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Centre of Full Employment and Equity

Aggregate demand should do the job

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1. Introduction

In this paper we extend the analysis of Mitchell (2001) who opened with the statement: "the unemployed cannot find jobs that are not there!". The contrast between the missives of microeconomics, where cost minimisation is a necessary condition for efficiency and profit maximisation, and policy practice conditioned by the NAIRU approach in this regard is stark – given the high costs in terms of unemployment and corresponding waste of resources. At the macroeconomic level, the dominant economic orthodoxy has, since the mid-1970s, cajoled policy makers to follow policies that have deliberately and persistently deflated their economies under the false impression that the role of policy is to ensure the economy is operating at the natural rate of unemployment. The profession seems to have become obsessed with supply side remedies to the high unemployment, despite the fact that most economies have failed to generate sufficient jobs over the last 25 years to match the growth in their labour forces. The costs of unemployment have seemingly been ignored (Mitchell and Watts, 1997; Watts and Mitchell, 2000). There is now considerable evidence that rises in unemployment are highly persistent and cumulative and permanent costs are incurred if active policy does not seek to reduce it quickly (Mitchell, 1993, 2001). There is also mounting evidence against the dynamics implied by the NAIRU approach (Chang, 1997; Fair, 2000; Akerlof *et al*, 2000).

Modigliani, who introduced the term NAIRU to the economics profession (Modigliani and Papademos, 1975), has recently argued that (Modigliani, 2000: 3) that

> Unemployment is primarily due to *lack of aggregate demand*. This is mainly the outcome of erroneous macroeconomic policies… [the decisions of Central Banks] … inspired by an obsessive fear of inflation, … coupled with a benign neglect for unemployment … have resulted in systematically over tight monetary policy decisions, apparently based on an objectionable use of the so-called NAIRU approach. The contractive effects of these policies have been reinforced by common, very tight fiscal policies (emphasis in original)

In this paper we examine the evidence needed to support this statement from Modigliani, by comparing the experience of the Australian economy to that of the Netherlands over the last 30 odd years. We show that in particular misguided government policy has been responsible for the persistently high unemployment and the cumulative and permanent losses to social and economic well-being entailed.

The comparison between Australia and the Netherlands is interesting because they share many features yet in other ways are quite distinct. Both are relatively small, highly developed open economies with a well-developed system of social security. However, Australia relies on exports of primary commodities, whereas the Netherlands due to the more diverse nature of its exports enjoys a more stable terms of trade. The feature of the Dutch economy that separates it from others, including Australia, is that it forms a transport hub for major trade in Europe and beyond. Moreover, the Netherlands has experienced robust employment growth of 2.9 per cent per annum over the period 1995–2000, whereas the corresponding figure for Australia was 1.6 per cent. As a consequence the rate of unemployment in the Netherlands in 1999 was 3.3 per cent, compared to 7.2 per cent in Australia. However, the apparent success in combating unemployment in the Netherlands is partly clouded by the huge increase in inactivity since the early 1980s. While there were 267 thousand persons officially unemployed in 2000, the number of disabled workers entitled to benefits was recorded to be over 900 thousand! In terms of the labour force, this group (including sickness benefits recipients) has more than doubled. The percentage in terms of the labour force rose from 9 percent in 1970 to 20 percent in 1980. It remained at that level more or less ever since. This feature induced, for instance, OECD (1998) to report that, when defined in a "broad" sense, unemployment in the Netherlands would reach around 25 percent of the labour force (see also Muysken, 2001).

Section 2 challenges the view held by Layard, Nickell and Jackman (LNJ) (1991), among others, that the rise in unemployment can be attributed to reducing search effectiveness among the unemployed. According to this view, search effectiveness has declined as welfare benefits have risen. We argue that jobs have to exist before search can be effective. Section 3 traces the main determinants and we conclude that it is aggregate demand that dominates employment generation. Section 4 digresses into the supply side explanations of unemployment to show that they lack explanatory credibility. We then show in Section 5 that it is deficiencies in policy and business investment that explain the deficiency in aggregate demand. The final section challenges the view that the private sector are able to produce enough jobs if they are less constrained by regulation. We argue that full employment requires a strong job creation role by the public sector. Concluding remarks follow.

2. Jobs have to exist before search can be effective

Over the last 25 years, as unemployment has risen and persisted at high levels, orthodox economists have concentrated on the supply side of the labour market, hypothesising that full employment now occurs at much higher unemployment rates than in the past. Piore (1979: 10) reminds us that:

> Presumably, there is an irreducible residual level of unemployment composed of people who don't want to work, who are moving between jobs, or who are unqualified. If there is in fact some such residual level of unemployment, it is not one we have encountered in the United States. *Never in the post war period has the government been unsuccessful when it has made a sustained effort to reduce unemployment*. (emphasis in original)

Figure 1 plots the UV ratio for Australia from September 1966 to December 2000 and for the Netherlands (using annual data) from 1966 to 2000. Notwithstanding sectoral variations, at first blush, we are dealing with a heavily demand-constrained economy. Since the mid-seventies there were on average 11 unemployed for each vacancy in Australia, and 7 unemployed in the Netherlands.[2] We repeat the opening sentence: The unemployed cannot find jobs that are not there!

Figure 1   UV ratio for the Australia and the Netherlands, 1966-2000

(a) Australia 1966-2000   (a) The Netherlands 1966-2000
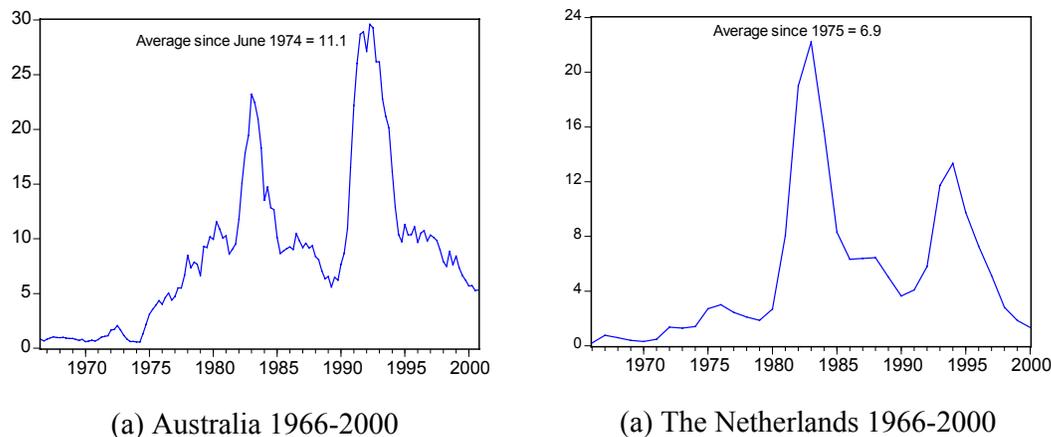
Source: Australia, ABS AUSSTATS, NIF current series data. Netherlands CPB (2001) and Muysken *et al.* (1994) and Ministry of Social Affairs (2001). The ratio is total unemployed (000s) to unfilled vacancies (000's). Australian data is quarterly, whereas the Netherlands is annual.

Figure 2 shows the unemployment rate on the left hand scale plotted against the sum of employment and vacancies (as a percentage of the labour force) as a measure of labour

demand on the right hand scale (inverted). The correspondence between the two series is striking and a major part of the variation in the unemployment rate appears to be associated with the evolution of demand.

Figure 2   Labour demand and unemployment, Australia and the Netherlands, 1966-2000

(a) Australia   (b) The Netherlands
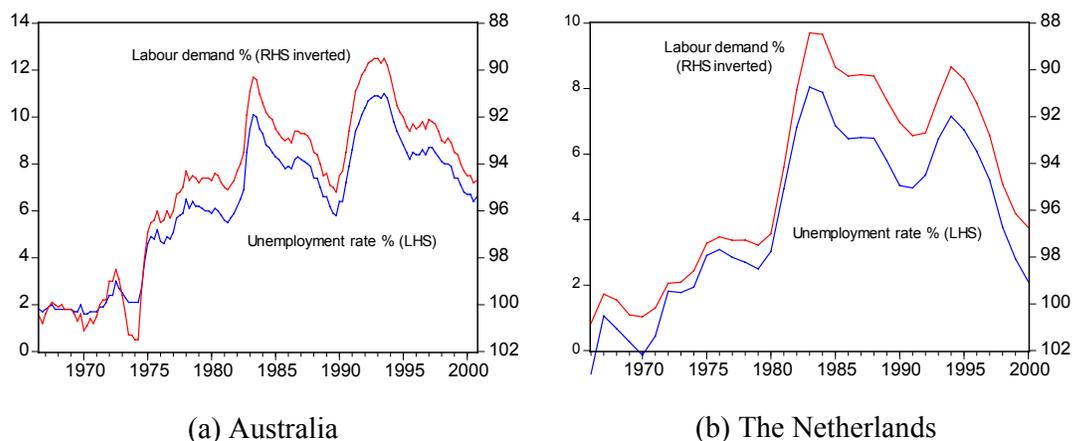
Source: see Figure 1.

