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Buffer stocks and monetary policy – the role of the central bank

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1.   Introduction

This paper develops a broad theoretical macroeconomic framework based on the recognition that fiat currency systems are in fact public monopolies per se, and introduce imperfect competition to the monetary system itself, and that the imposition of taxes coupled with insufficient government spending generates unemployment in the private sector. An understanding of this wide spread monetary framework allows us, once we have appreciated how unemployment occurs, to detail the role that government can play in maintaining its near universal dual mandates of price stability and full employment (see Mitchell, 1998; Wray, 1998; Mosler, 1997-98; Mitchell and Mosler, 2002, 2006; Mitchell and Juniper, 2006).

We recognise that central banks have, increasingly, been given the responsibility by government for managing the price level. In conducting monetary policy to fulfill their major economic objectives, central banks manipulate the interest rate and attempt to 'manage' the state of inflation expectations. These policy 'tools' are employed to achieve an optimal level of price stability and capacity utilisation (typically assumed to be invariant in the long-run to nominal aggregates). Where negative real effects from the operation of 'inflation-first' monetary policy are acknowledged they are theorised to be necessary for optimal long term growth and employment and small in magnitude.

However, several researchers have found that sacrifice ratios remain significant and persistent, meaning that GDP losses during disinflation episodes are substantial. Additionally, a major component of this monetary policy stance is the persistent pool of unemployed (and other forms of labour underutilisation, for example, underemployment) (see Ball, 1994; Ball and Sheridan, 2003, Mitchell and Bill, 2004) as a buffer stock for wage and thereby price stability. The unemployment pool is thus widely recognised and monitored as a price anchor, a primary concern for price stability in general, and a prime object of monetary policy. Recognising that the effectiveness of unemployment *per se* as a price anchor is a further function of the terms, conditions, and administration of the unemployment program, we also recommend management of the unemployment policy and programs be made a function of the agency responsible for said price stability - the central bank.

Additionally, we will show that the central bank, as part of the consolidated currency-issuing government sector, has another, somewhat similar yet far more effective buffer stock option which is in fact an alternative way of managing the unemployment program. We argue that a superior use of the 'labour slack' necessary to generate price stability is to implement an employment program for the otherwise unemployed as an activity floor in the real sector, which both anchors the general price level to the price of employed labour of this (currently unemployed) buffer and can produce useful output with positive supply side effects.

The second aim of the paper, therefore, is to contrast how different buffer stock options - the heart of any monetary system - which are available within the broad monetary system we outline in the first part of the paper, function to maintain price stability and optimise output. We juxtapose these two buffer stock options that a central bank has to maintain price stability. First, we consider the unemployment buffer stock approach (characterised by the well-known NAIRU concept) which is the current orthodoxy among central bankers noted above. Second, and by way of contrast we explore the employment buffer stock approach (which we term the Job

Guarantee (JG)) which reflects the fact that the imperfect competition introduced by fiat (flexible exchange rate) currency provides the issuing government with pricing power and frees it of nominal financial constraints.

The JG approach represents a break in paradigm from both traditional Keynesian policies and the NAIRU-buffer stock approach. The difference is a shift from what can be categorised as 'spending on a quantity rule' to 'spending on a price rule'. For example, under current policy, the government generally budgets a quantity of dollars to be spent at prevailing market prices. In contrast, with the JG option, the government additionally offers a fixed wage to anyone willing and able to work, and thereby lets market forces determine the total quantity of government spending. We categorise this as spending based on a price rule.

The paper is laid out as follows. Section 2 provides a summary of the monetary framework outlined in Mitchell and Mosler (2002, 2006). Section 3 provides a theoretical structure for understanding the persistently high unemployment. In Section 4, we compare two buffer stock methods of stabilising prices: (a) the NAIRU approach, and (b) the Job Guarantee approach. Concluding remarks follow.

2.   A macroeconomic framework with imperfect competition

2.1   Sectoral accounting

How does government macroeconomic policy operate in a modern monetary economy distinguished by the use of fiat (rather than commodity) currency and flexible exchange rates (see Mitchell and Mosler, 2002, 2006)? Under a fiat currency, the monetary unit, defined by the government, is convertible only into itself and not legally convertible by government, for example, into gold as it was under the gold standard. The currency has no intrinsic worth. The viability of the fiat currency is ensured by the fact that it is the only unit which is acceptable for payment of taxes and other financial demands of the government.

