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Capacity constraints and the Job Guarantee

William Mitchell and Martin Watts¹

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Centre of Full Employment and Equity
The University of Newcastle, Callaghan NSW 2308, Australia
Home Page: <http://e1.newcastle.edu.au/coffee>
Email: coffee@newcastle.edu.au

We have the resources in terms of idle manpower and idle plants to do so much, while the preachers of austerity, most of whom are in little danger of themselves suffering any serious consequences, keep telling us to tighten our belts and refrain from using the resources that lie idle all around us - William Vickrey (2000: 5).

1. Introduction

The efficacy of the Job Guarantee (JG) as a strategy for sustained full employment has been the subject of ongoing debate between its advocates, who typically align themselves with the principles of Modern Monetary Theory (MMT), and other heterodox economists. The latter group includes Lopez-Gallardo (2000), Aspromourgos (2000), Kadmos and O'Hara (2000), King (2001), Ramsey (2002-03), Sawyer (2003, 2005) and Seccareccia (2004) who have raised issues, including the stabilisation of inflation, balance of payments constraints, political and intellectual constraints, invisible under-employment, and the sustainability of full employment. Their critiques have been considered in detail in Mitchell (1998), Mitchell and Mosler (2002), Mitchell and Watts (2003), Mitchell and Wray (2005), Mitchell and Muysken (2008)

The focus of this paper is on the achievement and maintenance of full employment through the adoption of a JG in comparison to pump priming, which is advocated by a number of economists, including Sawyer (2003, 2005). In particular, it is generally recognised that a reduced rate of growth of capacity during a recession can cause capacity constrained unemployment in the recovery which would be exacerbated if there was a significant pro-cyclical labour supply response, in addition to labour force increases driven by the rising working age population (see, for example, Malinvaud, 1980; Mitchell and Muysken, 2002 and Arestis and Sawyer, 2005). Consequently an expansion in spending may have an insignificant real effect on employment and output and is likely to impact on inflation. In other words, the real output gap, which relief from the high unemployment is defined as the actual level of output minus potential output associated with the full utilisation of existing capacity, is not large enough to allow all the unemployed to gain productive jobs in the private sector.

We shall argue that, while private sector investment, which is governed by profitability considerations, may be insufficient to expand potential output sufficiently in a recovery to re-absorb the unemployed who lost their jobs in the downturn, this contention does not apply to a currency-issuing government which introduces a JG. While a major planning exercise is required, when the JG is first implemented, which must address the prevailing rate of labour underutilisation, the creation of additional JG jobs simultaneously creates the extra productive capacity required for program viability. On the other hand, the prospective fluctuations in JG employment arising from the fluctuations in non-government employment are likely to be relatively modest within a fully employed economy, which makes the planning process less challenging.

The paper is structured as follows. In Section 2, we briefly explore the theoretical literature about capacity constrained unemployment, by particular reference to Malinvaud (1980), Mitchell and Muysken (2002) and Arestis and Sawyer (2005), and also note the empirical evidence about the slow growth of potential output since the GFC in the OECD countries (OECD, 2009) and the USA (Reifschneider *et al.*, 2013). The concept of fiscal space is explored in Section 3. We then highlight the difficulties of achieving and sustaining full employment through pump priming and show that the

arguments about capacity constrained unemployment have no relevance to the implementation of a JG, but we acknowledge the major planning issues are entailed, particularly in the initial implementation of the JG. Concluding comments complete the paper.

2. Capacity constrained unemployment

2.1 Theoretical perspectives

Edmond Malinvaud presented the Marshall Lectures at Cambridge University in 1978, which culminated in his 1980 book entitled *Profitability and Unemployment*. He was contributing to a robust debate about the rising unemployment rates around the world, following the OPEC oil shocks and the contractionary fiscal response by governments to the ensuing rise in inflation.

Aggregate demand and income rationing in a monetary economy will impact on the product and labour markets. Thus, consumers in aggregate could receive a level of income, which was constrained by involuntary unemployment, and, in turn, firms would face constrained sales due to a lack of demand. Malinvaud argued that it was possible that there would be insufficient capacity after a recession to enable workers who were involuntarily unemployed to be re-engaged in the productive workforce, following an increase in demand. In other words, in the terminology used at the time, the unemployment was neither Classical nor Keynesian, even it had originated as one of these causal categories. Instead, the unemployment was a consequence of low investment during and after a recession, which reduced the growth of capacity. Thus, following a recession, mass unemployment could persist and be *capacity constrained*, rather than demand-constrained or Keynesian. Malinvaud showed that even with real wage flexibility (the Classical case), mass unemployment could persist under these circumstances.