Modigliani (2000) has presented similar graphs for France, Germany, and the United Kingdom, which shows that as job availability declines the unemployment rate rises, with the concomitant outcomes that the search process lengthens, as does the average duration of unemployment. Modigliani (2000: 5) concluded, "Everywhere unemployment has risen because of a large shrinkage in the number of positions needed to satisfy existing demand."

Part of this upward movement in unemployment could also be explained from shifts in the unemployment-vacancy (UV) relationship, the so-called Beveridge curve. Much has been made of the shift in this relationship over time. Figure 3 plots the vacancies (thousands) against unemployment (thousands) for both Australia and the Netherlands from 1966 to 2000. The outward shifts are clearly shown. The three noticeable outward shifts in the Australian Beveridge curve occurred in 1974, 1982, and in 1991. Similarly a minor outward shift occurred in the Netherlands in 1975 followed by a strong outward shift in 1981. It is no surprise that these shifts are driven by cyclical downturns rather than any autonomous supply side shifts. Mitchell (1987) has previously shown that structural imbalances (supply constraints) can be the result of cyclical variations and can be resolved, in part, by attenuating the amplitude of the downturns.

Figure 3   Beveridge curve, Australia and The Netherlands, 1966-2000
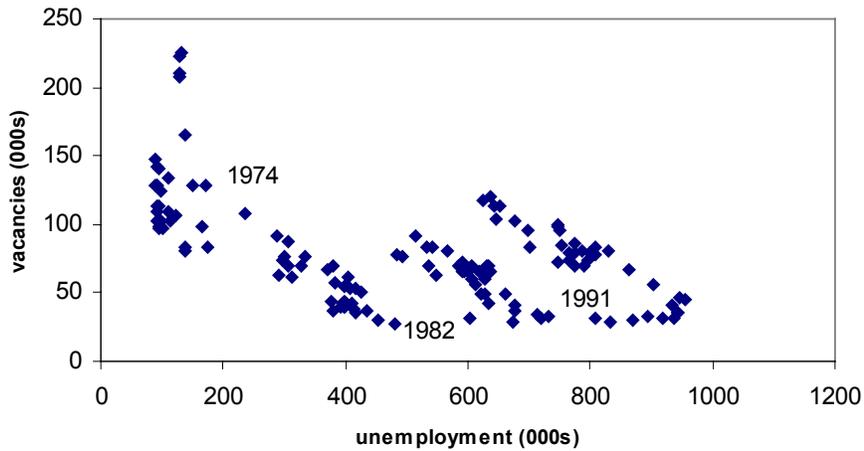
(a) Australia 1966-2000
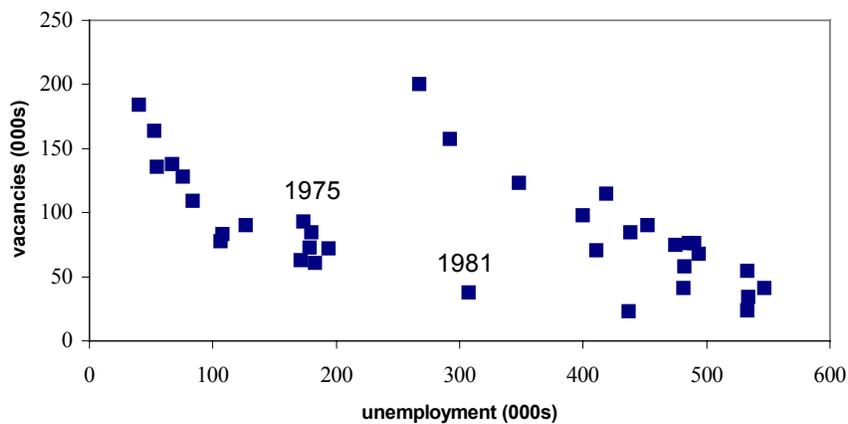
(b) The Netherlands 1966-2000

Source: see Figure 1.

LNJ (1991: 4, 38) argue that these shifts are due to a failure of the unemployed to seek work as effectively as before. They explain the outward shift in the European Beveridge curve by "a fall in the search effectiveness …among the unemployed" (1991: 38). LNJ (1991: 268) also claim that the UV shift has been due to "rise in long-term unemployment, which reduces search effectiveness…" What does this mean? LNJ (1991: 38) offer the following explanation: "Either the workers have become more choosey in taking jobs, or firms become more choosey in filling vacancies (owing for example to discrimination against the long-term unemployed or to employment protection legislation.)" They suggest that the first reason

dominates. There is clearly an observational equivalence problem in attempting to test for this. Search time will lengthen when there are large cyclical downturns and the probability of gaining a job decreases. With UV ratios averaging 11.1 or 6.9 unemployed persons per vacancy over the last 26 years, it is a fallacy of composition to conclude that if all individuals reduced their reservation wage to the minimum (to maximise supply-side search effectiveness) that unemployment would significantly fall (given the small estimated real balance effects in most studies). Further, unless growth in labour requirements is symmetrical and labour force growth steady on both sides of the business cycle, the pool of unemployed can rise and remain persistently high (Mitchell, 2001). We elaborate on this point below.

Table 1 Beveridge curve regression, Australia and the Netherlands

Variable	Australia		The Netherlands	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	1.47	(27.3)	1.10	(16.2)
LVR	-0.09	(2.11)	-1.03	(15.4)
PLTU	0.02	(9.13)	0.01	(4.28)
RECESSION_2			0.25	(2.14)
RECESSION_3	0.04	(2.03)		
RECESSION_1*LVR			0.62	(6.98)
RECESSION_2*LVR	-0.21	(4.26)		
R-squared	0.83		0.98	
S.E. as % of mean LUR	3.88		8.37	

Source: See Figure 1. The regression for Australia uses quarterly data from March 1978 to June 2000. The regression for The Netherlands uses annual data from 1966 to 2000. The dependent variable was the log of the unemployment rate. VR is the log of the vacancy rate, PLTU is the proportion of long-term unemployment.

To examine the impact of recessions on the UV relationship and look for the impact of rising long-term unemployment we ran a simple regression. We use the proportion of long-term unemployed to total unemployment (PLTU) as the "search effectiveness" variable as suggested by LNJ (1991). We will show below that this variable is itself affected by recession, which has significant implications for the credibility of the supply side story. We also include dummy variables: for the Netherlands Recession_1 (zero until 1975, unity thereafter) and Recession_2 (zero until 1981, unity thereafter), and for Australia Recession_2 (zero until March 1983, unity thereafter) and Recession_3 (zero until March 1991, unity thereafter).[3] They are included as intercept dummies and are allowed to interact with the

vacancy rate to test for slope changes. The dependent variable is the log of the Vacancy Rate (LVR).[4]

The results shown in Table 1 reveal that the UV relationship is displaced by the rise in long-term unemployment, but the recessions exacerbate the outward shift. All recessions appear to have worsened the trade-off between unfilled vacancies and unemployment. To summarise this recession-driven outward shift in the UV relationship, we calculated the rate of unemployment at which unemployment would equal vacancies. The results are summarised in Table 2 and clearly illustrate the outward shifts of the UV curve after each recession. This evidence is strongly supportive of the hysteresis hypothesis.

Table 2 Rate of unemployment equal to vacancies, Australia and the Netherlands[5]

	Australia	The Netherlands
Pre Recession 1	0.87	1.90
Recession 1	4.53	2.64
Recession 2	5.06	4.22

Source: Table 1.

Figure 4 shows that the relationship between long-term unemployment and the unemployment rate is very close. As unemployment rises (falls), the proportion of long-term unemployed rises (falls) with a lag. Several studies have formally examined this relationship. Chapman *et al.* (1992), EPAC (1996), and Mitchell (2000b, 2001) have all found that a rising proportion of long-term unemployed is not a separate problem from that of the general rise in unemployment in Australia. However, it is remarkable that the proportion of long-term unemployment is much higher in the Netherlands, compared to Australia, and hardly falls when unemployment falls, a characteristic common across most European countries. The notion that a relatively more generous welfare system in Europe may explain the latter phenomenon, motivated the supply-side policy emphasis that OECD governments have adopted over the last two decades. However, unemployment tripled in two years in the Netherlands, starting from an unprecedented height already in 1981, and that also provides a plausible explanation for the surge in long-term unemployment. The persistence then can be explained by the observation that it is very hard for an economy to absorb such a large number of long-term unemployed people. As is reported in Muysken (2001) the strong job growth in the Netherlands was mainly favourable to new entrants to the labour market. So while LNJ (1991) may claim search effectiveness declines and this contributes to rising

unemployment rates, it is highly probable (as shown in Figure 2) that both are caused by insufficient demand for labour. The policy response then is entirely different.