While not emphasised in mainstream analysis, as a matter of national accounting - the federal government deficit (surplus) equals the non-government surplus (deficit). The non-government sector is the sum of the private domestic and the foreign sectors. In aggregate, there can be no net savings of financial assets of the non-government sector without cumulative government deficit spending. In other words, the only entity that can provide the non-government sector with net financial assets (net savings) and thereby simultaneously accommodate any net desire to save (financial assets) and thus eliminate unemployment is the federal government. It does this by net spending. Additionally, and contrary to mainstream rhetoric, yet ironically, necessarily consistent with national income accounting, the systematic pursuit of government budget surpluses is dollar-for-dollar manifested as declines in 'non government' savings.

Macroeconomics textbooks use a 'sectoral flows' framework to summarise the accounting of income flows between the government, private and foreign sectors. Total private savings equals private investment, the government budget deficit, and net exports, as net exports represent the net financial asset savings of non-residents. Pursuing budget surpluses is necessarily equivalent to the pursuit of non-government sector deficits. The decreasing levels of net private savings 'financing' the government surplus increasingly leverage the private sector and the deteriorating debt to income ratios will eventually see the system succumb to ongoing demand-draining

fiscal drag through a slow-down in real activity. If the aim was to boost the savings of the private domestic sector, when net exports are in deficit, then as Wray (1998: 81) suggests "taxes in aggregate will have to be less than total government spending."

The government surplus thus has two contractionary effects on the private sector: (a) the stock of financial assets (money or bonds) it holds, which represents private wealth, falls; and (b) private disposable income falls in line with the net taxation impost. Some may retort that government bond purchases provide the private wealth-holder with cash. That is true but the context is the funds the non government sectors receive by selling securities to the government are the same funds it needs for the net tax payments to that government. The result is exactly the same when expanding this example by allowing for private income generation and a banking sector.

2.2   Government spending is not inherently revenue constrained

Mainstream macroeconomics draws a false analogy between private household budgets and the government budget by claiming that like a private household, the government has to 'finance' its spending. With three alleged sources of 'finance' available to government (taxes, selling bonds and money creation), various scenarios are constructed to show that budget deficits are either inflationary, if 'financed' by 'printing money' or squeeze private sector spending (by pushing up interest rates) if 'financed' by debt issue. Taxation is also considered to be a drain on private enterprise and initiative.

Bell (2000: 617) says that the erroneous understanding that a student will gain from a typical macroeconomics course is that "the role of taxation and bond sales is to transfer financial resources from households and businesses (as if transferring actual dollar bills or coins) to the government, where they are respent (i.e., in some sense 'used' to finance government spending)."

What is missing is the recognition that a household, the user of the currency, must finance its spending, *ex ante*, whereas government, the issuer of the currency, necessarily must spend first (credit private bank accounts) before it can subsequently tax (debit private accounts). Government spending is the source of the funds the private sector requires to pay its taxes and to net save.

Government spending is therefore not inherently revenue constrained and is typically facilitated by the government issuing cheques drawn on the central bank, which would never contemplate 'bouncing the government cheque'! The recipients of the cheques (sellers of goods and services to the Government or transfer payment recipients) deposit them in their bank, and after clearance, credit entries appears in accounts throughout the commercial banking system. Operationally, this process is independent of any prior revenue, including taxing and borrowing. How much the government spends today does not financially diminish its ability to further spend in the future. Taxation is the reverse of this process and bank entries reflect the draining of funds from the private sector by the government. No real resources are transferred to government. Nor is government's ability to spend augmented by the adjustments to private bank accounts. The notion of the government 'saving' its own currency is nonsensical.

That being said, we recognise that governments do impose constraints on themselves, such as 'no overdraft rules' and 'debt ceilings' for the treasury and central bank. Again, these are self imposed and reversible by the government, and not inherent in the monetary system.