Firms will not invest unless they expect the new productive capacity will generate an acceptable rate of return, which is defined simply as being positive in Malinvaud's model. He defines a probability distribution for actual output defined as the minimum of real demand and the level of output associated with the full employment of labour. The expected net returns are expressed in terms of the expected gross returns associated with actual output, taking labour costs into account, minus the cost of the provision of a specific level of capacity, which incorporates a unit capacity cost. The maximisation of expected returns yields an optimal level of capacity. His model is more coherent if the capital equipment is rented, so that unit capacity cost has a clear meaning. His resulting linear investment function has major deficiencies, which he acknowledges (Malinvaud, 1980: 29-37). Notwithstanding these modelling issues, Malinvaud was an early developer of the notion of capacity constrained unemployment, albeit in a static framework.

Mitchell and Muysken (2002) argue that firms form expectations of future profitability by considering the current capacity utilisation rate against their normal usage. They will only invest when capacity utilisation, exceeds its normal level. They will hire extra labour to work on the new capacity to produce the output necessary to satisfy the expected increase in demand. Thus, investment varies with capacity utilisation and productive capacity grows at rate, which is bounded from below, and above. The asymmetric investment behaviour thus generates asymmetries in capacity growth because productive capacity only grows when there is a shortage of capacity. The authors developed a model based on the notion that investors face endemic

uncertainty when making large irreversible capital outlays, which leads them to be cautious and to use broad safety margins in times of pessimism. Also any new investment is likely to have a lagged effect on new capacity, since investment takes time. In addition, to the extent that real wages have declined during the recession, recovery will be more modest and the inducement to invest may well be weaker, due to lower capacity utilisation, thereby slowing the economic recovery.

Thus firms will be reluctant to invest in new productive capacity in the early stages of recovery if they are unsure that the demand growth will be robust and enduring and capable of supporting the extra productive capacity. It is thus entirely possible that the private sector can become capacity-constrained, which limits the scope for private sector employment expansion in the short-run after a deep recession. Mitchell and Muysken (2002, 2008) tie this model into the concept of hysteresis, where potential real output falls in a lagged fashion with declining real GDP is also consistent with this conclusion. The longer a recession is allowed to endure the greater will be the impact of these hysteretic forces. This type of model stands up very well to empirical scrutiny.

Arestis and Sawyer (2005) develop a structuralist model of inflation, which incorporates three key features: (a) '[o]ne set of inflationary pressures comes from the level of demand relative to the size of productive capacity'; (b) a second set of pressures arises from the 'inherent conflict over the distribution of income'; and (c) aggregate demand determines the level of economic activity and there is no expectation that 'the level of demand will generate full employment of labour and/or full capacity utilisation'.

They conclude from their analysis that: (a) productive capacity and hence investment impacts on the NAIRU (inflation barrier), which consequently exhibits hysteresis; (b) investment which depends on capacity utilisation and profitability, is also influenced by aggregate demand; and (c) changes in labour market flexibility have a minimal effect on the inflation barrier (Arestis and Sawyer, 2005: 966-67). The authors approvingly quote Dow (1998) on the 'effects of recession on the future capital stock and thereby on future employment prospects'. Dow finds that enterprises adjust their capital stock to the prevailing level of aggregate demand and level of employment. Arestis and Sawyer (2005: 968) write that:

High levels of unemployment and excess capacity can be expected to have led to a substantial reduction in the capital stock to below what it would have been if there had been sustained full employment, and on the basis of the argument developed above, the increase in the inflation barrier would be correspondingly substantial.

Their structuralist model is consistent with the arguments developed by Malinvaud (1980) and Mitchell and Muysken (2002).

2.2 Empirical work

OECD (2009) acknowledged that the real crisis post-GFC had led to a downward revision in the level of OECD potential output of about 2 per cent by the end of 2010, with the medium term forecast being a decline of 2.75 per cent, although the long-term potential growth rate was allegedly unaffected. Two thirds of the short-term decline in potential output growth was attributed to the 'collapse in investment and the associated slower growth of capital input to production' (OECD, 2009: 213).

Following a deep recession, the rise in unemployment would be partially translated into higher structural unemployment (and lower potential output) via rising long-term unemployment and hysteresis effects, but ‘hysteresis effects are asymmetric in the sense that they tend to raise the NAIRU when unemployment rises, but do not lower the NAIRU when unemployment falls’ (OECD 2009: 230).