Figure 4 Proportion of LTU and unemployment rate, Australia and the Netherlands
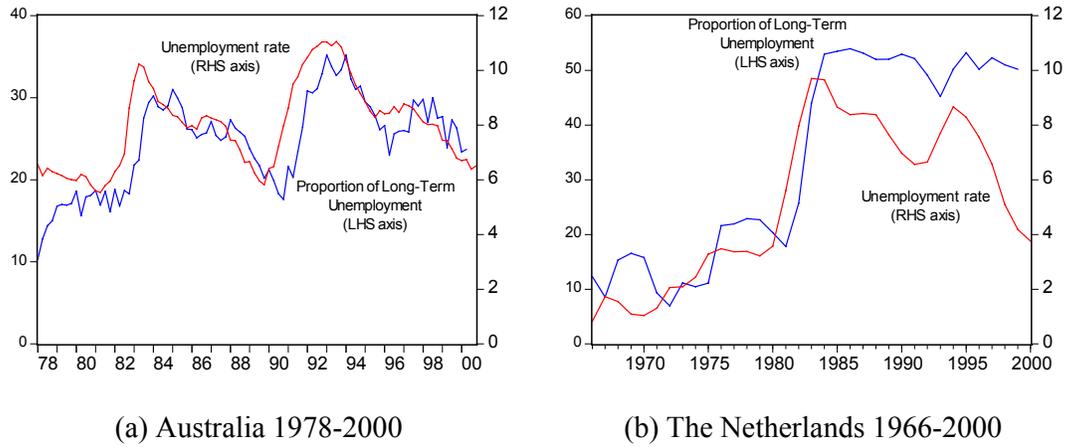

(a) Australia 1978-2000   (b) The Netherlands 1966-2000

Source: For Australia ABS AUSSTATS database, The Netherlands CPB (2001) and Muysken *et al.* (1994).

3. Aggregate demand generates jobs

Modigliani (2000) argues that the level of aggregate demand rather than the labour force (supply) determines the level of employment. Figure 5 shows the annual percentage growth in real final demand and employment from 1965 to 2000 as a way of appreciating the correspondence between demand dynamics and employment dynamics.

Figure 5 Annual percentage growth in demand and employment
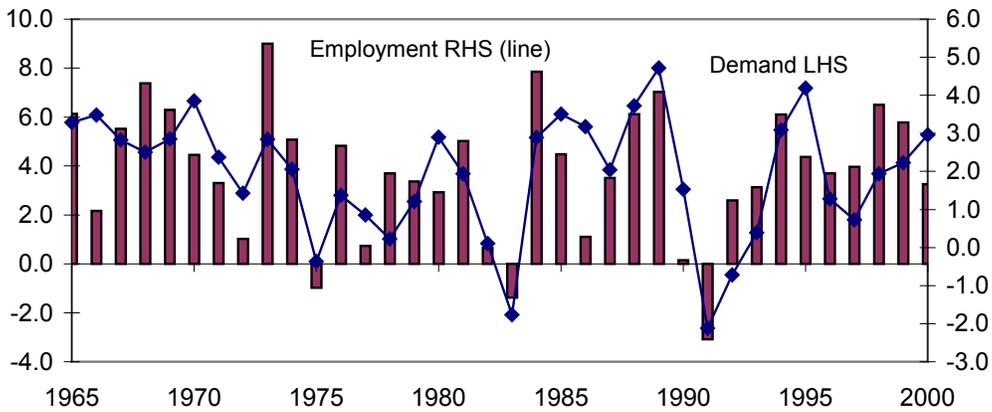
(a) Australia 1965-2000
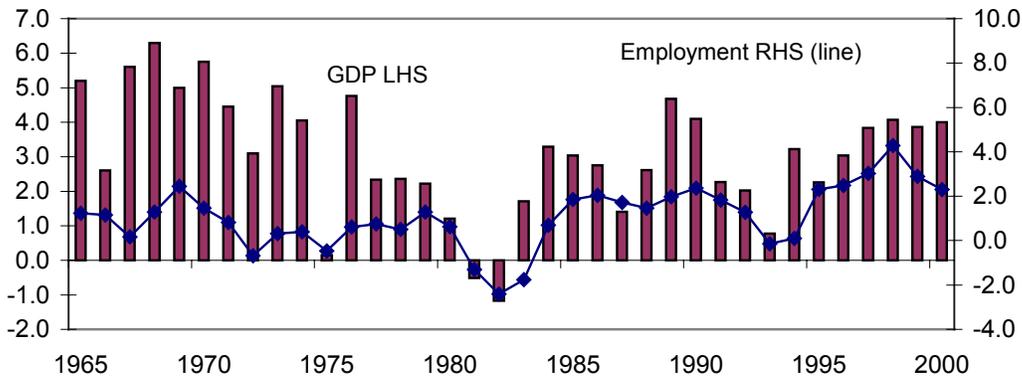

(b) The Netherlands 1965-2000

Source: ABS AUSSTATS database for Australia and CPB (2001) for the Netherlands. Employment is annual percentage growth in total farm and non-farm employment, demand is the annual percentage growth in real final demand (Gross National Expenditure at 1998/99 prices for Australia, GDP at 1980 prices for the Netherlands).

The major shifts in employment fortunes are closely related to similar directional shifts in real demand. Note that in Australia following the 1974 recession, which in relative terms was not

as severe as the two later recessions (1982 and 1991), real demand growth was subdued. Australia has never recovered from the increase in unemployment that coincided with this period. The same holds after the recession in the Netherlands in 1981.

Another way of viewing this relationship is from the unemployment side. Figure 6 shows the relationship between the growth in real demand (expressed as the 5-year moving average of the annual percentage changes) and the unemployment since 1960. We use the smoothed series to provide a better depiction of the downward trend in real demand over the period that unemployment began to become a problem.

Figure 6 Real demand growth and the unemployment rate, Australia and the Netherlands
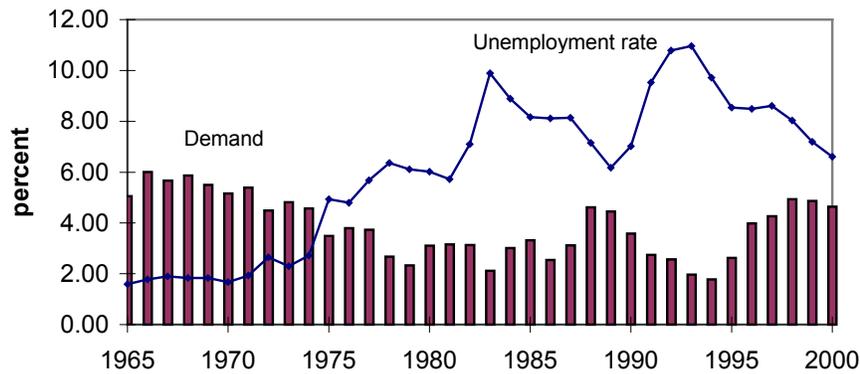
(a) Australia 1960-2000
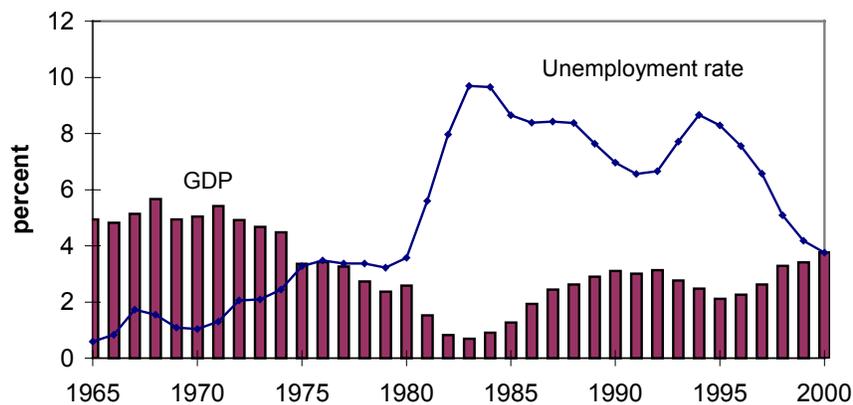
(b) The Netherlands 1960-2000

Source: ABS AUSSTATS database for Australia and CPB (2001) for the Netherlands. The unemployment rate is the aggregate unemployment rate and demand growth is the 5-year moving average of the annual percentage changes in real final demand (Gross National Expenditure at 1998/99 prices for Australia, GDP at 1980 prices for the Netherlands).

The evidence leaves no doubt that the rise in unemployment was associated with a marked deficiency in aggregate demand. Had aggregate demand not fallen in the mid-1970s and remained well below the 1960s levels for the next decade, the unemployment rate would not have risen significantly in Australia. Further, subsequent growth in employment (given the on-going labour supply growth) would have been able, as in previous recessions in the 1960s, to absorb those in the unemployment pool. The severity of the demand restraint meant that the unemployed pool rose far beyond what could be absorbed in any normal recovery.

