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Ian M. McDonald: A review of his contributions to economics

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Ian M. McDonald: A review of his contributions to economics

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I am grateful for helpful comments from Ross Guest, Kwang Ng, Hugh Sibly and Roy Webb; and especially to Ian McDonald for providing background information and discussions of his research that I have drawn on.

Introduction

It is a pleasure and privilege to be able to provide this commentary on Ian McDonald's career in economics. It's been my good fortune to have Ian as a teacher when I was a 2nd year student; as the supervisor of my Masters thesis; as my boss when I tutored Intermediate Macroeconomics; and then as a colleague for over 20 years in the Department of Economics. So I feel I'm in a position to provide you with an informed perspective on Ian's career; as well as being incredibly lucky to have had the benefit of his example and wise counsel over all these years.

Some background

Ian's career as an economist almost never happened. He did his undergraduate studies at University of Leicester, completing a Bachelor of Arts with Honours in 1968. But it was only with some pushing from his parents that he began the degree. Ian says: 'I wasn't really interested in going to university. I only applied because my parents insisted I apply. Then I got into university and I found I had an aptitude for economics.' Having discovered a passion for the field, Ian undertook a MA in Economics at University of Warwick, which he completed in 1969, and went on to do his PhD in Economics at Simon Fraser University from 1970 to 1974.

Upon completing his PhD in 1974 Ian joined the Department of Economics at University of Melbourne. He has been here ever since. You will see that I have chosen a fairly bland title for my commentary. In fact, this was only after rejecting a range of other titles where I tried to capture something of the essence of Ian. One of these was 'How the Department of Economics at University of Melbourne Civilised Ian McDonald'. In support of this I provide Exhibits 1-3. Exhibit 1 is Ian during his days at a PhD student. I have pointed out to Ian that: a) His suntan is rather too developed for someone who was working really hard on a PhD in economics; b) His taste in cars – measured in quality units - has followed a U-shape over his life. In his early life Ian drove this stylish machine, and he currently drives the academic's sports car, an Audi. But when I knew him in the early 1980s Ian drove an early model Toyota Celica, with doors that could be opened with a 10 cents coin; and c) It's a testament to his healthy lifestyle and his great

equanimity that he hardly seems to have aged. Put a long black wig on Ian, and he would look much the same today. Exhibit 2 was taken around the time he came to the Department. Either Ian was doing an early audition to be Sirius Black in 'The Prisoner of Azkaban', or modelling himself on Charles Manson. Obviously he had found it a disturbing experience leaving the Northern hemisphere; or maybe the Economics Department at Melbourne was not quite what he was expecting. In any case, we finish with Exhibit 3, Ian as we know him today – urbane and charming; you could take him anywhere. Maybe that has had a bit to do with his wife Daina as well, but at least being in the Department doesn't seem to have done him too much damage.

I said that Ian commenced in the Department of Economics in 1974 and has been there since. That makes 38 years to where we sit today in 2012. Originally appointed as a Lecturer, Ian got tenure on April 1 1978 (a date which he emphasises), and was then promoted through the ranks, being appointed to an advertised vacancy for a Professor from July 1 1991. Ian has taken several opportunities that have been offered to him to visit away from Melbourne. He spent 1976-77 as a Visiting Lecturer at Nanyang University in Singapore, was a Visiting Scholar at MIT for 1981, and then a Visiting Associate Professor at Queens University in 1989-90.

During his 38 years Ian has built up an enviable research portfolio; primarily working in the field of macroeconomics, and motivated in Ian's words, by 'the importance of the problem of unemployment'. At the same time he has been a major part of the teaching program of the Department of Economics. For 20 years he taught the core second-year subject, Intermediate Macroeconomics; and for the past decade has brought important innovations teaching a 3rd year subject in Behavioural Economics and co-teaching the Arts Faculty foundation subject 'Politics, Philosophy and Economics'. Ian has also made major contributions to management of the Department, Faculty and University. He was Head of Department from 1993 to 1996, had two terms as Deputy Dean, and a variety of roles in the university including being Chair of the Academic Board TALQAC in 1999 to 2000. As one of the group in the Department who came to influence its management from the mid-1980s onwards, he was integral to setting the Department on its trajectory to where it sits today.

Ian in a nutshell

I want to start out by giving you a description of what I think are Ian's main characteristics.

First, Ian is a person who is hugely good-spirited. He has a consistently positive outlook, and I can't recall him ever giving the impression that he thought he had been hard done by. He is unfailingly generous with his time and advice – both with students and colleagues; and he has been similarly generous in committing his time to serve the Department and University.

Second, Ian is the complete academic. He has made exceptional contributions across research, teaching, and service to the university, community and economics profession. He has also done this without ever seeming to struggle; although he certainly works very

hard. (The one-time coach of Hawthorn, Yabby Jeans, famously commented: 'Football is not a difficult game. Either you have the ball, the other side has the ball, or it is being contested.' I can imagine Ian telling Yabby Jeans that being an academic is not that difficult: 'All you need is to be good at research, teaching, and service.)

Third, Ian has worked out his own path to follow. I guess all of us would want to make their own case for having done this; and to some degree, reasonably so. I think, however, that in Ian the characteristic is particularly marked. He has not followed fads or fashions. He has not been someone to write the Australian version of a US paper; or to fiddle with changes to assumptions to make a new paper out of an already published paper. Instead he has decided what he thinks are the important questions that need to be answered to understand our economy and society; and then decided what he thinks are the most fruitful approaches for exploring those questions. That Ian has found his own path ultimately explains, I think, why he has been able to make the seminal contributions that he has. I think it also explains Ian's continuing development throughout his career. When he has found a new area of knowledge that he judges will be valuable for thinking about the questions he wants to answer, he has set out to learn it; most recently for example in his engagement with behavioural economics.

If Ian has followed his own path, what has this path been? This is the fourth component of the presentation of 'Ian in a nutshell' that I want to make. Ian has described his main area of interest as macroeconomics, and in particular the problem of how to deal with high unemployment. I would cast this in a more general way. To me, Ian is someone who cares about civil society; as Sylvia Nasar (2011, p.xv) has put it in describing the early evolution of economics:
'…searching for intellectual tools that could help solve what Keynes called the 'political problem of mankind: economic efficiency, social justice and individual liberty'.'

I think this quote is apposite because in the questions that have motivated his research and teaching, Ian is very much an old-style Keynesian. The consistent theme of his research has been to understand why unemployment and inequality happen in capitalist market-based economies, and what policy-makers can do to alleviate those problems. And he has thought that these problems were important because their existence can threaten the existence of a civil society.