However, rather than highlighting the capacity constraints which would frustrate a recovery in employment and emphasising the need to engender buoyant expectations to promote new investment, OECD (2009: 214) argued that ‘accelerating structural reforms in the years ahead would not only improve longer term growth prospects and enhance resilience to new adverse shocks, but would also contribute to easing fiscal pressures.’ Thus, by exaggerating the impact of the deep recession on potential output, via an asymmetric hysteretic process, the OECD could at best be justifying short-term fiscal stimulus measures, but, by 2009, ‘ambitious’ fiscal consolidation measures were being advocated, which would be sufficient to bring government budgets close to balance or even into surplus. The higher unemployment, which was alleged to be mainly structural, then affirmed the need for further structural reform (OECD 2009: 214).

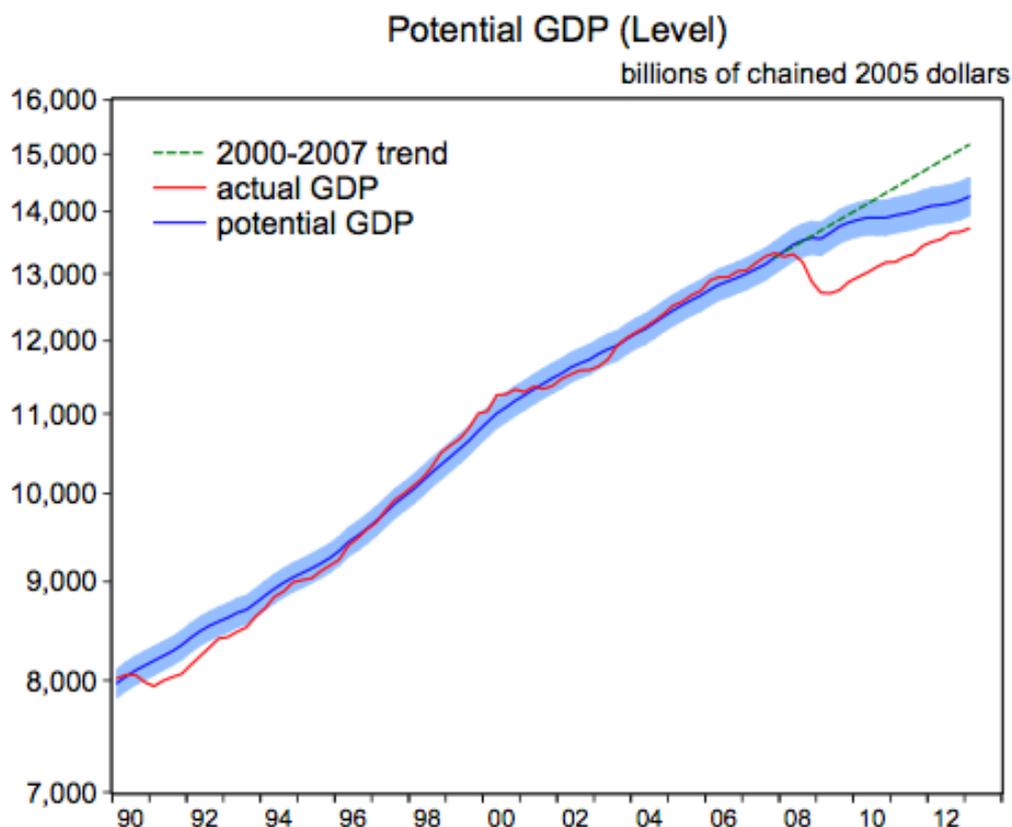
Increasing evidence is emerging about the impact of the recession on USA growth potential. The USA has not been subject to the fiscal austerity measures characteristic of the Eurozone through the imposition of institutionalised neo-liberal policies, notwithstanding the ongoing political debates over the debt ceiling. A recent paper by Reifschneider *et al.* (2013), from the Federal Reserve Board, argues that, since the GFC at the end of 2007, discouraged unemployment in the USA has contributed to a decline in the participation rate to 62.8 per cent. At the same time there has been reduced investment in plant and machinery, which has led to a decline in productivity growth. Figure 1 accompanies the authors’ estimate that potential GDP is now about ‘7 per cent below the trajectory it appeared to be on prior to 2007’ and that the annual growth of potential output has declined from 2.6 per cent (2000-2007) to 1.3 per cent (Reifschneider *et al.*, 2013: 8). This has been accompanied by a decline in trend multifactor productivity. Particularly significant in the light of the OECD’s curious view of asymmetric hysteresis, is that the authors estimate that actual output continues to lie below potential output, despite the slower growth of the latter. Thus there is scope for output expansion, before capacity constraints starting to bind.