Again a similar story can be told for the Netherlands, where aggregate demand fell sharply in the early 1980s. However, the recovery of unemployment was much better relative to the Australian experience. To a certain extent this apparent recovery is biased due to the enormous amount of inactivity in the Netherlands, as we indicated in the introduction. Whatever is the conclusion about these supply effects, there is still solid support in both countries that unemployment can be associated with a marked deficiency in aggregate demand.

4.   A digression: supply side explanations of unemployment

The orthodox response may be that we are ignoring the role of labour costs in this analysis. To elaborate that contention, we analyse the notion of equilibrium unemployment from a theoretical perspective using the model of LNJ (1991) as a starting point.[6] While there have been various frameworks used in the literature to explain unemployment as an equilibrium phenomenon, the LNJ (1991) approach embracing search unemployment in a wage bargaining environment has been the most influential. The so-called NAIRU-approach, derived from the LNJ (1991) framework, has also been the dominant force in debates on policy measures to combat unemployment. Therefore we believe it is constructive to consider that approach and the various extensions that have been developed in response to criticisms.

LNJ (1991) start with a right-to-manage bargaining model, in which a bargained real wage has to adjust to a product real wage offered by the firms. In equilibrium the rate of unemployment is consistent with both wage setting and price setting behaviour; in absence of inflation surprises, it is determined solely by the factors determining wage and price setting. Since in equilibrium surprises are absent (constant inflation), this rate of unemployment is called the NAIRU (Non-Accelerating-Inflation-Rate of Unemployment). It is considered to be

equilibrium unemployment because the system tends to converge to it, as the inflation-averse authorities will use aggregate policy to keep price acceleration low. So it is the conduct of fiscal and monetary policy that determined the fluctuations in actual unemployment around its NAIRU level (Nickell and van Ours, 2000: 142).

The NAIRU is affected by institutional factors like benefit ratios, minimum wages, bargaining coordination by unions, employment protection and labour taxes. Additionally, commodity prices and skill mismatch can play a role. However, as a result of the assumed production structure – a Cobb-Douglas production function is used – and the assumption of a constant benefit rate, neither labour augmenting technological change, nor changes in the capital stock or costs of capital can impact on the NAIRU in this model. That is a serious shortcoming and maintains the earlier conceptions of the natural rate hypothesis where the steady-state unemployment rate is not affected by fiscal or monetary policy. No scope is given for aggregate demand, technological change or capital costs to impact on unemployment.

It therefore is not surprising that the NAIRU-approach has been contested on precisely these grounds. Blanchard (1997) argues that the price-setting curve is derived from a model in which prices are set as a mark-up on marginal costs. In that context, wage costs relative to capital costs are relevant. Therefore capital costs should be included in the price setting equation. Moreover, the real interest rate may also affect hiring costs, investment in firm-specific human capital and costs of creating customer markets (Phelps, 1994; Phelps and Zoega, 1998). So for various reasons, the NAIRU will increase with the real interest rate. This induced Phelps and Blanchard to argue that the high unemployment in Europe in the 1980s was caused by the high real interest rates.

Further, Rowthorn (1999) shows that even if capital costs are ignored, the capital stock will be an argument in demand for labour and hence in the price setting. The impact of the capital stock disappears only when a Cobb Douglas production function is used (unit elasticity of substitution). However, since empirical studies find this elasticity to be well below unity, a decrease in the capital stock due to an increase in the rate of interest will lead to a decrease in labour demand and a rise in unemployment. Finally, whereas in LNJ (1991) the neutrality of unemployment with respect to technical change is a result of the production structure (unit elasticity of substitution) and institutional features (constant benefit rate), Rowthorn (1999: 422) emphasises that in his analysis investment should be "on average just sufficient to keep

pace with ... any bias in technical progress." From a somewhat different perspective, Blanchard (2000) also concludes that the slowdown in Total Factor Productivity growth can explain much of the unemployment in Europe, which occurred up until the 1980s.

In Blanchard's analysis actual and equilibrium unemployment are closely related because they are affected by the same shocks. For instance, while an increase in the interest rate will increase actual unemployment due to decreased aggregate demand (in particular investment), the corresponding decrease in the capital stock will increase equilibrium unemployment. In that way he also implicitly counters the claim by Modigliani (2000) that the observed strong correlation between actual unemployment and the net investment rate is due to aggregate demand effects.[7]

Another reason why actual and equilibrium unemployment are closely related is because of hysteresis. Although Blanchard is one of the researchers who introduced this concept in the literature (Blanchard and Summers, 1986) – he claims always to "have felt some uneasiness in doing so, feeling that it remained loose, and in need of more work" (2000 III: 22). Assuming that the longer a person is unemployed, the lower his search intensity is, Blanchard finds – using some back of the envelope calculations – only a very limited quantitative impact of long-term unemployment on equilibrium employment.[8] Nonetheless, Blanchard is very reluctant to abandon hysteresis as a relevant explanation and decides that further research is necessary. This holds particularly when we consider the impact of unemployment on wage formation. It is probable that unemployment will falls disproportionately on new entrants (2000 III: 38).

Ball (1999) develops a very rough model in which he precisely develops Blanchard's proposed extension by assuming: "last fired, first rehired".[9] As a consequence the long-term unemployed do not put pressure on wages, although they can be reemployed if demand is sufficiently strong (see also Mitchell, 1987). This implies that the bargained real wage will increase if the share of long-term unemployment in total unemployment increases. And since this share tends to be positively related to total unemployment, the NAIRU will increase when unemployment increases.

Ball also presents a very persuasive account of the evolution of unemployment after the oil crises. He emphasises the differences in behaviour of the monetary authorities after the

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recession in the early 1980s, which followed the sharp increase in the interest rates after the second oil crisis in 1979. In response to that recession the monetary authorities in both the US and Canada lowered their nominal rates of interest strongly, while in Europe the Central Banks kept the nominal rate of interest high. As a consequence output growth increased above its trend rate for some time in North America and both unemployment and inflation went back to their initial levels. However, in Europe output growth remained low, unemployment stayed high, and only inflation returned to its previous level. Hence Europe was confronted with a higher NAIRU, whereas it remained constant in North America. Ball conjectures that this is due to hysteresis.

To investigate what happened from the mid-1980s onwards, he selects 10 OECD countries (9 European plus Canada) and looks in particular at what happened in the four countries of that sample, which were successful in reducing unemployment. These countries are: Ireland, The Netherlands, Portugal and the UK. Ball finds first that there is not a significant relationship between labour market institutions and success. The reason is that Ireland and Portugal did not introduce institutional reforms at all; the reforms in the Netherlands and the UK were relatively minor in his opinion;[10] and of the other countries that introduced reforms, no significant effect of them could be detected. His second finding is that demand expansions play an important role in explaining success stories, both because of the behaviour of monetary policy and because of other shocks. These demand expansions pushed unemployment rates below the NAIRUs in the success countries, and the low actual unemployment then decreased the NAIRU. Not surprisingly the success countries were also confronted with a large rises in inflation after the reduction in unemployment, except for Ireland. However, these rises were short-lived. The six other countries had lower reductions in unemployment and lower inflation.

In terms of the evolution of the NAIRU literature examined, Modigliani (2000) takes the most extreme position on the NAIRU-approach. In his view "there is nothing *conceptually* wrong" with that approach, that is, aiming at unemployment smaller than or equal to u^*. However, "reliance on the NAIRU as an operational approach runs into great problems and involves serious risks, because of the enormous difficulties of estimating and tracking u^* through time"(Modigliani, 2000: 12). Due to unavoidable errors in calculation serious policy mistakes then can be made, with "catastrophic" results for unemployment when monetary policy is "in the hands of a Central Bank with the framework and mission of the Bundesbank or ECB"

(Modigliani, 2000: 14). Thus, the high unemployment in Europe since the mid-eighties is "largely the result of a misguided overcautionary monetary policy"(Modigliani, 2000: 14).

Modigliani's analysis of the causes of European unemployment in the 1980s is rather similar to those of Blanchard and Ball presented above. An important difference, however, is how this monetary policy has lead to a higher unemployment. While Blanchard stresses the indirect route through the relative price of labour with respect to capital, which leads to substitution of labour for capital and dominated by an inward shift in demand for labour because of a decrease in the capital stock, Ball points at the adverse effect on aggregate demand and in particular on its impact on the NAIRU through hysteresis. Modigliani emphasises the direct impact of aggregate demand, triggered by a decline in investment. The overcautious monetary policy induced a fall in investment below its 'full employment investment ratio' Through the multiplier mechanism aggregate demand declined and unemployment increased.[11] Moreover, the shortfall in investment has persisted because monetary policy has remained too tight, combined with a tight fiscal policy motivated by the Maastricht-criteria. The reason for this overcautious monetary policy is an "obsessive fear of inflation" coupled with a "benign neglect policy for unemployment"(Modigliani, 2000: 3), which has induced the Bundesbank and later the ECB to overestimate systematically the NAIRU.

Modigliani proposes a more expansionary monetary policy, "programmed in collaboration with the unions and the employers"(Modigliani, 2000: 14). Moreover, "rigidities in the labour market and poor work incentive designs" should be combated too, since these compound the effect of insufficient demand (Modigliani, 2000: 15).