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2.3   Unemployment occurs when net government spending is too low

The purpose of government spending is to move real resources from private to public domain to facilitate the government's economic and social program. As government spending is not revenue-constrained, taxation functions to promote offers from private individuals to government of goods and services in return for the necessary funds to extinguish the tax liabilities and fulfil net savings desires. So by design tax impositions can be said to create unemployment (people seeking paid work) in the non-government sector, while government spending reduces the unemployment as it satisfies the need for funds created by the tax liabilities. As a matter of accounting, for aggregate output to be sold, total spending must equal total income (whether actual income generated in production is fully spent or not each period). Involuntary unemployment is idle labour unable to find a buyer at the current money wage. In the absence of government spending, unemployment arises when the private sector, in aggregate, desires to spend less of the monetary unit of account than it earns. Nominal (or real) wage cuts *per* se do not clear the labour market, unless they somehow eliminate the private sector desire to net save and increase spending.

Unemployment thus occurs when net government spending fails to accommodate the need to pay taxes and the private desire to net save. Wray (1998: 81) says, "Normally, taxes in aggregate will have to be less than total government spending due to preferences of the public to hold some reserves of fiat money." Thus, in general, deficit spending is necessary to ensure high levels of employment.

For a time, inadequate levels of net government spending can continue without rising unemployment if GDP growth is driven by an expansion in private debt (technically this represents net dis-saving desires). The problem with this strategy is that when the debt service levels reach some 'threshold' percentage of income, the private sector will attempt to restructure their balance sheets to make them less precarious and as a consequence the demand for debt slows and the economy falters. In this case, any fiscal drag begins to manifest as unemployment.

2.4   Why does the federal government issue debt?

If government spending is not financially constrained then why does it issue debt? To answer this question we appreciate that the government's budget has liquidity impacts on the private sector. Government spending and purchases of government bonds by the central bank add funds and taxation and sales of government securities drain private funds. These transactions influence the member banks' 'cash' positions at the central bank's clearing system on a daily basis and on any one day they can result in a system surplus (deficit) due to the outflow of funds from the official sector being above (below) the funds inflow to the official sector. The system cash position has crucial implications for the central bank, which targets the level of short-term interest rates as its monetary policy position.

After spending and portfolio adjustments have occurred, government budget deficits result in 'system-wide' surpluses (manifested as excess reserves in the accounts commercial banks keep with the central bank). Competition between the commercial banks to create better earning opportunities on the 'surplus' reserves then puts downward pressure on the cash rate. But the system-wide excess cannot be removed by intra-bank transactions because for every liability there is a corresponding asset – that is, no net financial assets can be created or destroyed by purely private transactions. If the central bank desires to maintain the current target cash rate then it

must 'drain' this surplus liquidity by selling government debt or otherwise offering an interest bearing deposit at the central bank. In other words, government debt functions as interest rate support via the maintenance of desired reserve levels in the commercial banking system and not as a source of funds to 'finance' government spending. If the government did not issue debt then the central bank would lose control of the interest rate. The extreme example is Japan which has near zero short-term interest rates because the Bank of Japan does not 'drain' all the liquidity being pumped in via their massive budget deficits. Nugent (2003) says "that in Japan, with the highest public debt ever recorded, and repeated downgrades, the Japanese government issues treasury bills at .0001%! If deficits really caused high interest rates, Japan would have shut down long ago!"

With on-going budget deficits, the private sector may ultimately 'refuse' to hold any more cash or assets. This extreme condition would be evidenced by prices rising so fast when the government tried to spend it couldn't (net) spend any funds. In a less severe case, the private sector would increase its consumption spending in response to excessive income from the net government spending. With private employment levels rising in response to the increased consumption, the budget deficit could be lower yet the economy still be operating at its real limit (full employment). Whether this generates inflation depends on the ability of the economy to expand real output to meet rising nominal demand. That is not compromised by the size of the budget deficit.

2.5   Buffer stocks and price stability

Buffer stocks in labour markets are the current preferred method of overall price stabilisation in most economies. In Section 3, we show that central banks now focus almost exclusively on price level stability using unemployment as the buffer stock (the 'NAIRU-buffer stock' approach). By way of contrast, Mitchell (1998) and Mosler (1997-98) have outlined in detail the inflation control mechanisms using employment as a buffer stock compared to the NAIRU approach. We consider this approach Section 4.

