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Plurality in Teaching Macroeconomics

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1 Introduction

In the aftermath of the Great Depression, there was turmoil in the field of macroeconomics, which resulted in the Keynesian ‘revolution’. However, the current Great Recession, the worst crisis that capitalism has faced since then, has failed, at least so far, to generate a significant change in the direction of teaching and practice of macroeconomics\(^1\). For eg., any standard undergraduate/graduate textbook on macroeconomics has more or less remained intact despite such a fundamental question raised primarily on macroeconomics by the global crisis. I believe one of the central reasons for this inertia is that finance (unlike monetary theory and policy), the stage of the current crisis, does not form the central core of the building blocks of new Keynesian economics, the workhorse of today’s macroeconomics.

This seems bizarre as if nothing has happened and the economists are just going about doing business as usual. Without going into the politics of why this is so, let me just focus on how Macroeconomics ought to be taught to students at the intermediate level, which gives them an overall perspective on the subject\(^2\). I must note that this article has been inspired by an editorial published in EPW [2013].

Macroeconomics as a subject proper came into existence with the writings of John Maynard Keynes\(^3\). There were debates during his time about how to characterise a capitalist economy, most of which are still a part of the discussion among economists. Keynes [1936, 1937] argued that capitalism is a fundamentally unstable system so the state needs to intervene to control this instability.

Keynes [1936] has been interpreted in different, often contradictory, ways. In today’s context, they can be broadly classified in two categories:

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\(^1\)There are a few exceptions like the Journal of Economic Education (JEE), which has held symposia, and the Institute for New Economic Thinking (INET) to discuss this issue but unfortunately it still has not percolated down to the textbook and/or teaching levels in any general sort of a way.

\(^2\)What is presented here is just an outline of how it could be taught and is not in any sense exhaustive. The same holds for the references.

\(^3\)While Michal Kalecki arrived at most of the Keynesian conclusions simultaneously with, or in some cases before, Keynes, he was inaccessible to the English readers as his initial writings were in Polish.
Post Keynesian (PK) and New Keynesian (NK). I would like to place the IS-LM model, the starting point or most of the undergraduate textbooks, as a precursor to NK and hence a part of the latter because it belongs to a similar interpretation of Keynes and the new Keynesian 3-equations framework can be easily compared to the IS-LM model.

The central distinction between the two interpretations lies in what constitutes the short run because that is the core of the difference. For the new Keynesian framework, it’s the period during which prices are rigid whereas for the post Keynesian tradition, it is one during which investment is rigid. On the other hand, the similarity lies in the non-neutrality of money in the short run even though the reasons for why this is so are entirely different. Their long-term versions, therefore, are when prices are fully flexible and investment is endogenised respectively. Full price flexibility in the New Keynesian tradition makes money neutral, which is the opposite of what Keynes arrived at, and the supply side takes over in determining the growth of an economy. For the post Keynesian version, money and demand matter in the long run as well. Given that the primary focus of the paper is on the short-run macroeconomics, I will only briefly comment on the long run issues. However, my argument of a holistic approach to macroeconomic pedagogy holds true for growth theory as well.

Ideally, a macroeconomics curriculum as a pedagogical exercise should give equal weightage to the two traditions to give the students a holistic perspective on the subject. This is more so because the policy prescriptions flowing out of these paradigms are palpably at variance with each other and such a training can help the students make an informed judgement. This paper is divided in five sections. Since post-Keynesian economics is missing in the mainstream pedagogical tradition, I start section 2 with that and show how it is more consistent with Keynes’ own view followed by the new-Keynesian tradition. The fourth section compares the two traditions and the last section concludes the paper.

2 Keynes and the Post-Keynesian Tradition

2.1 The Keynesian Problématique

Keynes [1937] presented a simplified version of his arguments made earlier in Keynes [1936]. The central question that Keynes [1936, 1937] raised was whether capitalism is a self-regulating system i.e. it reaches full utilisation of capital and/or labour or a fundamentally unstable one that in general there is a simultaneous underutilisation of capital and unemployment of labour?

The theoretical superiority and rigour of Keynes [1936, 1937] comes from the fact that he could demonstrate the instability in a world with full price flexibility (competitive markets). This to my mind is the one of the cen-
tral distinctions between Keynes and the new Keynesian tradition. Unlike Keynes [1936], the new Keynesian version assumes imperfect competition with rigidity in prices, which provides non-neutrality to money. Is this distinction important? I believe Keynes’ abstraction of a world with flexible prices is to show that even in a world of full price flexibility, both labour and capital can remain underutilised so price/wage rigidities are not what cause unemployment. That perfect competition is far removed from reality is not a weakness of Keynes [1936]’s argument instead, I believe, this theoretical abstraction shows the beauty and resilience of his argument against the orthodoxy prevalent during his time (and ours as embodied in the mainstream tradition today).