It is obvious that our approach is highly sympathetic to Modigliani's analysis. To provide a rough impression of the impact of labour costs on employment, Figure 7 examines the relationship between employment and real unit labour costs in Australia and the Netherlands. We approximate real unit labour costs by the share of labour income in GDP. The figure suggests that there is no unique relationship between the variables. It is interesting to note that for Australia in the period 1966 - 1973 the relation virtually is a horizontal line, whereas in the Netherlands it is a vertical line in the 1970s. A slightly negative relationship can be discerned for Australia in the period 1974 – 1989 and in the Netherlands in the 1980s. Finally for both countries the relation in the 1990s is virtually a horizontal line.

Figure 7 Employment growth versus wage share, Australia and The Netherlands
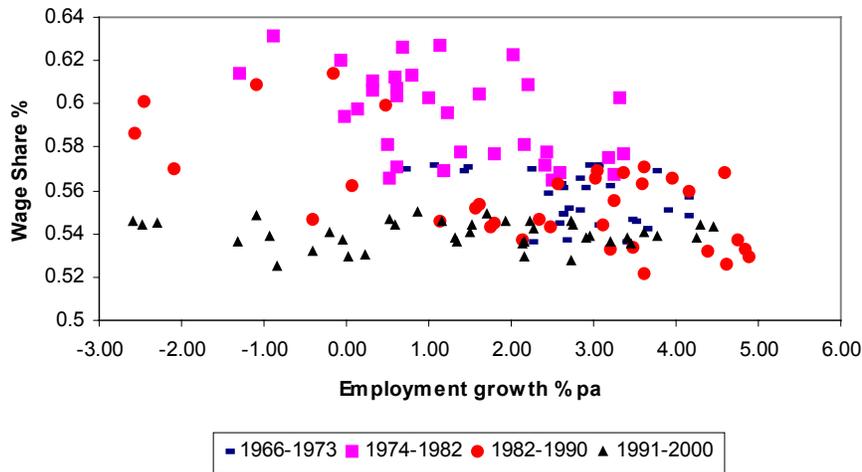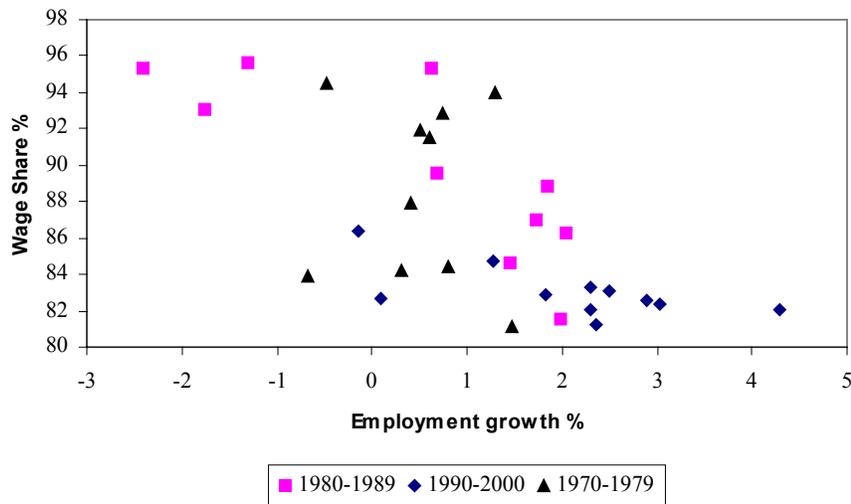
(a) Australia 1966-2000

(b) The Netherlands 1970-2000

Source: Australia – ABS AUSSTATS database, The Netherlands – CPB (2001). Employment growth is the (four-quarter) percentage change in total employment and wage share is the percentage share of wages in GDP. Quarterly data was used for Australia and annual data for The Netherlands.

When we look at the relationship between unemployment and the wage share, this better illustrates that factors other than labour unit costs have caused the enormous rise in unemployment that has been witnessed. Figure 8 shows clearly that for both countries the initial impact increase in the wage share only had a relatively small impact on unemployment. Then the recessions of 1974 and 1982 in Australia caused an enormous increase in

unemployment, without hardly any impact on the wage share, the same holds for the recession of 1981 in the Netherlands.

When the wage share started to decrease in the mid-1980s in both countries unemployment was hardly affected. Finally the wage share has hardly changed in both countries since the early 1990s but unemployment declined consistently in the Netherlands and fluctuated in Australia. All this illustrates that wage costs factors do not provide a consistently plausible explanation of the persistently high unemployment. We conclude that to a large extent, demand factors explain the fluctuations in unemployment, and unit labour costs hardly play a role.

Figure 8 Unemployment and wage share, Australia and The Netherlands
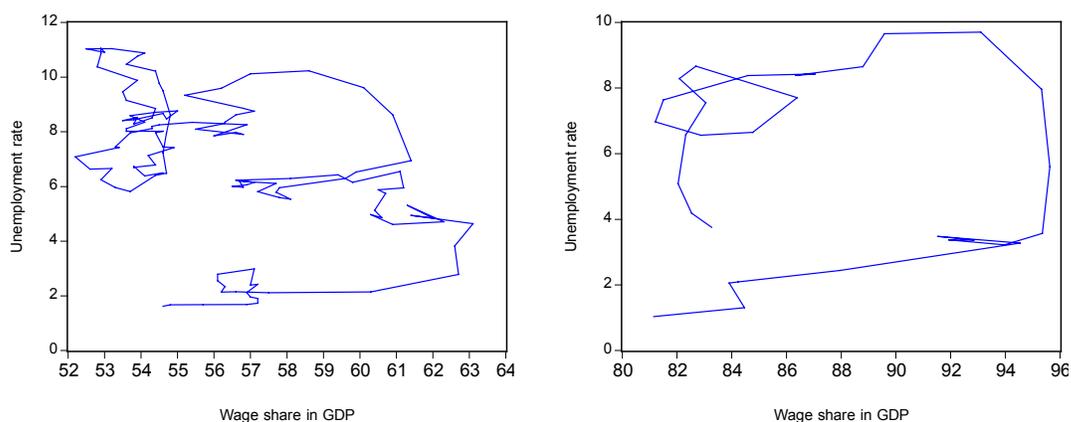
(a) Australia 1966-2000   (b) The Netherlands 1970-2000

Source: Australia – ABS AUSSTATS database, The Netherlands – CPB (2001). Quarterly data was used for Australia and annual data for The Netherlands.

5.   Policy and business deficiencies in aggregate demand

To help account for the rise in unemployment in both countries it is useful to compute the evolution of the GDP gap, indicating the deficiency of aggregate demand. For the unemployment rate to remain constant, real GDP growth has to be equal to the sum of labour force and labour productivity growth, *other things equal*. In the midst of on-going debates about labour market deregulation, minimum wages and taxation reform, the most salient, empirically robust fact that has pervaded the last two decades is that the actual GDP growth

rate has rarely reached this required rate. Figure 9 is derived from annual analysis of GDP gap components.

Figure 9 GDP and Required GDP, Australia and the Netherlands, 1965-2000
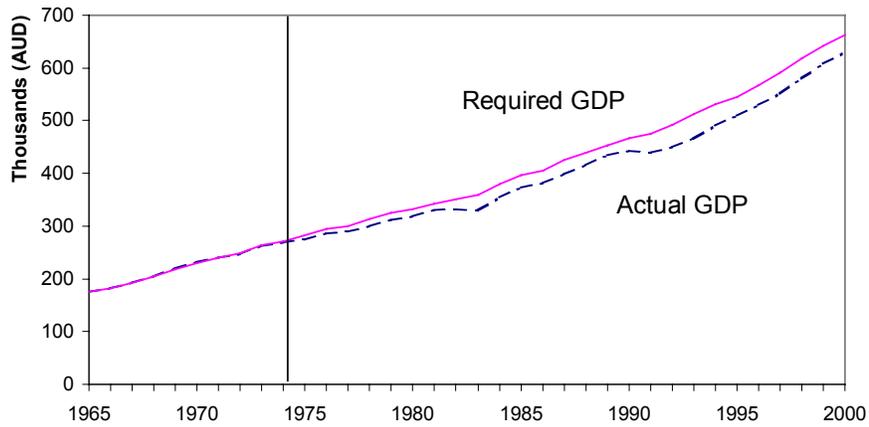
(a) Australia
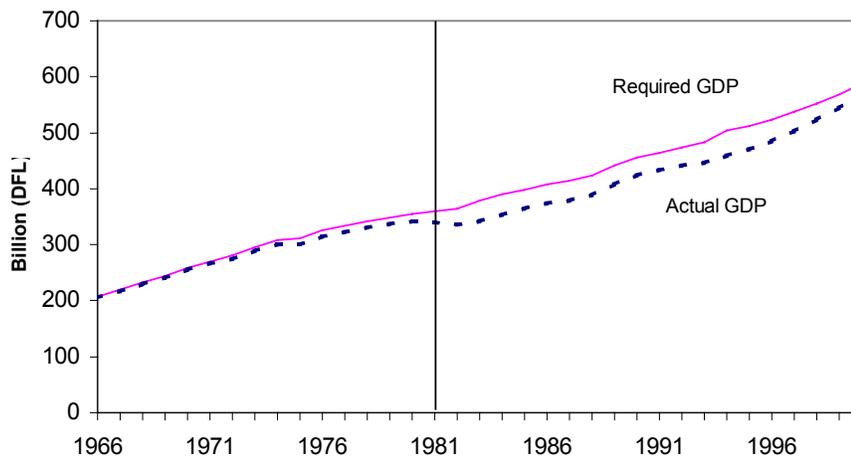
(b) The Netherlands

Source: Australia: ABS AUSSTATS Labour Force and National Accounts data. The Netherlands, CPB (2001).