3.   Trends in central bank conduct and unemployment buffer stocks

Once the monetary targeting experiment of the 1970s and 1980s was abandoned as a failure, the monetary authorities in many OECD countries reconstructed the conduct of monetary policy during the 1990s by introducing regimes that placed an exclusive focus on directly maintaining price stability (see Ball, 1994).

This concurred with the prevailing view among central bankers that monetary policy should adopt low inflation as their sole objective. Underpinning this view is the belief in a 'NAIRU-view' of the world, whereby there is some unique real level of activity (summarised in either output or employment) that the economy gravitates to, and any episodes of price disinflation will only temporarily push the real economy below these levels.

Accordingly, in a TV-NAIRU[2] economy, rising demand will increase output and employment and a range of wage-wage (relativity) and wage-price (distributional struggle) forces as the product market softens can lead to acceleration in price inflation. In response, the role of the central bank is to repress demand via interest rate manipulation. The higher unemployment brings the real income expectations of workers and firms into line with the available real income and inflation falls and then

stabilises. The inflation dynamic in turn impacts on inflationary expectations such that this 'independent' driver of price inflation is rendered benign.

The foundation for the recent trends in monetary policy can be found in Kydland and Prescott (1977), Sargent (1983), Barro and Gordon (1983) among others. They have persuaded central bankers that unless there is a commitment to an optimal inflation target (zero inflation), inflationary biases will plague the economy and thereby reduce growth and employment, the other leg of the dual mandate. Most central bank officials are appointed by politicians who feel pressure from their constituencies to sustain output and employment at socially popular levels. The optimal monetary policy literature burgeoned after these early publications. An emphasis developed on central bank independence to avoid the time-inconsistency problem and transparent policy rules that maximised credibility.

The broad rationale for price stability is made on several grounds. Saxton (1997: 1) provides a rationale for price stability (which we paraphrase):

- Anchors the price system – that is, provides a nominal anchor to the value of the fiat currency.

- Promotes effective functioning of the price system – that is, the market allocation system is not subject to nominal price distortions and (neo-classical) efficiency is increased.

- Promotes stability and growth - supporters of inflation targeting claim that the policy regime allows for permanent low inflation with minimal price variability, which should lower inflation expectations and uncertainty about future inflation. King (2003) believes that as a consequence long-term interest rates should be reduced thus providing benefits to investment. The lower interest rates, in turn, promote stronger economic growth.

- Eliminates tax distortions – which help tax-paying investors who are caught out by the 'taxation without representation' problem in times of rapid inflation.

- Promotes transparency, accountability and credibility – the explicit announcement of price stability as the major focus of monetary policy makes it transparent and credible and places a discipline on monetary authorities to avoid non-optimal policy shifts. Credibility thus suggests that the public trust the central bank to maintain its nerve and act consistently to achieve price stability. It is the result of a period of acting in a consistent fashion. Importantly, central bank credibility is considered by supporters of inflation targeting to a principle mechanism by which the economy purges inflationary expectations and risk premiums on interest rates (see Judd, 1995).

It is clear that these accord with the desirable features of an optimal monetary policy. Monetary theorists such as King (2003) and Bernanke and Mishkin (1997) argue that an exclusive focus on inflation control provides the central bank with a vehicle to promote understanding and dialogue with the public such that inflation expectations will be purged and lower interest rates sustained (see also Svensson, 1997). Masson *et al* (1997: 6-7) say that "central banks … are subject to continual pressure to stimulate activity and/or pursue other objectives that may conflict with price stability. Inflation targeting in principle helps to redress this asymmetry by making inflation, not output or some other target variable, the explicit goal of monetary policy and by providing

the central bank a forward-looking framework to undertake a *pre-emptive* tightening of policies before inflationary pressures become visible." (emphasis in original).

The almost exclusive central bank focus on maintaining price stability on the back of an overwhelming faith in the 'NAIRU ideology' has marked the final stages in the evolution of an abandonment of earlier full employment policies. The modern policy framework is in contradistinction to the practice of governments in the post World War II period to 1975 which sought to maintain levels of demand using a range of fiscal and monetary measures that were sufficient to ensure that full employment was achieved. Unemployment rates were usually below 2 per cent throughout this period. Unemployment since the mid-1970s has mostly persisted at high levels although in some economies low quality, casualised work has emerged in the face of persistently deficient demand for labour hours.