You get a good sense of this from Ian's <u>Macroeconomics</u> textbook [1, p.5]. There, he writes of the Australian macroeconomy in the early 1990s:
'In 1993-94 the rate of unemployment was higher and the rates of national saving and inflation were lower than they were in 1988-89. To make a judgement about whether economic welfare was greater or less than in 1993-94 compared with 1988-89 requires a weighting on the three characteristics…My value judgements are such that the increase in the rate of unemployment and the reduction in national saving caused a greater loss of economic welfare than the gain in economic welfare created by the decrease in the rate of inflation.'

The questions that Ian has addressed are one part of his path; another part of the path is how he has gone about answering the questions. In the approaches he has taken to analysing unemployment and inequality I think of Ian as being an old-style institutionalist; in the mould of economists such as John Dunlop, Arthur Ross and John Commons. By institutionalist what I mean is that in trying to explain what happens in labour markets, Ian has consistently emphasised the role of institutions (such as trade unions) and human psychology (recognising for example that as humans we care about considerations such as fairness). (Of course Keynes also drew extensively on psychology in his work – an aspect of his work that Ian discusses in [2].)

The other part of Ian's path is to describe how he has presented his answers. Ian does write well; but he is a master of the diagram. In almost every one of his papers there is a diagram that conveys the main result and intuition; or a graph that in a glance lets you understand the point he wants you to take away from some data.

A final point I want to make is about the breadth of Ian's intellectual interests. From the insightful reviews he has often provided me of the very many plays, musical performances and operas that he and Daina have attended over the years, I am sure he could have been a critic if he had wanted. Ian also reads a huge amount. It has to be said that Ian takes his reading seriously. He once told me that he was reading Henry James, but finding that to contemplate the writing properly, he could only get through 5 or 6 pages a night. I thought that perhaps the same sleepiness that often seems to affect Ian at meetings was also intruding on his nightly reading time, or that he needed new glasses, or was just getting a bit old and slow. However, I soon found out different. Ian gave me a copy of 'The Bostonians' to read. It is a marvellous book, with a capacity to evoke an atmosphere, and with characters and settings, that remain with you long after reading. I did find though that it was very hard going; and I could only read a few pages at each sitting. Feeling like I could empathise with Ian, I told him that I loved the book, but I was having the same problem with Henry James that he had found. 'Oh', Ian told me, 'I read 'The Bostonians' quickly. That is one of his easy books.' Ian's interests and reading extend to philosophy (he recently took a course on Kant) and psychology; and, of course, the other area of human activity that matches these fields for intellectual richness, Australian rules football. His breadth of intellectual interests, and Ian's consequent capacity to bring to bear alternative perspectives on how humans live and think, I would say partly explains how he has gone about being an economist.

Trade unions and wage-setting

In a series of articles in the 1980s Ian studied the implications of trade union wage-setting for wage dynamics and employment outcomes. This research was hugely influential, and, together with research on topics such as staggered wage-setting, implicit contracts and efficiency wages, constituted the beginnings of the New Keynesian paradigm.

Ian's description of how he came to work on this topic is at once instructive and disarmingly honest:

'On getting tenure…I decided to research on an important issue, the determination of nominal wage rigidity. I was unhappy with the somewhat trivial research I had done on macroeconomic stability, the motivation for that research being to get tenure. At the time the theory of implicit contracts was the frontier theory. To me that theory was not convincing because the reliance on risk seemed a poor fit with the sustained periods of wage rigidity observed in the real world.'

Ian's research on the topic of wage rigidity commenced when he prepared a note [3] on a 1975 paper in Economic Inquiry by J. H. Moore. In that paper Ian developed the basic analytics of a model of trade union wage-setting, and showed how workers who were members of a union might choose to vote against a wage cut with their existing employer, even if their income should they lose their current job would be less than the reduced wage. Having seen an announcement of a forthcoming paper on wage rigidity by Robert Solow to be published in the Journal of Macroeconomics, Ian sent his note to him. Robert Solow's four page response became the basis for their collaboration on the well-known paper, 'Wage bargaining and employment' [4], published in the December 1981 issue of American Economic Review. This paper has been cited 485 times (Web of Knowledge, accessed 8/2/2012). It is the most cited social science paper ever published by an academic affiliated with the University of Melbourne (I am grateful to Andrew Oswald for giving me this information). It has been reprinted in seven different volumes of collected papers, including the Mankiw and Romer (1991) 2-volume set on New Keynesian Economics.

The paper's main objective was to characterise conditions under which trade union wage setting might cause real wage rigidity. The beginning point is a trade union that has a closed shop arrangement covering all of some specified group of workers. The union's objective is to maximise the expected utility of a representative member:
$EU = (L/N)[U(w) – D] + ((N-L)/N)[U(b)]$
Where N = union membership; L = employment; U(w) – D is net utility when employed; and U(b) = utility for a worker who is not employed in a job covered by the union.

Two scenarios for wage-setting are considered. The first is a simple monopoly model. The union unilaterally chooses the wage at which it members will work, after which the employer chooses the level of employment to maximise its profits. In a subgame perfect equilibrium the union chooses the wage that maximises the EU of a representative member given that the employer will choose an employment level on its (profit-maximising) labour demand curve. Graphically, this outcome is at a point of tangency between the employer's labour demand curve and an indifference curve representing the union's preferences (see Figure 1).

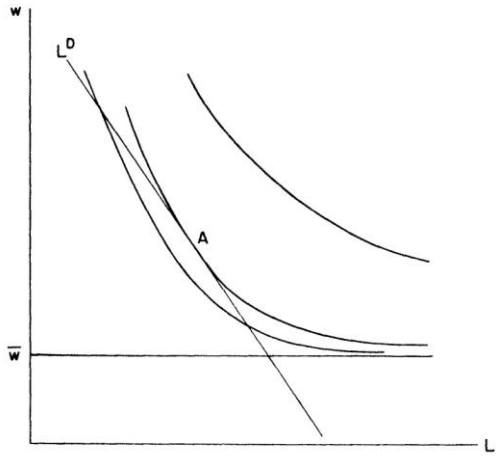

FIGURE 2

Figure 1: Wage and employment outcome in the monopoly union model
Source: [4, Figure 2]

The second model, the main modelling innovation in the paper, is designated as an efficient bargains model. This model was motivated by Ian realising that the wage/employment outcome in the simply monopoly model would not be Pareto optimal. In the efficient bargains approach, a contract curve of efficient wage/employment outcomes is first identified. Various approaches are then used by Ian and Robert Solow to choose a predicted wage/employment outcome from this set of possible outcomes – such as a fair shares rule. Graphically, this outcome is [4, p.903] 'is at the intersection of an upward-sloping *efficiency* locus and a downward-sloping locus that can be interpreted as reflecting *equity* (or power) considerations' (see Figure 2).