The results are clear. Prior to 1974, the growth rate of GDP was sufficient to match the required growth rate set by the growth of the labour force and labour productivity in Australia. After that point, GDP growth was never sufficient and unemployment rises and falls reflected the history of that deficiency. The same holds for the Netherlands after 1981, although the gap closed in the late 1990s which was reflected in the sharp decline in unemployment.

An interesting question then is: what determines the GDP gap? In our view there are three obvious candidates. First, investment, since fluctuations in investment typically drive the business cycle. Second, monetary policy through its impact on aggregate expenditures. And last but not least, fiscal policy. We will concentrate here on the impact of the first two on aggregate demand and discuss the role of fiscal policy in a separate section.

5.1 Business deficiencies in aggregate demand

Investment expenditure, which adds to productive capacity, is a key component of aggregate demand. Fluctuations in the level of investment drive the business cycle. We should expect a close relationship between changes in the investment ratio (investment to GDP) and demand aggregates in the labour market, given the analysis presented above. Mitchell (1996) argued that the major determining factor accounting for the changes in the level of unemployment in the OECD has been movements in the investment ratio. Ball (1999) has also presented evidence supportive of this claim.

Figure 10   Public, Private and Aggregate investment ratios, Australia and the Netherlands.

(a) Australia (smoothed series used)   (b) The Netherlands
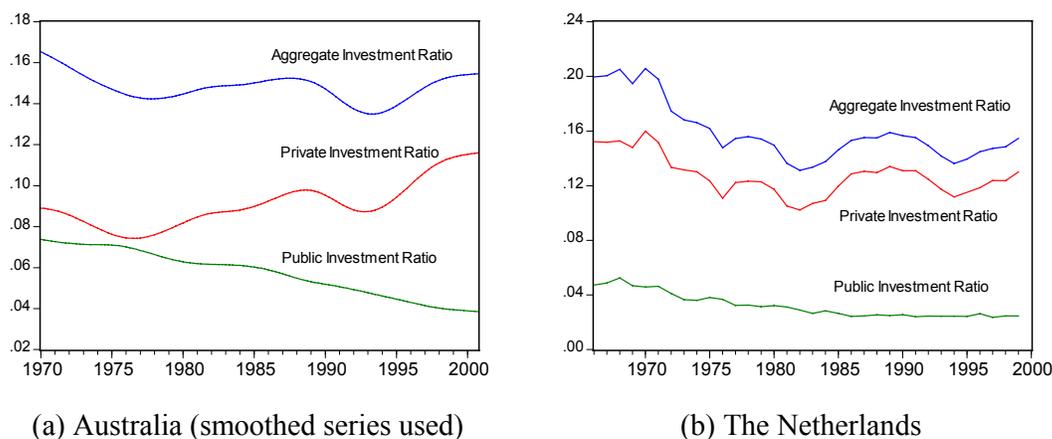
Source: ABS AUSSTATS database, The Netherlands CPB (2001). Australia data was quarterly and all series were smoothed using a Hodrick-Prescott filter. The Netherlands used annual data and no smoothing was applied. Private investment excludes dwellings and inventory movements. There is also a major difference in the way the two countries classify public investment, which makes the relativities difficult to compare.

Figure 10 shows the evolution of the smoothed private, public and aggregate investment ratios (investment to GDP). In both countries the aggregate ratio started declining in the early 1970s and, despite rising in the recovery from the each recession since, it has failed to return to the levels associated with full employment in the 1960s. Of particular note is the continued decline in public capital expenditure since the early seventies. In Australia this fall continued for the whole period, whereas in the Netherlands the investment share stabilised around the

all-time low of 2.5 per cent. The transfer of resources to the private sector in several budgets as taxes and government spending fell has not seen the investment ratio for the private sector meet the gap left by the public decline. The decline in public capital expenditure as a share of GDP is symptomatic of the regime shift that occurred as the NAIRU-era began. We will examine this issue further on.

To examine the role of capital expenditure in influencing unemployment, we computed the full employment investment ratio as a benchmark for both Australia and the Netherlands.[12] We then computed a full capacity income (GDP^*) level based on a Harrodian natural rate of growth concept (see Davenport, 1982; Mitchell, 2001). We used this to derive a time series for the ratio of actual total investment to full capacity income (I/GDP^*). Finally, we subtracted this ratio (I/GDP^*) from the full employment investment ratio to compute the investment shortfall series. This measures for each period (in terms of percent of potential GDP) the extent to which I/GDP^* falls short of the full employment investment ratio and is a measure of demand deficiency.

Figure 11 shows that the relationship between the investment shortfall and the unemployment rate is striking. The crucial rise in unemployment Australia in 1974 was preceded by a large jump in the investment shortfall, and the same holds for the rise in unemployment in the Netherlands in 1981.

Figure 11 Investment shortfall and unemployment rate, Australia and the Netherlands

(a) Australia 1960-2000   (b) The Netherlands 1965-2000
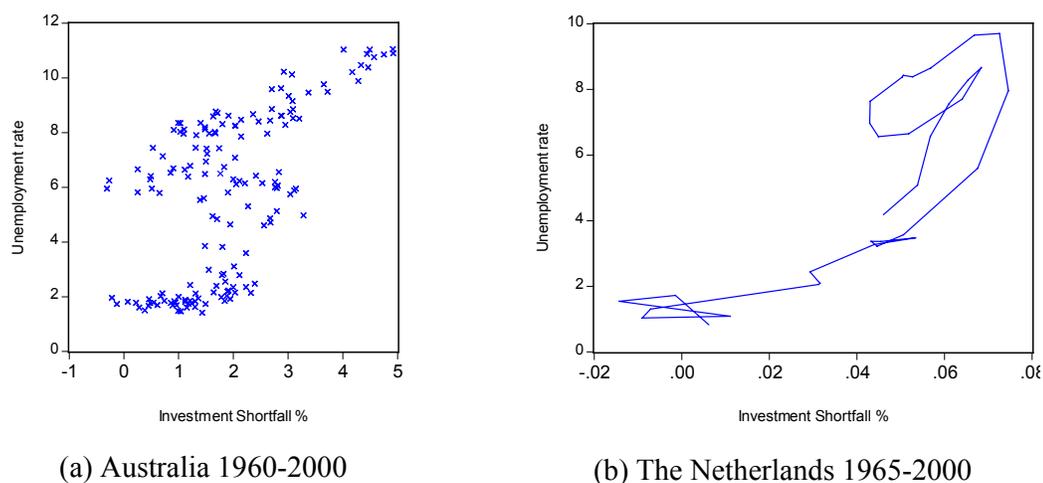
Source: see text for description of derivation of investment shortfall

5.2   Monetary policy puzzles

Taking us through the Keynesian reasoning that investment affects aggregate demand, which in turn determines employment and unemployment, Modigliani (2000: 9) concludes, "We know from elementary economics that investments are affected by monetary policy (interest rates and credit availability). In fact as it is well known, this is the channel par excellence through which a Central Bank controls output and inflation. … Indeed, there is no economics fundamental that can lead anybody to hold the view that money can directly affect inflation up or down except through raising or curbing aggregate demand and thus the demand for labor, wages and prices." We agree with this view, although we think that monetary policy does not only affect aggregate demand through its impact on investment, but nowadays it has an impact on all spending categories.

