

Matching Financial and Physical Limits

Towards an understanding of Inflation, Recession, Stagflation and Degrowth

GDP and realGDP or “Output”

- GDP (Gross Domestic Product) is the total dollar value of all goods and services purchased in an economy over a one year period.
- Output (or realGDP) is the GDP adjusted for general price changes or Inflation.
- It is a measure of the current* productive capacity of the economy. Even the cost of “bads”, such as war, car crashes, pandemics and dealing with the effects of pollution, represent productive capacity which *could have* been deployed delivering wanted goods and services.
- It can be helpful to consider the good approximation described by the following relationship:

$$\text{OutputGrowth} = \text{GDPgrowth} - \text{Inflation}$$

- Economic output requires inputs (factors of production). As well as Capital and Labour, production requires Natural Resources – Raw Materials and Energy from the natural world. Economists have historically tended to assume Natural Resources were unlimited and focused on Labour and Capital. Mainstream economists still underrate the importance of energy in determining economic output.
- If we could *decouple* economic activity from the process of extracting material resources and converting them into waste - we would still need to obtain energy from the environment. Instead of exploiting the Earth, human economies could employ the generosity of the Sun. Maximum economic output would be proportional to the product of energy harvested and the efficiency of our technology.
- Even today, Output is proportional to energy; where the conversion factor depends upon the current technology. In other words, *energy shortages cause recessions* – until alternative energy sources come on line, or else efficiency improves (new technology). In the 1970s, 4 cylinder cars replaced V8 gas guzzlers.

Inflation / Deflation: changing Prices

- An increase in the level of prices of the goods and services that households buy. It is measured as the rate of change of those prices. Calculated every quarter. –RBA
- Typically, prices rise over time, but prices can also fall (a situation called deflation). –RBA
- Positive inflation suggests that:
 - MoneyGrowth (including velocity) is greater than outputGrowth (the growth of realGDP).
 - OutputGrowth is held back by a factor other than a lack of finance (money).

* Correction: current productive capacity should usually be larger than GDP and include underutilised factors of production such as unemployment and factories running below capacity. I should have said “in the absence of policy change...”.

Recession: falling Output

- Recession is *a sustained period of weak or negative growth in real GDP (output) that is accompanied by a significant rise in the unemployment rate.* –RBA
- A “sustained period” means two successive quarters (6 months).
- A decline in real GDP (output) could be due to inadequacies in any of the following:-
 - Capital – a failure to make appropriate investments (energy infrastructure, education & training)
 - Labour generally (e.g. reduced hours worked due to a pandemic); or labour with the skills needed
 - Raw materials or Energy
 - Demand – low confidence and/or a scarcity of money. e.g. The Great Depression
- Opinion: an energy shortage leads to recession because the higher cost of necessities leads to an inevitable fall in discretionary spending - and that fall in sales costs jobs - even if interest rates remain low. Decreasing demand may be offset if the beneficiaries of the scarcity quickly spend their windfall profits in the local economy. However, if the money’s return is delayed, the local money supply shrinks.
- What is “a sustained period of weak or negative growth in real GDP (output)” with *full* employment. Does a Job Guarantee turn a recession into something more like Degrowth? A discussion of Recession and Degrowth is on page 5.

Stagflation: falling output with rising prices

- Inflation and recession can occur together when output falls in spite of finance being readily available.
- Stagflation has only ever occurred in association with a shortage of critical inputs. For example, the 1970s oil supply “shocks” and, potentially, the current Russian-Ukraine war which has slashed the global supply of fossil fuels by 10% and brought about global food shortages.
- Global shortages are compounded in Australia by a, hopefully short lived, east coast energy and food crises. We are headed for stagflation in my opinion. Energy constraints will reduce realGDP (Output), while both energy and food shortages have already added to CPI inflation.
- Opinion: If Australia can decouple its energy and food prices from international scarcity, the “downturn” may not last long enough to become a recession – hence avoiding stagflation. If Australia grows the money supply to keep up with the one-off price rises and moderate wage increases, we might get away with a one year burst of inflation - but attempting to dampen demand will probably ensure stagflation.

Why is the desired inflation target 2% to 3% and not zero?