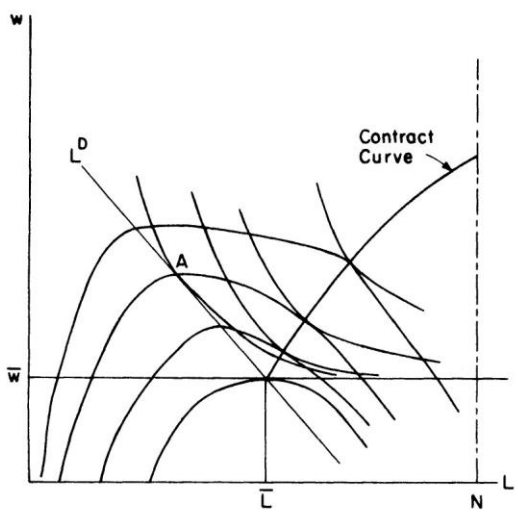

FIGURE 3

Figure 2: Wage and employment outcome in the efficient bargains model
Source: [4, Figure 3]

The final stage in the paper's analysis is to derive conditions under which there will be real wage rigidity in the face of business cycle changes in labour demand. In the monopoly union model it is shown that wage rigidity will occur where the labour demand curve shifts iso-elastically and provided that the alternative income when out of employment, b, does not vary too much over the business cycle (such as where government unemployment benefits remain constant over the business cycle). In the efficient bargains model, the exact conditions for wage rigidity depend on the rule for choosing the wage/employment outcome from the set of efficient outcomes. But it is possible to provide a general intuition. Where the influence of the business cycle on changes to product market conditions is greater than the effect on alternative income, then both the efficiency and equity loci will shift rightwards in an expansion, and leftwards in a contraction. Employment then will unambiguously vary pro-cyclically; however, there will be offsetting effects on real wages. (That the product market effect outweighs the effect on alternative income matters because an improvement in product market conditions shifts the contract curve rightwards; whereas an increase in alternative income – which might be expected to accompany an improvement in product market conditions – will shift the contract curve leftwards.)

Two early criticisms made of this approach to studying wage-setting were that: first, it mis-represented the process of wage-setting; and second, it failed to appropriately capture union preferences by not recognising the dominant role that 'insiders', members who were employed, or who had high levels of seniority and job security, exerted on union decision-making. In fact, Ian had been aware of these potential criticisms at the time of working on the original paper (see [5]). But the criticisms did become the motivation for the further research that Ian undertook on union wage setting in the 1980s. Much of this research is summarised in [6], [7] and [8].

For the most part the findings from this research showed that Ian and Robert Solow's results were robust to taking account of the criticisms. In [6] Ian and John Creedy reviewed four main alternative models of union wage-setting that incorporated alternative assumptions on union preferences and the wage bargaining process. In addition to the simple monopoly union model and the efficient bargains model, they also considered the 'right to manage' model where the union and employer bargain over the wage, after which the employer unilaterally sets employment, and an insider-dominated model where a sub-group of employed union members, who face no risk of unemployment, dominate decision-making (see also [6] for a more detailed consideration of the insider-dominated model). The alternative models are shown to be sufficiently similar that the equilibrium bargained wage can be described by the same general function; and importantly, in all the models 'shifts in demand have their major effect on wages…' [6, p.358].

In one respect, however, some doubt was cast on the generality of the findings on wage rigidity. In [8] (building on the brief analysis in [5]) Ian examined a model where the group of insiders that dominate union decision-making corresponds to the members who are currently employed. In this environment the union has a tendency to respond to a business cycle expansion by seeking wage increases rather than employment growth.

This is because it weights the welfare of currently employed members above that of members who are currently unemployed. In the limit, where the union places no weight on the welfare of its currently unemployed members, then an increase in labour demand will translate solely into higher wages.

In a later piece of research with Robert Solow [9], Ian embedded the trade union model of wage-setting into a two-sector model of the labour market: a high-wage unionised primary sector, and a competitive secondary sector (sharing some similar features to the Harris and Todaro, 1970, model of employment and migration in a developing economy). In that research they showed that it was possible to 'give an account of' two main stylized features of the US labour market: counter-cyclical variation in the wage differential between primary and secondary sector workers; and larger proportional variation over the business cycle in employment in the secondary than primary sector.

Ian's own judgement on his research on trade unions and wage bargaining is to give a plus and a minus. From a practical perspective, the bargaining theory approach was valuable in seeming to provide part of the explanation for the rise in unemployment in industrialised economies that happened in the 1970s. Declining trade union density since that time has, however, made it less relevant; and the fact that wage rigidity and high unemployment did not disappear with that decline in union influence implied that there must be other factors apart from trade union wage bargaining at work in explaining wage rigidity. Moreover, Ian had concerns about the robustness of the association between trade union wage bargaining and wage rigidity. Extending the model of trade union wage setting to a general equilibrium framework resulted in a unique natural rate of unemployment (see also Layard et al., 1991), hence removing its capacity to explain persistent changes in unemployment.

The equilibrium range

Ian's dissatisfaction led him to look for alternative ways of explaining wage rigidity that first, had a more rigorous theoretical foundation, and second, better matched the data. This led to Ian's research on what he has called the 'Equilibrium range', the main topic of his research activity from the late 1980s to early 2000s. Much of this was undertaken with his one-time PhD student, Hugh Sibly, and his colleague in the Department of Economics, Jenny Lye.

The equilibrium range is the idea that there may be a range of rates of unemployment at which the rate of inflation will remain constant, with rates of unemployment outside the range exhibiting the same relation with the rate of inflation as in the usual short-run Phillips curve (see Figure 3). That is, beyond the lower bound of the equilibrium range, umin, further decreases in the rate of unemployment will cause a higher rate of inflation; and beyond the upper bound of the equilibrium range, umax, further increases in the rate of unemployment cause a lower rate of inflation.