Prior to Keynes, it was believed in the Marshallian tradition (as is in the new Keynesian tradition today) that there could be unemployment of labour provided there is a downward rigidity of real wages in the labour market which restricts labour demand ahead of its supply at that level of real wages. So, unless these rigidities are removed, unemployment cannot be removed (see figure 1). So, the causality moved from real wages $\rightarrow$ employment $\rightarrow$ output (through the production function).

On the contrary, Keynes’ explanation for unemployment was just the reverse (see fig. 2) i.e. since the causality moves from investment ($I$) $\rightarrow$ output ($O$) $\rightarrow$ employment ($E$) $\rightarrow$ marginal cost ($mc$) $\rightarrow$ prices ($p$) (hence the real wages $\bar{w}/p$), investment is primarily at the source of it. The linking of employment to marginal cost is important here because that’s where the role of rigidity of money wages appears. Nominal marginal cost has two components: real marginal product and nominal wages. Now the real marginal product, for a given level of employment, is provided merely by the position on the labour demand curve but nothing within the system so far gives us the information on nominal wages. In the absence of the information on the latter, price becomes indeterminate because the marginal cost is undefinable unless the nominal wages are given. Keynes, therefore, assumed nominal wages to be given (based on the bargaining power of the workers) for a determinate price system, an assumption which had nothing to do with the cause of unemployment. So, an unanchored wage would have merely meant an unanchored price at the level of unemployment with the latter determined by rigidity in investment.

The central message of [Keynes, 1936, p. 245] can be captured in the following quote

Our independent variables are, in the first instance, the propen-

\[\text{4The post-Keynesian tradition too assumes imperfect competition, which, although more realistic, I believe, blunts the theoretical charge that Keynes [1936] was mounting on the economic orthodoxy during his days. It is important to make this distinction otherwise it gives the impression that Keynes/post-Keynesianism is about price rigidity, which they are absolutely not.}\]
sity to consume, the schedule of the marginal efficiency of capital and the rate of interest ....

Our dependent variables are the volume of employment and the national income (or national dividend) measured in wage-units.

The schedule of the marginal efficiency of capital (MEC^5) and the rate of interest between them determine the level of investment and that combined with the propensity to consume determines the total level of income (in wage units) and employment.

Let us focus on the two determinants of investment. Absence of involuntary unemployment requires the investment to be at a level which generates

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^5Let’s say that an investment project with a certain life of periods has a stream of expected returns. The average efficiency of capital is given by that rate of discount, which generates a present value exactly equal to the total cost of investment and the marginal efficiency given by the return on capital at the margin.
the output corresponding to full employment. For that to happen, following two conditions need to be fulfilled together:

1. that *this* level of aggregate investment lies on the MEC schedule.

2. that the nominal rate of interest is such that *this* MEC is materialized.

Keynes argued, captured famously in the phrase, ‘there is many a slip between the cup and the lip’ for these two conditions to be satisfied *simultaneously*. Why, in general, can’t these conditions be satisfied?

First, since investment ($I$) is a decision, which inherently entails expectations about an uncertain\(^6\) future, its returns are unstable with respect to the magnitude of investment. Compounded with the uncertainty of investment, there is a calculable probabilistic risk that the capitalists take into account while making this decision. Keynes called that the borrower’s risk.

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\(^6\)Uncertain in the Keynesian sense of fundamental uncertainty and not some calculable probabilistic risk. In today’s world, a comparable argument would be that capitalists while making the investment decision can only make a best guess, nothing more and nothing less, irrespective of whether the futures market is well defined. The case of perfect information, the benchmark case in the mainstream tradition today, just does not arise because there can never be perfect information about something which is unseen.
The net expected return on an investment for the capitalists is then given by the difference between the MEC and the borrower’s risk (BR). The opportunity cost of committing to this long term investment where the fungible money capital will be blocked for the period of the investment\footnote{Technically the money capital is not fully blocked because the capital asset can always be sold but a distress sale will normally entail a loss from its potential value.} is given by the interest rates, which are an alternative form of holding wealth.