While hysteresis is acknowledged, in their modelling, the short-run “natural rate” is restored to its long-run constant value, albeit very slowly, with the long-run rate having a coefficient of 0.04. Reifschneider *et al.*, 2013:37 note:

These dynamics are consistent with the idea that, although financial crises and deep recessions can have persistent effects on labor supply by disrupting labor market functioning, impairing unemployed workers’ skills, and causing premature permanent departures from the labor force, such events do not alter demographic conditions, the social safety net, or other fundamental determinants of long-run conditions in the labor market.

The significance of this claim for modelling should not be overstated; in the light of the low coefficient and the rather tenuous concept of the natural rate that underpins their conceptual framework (see Mitchell, 1987). However, it should be noted that older men who lose their jobs often never return to the labour market, so demographic conditions do not exclusively determine the long-run estimate of the “natural rate”.

Figure 1: State-Space Model Estimates of the Level of US Potential GDP & its Components



Source: Reifschneider *et al.* (2013) Figure 1.1, Appendix. Shaded region denotes 95% confidence interval for estimates of potential output. GDP measures are in billions of chained 2005 dollars.

The FRB authors acknowledge that hysteresis has been a major factor in the aftermath of the GFC, which was not the case with previous recessions. This is significant in the light of the second plank of the Federal Reserve’s dual mandate, namely full employment. Reifschneider *et al.* (2013: 16) point to three potential sources of labour market damage “(1) difficulties in reallocating labor across different segments of the economy (industry, occupation, or geographic) associated with the distribution of the demand shock caused by the financial crisis and deep recession; (2) a more general deterioration in the efficiency of the matching process between available workers and available jobs; and (3) longterm damage in labor markets (often referred to as hysteresis) associated with the substantial rise in the number of long-term unemployed and a possible reduction in the employability of affected workers.”

They point out that despite the impact on the supply-side, their point estimates imply that the level of economic slack remains quite high. They support ‘a highly accommodative monetary policy’, with inflationary expectations being well grounded, but do not rule out fiscal policy. Further ‘the case for aggressive policy is strengthened further by the likelihood that much of the supply-side damage is an endogenous response to weak aggregate demand’ (Reifschneider *et al.*, 2013: 52). In contrast to the OECD (2009), the authors confirm that the hysteretic process is reversible. This reversibility of hysteresis was examined in Mitchell (1987).

To their credit, the authors do acknowledge that their analysis may overestimate the long-term damage that has been done. They note that ‘a substantial portion of the slowdown in the adjusted growth rate since 2007 reflects an unusually slow pace of capital deepening—a factor whose contribution to growth should pick up substantially over time as the recovery in business investment and the broader economy proceeds.’ (Reifschneider *et al.*, 2013: 8-9).

2.3 Implications

There is a large degree of unanimity in the heterodox theoretical literature about the hysteretic impact of recessions, both with respect to workers’ human capital (broadly defined) and the stock of productive capacity, which have implications for both the rate of economic recovery and the rate of inflation. Some empirical literature has also been canvassed to demonstrate that the severity of the post-GFC recession appears to have achieved an increased degree of consensus about its impact on the supply-side of the economy, albeit without agreement about the appropriate set of remedial policies. The OECD has made a major concession in conceding that major real shocks bring about a hysteretic process, although the assertion that the process is asymmetric seems dubious. We now focus on the consequences of capacity constrained unemployment for the achievement of sustained full employment.

3. Fiscal space

Full employment occurs when aggregate spending is sufficient to elicit output levels, which at current productivity levels will provide enough jobs (measured in working hours) for all the workers who desire to work. Once the non-government sector has determined its spending (and saving) decisions, it is the role of government fiscal and monetary policy to ensure that aggregate demand is appropriate.

From the sectoral balances perspective of the national accounts, we define the non-government sector balance as the sum of the private domestic and net exports, that is, $(S - I) + (X - M)$, where S is household saving, I is private capital formation, X is exports and M is imports. The sectoral balances tell us that the government balance ($G - T$), where G is government spending and T is taxation revenue is equal to and of opposite sign to the non-government balance.

Thus, $(G - T) = (S - I) - (X - M)$. It is likely for many nations that the right-hand side (the net position for the non-government sector) will be positive. In this situation, the level of aggregate activity can be maintained on an on-going basis (at any rate of unemployment) only if $G > T$. That is a continuous budget deficit is required to sustain a given level of activity.