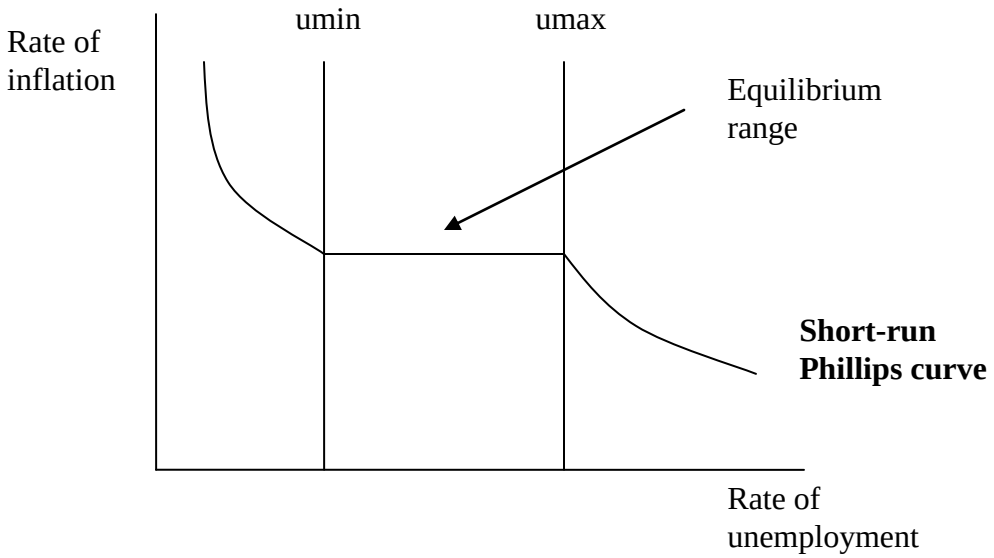

Figure 3: The equilibrium range

Ian's work to establish theoretical foundations for the equilibrium range proceeded in two main stages. In the first stage [10 and 11], he showed that adding the extra feature of producer prices being set in a customer market to a model with trade union wage setting could result in an equilibrium range of rates of unemployment. In the second stage Ian and Hugh also introduced the possibility that workers experience loss aversion [12]. It is shown that this can result in a range of equilibrium wages, thereby expanding the range of equilibrium rates of unemployment.

Customer markets

In a customer market it is assumed that price changes are communicated to a firm's existing customers much more quickly than to potential future customers (see Scitovsky, 1952, pages 272-81). Hence a price increase leads to a substantial and rapid loss in sales; whereas a price decrease will lead to only a gradual rise in sales. This asymmetry in the speed of adjustment of sales will produce a discontinuity in the present discounted value (PDV) of sales, where the PDV of marginal revenue (MR) from a decrease in price is less by a discrete amount than from an increase in price.

For expositional purposes, a kinked demand curve can approximate the implications of Scitovsky's analysis for the price-setting of a profit-maximising firm. The kink in demand for the firm's output introduces a discontinuity in marginal revenue (MR) at the current price (see Figure 4). It implies a range of levels of marginal cost (MC), between MCmin and MCmax, at which the firm's profit maximising price remains constant.

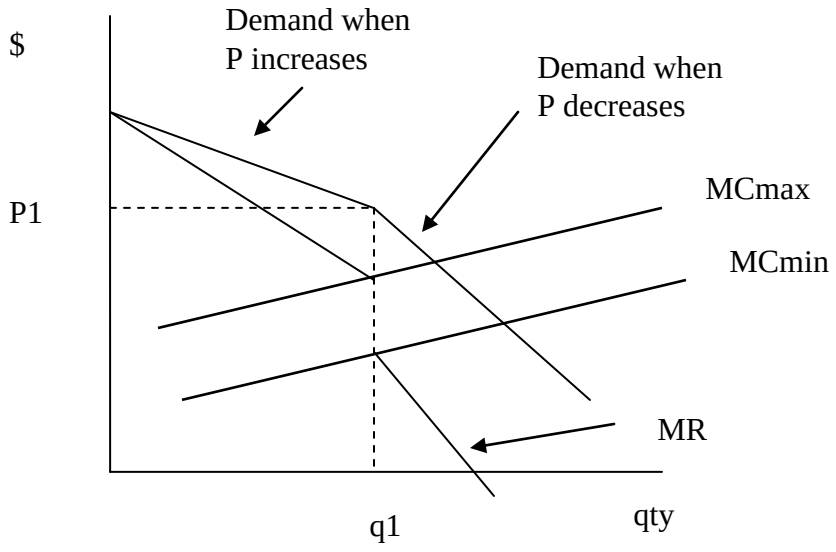

Figure 4: Price setting in a customer market

There are also implications for price dynamics in a customer market. Suppose, for example, that an expansionary government policy increases demand for a firm's output; and that the increase in demand can be represented graphically as parallel outwards shifts in the demand and MR curves. Then where the firm's MC curve intersects the discontinuous ranges of both the original and new MR curves, it follows that the profit-maximising price will remain constant before and after the increase in demand (see Figure 5).

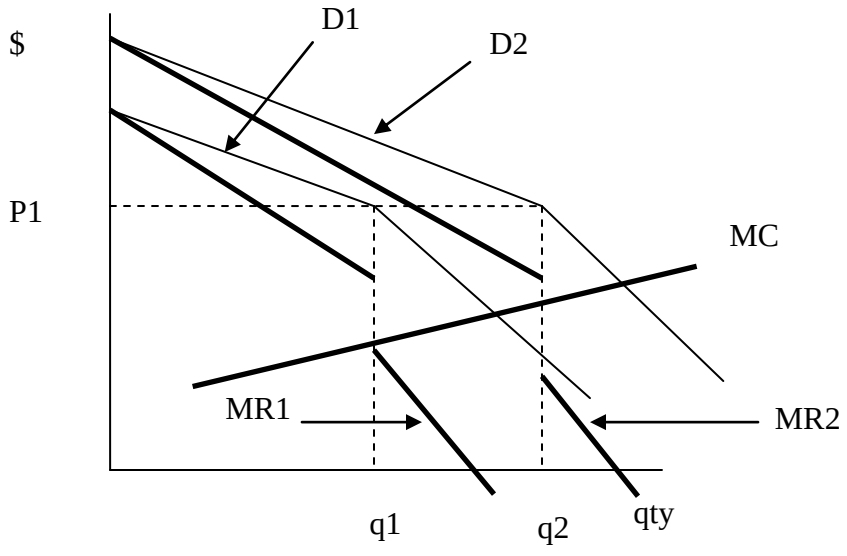

Figure 5: Price stickiness with an increase in demand in a customer market

The possibility that a change in demand will leave a firm's profit-maximising price unchanged is argued to have particular importance. Considered jointly with the result that trade union wage bargaining can produce a constant real wage at different levels of employment, the analysis of price-setting in a customer market implies that a profit-maximising firm can, in response to a change in demand, change its employment while keeping its price constant. It follows that there can be a range of equilibrium employment levels.

Take the case of the firm described in Figure 5. Suppose that its MC is based on a particular value of the nominal wage. Then the two equilibrium levels of output, q1 and q2, are consistent with the same real wage since the price level remains constant. Thus both equilibria are consistent with profit maximisation by the firm and equilibrium in the model of trade union wage bargaining. Furthermore, each output level between q1 and q2 would also be consistent with profit maximisation and bargaining equilibrium for an appropriately positioned demand curve between the curves D1 and D2.