Second, this rate of interest \((i)\) itself is volatile. In the world of a given stock of money of Keynes [1936, 1937], the nominal rate of interest is determined by the demand for and fixed stock of money \((\bar{M})\). A part of the demand for money is given by its purpose for monetary transactions, which for simplicity can be taken as a constant fraction of the nominal level of income. Rate of interest is that premium which must be paid at the margin for the asset holders to absorb the remaining stock of money (Keynes [1937] called it inactive balances) since money is a non-interest bearing asset. If the demand for these inactive balances is less than its given supply, then the interest rates will decrease to entice the asset-holders to absorb the remaining liquidity. This gives us a negative relationship between the nominal rate of interest and liquidity preference \((LP)\). But this preference for liquidity (despite zero monetary return) is not just dependent on the current rate of interest but also on long term state of expectations, which for simplicity, can be assumed to be given by the stream of expected rates of interest. To show this, if for a given level of current rate of interest, the expected rate of interest rises, then the demand for inactive balances will rise even if the current rate of interest is high because the agent will want to wait for tomorrow to buy the interest-bearing asset rather than buying it today. In other words, a higher expected rate of interest would shift the liquidity preference outward for a given level of current rate of interest. Moreover, there is a minimum level of nominal rate of interest below which it cannot fall, which is given by the lender’s risk (famously known as the rate of interest associated with the liquidity trap). Lender’s risk \((LR)\) consists of the premium that the lender adds to take into account the risk in the event the expected rate of returns turns out be different from that claimed by the borrower. So, the opportunity cost of making an investment is the sum of the interest rate and the lender’s risk.

Investment is, therefore, determined by the level on the MEC where the net return on investment \((MEC - BR)\) is equal to the net opportunity cost \((i + LR)\). This level of investment together with the propensity to consume given by \(\bar{c}\) provides the following causality of the Keynesian system:
A more nuanced argument of Keynes [1936] can be deciphered from the (in)famous chapter 17 of his book. Assets can be divided in three categories: capital asset (wheat, steel, factories etc.), claim over capital assets (bonds, shares, futures etc.) and money (cash, demand deposits) with increasing order of liquidity in that sequence. Drawing the money line between the latter two categories is purely subjective depending on the issue at hand, so in certain cases short term deposits can be a part of money whereas in certain others it cannot (different definitions of M1, M2 etc.).

Each of these assets have 3 characteristics in varying degrees of value: yield \((q)\), carrying cost \((c)\) and liquidity premium \((l)\). The own rate of own interest of any asset, say wheat or bonds or money etc., which is the internal rate of return of an asset in terms of itself is given by \(q - c + l\). This own rate of own interest is of course not comparable with each other since they are denominated in different commodities.

For comparability, they need to be converted into any\(^8\) common denomination, which would require adding a component to this internal rate of return that measures the expected change in the value of the asset under consideration in terms of the common denomination. For convenience, let’s take that common denomination as money. In that case, if \(a_s\) is the expected price appreciation of a capital asset in terms of money, say steel, and \(a_b\) of a claim over a capital asset, say a bond, then on the margin the returns between these three categories of assets should be the same for all three to be held. In the absence of that the demand for the asset which has the highest expected return will be demanded more than the other assets.

Money being a barren asset has no yield \((q_m = 0)\). It also does not have a carrying cost especially if there’s no cost of running a bank account, so \((c_m \approx 0)\). The central issue then is, despite its barrenness, ‘[w]hy should anyone outside a lunatic asylum wish to use money as a store of wealth?’ [Keynes, 1937, p. 216]. This issue will perhaps become clearer if we look at the following equilibrium condition, which is the best way of understanding his fundamental contribution to the discipline:

\[
(q - c + l)_s + a_s = (q - c + l)_b + a_b = l_m
\]

\(^8\)It is important to note here that which commodity serves as this benchmark is immaterial to the discussion that follows. It could be wheat or steel or bonds or money for all you care. Denomination in terms of money, as done above, is just a convenient way.
At the level of the economy, this condition would have to hold (even though at an individual level some might be holding just one or two and not necessarily all of these assets simultaneously) for all the three types of assets to exist in the economy.

If the last term did not exist, then the choice of the individuals would be between either owing a capital asset directly or indirectly (as a claim over it), in which case there would never be a problem of involuntary unemployment because all demand will always be directed at commodities in some form or another and all that can be produced will be produced (a Say’s law world so to speak). But unfortunately the real world is not so simple since not only does money exist, it exists as a store of value. And this value is not derived from its property of being the common denomination because the last term \((l_m)\) will still exist even if the common denomination is changed to steel or to bonds, in which case \(a_s\) or \(a_b\) respectively will have to be subtracted across the equation above:

\[(q - c + l)_s = (q - c + l)_b + a_b - a_s = l_m - a_s\]  \[\text{[denomination: steel]}\]
\[(q - c + l)_s + a_s - a_b = (q - c + l)_b = l_m - a_b\]  \[\text{[denomination: bond]}\]

What gives money its value is the premium \((l_m)\) that it holds in the minds of the wealth owners.

