most likely would be a hard landing should there be a need for further substantial interest rate increases to resist traditional inflationary pressures. In such an event, which is by no means certain, equity prices might be significantly affected. Within the framework of the Gordon pricing formula, not only would higher discount rates have an effect but there might also be a simultaneous revision upwards of the equity risk premium. In such an environment, a reduction in the expected growth rate of dividends could also occur with still further implications.

While it is true that investment spending in the United States has been unusually strong in recent years, the real Hamlet of the piece has been consumption. As equity prices have risen to record levels, the household savings rate has fallen almost to zero. While there has been some modest selling of shares by the household sector, much of the consumption boom was financed by borrowing, which has led to a record high in the household debt to income ratio. These high levels of spending have contributed materially to both corporate profits and government tax revenues, and both are now materially dependent on such spending continuing.¹⁰ However, should there be a downward adjustment in asset prices, spending could fall sharply as households attempted to reconstitute their wealth out of current income. Indeed, the fact that so much of recent consumption spending has been on durable goods implies that still further expenditures on such items would be easily postponable. Whether the result would be a moderate and welcome decline in spending from current levels, or something greater and correspondingly unwelcome, remains to be seen.

8. See BIS (2000b), Table II.4.

9. See BIS (2000a).

10. See Godley (2000).

On the corporate side, debt levels are also high even if debt service levels currently benefit from relatively low interest rates. Indeed, virtually all of the recent increase in corporate investment appears to have been financed by debt issue rather than the more traditional vehicle of retained earnings. Moreover, over the last few years there has been a significant degree of sectoral re-allocation as traditional firms have bought back shares in high volumes and firms in the IT sector have sharply raised the level of initial public offerings.¹¹ The upshot of this is that recent investment has been skewed sharply in the direction of IT expenditures. Should these expenditures fail to generate the profits anticipated, there would be a corresponding need to cut back capacity in this area and a reduction in investment spending might also be anticipated. Fortunately, and unlike the earlier overinvestment in Japan and East Asia, the rapid depreciation rates for IT equipment might lead to this process being completed relatively quickly.

Another unwelcome aspect of recent developments in the United States is that much of what has happened has been financed with foreign money. As a proportion of GDP, the US current account deficit is at a record high, as is the level of international debt. While net debt servicing requirements are still relatively low, this could change in an environment of generally higher interest rates. It is also remarkable that an increasing proportion of the external funding has been provided through equity markets and foreign direct investment. While this reduces the contractual obligation to service debt, it might also imply some vulnerability of the US dollar should there be a change in sentiment about the prospective rates of return on such investments.¹² On the one hand, this might be thought a stabilising factor since a lower dollar (via substitution effects) would raise aggregate demand even as lower asset prices were working in the opposite direction. On the other hand, such an outcome could seriously complicate the lives of policy-makers if a lower dollar directly raised inflation at a time when other inflationary pressures were still working their way through the system. While the interaction of all these influences could conceivably result in a soft landing from rates of spending growth which are clearly unsustainable, the prospect of a hard landing can by no means be ruled out.

The implications for other economies

The US economy in 1999 produced 22 per cent of global GDP. Moreover, over the last two years, spending in the United States has accounted for 32 per cent of the increase in spending globally. A hard landing in the United States could then still have material effects elsewhere. The major English-speaking countries would seem particularly exposed. For most of them, including Australia, the alignment of their business cycles with the United States has grown increasingly close. Moreover, in many cases, the imbalances identified in the United States also seem evident. In Australia, for example: credit growth has been very rapid; asset prices are very high

11. See BIS (2000b), pp 109–110, especially Graph VI.5.

12. In sophisticated financial markets like those in the United States, FDI can be hedged for currency exposure rather than sold.

(indeed property prices have risen much more strongly than in the United States); the household savings rate has fallen sharply; and external deficit and debt numbers are at near record and record levels respectively. A change in sentiment concerning prospects in the United States might also imply changes in sentiment elsewhere. Again, this could be a welcome change on the one hand or ‘too much of a good thing’ on the other.