By treating this analysis as representative of what happens in the economy, Ian argues that the model of price setting in a customer market and wage bargaining provides a microeconomic foundation for the fundamental Keynesian proposition that a change in the level of nominal aggregate demand can cause a permanent change in the levels of output and employment.

Loss aversion

Loss aversion is the idea that decision-makers place greater weight on losses in income than gains in income, where gains and losses are measured relative to a reference point (see Tversky and Kahneman, 1991). Ian and Hugh Sibly interpret loss aversion to imply that there is a discontinuity in workers' utility functions at their existing (reference) wage level. It follows that there can be a range of wage levels as the equilibrium of a wage bargaining model. ('At the maximum bargained wage, the marginal benefit to the worker from a wage increase is equal to the marginal loss to the employer from that wage increase. But the marginal loss to the worker from a wage decrease is greater than the marginal gain to the employer. This follows from the discontinuity in the utility function implied by loss aversion. Only at a lower bargained wage is the marginal loss to the worker from a wage decrease equal to the marginal gain to the employer. This lower bargained wage is the minimum bargained wage.' [17, p.37]) Having this range of equilibrium real wages then expands the possible equilibrium range of employment levels.

Policy implications

Several features of the equilibrium range theory are worth emphasising. First, the key feature is obviously the existence of a range of equilibrium levels of employment, and hence the rate of unemployment. Levels of employment within the range of equilibria will not create disequilibria and therefore will not cause an unemployment-level effect on

inflation. The size of the equilibrium range will depend on the size of the customer market effect on firm's price/MC mark-ups and the degree of loss aversion exhibited by workers. Second, the minimum rate of unemployment in the equilibrium range, minu, can be regarded as akin to the standard natural rate concept. A decrease in unemployment below minu will cause higher inflation, and minu is determined by supply-side factors such as the unemployment benefit replacement ratio. Third, the level of the rate of inflation within the equilibrium range will depend on factors identified by the natural rate approach - such as the expected rate of inflation.

A variety of implications for policy-making follow from the equilibrium range theory. The main idea is that, within the equilibrium range, it is possible for government to change the rate of unemployment without consequences for inflation. Hence, Ian has argued [13] that it is critical for policy-makers to identify the level of umin; and then to understand that it can reduce the rate of unemployment to that level without causing a higher rate of inflation.

In [14] Ian and Hugh Sibly show that one policy approach for reducing unemployment may be a temporary unanticipated increase in the money supply. Unanticipated changes in the money supply cause an unanticipated change in the real wage provided there is some stickiness in nominal wages. Where a worker's reference wage is their real wage in the previous time period (or more generally is malleable with respect to a monetary shock), an increase in money supply will therefore induce a lower reference real wage, and hence future output will increase.

The equilibrium range theory implies that 'within the range' changes in aggregate demand should not affect the rate of inflation. Yet in past decades in Australia there have been declines in the rate of inflation in Australia despite the rate of unemployment also falling. Hence an important elaboration of the equilibrium range theory is to have some alternative explanation for why inflation has varied in Australia. In [14] Ian and Jenny Lye consider the potential role of incomes policies and inflation targeting in reducing inflation expectations and hence the rate of inflation. Their analysis of changes in unit labour costs in Australia from 1965 to 2001 (building on [17]) finds some support for the role of incomes policies in moderating inflation. Five out of eleven episodes of incomes policies are found to have had a significant downward effect on wage inflation, with the 'successful' episodes being concentrated in the 1980s and in periods with relatively high rates of unemployment. In subsequent work [for example, 16 and 18] Ian has suggested incomes policies as a potentially valuable supplement to inflation targeting by the RBA as a way to lock-in low expectations of the rate of inflation. For example, in [16] Ian argues that Fair Pay Commission should adopt the policy of adjusting minimum wages by 4 per cent per year, thereby assisting in creating an expectation of nominal wage inflation in Australia in the range of 2 to 3 per cent per year.

The equilibrium range in Australia

Ian, Jenny Lye and Hugh Sibly have several papers where they test the equilibrium range theory using data for Australia. In [17] they report the findings from empirical analysis of the relationship between inflation and unemployment in Australia for the period 1965 to 1997. This analysis was updated to 2005 in later papers by Ian and Jenny Lye [15 and 18]. In these papers the estimation method is a regime switching model for the rate of increase in unit labour costs that distinguishes between three states: peak (rate of unemployment less than umin); range (rate of unemployment between umin and umax); and trough (rate of unemployment greater than umax); with umin and umax being estimated as part of a maximum likelihood procedure.

There are several main findings from this analysis. First, it is not possible to reject the hypothesis of an equilibrium range. The estimated range is quite large – for example, 6.6 percentage points of the rate of unemployment when the estimation period to 1997 is used. Second, umin is found to have fluctuated widely, varying from between 2 per cent and 7 per cent. After beginning at around 2 to 3 per cent in the late 1960s, umin reached a peak of 7 per cent in 1977, thereafter mainly following a decreasing path back to about 2.5 per cent in 2005. Third, two main determinants of umin are identified: trade union density, and the unemployment benefit replacement ratio. In the early 1970s increases in the unemployment benefit replacement rate caused the large increase in umin; whereas from the late 1970s onwards declines in trade union density are estimated to have progressively lowered umin.