Figure 12 Monetary policy, inflation and unemployment, Australia and the Netherlands

Australia, 1970-2000

(a) Monetary Policy and Unemployment   (b) Monetary Policy and Inflation

The Netherlands, 1975-2000

(a) Monetary Policy and Unemployment   (b) Monetary Policy and Inflation
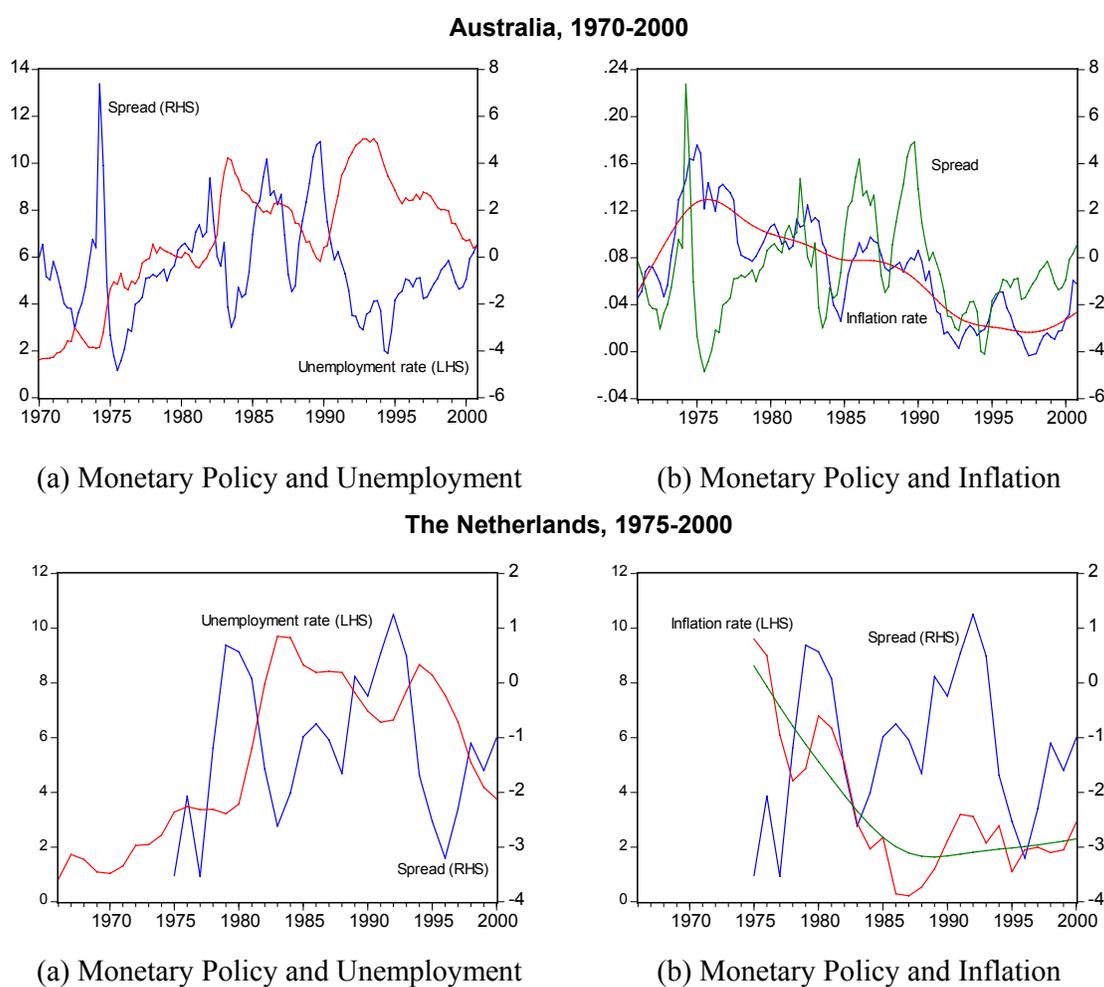
Source: Australia, AUSTATS and Reserve Bank Databases, The Netherlands, CPB (2001: B3).

Figure 12 provides a version of the history of monetary policy over the last 30 years in relation to the evolution of inflation and the unemployment rate. The measure of monetary policy shown is the spread between the Official 90-day bill rate and the 10-year Treasury bond rate. A high spread indicates a tight monetary policy (see Mitchell, 2001). The inflation measure is the annual inflation rate (CPI) and we have also plotted a smoothed inflation series using a Hodrick-Prescott filter to measure trend inflation. The left-hand panel in Figure 12 shows that in Australia the sharp rises in the unemployment rate corresponding to the last 3 recessions were preceded by sharp tightening in the monetary policy measure. It is puzzling why the spread was so high during the period following the 1974 crises when the stock of unemployment was building. From the right-hand panel the 1980s and late 1990s stand out as worrying examples of mistaken monetary policy. With trend inflation falling throughout the decade and the unemployment rate still above acceptable levels, why did the RBA hold the spread at such high levels for so long in the 1980s? Further, with inflation well under control in the late 1990s, why did the RBA successively push short rates higher? The manifestation of this behaviour has now been revealed with the December quarter National Accounts showing that GDP growth had become negative.

A similar story can be told for the Netherlands, where the Dutch Central Bank adhered strictly to the German Bundesbank's monetary policy. From the lower panels of Figure 12, we might wonder why the spread was so high around the second oil crisis with unemployment increasing rapidly and inflation on a downward trend. Further, after the fall of the Wall the spread rose to an unprecedented height, creating a recession all over Europe, while unemployment was high and inflation was definitely under control. In conclusion, the past 25 years in Australia and the Netherlands provide plenty of evidence that the Central Banks have acted in accordance with Modigliani's assessment noted above.

5.3   The impact of policy and business deficiencies on aggregate demand

We started this section by identifying the GDP-gap for Australia and the Netherlands and pointing out the importance of investment behaviour and monetary policy in determining it. However, if the OECD Jobs Study (1994) model was convincing we should expect a host of supply side variables and others reflecting government regulations and transfer payments to be prominent. To examine this further a simple dynamic regression modelling the GDP gap was run. The GDP gap was computed using the methodology outlined above and expressed in percentage form. We regressed the gap (as the dependent variable) on a range of variables,

which capture various supply side, and/or demand side theories contained in the literature. We chose to represent the demand side by the measure of monetary policy (SPREAD) and the shortfall in investment spending (SHORTFALL) discussed above. A range of supply side variables (including real wage costs measures and government benefits) was tried. None of the supply side variables were significant.[13]

Table 3 GDP Gap Regressions, Australia and the Netherlands

| | Australia, 1960:4 to 2000:4 | | The Netherlands, 1975 - 1999 | |
Regressor	Coefficient	*t*-Statistic	Coefficient	*t*-Statistic
Constant	-0.00	(0.47)	-13.91	(0.88)
SPREAD(-4)	0.001	(4.45)	6.54	(2.94)
SHORTFALL	0.002	(4.12)	524.82	(1.81)
YGAP (-1)	0.93	(53.1)		
D753	-0.01	(2.59)		
D824	0.02	(3.99)		
R-squared	0.97		0.382080	
S.E. of regression	0.005		13.34824	
Mean dependent variable	0.033		8.379545	

Notes: D753 is unity in 1975:3 and zero otherwise. D824 is unity in 1982:4 and zero otherwise. t-statistics in parentheses. Both spread and shortfall in the Netherlands are delayed one year.

The tested-down regression is reported in Table 3 for Australia (1960:4 to 2000:4) and the Netherlands (1975 to 1999). There is some supportive evidence for The Netherlands, but given the limitations of annual data and the short sample available for the SPREAD variable, we would not wish to put too much confidence in the results. For Australia, the diagnostics for the regression were sound. The regression forecasted satisfactorily out-of-sample over the 8 quarters. The results confirm that the shortfall in investment as a percentage of GDP was a key determinant of the GDP gap over the period examined. In addition, the era of tight monetary policy aimed at curbing inflation was also instrumental in maintaining the GDP gap.

6   What if the private sector can't provide enough jobs?

Mitchell (2000) argues that in the fifty years since the end of World War II, most OECD economies have gone from a situation where the respective governments ensured there were enough jobs to maintain full employment to a state where the same governments use unemployment to control inflation. A major aspect of this move has been the changes that

have occurred in public sector employment. Many economies have undergone substantial restructuring of their public sectors with significant employment losses being endured. Table 4 shows that in Australia, the labour force has grown at an average compound rate of 1.87 per cent per annum since 1970. Over the same period, private employment has averaged 1.91 per cent per annum, whereas public employment has averaged a rate of growth of 0.64 per cent per annum (driven heavily by the growth in the 1970-75 period). Since 1990, the public sector has declined in absolute employment every year with a rapid –2.03 per cent per annum average decline since 1995.

Over the 30-year period from 1970, private employment growth in the Netherlands was 1.05 per cent per annum. Like Australia, it kept up with labour force growth of 1.13 per cent. Dutch public sector growth lagged behind with a growth rate of 0.85 per cent per annum After an upsurge in growth until the mid-1980s, employment growth in the Dutch public sector was virtually flat over the 1990s. As a consequence, the share of public employment rose in the Netherlands from 11.1 per cent of total employment to 14.7 per cent in 1985. Afterwards it fell back to just below its initial level, 10.7 per cent in 1999. So the pattern is similar to Australia except that the public sector deficiency is less damaging because the Dutch labour force growth is substantially below that of Australia.

Table 4 Growth rates in labour market aggregates, Australia and the Netherlands, 1970-1999

	Public Employment Growth	Private Employment Growth	Total Employment Growth	Labour Force Growth
Australia	0.64	1.91	1.67	1.87
The Netherlands	0.85	1.08	1.05	1.13

Notes: Growth rates are annual average compound rates for the periods shown. UGAP is unemployment minus 2 per cent of the Labour Force to capture frictional unemployment. For a full account of this data and OECD comparisons see Mitchell (2000c).