It becomes obvious (and incontestable) that if the non-government spending decline from a given position of full employment, the only way that the spending gap can be filled is via a fiscal intervention – direct government spending and/or a tax cut (to increase private disposable income and stimulate private spending). It is possible for an expansionary monetary policy to reverse the decline in private spending, but the outcomes are much less certain relative to a fiscal expansion.

We thus can define the full employment budget deficit condition as:

$$(G - T) = S(Y_f) + M(Y_f) - I(Y_f) - X$$

where Y_f is the full employment national income, which is associated with 2 per cent unemployment and no underemployment.

The sum of the terms $S(Y_f)$ and $M(Y_f)$ represent drains on aggregate demand when the economy is at full employment and the sum of the terms $I(Y_f)$ and X represents spending injections at full employment. If the drains outweigh the injections then for national income to remain stable, there **has** to be a budget deficit sufficient to offset that gap in aggregate demand. If the budget deficit is not sufficient, then national income will fall and full employment will be lost.

Once we accept this reality and the fact that the government has no financial constraint to prevent it providing **any** level of deficit support to the economy, the debate focuses on how the required deficit should manifest itself. It is here that we recognise the fundamental constraint facing government – the availability of real goods and services for sale in the currency of issue (Mitchell and Muysken, 2008).

Capacity-constrained unemployment refers to a state when the level of output associated with the full utilisation of capacity is less than Y_f .

4. Policies for sustained full employment

4.1 Pump priming

While Post Keynesians often fail to recognise the likely need for a currency-issuing government to run continuous deficits, preferring to proffer untenable fiscal rules such as “balancing the budget over the cycle” as a way of appeasing the mainstream, they do typically advocate what has been referred to as generalised fiscal and monetary expansion mediated by incomes policy and controlled investment as a solution to mass unemployment (Ramsay, 2002-3; Kadmos and O'Hara, 2000; Sawyer, 2003, 2005).

Davidson (1994: 79) representing the mainstream Post Keynesian approach writes “Government fiscal policy is conceived as the balancing wheel, exogenously increasing aggregate demand whenever private sector spending falls short of a full employment level of effective demand and reducing demand if aggregate demand exceeds the full employment level.”

However (indiscriminate) expansion in isolation is unlikely to lead to employment opportunities for the most disadvantaged members of society and does not incorporate an explicit counter-inflation mechanism, whether or not full employment is achieved. The assumption that the fiscal multiplier is relatively stable ignores the fact that fiscal policy is subject to well documented lags (Friedman, 1948), so the degree of stimulus required may well have changed before the planned measures have taken effect. An indiscriminate expansion also fails to address the spatial labour market disparities. Arestis and Sawyer (2005: 967, 973) argue correctly that ‘the industrial structure of a region and ... variations in productive capacity as well as in aggregate demand in the region ... [drive these disparities and conclude] ... in terms of policy implications, appropriate demand policies are required to stimulate investment and underpin full employment.’

But how can we be sure that the investment will provide jobs in failing regions through the provision of sufficient capacity (see also Reifschneider *et al.*, 2013)? Upon what basis are the most disadvantaged workers with skills that are unlikely to match those required by new technologies going to be included in the ‘generalised expansion’ (Tcherneva, 2011)? In addition, where is the inflation anchor? Reference

is made to the adoption of incomes policy, but the specifics are rarely spelled out. In particular, how are the interests of the disadvantaged going to be looked after in the wage fixing process?

4.2 Spatial Keynesianism

Mitchell and Juniper (2007) develop what they term *Spatial Keynesianism* to describe a spatially aware approach to macroeconomic policy, which includes a spatially targeted employment policy. Spatial Keynesianism stands in contrast to the bluntness of orthodox Keynesian tools, which fail to account for the spatial distribution of social disadvantage.

They argue that the state can resolve demand gaps which cause unemployment in two ways: (a) by increasing net spending via purchasing goods and services and/or labour at market prices as explained in the previous sub-section; and/or (b) by using its currency issuance power to provide a fixed-wage job to all those who are unable to find a job elsewhere. This employment buffer stock approach is termed the JG (see Mitchell, 1998; Wray, 1998). The JG is an effective strategy for a fiat-currency issuing government to pursue to ensure that work is available at a liveable wage to all who wish to work but who cannot find market sector employment (including regular public sector). The government would become 'an employer of last resort' and provide a buffer stock of jobs that are available upon demand. The JG differs from a Keynesian expansion because it represents the minimum stimulus (the cost of hiring unemployed workers) required to achieve full employment rather than relying on market spending and multipliers. The JG also provides an inherent inflation anchor missing in the generalised Keynesian approach (Mitchell, 1998). Clearly, and emphatically, a mixture of (a) and (b) is likely to be optimal although (a) alone is not preferred.