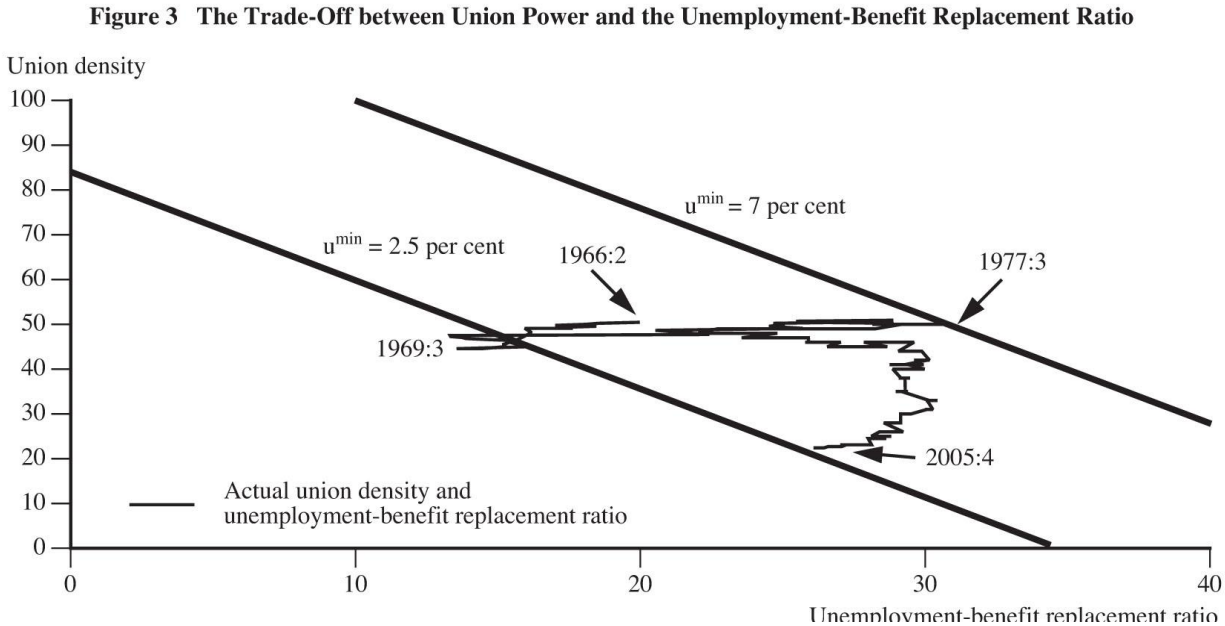

Figure 6: The evolution of umin, Australia, 1996 to 2005
Source: [18, Figure 3]

Fourth, until the late 1970s the actual rate of unemployment in Australia tended to be below umin; but ever since the early 1980s the actual rate of unemployment generally exceeded umin by several percentage points. Ian uses the comparison of the paths of the actual rate of unemployment in Australia and umin to make inferences on the causes of unemployment and inflation in Australia [18, p.250]. Increases in the rate of unemployment in the 1970s appear to have been primarily associated with an increase in umin caused by higher unemployment benefits. Hence Ian argues that this rise in unemployment can be attributed to inappropriate supply-side policy. Policy-makers compounded their difficulties by failing to recognise that the increase in umin had occurred; and by using aggregate demand policy to keep the actual rate of unemployment below umin caused increasing inflation in Australia commencing in the mid-1970s. Looking to the end of the sample period Ian observes that there remained a large gap between the actual rate of unemployment and umin. Although the rate of unemployment decreased fairly consistently after 1993, umin also declined; so that in 2005 there was still a gap of 2.5 to 3 percentage points. Ian attributes this gap, and therefore the failure of the rate of unemployment to have returned to its 1960s levels, to weak aggregate demand policy; that is, the rate of unemployment could have been lower by 2.5 to 3 percentage points without causing higher inflation.

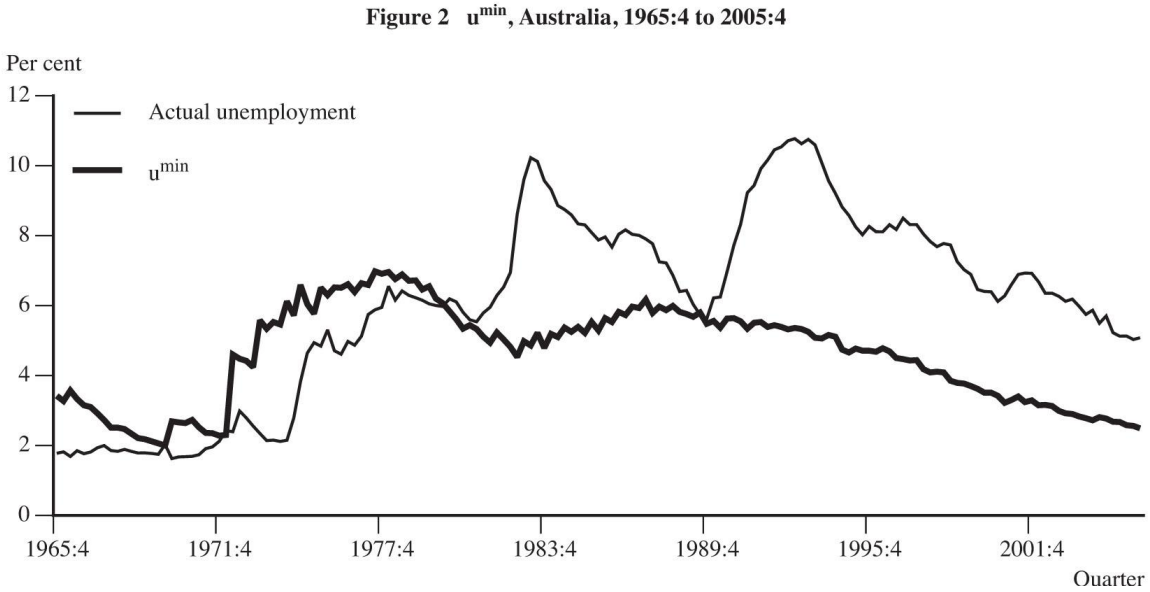

Figure 7: umin and the actual rate of unemployment, Australia, 1965 to 2005
Source: [18, Figure 2]

Why policy-makers would not have not to further reduce the rate of unemployment is a question that Ian explores in [19]. He assumes that the public judge the RBA according to a loss function:

$L = l(p, u - umin^*)$

Where L is the loss, p is the rate of inflation, u is the actual rate of unemployment, and umin* is the public's perception of umin. It then follows that [19, p.92]:

'…if the RBA can persuade the public to increase their perception of umin, then the RBA will enjoy an improvement in the public's evaluation of its performance.'
Ian then goes on to describe several reasons why the RBA is likely to be regarded as having an information advantage over the general public in estimating umin.

Australia's ageing population

In the early 2000s the implications of Australia's aging population became a major area of research for Ian, much of this done jointly with his PhD student at the time, now Professor Ross Guest. Ian describes his interest in this topic going back to when he was: '…first studying economics in the 1960s, when I got interested in the many comments one saw that people don't make enough provision for the future. It is often claimed that people don't save enough…In the 1980s, I started to think about a more systematic way of tackling this issue by applying optimal growth theory to questions of how much should we save. As I started thinking about this in the 1990s the aging population issue became important and this seemed a natural topic to apply the ideas of optimal saving.'

Ian and Ross Guest commenced by studying the consequences for living standards in Australia of an ageing population [20]. Their findings – once you read their work – are intuitive and sensible; yet they ran counter to much of the gloom and doom that characterised the initial public debate on this question.

The analysis uses a model of a small open economy with many periods that incorporates projections of the future age composition of the population and labour force. This model can be used to derive implied paths of future levels of consumption per person from 1999 to 2050. The base case prediction is for average growth in consumption per person of 1.2 per cent per annum. This compares with growth of 1.43 per cent that it is estimated would occur in the absence of population ageing effects. Hence, living standards are forecast to be slightly lower due to ageing effects, but still to grow strongly. This occurs because the assumed growth in labour productivity (1 per cent per annum) easily dominates the effect of ageing on living standards. Other simulations showed that a decrease in forecast rates of immigration (from a net increase per year of 0.54 per cent of population to zero) would slightly lower the growth rate in consumption per capita by 0.06 per cent per annum; but that plausible variation in the fertility rate would not affect living standards.