- Experience has shown that inflation below 2% leads to unemployment and reduced output.
- The RBA suggests, among other things, that a zero inflation target is unstable:-
 - *“If inflation is too low, consumers may delay purchases if they expect prices to fall. As a result, falling prices – a situation called ‘deflation’ – can lead to lower spending. Businesses could respond by laying off workers or reducing wages which, in turn, places further downward pressure on demand and prices.*
 - *Having inflation much lower than 2 to 3 per cent over the medium term can limit the ability of monetary policy to stimulate demand. For example, in response to a sharp decline in aggregate demand, it may be the case that monetary policy should be set such that real interest rates become negative. Having a very low inflation target (so that actual inflation is close to zero) makes it more difficult to reduce real interest rates to such levels.*
 - *Businesses that need to decrease their real wages and prices in response to negative events usually choose to allow their nominal wages and prices to grow at a rate that is below the general rate of inflation; if inflation is very low, there is less room for a business’s wages or prices to grow at a rate below inflation.”*
- OK – you can’t push on a piece of string – but is there an underlying economic reason why 2% to 3% might be stable, and zero is not? There are other ways to stimulate a slowing economy apart from giving away money with negative interest rates, but these methods are not available to the RBA. Under a near zero inflation regime, is a slow down merely the inevitable result of random fluctuations, or might there be a relentless drag which has to be compensated for with continuous inflation? Would a steady state economy, for example, expect to undergo continuous inflation?
 - I have no idea, but this is economics, so let’s speculate and see if anything sticks. Let’s assume the right amount of money chasing the right amount of goods is not good enough – that we need a bit more money and, consequently, a bit more inflation in order to maintain output and avoid contraction. Why might the relationship between money and real goods and services have to keep slipping just to maintain output?
 - After exploring the contributions of credit fuelled asset bubbles and the extortion of economic rents, I came down on the side of psychology. Maybe borrowers like a bit of inflation because they might get a pay rise in the future. It probably has something to do with people feeling that zero inflation is on the precipice of falling into a recession. Inflation below 2% might increase the probability of reduced output because people fear recession so much that they bring it about.
 - So yes, a steady state economy may well be subject to continuous inflation. But it may also depend on what you’re used to. People may get used to zero inflation and lose the fear of recession when there is a Job Guarantee to counteract the tendency to fall into recession.

(It has been pointed out that we need an automatic stabiliser which prevents unemployment rather than “an ambulance at the bottom of the cliff” to mitigate the consequences after it has happened. Nevertheless, a Job Guarantee will probably reduce anxiety about recession to some degree.)

What is the evidence for interest rates controlling inflation?

- Not a lot – and it is inconsistent. See Prof Philip Lawn’s notes entitled: *What is inflation, what are its causes, and why is an understanding of it important?*
- I also found a 1991 RBA Research Discussion Paper (#9104) – by Michele Bullock and Mark Rider, entitled: *The Cross-Country Relationship between Interest Rates and Inflation over Three Decades.*

ABSTRACT

This paper looks at the relationship between inflation and interest rates across a number of industrialised countries over the past three decades. The paper is in three parts. It begins by splitting the whole period up into a number of smaller periods and looking at the inflation/interest rate relationship across countries within these periods. The most interesting conclusion of this section is that while there was a negative relationship between inflation and real short-term interest rates in the 1970s (i.e. *high inflation countries had lower real short-term interest rates*), in the 1980s there was a positive relationship between real short-term interest rates and inflation. The paper then discusses some explanations for this observation - why might we expect to see higher real interest rates in high inflation countries and why has this only occurred in the 1980s. Finally the paper uses a simple test to attempt to distinguish between competing explanations of the positive inflation/real interest rate relationship. Unfortunately, the test cannot distinguish conclusively between the competing hypotheses.

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- The intention is that higher interest rates reduce the money supply by slowing demand for new credit money (bank loans) to below the rate at which money is destroyed by paying down existing loans. But there are side effects.
 - Adjusting interest rates is a very blunt instrument. Interest tends to transfer wealth from the young and the entrepreneurial to cashed up savers. Do savers deserve less or more than keeping up with inflation?
 - Interest adds to prices by increasing the cost of doing business. The going interest rate sets the cost of overdrafts as well as the minimum rate of profit required to justify a new or existing business venture.
 - Raising interest rates increases the cost of capital intensive projects, such as renewable energy, and slows investments needed to mitigate climate change.
 - In the mid 1990s, after a series of rate rises, inflation eventually fell, but not before recession produced bankruptcies, foreclosures and mass unemployment. “The recession we had to have!”
 - If the drivers of inflation are such that reducing the money supply is the appropriate response, it would be better to use fiscal policy – to target taxes where there might be too much money.
 - If inflation is of the more common *cost-push* variety – i.e. due to a shortage of inputs, such as appropriately skilled workers, raw materials or energy, then raising interest rates is highly likely to bring on a recession.

Degrowth vs Recession:

From Jason Hickel www.tandfonline.com/

1. Degrowth is a planned reduction of energy and resource use designed to bring the economy back into balance with the living world in a way that reduces inequality and improves human well-being. Recessions are not planned, and do not target any of these outcomes. They are not intended to reduce ecological impact (even though this might in some cases be an unintended outcome), and they are certainly not intended to reduce inequality and improve well-being – indeed, they do the opposite.
2. Degrowth has a discriminating approach to reducing economic activity. It seeks to scale down ecologically destructive and socially less necessary production (i.e. the production of SUVs, arms, beef, private transportation, advertising and planned obsolescence), while expanding socially important sectors like healthcare, education, care and conviviality. Recessions, by contrast, do not discriminate so wisely. Indeed, they quite often destroy socially important sectors while empowering socially less necessary sectors. In the present COVID crisis, for instance, schools, recreational facilities and public transportation are negatively affected, while Amazon is expanding and stocks are rallying.
3. Degrowth introduces policies to prevent unemployment, and indeed even to *improve* employment, such as by shortening the working week, introducing a job guarantee with a living wage, and rolling out retraining programmes to shift people out of sunset sectors. Degrowth is explicitly focused on maintaining and improving people’s livelihoods despite a reduction in aggregate economic activity. Recessions, by contrast, result in mass unemployment and everyday people suffer loss of livelihood.
4. Degrowth seeks to reduce inequality and share national and global income more fairly, such as with progressive taxation and living wage policies. Recessions, by contrast, tend to make inequality worse. Again, the COVID crisis presents an example of this, where the response packages (QE, corporate bailouts, etc.) have made the rich richer (specifically to the benefit of asset owners), and billionaires have added billions to their wealth, while virtually everybody else has lost, with the poorest 50% of humanity losing \$4.4 billion per day (Sumner et al., 2020).
5. Degrowth seeks to expand universal public goods and services, such as health, education, transportation and housing, in order to decommodify the foundational goods that people need in order to lead flourishing lives. Recessions, by contrast, generally entail austerity measures that cut spending on public services.
6. Degrowth is part of a plan to achieve a rapid transition to renewable energy, restore soils and biodiversity, and reverse ecological breakdown. During recessions, by contrast, governments typically abandon such objectives in order to instead focus everything on getting growth going again, whatever the ecological cost might be.

Like all models intended to be compatible with ecological sustainability, Degrowth seeks to reduce economic inputs, i.e. raw materials, extracted from nature, as well as to eliminate pollution and ecologically disruptive wastes like greenhouse. The topic of economic output (or real GDP) is mentioned in point 3, when Mr Hickel speaks about “maintaining and improving people’s livelihoods despite a *reduction in aggregate economic activity*” – a phrase that is quite close to “*recession*”.

From a contemporary macro-economic point of view, if economic output (realGDP) declines for a sustained period of time (6 months) and there is no unemployment, then degrowth will look like *recession with full employment*. If competition for scarce resources increases prices at the same time, then inflation + recession looks like *stagflation with full employment*. However, we are assured, it won’t look like any familiar recession, because the fair distribution and decommodification of the decreasing output will ensure happiness and wellbeing.

In keeping with undermining traditional economic concepts such as GDP, instead of attempting to quantify the value of unpaid and voluntary work, decommodification would remove much economic activity from any monetary transaction. This will help degrow the formal economy - but failing to recognise economic activity does not mean it doesn't occur. I sense a somewhat justified antipathy to economists behind this.

A transition to renewable energy automatically reduces energy use because electricity is roughly three times more potent than combustion. The electrification of domestic and industrial processes as well as transport will improve efficiency even more, so we can probably reduce primary energy usage to below one quarter for a given level of economic activity. During the early part of the "rapid" energy transition, however, energy consumption from fossil fuels will have to increase as energy is invested into the renewable energy infrastructure which will eventually end our dependence on fossil energy. There will also be an increase in the mining of the materials required to bring about the energy transition. And when the transition is complete, will it be forbidden to increase the amount of renewable energy produced? Even if it is to be used to turn waste into raw materials?

I have been thinking about energy and sustainability since 1974, so I want to take this opportunity to summarise my conclusions. Over the next few decades, I believe we need to create a *zero waste or circular economy* running on the generosity of the sun. We will have to increase renewable energy supplies in order to power the upcycling of wastes into raw materials - to minimise the extraction of materials from the Earth and eliminate pollution altogether. We may need even more energy to convert atmospheric CO₂ back into carbon – to unburn the coal and to make polymers that replace plastics.

The process of converting waste into "low entropy" raw materials will not only require energy, it will require new industries and new jobs which will tend to look like economic growth – except that, for upcycling, the only increase in output will be qualitative. The price of the "basket of goods" will be higher than today, because its production will no longer be subsidised by stealing from and degrading our living planet. This might suggest a lower level of personal consumption where wages have not increased as fast as prices, but the generosity of the sun and the efficiency of our technology may or may not provide us with higher real wages. This is why I am agnostic about growth itself. The important issues lie elsewhere. (I also question how the *quality* of the goods in the inflation basket is dealt with by economists, because this hypothetical basket has a powerful effect on the quantification of inflation.)

I am also concerned about the economics of an equitable and sustainable circular economy – particularly the causes of inequality and how to optimise the balance between autonomy and collective responsibility. Because of my engineering experience I tend to believe that a good design does not need a lot of intervention once it is implemented; that an understanding of how things work combined with a carefully and wisely chosen set of priorities, or design criteria is likely to deliver a better "system" than making it up as we go along. One of my regrets is that the discipline of economics is some way from understanding how things work, so we have to continue to make it up as we go. Although I share quite a few of Jason Hickle's goals, I remain wary about handing too much over to bureaucratic or political control, and sceptical about promises that are really hopes dressed in conviction.

Thank you for your interest.

Richard Corin 25/06/2022