With private sector employment growing more or less commensurately with the labour force, the withdrawal of public sector employment has contributed significantly to the persistently high unemployment that Australia has experienced. As we have already indicated above, the Netherlands has partially eliminated this problem by shifting a large number of workers into the disabled category. That is, they do not show up in the official unemployment figures. If the governments expected the private sector to provide commensurately more jobs as public sector employment was cut, then they were wrong – in particular for Australia. The

magnitude of private employment growth necessary to compensate for the public sector losses has been historically unattainable on any sustained basis.

To motivate this statement we use the framework developed in Mitchell (2000c). Full employment is taken to mean the provision of enough public and private jobs to match labour supply[14]minus some constant proportion α of frictional unemployment[15] – the remaining unemployment is and demand-deficient unemployment. We define the private employment gap, *PGAP* as the level of public employment required to achieve full employment once private employment is determined. If public employment is below *PGAP*, then demand-deficient unemployment will be positive and the economy departs from full employment. Accordingly, we define the unemployment gap (*UGAP*) as the difference between *PGAP* and actual public employment. [16] So the greater the increase in the private employment gap, the greater must the rate of growth in public employment for demand-deficient unemployment to remain constant. *UGAP* will be positive if private and/or public employment are insufficient to match the labour force (net of frictional unemployment). With reasonable assumptions made about labour force growth (conditioned by the magnitudes common since the mid-1970s) and the cyclical nature of private employment growth, it becomes manifestly obvious that sustained full employment requires a robust and counter-cyclical public employment growth rate.

Applying this framework to the Australia and the Netherlands yields the results shown in Figure 13. By failing to expand public employment, at least in line with labour force growth, the governments have allowed unemployment to persist at high levels. In this context, we say that at any point in time the government chooses the level of unemployment. Mitchell (2000c) simulated the evolution of unemployment in Australia assuming that the public sector employment grew in proportion with the labour force over the 1970-2000 period. The results were striking. Unemployment in 2000 would be below frictional levels.

Figure 13 PGAP, Public Employment and UGAP in Australia and the Netherlands
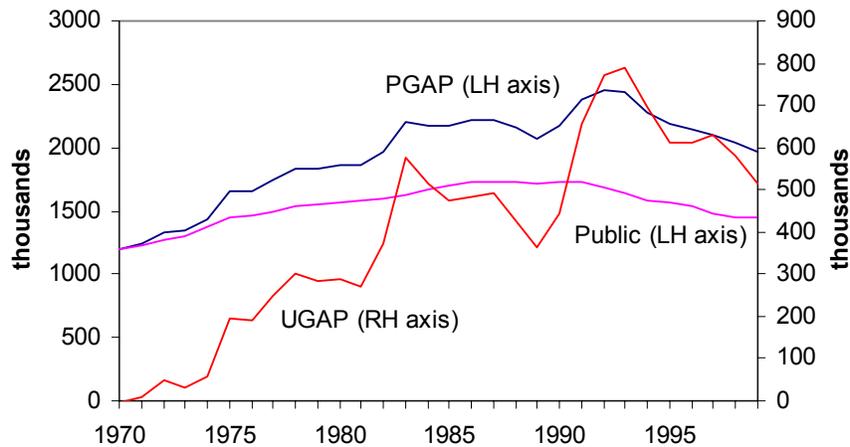
(a) Australia, 1970-2000
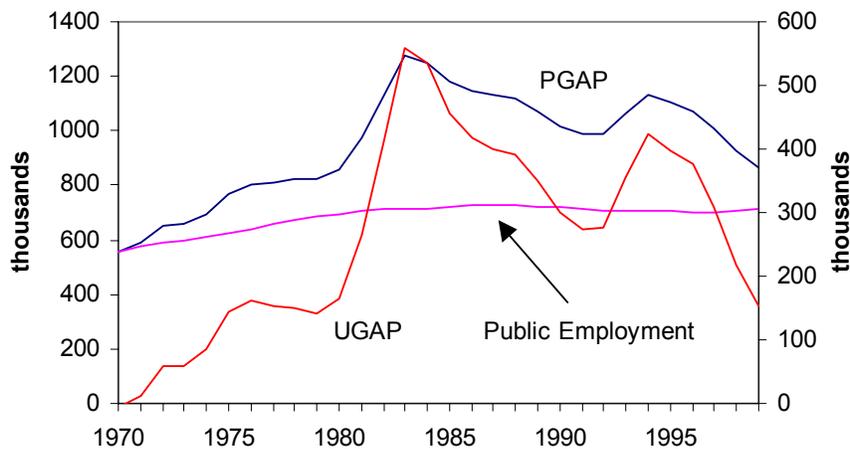
(b) The Netherlands, 1970-2000

Source: OECD Economic Outlook Database, 1960-2000.

7.   Conclusion

We have demonstrated that employment and outcomes in both Australia and the Netherlands, are predominantly driven by aggregate demand. There is strong evidence to support this contention. The robustness of the results is strengthened by the fact that the two countries exhibit considerable diversity in economic structure. Despite all the labour market and related supply-side reforms that have been introduced in Australia over the last 15 years, the

unemployment rate persists at high levels due to demand deficiency. In the same way demand deficiencies can explain to a large extent the fluctuations in the Dutch unemployment rate. Moreover, the apparent Dutch success in combating unemployment is partly clouded by the huge increase in inactivity since the early 1980s.

This demand deficiency reflects several factors: (a) declines in the investment ratio, (b) declines in public sector employment. Both have been exacerbated by deflationary macroeconomic policy since 1975, which has ensured that the persistently high unemployment was inevitable. We have illustrated for Australia and the Netherlands that these factors indeed have played an important role in the determination of aggregate demand.

Finally we have argued that the conventional NAIRU approach tends to neglect the role of aggregate demand and focuses on the supply side. However, it turns out that both employment and unemployment are very poorly correlated to wage costs, which are the driving force according to the NAIRU approach. Hence the overall conclusion of our paper is that the demand side of the economy should be taken much more seriously than usually is the case.

The policy implications of all this are quite obvious. First it should be recognised that due to excessive fear of inflation, it tends to follow a deflationary policy by setting the interest rate too high. Second, the public sector should take a much more active role in employment creation. Mitchell (1998) has proposed that a job guarantee be introduced by the public sector as a permanent solution to unemployment.

While our empirical evidence is convincing, there is a need for further more rigorous research into the demand side determinants of unemployment. We hope that we will succeed in focusing the interest of the profession more in that direction.

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[2] The lower number for the Netherlands when compared to Australia is due to both the lower rate of unemployment in the Netherlands and the possible underreporting of vacancies in Australia: the Dutch vacancy figures are not based on voluntary reporting by firms, but on survey data.

[3] Note that due to limitations in the long-term unemployment data (starting March 1978) we have only been able to consider the last two recessions in Australia.

[4] Taking unemployment as the dependent variable, reflects our contention that unemployment is determined by demand for labour. When interpreted in terms of the employment function, where employment is determined by demand and supply of labour simultaneously (Muysken *et al.*, 1994), this implies that we assume that demand for labour should follow supply of labour. Otherwise demand for labour is insufficient.

[5] For Australia we ignored long-term unemployment in the first period, since it was neglible anyhow.

[6] In fact, it was Carlin and Soskice (1990), who introduced the BRW-PRW model structure into the NAIRU literature.

[7] Actually, Blanchard (1999: 29) dubs this the "Modigliani puzzle" which he leaves for further research.

[8] In our view this is unsurprising given that usually only a small percentage of unemployment could be construed as arising from search factors.

[9] This is the way Nordhaus characterises Ball's analysis in his comment.

[10] In our view, that is an understatement.

[11] The multiplier mechanism is relevant in Europe because of the downward wage rigidity (p.4).

[12] For Australia we took the average of the investment ratio (total capital investment to GDP) for March 1970 to December 1971 (16.4 per cent). For the Netherlands we took the investment ratio for 1970 (20.6 per cent).

[13] Actually we could only do this for Australia, since the data for the Netherlands were not available on a quarterly basis, and the time series on an annual basis was too short..

[14] Labour supply in this context is equal to the current labour force, although we clearly recognise the importance of marginal workers not in the labour force.

[15] Frictional embraces structural factors. These factors are sometimes differentiated by spatial and skill-mismatch factors. The latter is somewhat contentious because in a tight labour market firms usually offer jobs with appropriate training implicit. A coherent regional policy with an active public sector labour market will also reduce the spatial imbalances significantly.

[16] We have $L = P + P_g + U$ where L is the labour force and P is total private employment, P_g is total public employment, and U is total unemployment. U is the sum of frictional unemployment (U_f) and demand-deficient unemployment (U_d). Then $PGAP = [L(1 - \alpha) – P] = P_g + U_d$ and $UGAP = U_d = PGAP – P_g$.