In a subsequent review paper [21] Ian and Ross Guest argued that there were important implications from their analysis for policy-making. Primarily, no drastic measures were required by government in anticipation of the ageing population – for example, '…there is little reason to cajole people today to do without medication, to save more, or to have more babies in order to protect the future living standards of the old' [21, p.9]

At the time, however, Ian believed he had limited success in convincing politicians of his arguments. Ian describes how he was asked to give evidence to a House of Representatives Committee – '…they listened and they asked me questions and so on and then at the end of the session as they were wrapping it up, the chair said "That's a pretty

optimistic scenario Professor McDonald – we're all hoping that things will turn out like that." In other words, he didn't believe me.'

Where Ian and Ross's research does suggest a role for government is in managing social outlays in order to achieve equity between older and younger populations [21, 22]. The government chooses the level of redistribution in society, from the young via taxes to the old in the form of pensions and health services, through its choice of the level of taxes/social outlays. In another one of his neat diagrams [21, p.6], Ian depicts this trade-off. In the absence of any increase in taxes, it is predicted that consumption per capita of the young and old would be respectively 90 per cent and 65 per cent above their 2000 levels. By increasing taxes and social outlays the government can move society in a north-west direction, raising the gain in living standards for the old and reducing them for the younger population.

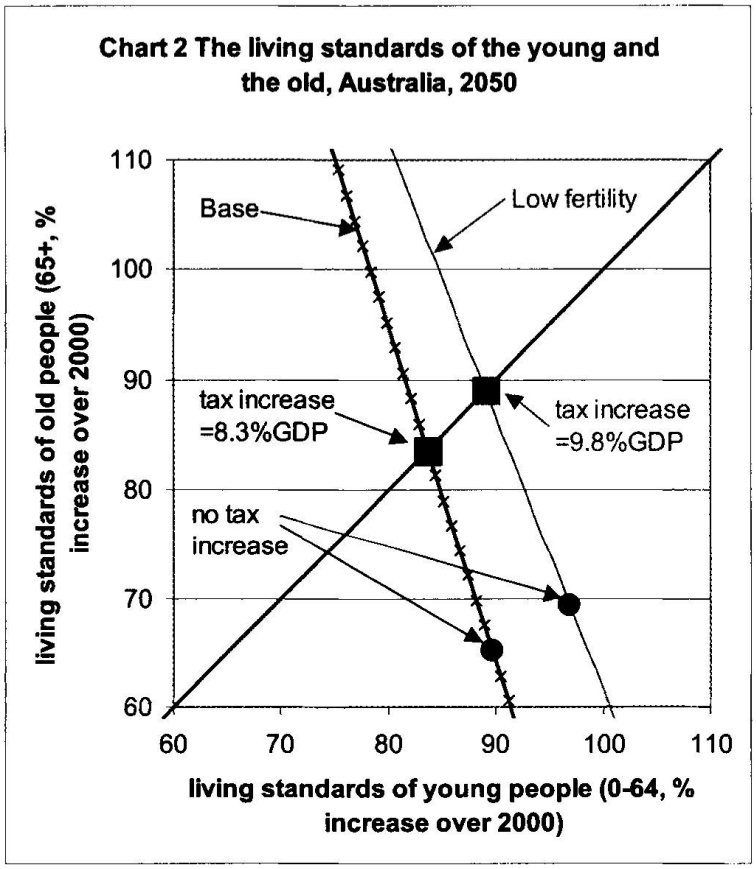

Figure 8: The trade-off in living standards between the young and old in Australia
Source: [21, Chart 2]

This work demonstrates Ian as the applied economist. He begins with a theory that is nicely matched to the situation he wants to understand. He is careful in choosing data to use in simulations. And his simulations are directed to a whole raft of policy-relevant questions, with the findings presented with great clarity. Ian and Ross Guest's review paper [21] would fit easily alongside any similar US contributions in Brookings Papers.

Building on the importance of productivity growth for living standards established in this earlier work, Ian and Ross Guest subsequently considered the implications for global living standards by region of international diffusion of total factor productivity [23].

Behavioural economics and human well-being

Discovering the idea of loss aversion took Ian's research on the equilibrium range in a new direction. It also initiated a whole new area of research and teaching activity for him. As Ian has explained:
'My appreciation of the importance of loss aversion opened my mind to other psychological concepts, such as cognitive dissonance. It also opened my mind to sociological concepts, such as the importance of social influences on people's thinking. At this time, in the late 1990s, a new area in economics was growing called behavioural economics. Behavioural economics draws on insights from psychology, sociology, and even neuroscience to develop economics. For me, behavioural economics promised to be a source of good sense about economics.'

Ian's revelation led him to undertake a wide variety of reading on this new topic, and in 2004 much of this was brought together when he commenced teaching a new subject in Behavioural Economics (the first in Australia, and I suspect one of the first anywhere). A good flavour of what Ian taught in those days is captured in the article he wrote for the 'For the Students' section of the Australian Economic Review [24]. The topics covered include fairness, loss aversion, self-serving bias and present bias. Subsequently, Ian has taken up many of these themes in his own research.

In an experimental project Ian and several others, Nikos Nikiforakis, Nilss Olekalns and Hugh Sibly, have examined the role of fairness and social comparisons [25]. They do this using an extended ultimatum game with three players: a Proposer, a Responder, and a Non-responder. The Proposer must decide how much of a fixed amount of 'money' to offer to the Responder, and how much to keep for him(her)self. The Responder must specify a rule for the minimum amount offered by the Proposer that he(she) is prepared to accept. Where the Proposer's offer is above this minimum amount then both Proposer and Responder receive shares of the money suggested by the Proposer; but where the offer is below the minimum then both Proposer and Responder receive zero. The Non-responder receives a payment of a fixed amount of 'money'. They do not take any part in the game; but both Proposer and Responder observe the amount given to the Non-responder. The idea in this game is that the allocation of money to the Non-responder will create a reference group effect on the amount of money requested by the Responder. The experimental analysis does confirm that (exogenous) increases in the payment to the Non-responder increases the minimum amount that the Responder is willing to accept; and also provides novel perspectives on how the formation of reference groups happens.