How does this portfolio choice affect the level of employment in the economy? Keynes [1936] argued that the MEC minus the risk \((q - c + l + a)\) of an asset falls as the production of it rises. This is for two reasons: (a) every additional unit of capital adds lesser to the output than the previous one (decreasing returns to scale), which he believed was a long-run factor; (b) cost of investment rises because the price of capital goods rises as a result of its increasing demand (a short-run factor). The point on which the economy settles of an MEC schedule for an asset is determined by the point at which it intersects the highest of all the returns. Now if all the returns are falling at the same rate, the production is each will increase up to the point where the asset is optimally employed. If, however, there is an asset, whose return falls more slowly than the others, then that asset’s returns sets the limit to the production of all the other assets. The asset limiting the production of others happens to be money in Keynes [1936]. In other words, slowly falling or perhaps a horizontal \(l_m\) sets the limits to a self-adjusting system.

But why does it fall relatively slowly than the other assets in question? It does so because its elasticity of demand substitution is infinite ([Keynes, 1936, p.] said ‘money is a bottomless sink for purchasing power’) whereas its elasticity of production is zero (production in the hands of a monetary authority), which is the exact opposite of a normal commodity. If there were one rigidity which defines the Keynesian system, it’s the rigidity of this liquidity premium, which stops the economy from self-adjusting to a
position of full employment. The above mentioned description of Keynes [1936] to my mind captures the essence of his argument on determination on investment.

Two interdependent reasons of volatility, in the MEC \((q - c + l + a)\) and the liquidity premium \((l_m)\), stops the economy from achieving the full employment level of \(ex\ ante\) investment. It is only by \textit{chance} that the two are at the levels corresponding to the full employment equilibrium, which is why Keynes [1936] called it a \textit{special case} of his \textit{general} theory of employment, interest and money. With the level of investment determined by the two independent volatile variables (MEC and the interest rate), the third independent variable, the propensity to consume determines the level of total demand through the usual Keynes-Kahn multiplier. Since Keynes assumed price flexibility, the multiplier adjustment of investment to total income \((Y = pO)\) is part price \((p)\) and part quantity adjustment \((O)\).

The remedy to the problem of simultaneous unemployment of labour and excess capacity, according to Keynes, lied in an astute combination of fiscal and monetary policies with a clear preference for the former because of its \textit{direct} impact on the level of activity. More on this later.

Let us now locate the continuation of this thought in the post-Keynesian tradition followed by the fundamental departure from this thought in the new Keynesian tradition.

### 2.2 Points of Departure in the post-Keynesian Tradition

The post Keynesian tradition further developed through the writings of one of his contemporaries, Kalecki [1971] and his colleagues at Cambridge, to name a couple like Kaldor [1986], Robinson [1971]. There are two fundamental ways in which the post-Keynesian tradition appends the arguments made by Keynes [1936] but they in no way alter the basic argument or the structure of his theory in my opinion. Out of the three independent variables in Keynes [1936], the MEC, interest rate and propensity to consume, the post-Keynesian tradition alters the role and nature of the latter two to further strengthen the argument of Keynes.

#### 2.2.1 Broadening the Role of Finance

**Volume of Credit: Principle of Increasing Risk** Finance plays a shadow role in the broader scheme of things of Keynes’ theoretical structure. It primarily enters the system through the interest rate (price of finance). Kalecki [1937] expanded the scope of finance by bringing in the \textit{volume of finance}, which quite aside from its price, limits investment\(^9\). Kalecki [1937] argued that the assumption of a risk premium \textit{independent} of the level of

\(^9\)I believe the credit rationing argument in the new Keynesian tradition has much to acknowledge this fundamental contribution made by Kalecki.
investment in Keynes [1936] under the conditions of external finance is not justified. In fact, the risk increases as the level of debt as a proportion of equity capital (gearing ratio) rises for two reasons. It endangers the wealth position of the borrower as well as the increase in ‘illiquidity’ in the event of a distress sale. If not the borrower, at least the lender who is entrusting the former with her own capital will assign a higher risk premium with a rise in the gearing ratio beyond a certain point (at/after the point denoted by own capital of the borrower). As is obvious, a firm with a lower own capital will have the risk curve rising much ahead of a firm with a higher own capital, thereby, leading to a comparatively lower level of investment. This argument brings the issue of finance (external credit), which was lurking in the background in Keynes [1936], to the forefront of his theory. This fundamental break has ever since defined the post-Keynesian tradition.