It is clear that central bankers are now using buffer stocks of unemployed to achieve a desirable price level outcome. While the real effects of such a policy have been contested, and there is overwhelming evidence to suggest that the cumulative costs of this strategy in real terms have been substantial. In addition to lost output, other real costs are suffered by the nation, including the depreciation of human capital, family breakdowns, increasing crime, and increasing medical costs. However, and most important to a central banker, the effectiveness of an unemployed buffer stock has been shown to deteriorate over time, with ever larger numbers of 'fresh' unemployed required to function as a price anchor that stabilises wages. From empirical observation, the European Union currently requires unemployment in excess of 8 pre cent for price stability!

The question that arises is whether using a persistent pool of unemployed (or casualised underemployed) is the most cost effective way to achieve price stability? The understanding we achieved from Section 2, where we outlined the imperfectly competitive macroeconomic framework in which modern governments operate, would suggest that a better alternative would be to utilise an employed buffer stock approach.

4. Employment buffer stocks and price stability

4.1 The JG Buffer Stock approach

The JG proposal was conceived independently by Mitchell (1996, 1998) and Mosler (1997-98). It has since been developed further by a range of authors listed previously. The JG is also based on the buffer stock principle. Mitchell (2000) discusses the link between the JG approach and the agricultural price support buffer stock schemes like the Wool Floor Price Scheme introduced by the Australian Government in 1970. While generating 'full employment' for wool production, there was an issue of what constituted a reasonable level of output in a time of declining demand. The argument is not relevant when applied to unemployed labour. If there is a price guarantee below the "prevailing market price" and a buffer stock of working hours constructed to absorb the excess supply at the current market price, then a form of full employment can be generated without tinkering with the "price structure". The other problem with commodity buffer stock systems is that they encouraged over-production, which ultimately made matters worse when the scheme was discontinued and the product was dumped onto the market. These objections to do not apply to maintaining a labour buffer stock as no one is concerned that employed workers would have more children than unemployed workers (see Graham, 1937).

Under the JG, the public sector offers a fixed wage job, which we consider to be "price rule spending", to anyone willing and able to work, thereby establishing and maintaining a buffer stock of employed workers. This buffer stock expands (declines) when private sector activity declines (expands), much like today's unemployed buffer stocks, but potentially with considerably more 'liquidity' if 'properly maintained.'

The JG thus fulfills an absorption function to minimise the real costs currently associated with the flux of the private sector. When private sector employment declines, public sector employment will automatically react and increase its payrolls. The nation always remains fully employed, with only the mix between private and public sector employment fluctuating as it responds to the spending decisions of the private sector. Since the JG wage is open to everyone, it will functionally become the national minimum wage. To avoid disturbing the private sector wage structure and to ensure the JG is consistent with price stability, the JG wage rate should probably be set at the current legal minimum wage, though an initially higher JG wage may be set higher as part of a broader priority for an industry policy.

The JG introduces no relative wage effects and the rising demand *per se* does not necessarily invoke inflationary pressures because by definition it is satisfying a net savings desire. Additionally, in today's demand constrained economies, firms are likely to increase capacity utilisation to meet the higher sales volumes. Given that the demand impulse is less than required in the TV-NAIRU economy, it is clear that if there were any demand-pull inflation it would be lower under the JG. There are no new problems faced by employers who wish to hire labour to meet the higher sales levels. Any initial rise in demand will stimulate private sector employment growth while reducing JG employment and spending.

However, these demand pressures are unlikely to lead to accelerating inflation while the JG pool contains workers employable by the private sector. While the JG policy frees wage bargaining from the general threat of unemployment, two factors offset this. First, in professional occupational markets, while any wait unemployment will discipline wage demands, the demand pressures may eventually exhaust this stock and wage-price pressures may develop. With a strong and responsive tertiary education sector skill bottlenecks can be avoided more readily then with an unemployed buffer stock. Second, private firms would still be required to train new workers in job-specific skills in the same way they would in a non-JG economy. However, JG workers are far more likely to have retained higher levels of skill than those who are forced to succumb to lengthy spells of unemployment. This changes the bargaining environment rather significantly because the firms now have reduced hiring costs. Previously, the same firms would have lowered their hiring standards and provided on-the-job training and vestibule training in tight labour markets. The JG policy thus reduces the "hysteretic inertia" embodied in the long-term unemployed and allows for a smoother private sector expansion. It is also worth noting that with high long-term unemployment, the excess supply of labour does not pose a very strong threat to wage bargaining (Mitchell, 1987, 1998). We thus hypothesise that the threat factor under the JG is now higher.