Elsewhere, the implications of a slowdown in the United States would seem more negative than positive. A significant factor in the rebound in growth in East Asia has been IT-related exports to both the United States and Japan. While consumer spending has begun to rise, it is not yet very robust. Countries in Latin America, particularly Mexico but to a much lesser extent also Brazil, are highly dependent on exports to the United States. They also rely heavily on commodity exports, whose prices might be sensitive to a US downturn. The recovery in Japan remains very fragile, with consumer spending continuing to stagnate and confidence likely to be further assaulted by job losses associated with further restructuring. Were the yen to strengthen further as the US economy weakened, this would unquestionably be bad news for Japan and for the region. On a significantly more positive note, aggregate demand in Europe now seems to be growing strongly and fears are beginning to re-emerge about a rise in inflation. Some strengthening of the euro in the context of a possible US slowdown might reduce the need for a cautionary hike in interest rates, perhaps contributing to the sustainability of the current expansion.

Finally, it may be worth noting that financial markets increasingly seem to take their cue from the United States.¹³ Higher bond rates and lower equity prices could well spill over into other jurisdictions, with implications for spreads as well as market volatility. While the events surrounding the collapse of LTCM and the Russian debt moratorium indicate that European markets might be less affected, the financial markets of emerging markets might be particularly vulnerable. Whether, as during the Asian crisis, Australian markets would benefit from a flight to quality would very much depend on how financial markets assessed the severity of the internal imbalances referred to above. Perhaps the only thing that is clear is that future developments in the Australian economy will increasingly reflect international as well as domestic influences.

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13. See Ayuso and Blanco (2000), Table 1.

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2. General Discussion

Much of the general discussion of DeLong's paper focused on the contribution of computer technology, and in particular, information technology (IT) to economic growth in the US in the 1990s. Participants also debated the extent to which other OECD countries can expect to benefit from IT over the next decade.

In considering the various ways in which computer technology has contributed to macroeconomic performance, one participant noted that the increased use of the internet during the 1990s had been crucial, and went on to point out that the internet has intensified competition among producers, thereby forcing them to become more efficient. Another argued that by facilitating communication and access to information, the internet has also reduced producers' costs. The resulting decline in prices has meant that consumers have been the primary beneficiaries of the IT revolution.

While participants were generally convinced by DeLong's assertion that the main source of the US's remarkable economic growth in recent years had been advances in computer technology, they were not convinced that productivity growth would continue at the same rate in the foreseeable future. Rather, they tended to agree with White's view that while DeLong had focused exclusively on supply-side factors, there were reasons to be concerned about the demand side. There was some discussion of the asset price boom in the US equity market, with a few participants expressing concern about the possibility of a major correction, and its consequences not only for the US but also for markets elsewhere. One suggested that major English-speaking OECD countries may be especially vulnerable to a sharp slowdown in the US economy, given that business cycles in these countries are highly correlated with those in the US. While acknowledging this possibility, one participant pointed out that we now have reasons to be more confident in the ability of monetary authorities in OECD countries to effectively manage aggregate demand.

There was considerable disagreement as to the likely contribution of IT to growth in other OECD countries. Several participants noted that a key difference is that while the US is at the frontier of technological innovation and production, the other countries are in the process of gradual catch-up. A few pointed out that it is important

to distinguish between productivity gains resulting from the *production* of computer technology, and those resulting from the *use* of computer technology. It was felt that if the productivity gains derive mainly from the *production* of computer technology, then productivity gains linked to IT will most likely be less in other countries.

There was also some discussion of problems associated with measuring the contribution of computer technology investment to national income. For example, since computer technology depreciates rapidly, high rates of investment in this sector are necessary to maintain the capital stock. To the extent that this effect of rapid depreciation is not adequately accounted for, calculations of the contribution of computer technology would tend to be exaggerated.

In discussing Australia's experience in this regard, it was argued that the widespread use of information technology has been a very recent phenomenon and therefore, cannot fully explain economic growth over most of the 1990s. Instead, a range of structural reforms, including trade reform, labour market reform, and financial market reform, that were undertaken during the last two decades were seen by many participants as the primary source of Australian productivity growth in the 1990s.