In another line of his recent work Ian has emphasised the importance of behavioural factors for understanding major economic events - such as the recent GFC [26]; arguing for example, that the existence of sub-prime mortgages depended on buyers exhibiting

present bias, and that the behavioural phenomenon of believing 'new era' stories explains why the downside risk associated with US housing prices was ignored by market participants. In considering how economists could have been so unprepared for the GFC, Ian includes an interesting reflection on how he perceives the evolution of economics in the past 20 to 30 years [26, p.249]:
'Economics has been dominated in the past two decades by a free market ideology, which includes a virtual opposition to market regulation. The free-market ideology has downplayed, almost to the point of rejection, the concerns of economists about traditional market failure…For example, economists have not led the environmental movement, even though economic analysis based on Homo economicus reveals that excessive pollution is a consequence of free markets. Consider the contrast with the movement to free trade, where economists have led…'.

Ian's interest in behavioural economics has also led him to think more about human well-being. He was quick to embrace the idea that research on the determinants of life satisfaction (happiness) can provide us with stylised facts about the well-being of different disadvantaged groups in society (see for example, Layard, 2005, p.84), and hence act as a guide for where government welfare policy should be directed. In a recent paper [27], Ian calculates 'life satisfaction tolls' for different groups in Australia, using data from the HILDA survey. He shows that the toll is greatest for those with a mental illness, receiving a disability pension or long-term unemployed. To the extent that policy-makers are unaware of the large negative effects of mental illness and disability, this may provide an argument for focusing more attention on improving the well-being of these groups; however, as Ian notes, it may also reflect the difficulty (costs) of improving their situation. Regarding the long-term unemployed, Ian draws on a much earlier piece of research [28] where he showed that the rate of long-term unemployment is primarily related to the state of the macro-economy. He therefore argues that the best remedy to the lower well-being that comes from long-term unemployment is effective macro-economic management.

Ian and teaching

As Nilss Olekalns wrote of Ian in his citation presented to Academic Board:
'Generations of students will attest to Professor McDonald's inspirational teaching. For over twenty years, he coordinated the subject Intermediate Macroeconomics where his insights into the discipline, combined with a masterful expository style punctuated with a legendary dry wit, provided students with not only a sense of the practical usefulness of economics, but also with a healthy scepticism towards doctrinaire approaches to the discipline.'

Ian's first lectures at University of Melbourne in 1974 were in Intermediate Macroeconomics. He gave three lectures on the Phillips Curve. For the rest of the 1970s he taught about one-third of the macroeconomics component of the second-year economics subject, and in 1982 took over teaching the whole of the macroeconomics component. He continued as the sole lecturer in Intermediate Macroeconomics for the next 20 years.

A major undertaking for Ian during his time teaching Intermediate Macroeconomics was to write his own textbook for the subject [1], building on the notes for students he had developed. The first thing that is impressive about the book (indeed any textbook) is the scale of the job. Completing a project like this is an act of love (or lunacy). The second thing you notice is how Ian's brilliance as an expositor comes shining through. Explanations of the theory are always clear, there are nice examples to illustrate key points, and always supplemented with Ian's diagrams. A third feature is how well the book flows. I think this is explained by Ian's objective in teaching:
'I aimed to keep as far as possible to a single analytic framework which was the IS-LM model. I figured this would maximise the students' understanding. I introduced [into the IS-LM framework] real wage constraint to discuss the real wage overhang issue, the consumption today-consumption tomorrow tradeoff to discuss the inter-temporal implications of the monetary/fiscal policy mix [see also 29]…I think this was a valuable extension…For me this tradeoff is the essence of economic growth.'
A fourth highlight is that the book is a treasure trove of ideas that I can never seem to find in other texts – for example, there is a comprehensive discussion of policy lags [1, pages 246-48], and a thorough coverage of the Friedman-Phelps natural rate and the expectations-augmented Phillips curve [1, pages 278-80].

I asked Ian how he would change his text if he was redoing it today. His reply is a nice summary on how his views about the macroeconomy have evolved:
'A new edition would have to incorporate the inflation target approach to monetary policy in an important way. But more importantly, the financial sector would have to be incorporated, more so than just the LM curve as done in macro texts. It has only become apparent to me in recent years that the financial sector is the major source of macro instability. I suppose this is a shift from the 1970s, when the unionised labour market was the problem. Deregulation has constrained the unions, at the expense perhaps of increased inequality, but unleashed the financial cowboys. The other aspect of a new textbook would be a behavioural economics basis. This would be important for wage and price determination, the consumption and saving decision, and of course the financial sector.'

His textbook reveals a lot about Ian's dedication to teaching. This can also be seen in his continual reflection on ways to improve how the subject was being taught. An example is his pioneering the introduction of a collaborative learning approach in tutorials. In this approach the primary activity in tutorials is for students to engage in problem solving facilitated by their tutor, rather than the tutorial being a mini-lecture. Ian explains:
'When Carol [Johnston] joined the Department she suggested we introduce collaborative problem solving in Intermediate Macro tutorials. That was a great innovation. It transformed tutorials into more student active sessions…Carol's system soon became the standard across the Department, at least in 1st and 2nd year. In this first year of CPS we did it as an experiment, for half the tutes, with results published in [30]. The effects in terms of improved marks were not as great as we thought. International students were helped. But CPS did lead to more satisfied students. Greater happiness for the same marks is a welfare gain.'

Ian's outstanding contribution to teaching was recognised by being the inaugural winner of the Dean's Award for Good Teaching in 1999; and by having received a Dean's Certificate for Good Teaching in almost every year since that time. His contributions to teaching have also extended to the high school teaching of Economics. With Carol Johnston he set up the Department's journal for high school students, Econochat (to which he subsequently contributed 12 articles), and he was a member of the VCE Economics Examination Committee from 1993 to 1998.

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Exhibit 1

Exhibit 2

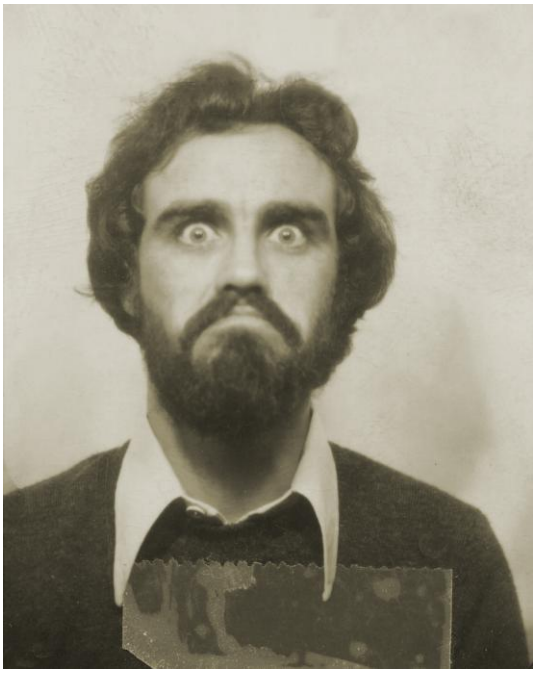

Exhibit 3