The JG wage provides an in-built inflation control mechanism (Mitchell, 1998, Mosler, 1997-98). The ratio of JG employment to total employment is called the Buffer Employment Ratio (BER) (Mitchell, 1998). The BER conditions the overall rate of wage demands. When the BER is high, real wage demands will be correspondingly lower. If inflation exceeds the government's announced target,

tighter fiscal policy would be triggered to increase the BER, which entails workers transferring from the inflating sector to the fixed price JG sector. Ultimately this attenuates the inflation spiral. So instead of a buffer stock of unemployed being used to discipline the distributional struggle, the JG policy achieves it via compositional shifts in employment. The BER that results in stable inflation is called the Non-Accelerating-Inflation-Buffer Employment Ratio (NAIBER) (Mitchell, 1998). It is a full employment steady state JG level, which is dependent on a range of factors including the path of the economy.[3]

Would the NAIBER will be higher than the NAIRU? We anticipate the reverse. The issue has its roots in the fact that a particular level of demand (unemployment) curbs the inflationary process in a NAIRU-world. Clearly, if we introduce a JG scheme, the initial level of JG employment will deliver a higher demand level than inherited under the NAIRU economy. Logically, in a NAIRU-world this should be inflationary. But the JG policy introduces 'loose full employment' for the reasons noted above. In this sense, the inflation restraint exerted via the NAIBER is likely to be more effective than using a NAIRU strategy. Additionally, the ease of hiring from the JG pool versus hiring from the unemployed pool results in the JG functioning more efficiently as a buffer stock. JG workers have current work habits, are easier to locate and observe, and are far less likely to have domestic and emotional issues.

5.   Conclusion – the central bank should manage the price anchor

Given the overwhelming central bank focus on price stability, and the critical roll of today's unemployed buffer stocks of unemployed, it is appropriate that the responsibility for the maintenance of the unemployed (or, better still, JG employment) program be placed in the realm of the central bank. The functioning and effectives of the buffer employment stock is critical to its function as a price anchor.

Condition and 'liquidity' is the key. Just as soggy rotting wool is useless in a wool price stabilisation scheme, labour resources should be nurtured as human capital constitutes the essential investment in future growth and prosperity. There is overwhelming evidence that long-term unemployment generates costs far in excess of the lost output that is sacrificed every day the economy is away from full employment (see Mitchell, 2001).

It is clear that the more employable are the unemployed the better the price anchor will function. The central bank is uniquely positioned to bring its research resources to bear on the issue of optimising its price anchor. We are hopeful that this would quickly recognise the obvious - continuous involvement in paid-work provides returns in the form of improved physical and mental health, more stable labour market behaviour, reduced burdens on the criminal justice system, more coherent family histories and useful output, if well managed. This is something at which a central bank should excel.

It is also the case the training in a paid-work environment is more effective than contextually isolated training schemes, which have become the fashion under the active labour market programs pursued by governments in all countries over the last two decades. Again, central banks will quickly recognise this and take immediate action to optimise the price stabilising aspects of their price anchor.

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[2] The constant NAIRU has now been abandoned and replaced by time-varying NAIRUs, which have high standard errors. The evolution from cyclically-invariant NAIRU's to the TV-NAIRU has occurred as ad hoc responses to empirical anomalies. The concept is now all but meaningless for policy analysis (Chang, 1997; Gordon, 1997).

[3] There is an issue about the validity of an unchanging nominal anchor in an inflationary environment. The JG wage would be adjusted in line with productivity growth to avoid change real relativities. Its viability as a nominal anchor relies on the fiscal authorities reigning in any private wage-price pressures. Clearly, in a hyperinflation environment, the discipline of the JG wage would fail. But in historical experience these circumstances have been rare.