Kadmos and O'Hara (2000: 10-12) criticise the focus on government consumption of low-skilled services by JG advocates. They claim the leading sectors rely on information, knowledge, communications and networking. They advocate a boost to public infrastructure investment, which enhances the profitability of private sector investment, in addition to contributing to aggregate demand and employment. Clearly, if a political will exists to construct public infrastructure then employment levels will rise subject to real resource availability. This is independent of the need for a JG. But, sole reliance on public sector investment to achieve full employment, would create considerable economic inflexibility. The ebb and flow of the private sector would not be readily accommodated and an increasing likelihood of inflation would result (Forstater, 2000).

Crucially, public investment is unlikely to benefit the most disadvantaged workers in the economy. The JG is designed to explicitly provide opportunities for them. By way of example, during the golden age in Australia (1945-1975) when public capital formation and social wage expenditure was strong, full employment was only achieved because the public sector (implicitly) provided an implicit JG for low skilled workers. This experience is shared across all advanced economies.

Additionally, environmental constraints militate against generalised Keynesian expansion. JG proponents emphasise the regional dispersion of mass unemployment. Higher output levels are required to increase employment, but the composition of output remains a pivotal policy issue. JG jobs would be designed to support local community development and advance environmental sustainability. JG workers could

participate in many community-based, socially beneficial activities that have intergenerational payoffs, including urban renewal projects, community and personal care, and environmental schemes such as reforestation, sand dune stabilisation, and river valley and erosion control. Most of this labour intensive work requires very little capital equipment and training, an issue we consider in the Section 4.3 (see Mitchell, 1998).

4.3 Employment buffers – the Job Guarantee

The issue of capacity constraints is often raised as an objection to the introduction of a JG. The government makes an unconditional offer of a job at a fixed wage to anyone who is seeking employment. The JG is thus demand, rather than supply, determined. Many critics of the scheme claim that there is not sufficient capital available to implement such a scheme since, in many economies, there have been high rates of unemployment since the GFC. First, it is necessary to establish whether there is capacity-constrained unemployment, which can be achieved by undertaking the following steps:

1. Calculate the real output gap that is the difference between capacity based, potential real output and actual real output.
2. Calculate the extra output that would be generated if the unemployed were to be re-employed (allowing for frictional unemployment of say 2-3 per cent), subject to an assumption about labour productivity per capita or per hour.
3. Compare that output with the real output gap which reflects prevailing capacity constraints.

If the extra output that would be forthcoming exceeds the real output gap, then the economy has capacity-constrained unemployment that cannot be solved by a short-run stimulus package but requires longer-term investment in productive capacity, particularly in the private sector.

In this situation, it may be argued that the JG is incomplete or possibly unviable as a solution to mass unemployment because in the medium term, the JG is also subject to capacity-constrained unemployment. However the implementation of the JG exploits the spending capacity of a currency-issuing government, which is not constrained by expectations of future aggregate demand. This stands in contradistinction to the spending decisions of private firms that are guided by profitability considerations and constrained by endemic uncertainty.

In other words, the JG creates its own productive capacity each time it takes on a new worker. Members of the Centre of Full Employment and Equity (CofFEE) have developed a detailed understanding of the types of jobs that could be created under a JG and research has been undertaken to establish the additional resources that would be required, including equipment (protective clothing etc); training resources; supervisory personnel; standard raw materials; and extra administrative and operational outlays (see Cook *et al.*, 2008). In short, a large amount of fine-grained information has been assembled about the necessary resources to mount a JG program in Australia. Further, practical experience has also been gained through involvement with employment generation programs in a number of countries. There is also a detailed international literature on this topic that enables realistic parameters for capital and training costs to be utilised, after being cross-matched with the data gleaned from research in Australia.

The upshot is that we have devised three stylised JG employment categories, differentiated by their labour intensity and wage to non-wage costings:

- Low capital intensity – 75/25 rule;
- Medium capital intensity – 60/40 rule; and
- High capital intensity – 50/50 rule.

For example, the 75/25 rule indicates that 75 per cent of total costs will be absorbed by wages with the remaining 25 per cent being non-labour costs, which include the wages of supervisors, administrative costs, materials used and capital depreciation. These categories can then be linked to the range of jobs that are identified to meet unmet community need and which would be accessible to the most unskilled workers.

From our research, the majority of jobs that are identified as being suitable for low skill workers were in the low capital intensity areas of work, although this varied across the specific need areas (transport amenity; community welfare services; public health and safety; and recreation and culture). The upshot is that these capital requirements are grounded in the real world evidence. The currency-issuing government has the financial capacity to procure the required resources and would not face the same sort of constraints that the private sector would face in the short-run if it were trying to deal with a generalised expansion. The key issue for the JG is adequate planning, which must be informed by accurate projections to ensure these purchases are made in a timely manner, thereby avoiding unnecessary delays in the offer of jobs.

The major challenge for the efficacy of the JG is in its initial implementation. For example, if the official unemployment rate is 5 per cent, labour underutilisation would be in the order of 10-12 per cent, which means that, if a 2 per cent unemployment (underutilisation) target is realistic, given normal labour market frictions, then a further 8-10 percentage points increase in total work hours can be anticipated by JG administrators, minus a portion of which will be taken up in due course by the private sector due to the resulting multiplier effects.

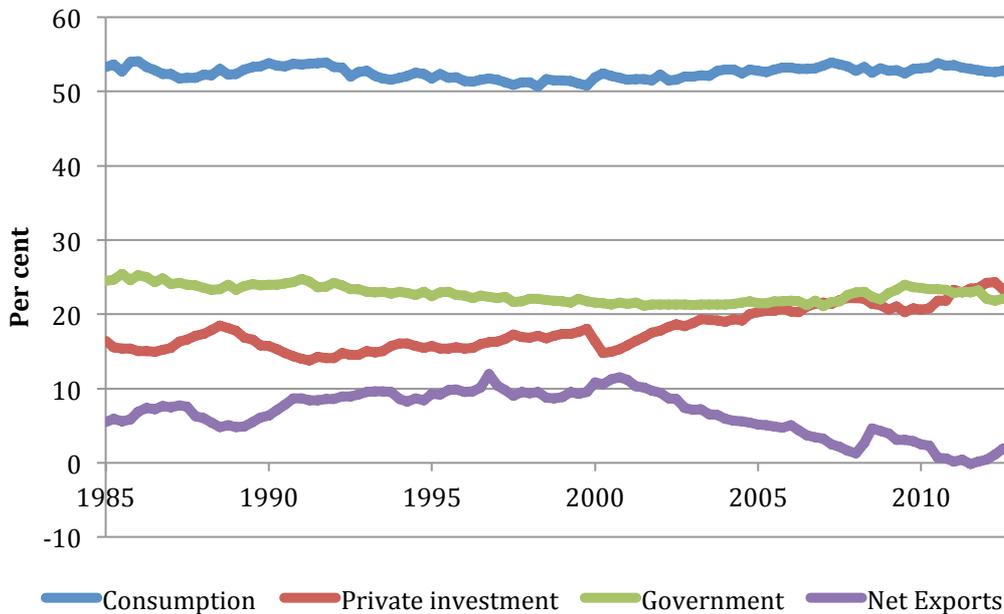
This is a logistical challenge, which would require careful planning with respect to the provision of additional resources, as described above. There is already an administrative structure in place, namely Centrelink, which is now identified with the Department of Human Services, which is responsible for health, social and welfare payments (including Newstart) and services, but there should be no expectation that the JG could or would be introduced in a very short time frame. An integral part of the planning process is to ensure that these resources are availability in close proximity to where JG workers live.

The ongoing test of the efficacy of the JG as a strategy for sustained full employment is its capacity to respond to fluctuations in non-government employment through its provision on demand of jobs and the necessary non-labour resources.

In Figure 2 we show the quarterly fluctuations of the main components of real aggregate demand in Australia from September 1985 until June 2013. The respective standard deviations of non-Government expenditures are consumption (0.82); investment (2.81); and net exports (3.09). As would be expected, the consumption share of GDP is relatively stable, whereas investment and net exports are quite volatile, which is revealed by the respective coefficients of variation. However it would be expected that in a fully employed economy, the fluctuations of investment would diminish to the extent that it is associated with the production of non-tradeable goods. Likewise the presence of a JG would further stabilise consumption, by

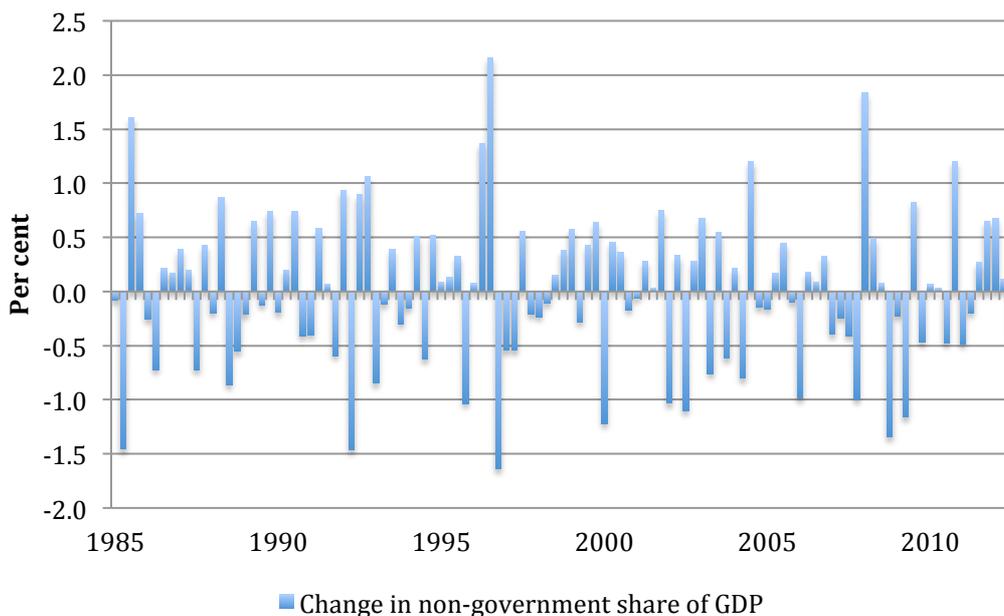
providing an increased certainty with respect to the receipt of income. Hence it is extremely unlikely that, once the JG is established, fluctuations in non-Government employment would impose similar organisational demands, as when the JG was established.

Figure 2: Shares of real GDP of main expenditure aggregates (September 1985 - June 2013)



Source: RBA Statistics: Table G11, Gross Domestic Product – Expenditure Components, Authors’ calculations.

Figure 3 Quarterly Changes in non-Government Spending as a share of Real GDP (December 1985 - June 2013)



Source: ABS, National Accounts.

This is confirmed in Figure 3, which shows quarterly changes in real non-government spending expressed as a share of real GDP. The majority of changes lie between -1 per cent and +1 per cent of GDP and the larger changes, in absolute terms, tend to be short lived. The positive changes in non-Government spending should lead to a seamless transfer of JG workers into the private sector to which they are attracted by higher hourly wages. The non-Government share of GDP fell 52 times over the nearly 28 years of quarterly observations, of which just 9 changes exceeded 1 percentage point of GDP.

Thus the major challenge to the implementation of a JG would appear to be when it is introduced and it is necessary to address the *extant* rate of labour underutilisation, but the Centrelink offices have extremely accurate data on the spatial distribution of job seekers, which will inform the deployment of non-labour resources. On the other hand, the ongoing maintenance of full employment through the JG would appear to be relatively straightforward in terms of the deployment of labour.

Finally, an issue, which is typically raised with respect to a full employment policy, is whether the demand impact of the extra employment is inflationary. The buffer employment ratio (BER) defines a critical proportion of total jobs that are in the JG pool, and is associated with the stabilisation of inflation. In any modern capitalist economy a full employment policy must be accompanied by a counter-inflation policy, which, for consistency, must not rely on unemployment buffer stocks to generate a counter-inflation sanction. The JG relies on an income sanction, namely taking up a minimum wage JG job, as opposed to one attracting market wages, to control inflation. The comparison of the size of the BER with the NAIRU is meaningless, since from both an economic and social perspective, the use of an employment buffer stock through the JG is superior to an unemployment buffer stock via the adoption of pump priming.

6. Conclusion

While a private sector expansion may be capacity constrained, when the economy has been in recession, this issue does not apply to the introduction of a JG, which can be designed to accommodate a range of viable capital-labour ratios. Subject to adequate planning, the offer of a JG job simultaneously creates the extra productive capacity required for the viability of this program. Further, by also adopting incomes policy to supplement the wage sanction which is characteristic of the JG program, it would be possible to keep the maximum stock of JG workers relatively small, which will reduce the incidence of low wage employment and also the disruption to the provision of services by JG workers caused by fluctuations in JG employment, due to both the flux of non-Government employment and the imperative of stable inflation.

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¹ The authors are Director of Centre of Full Employment and Equity and Professor of Economics at the Charles Darwin University and University of Newcastle, Australia (Mitchell); Professor of Economics, School of Business, University of Newcastle (Watts).