This contribution adds an additional layer to the instability of the investment process in Keynes [1936]. Not only is the MEC fragile, its coming to fruition itself is linked to the availability of finance. This is an important contribution since it makes credit an active player in the process of investment. So, it’s not just the price of the credit (the interest rate) that matters for investment, the volume of credit as determined by the banking system is as much, if not more, important in limiting the level of investment.

Minsky [1975], building on Kalecki [1937], argued that instability of finance required for investment creates the business cycles. Expectations about profits are based on current conditions, so during periods of optimism, capitalists might over-invest both because of low borrower’s as well as lender’s risk. This increases their gearing ratio since they borrow more as a proportion of their equity, thereby, increasing the gearing ratio but servicing this debt requires cash flows. So, he wrote about three regimes of finance: hedge (cash flow is more than both the principal and interest commitments), speculative (cash flow is enough to only pay for interest commitments and not the principal) and ponzi (cash flow is less than both) which this process of investment expansion results in in that order. Such a movement leads to bankruptcy of firms indulging in ponzi finance and more the number of such firms more is the possibility of a financial crisis, thereby, increasing the lender’s as well as borrower’s risk further. This restricts investment and ultimately leads to its collapse.

Critics of Minsky [1975] have argued that rising investment also leads to higher profits, and, hence, should in the ex post sense not lead to an increase in the gearing ratio since both its numerator and denominator expand as the very result of the investment process. This places a question mark on the very basis of the financial instability hypothesis that Minsky was describing (Lavoie and Seccareccia [2001]). While we agree that there is indeed a macroeconomic link missing here but Minsky can be interpreted slightly differently so that the argument of the financial fragility holds without a macroeconomic fallacy. If there is concentration of certain sectors/corporate
players in overall credit, their failure can lead, through a contagion effect, to a system wide financial stability even though at the level of the system, the debt-capital ratio might be falling. We could call it the problem of concentrated credit driven financial fragility (the global economic crisis comes quite vividly to one’s mind while thinking about this possibility).

**Price of Credit: Endogenous Money**  In Keynes [1937], the rate of interest was determined by the stock equilibrium in the demand and supply of inactive balances. Since the supply of inactive balances is fixed and its demand is inversely related to the rate of interest, the rate of interest adjusts to bring the latter in equilibrium with the former. So, the supply of money is exogenous while the rate of interest is endogenous.

As opposed to this, Kaldor [1986] argued that in the modern world of fiat money, supply of money cannot be argued to be exogenous. In fact, it is the interest rate that the central bank can control, particularly the short term rates of interest (for eg. the repo rate for India or federal funds rate for the US). At that short term rate of interest \(i_S\), the level of money demand determines the supply of money. So, the causality in this stock equilibrium moves from interest rate \(\rightarrow\) expected rate of interest \(\rightarrow\) demand for inactive balance \(\rightarrow\) supply of inactive balance. So, it moves in the reverse compared to Keynes’ causality. But this is not the end of the story since what matters for investment, if at all, is the long-term rate of interest \(i_L\) since the terms of two assets i.e. capital goods and the financial asset have to be comparable. How are the two rates linked?

[Kalecki, 1939, ch. 6] presented such a linkage. In order to do that, we need to bring in a representative short term asset (say a treasury bill) and a long term asset (say a consol) and ask the question as to how does a wealth-holder decide between these two assets? What are the relative (dis)advantages of holding one over the other? Since the term of a consol is more than that of the bill, it is not the current rate of interest on bills that matters but what its expected value \(i_S\) will be over the term of the consol. While bills protect the integrity of the principal, consol can depreciate in value, the risk of which can be estimated. On the other hand, the expected short term rate of interest is subject to uncertainty, even though the current rate of interest on bond is not. Moreover, rebuying of bills over the relevant period also involves some costs. Assuming these costs to be negligible, the condition of indifference of a wealth holder requires the expected short-term rate of interest to be equal to the long term rate of interest net of the expected depreciation.

Any change in the expected short-term rate of interest will affect the long-term rate of interest as well but this relationship will not be one-to-one because the risk of depreciation is not exogenous but varies with the current yield on the consol. This is so because for every rise/fall in the long-
term rate of interest, its expected depreciation falls/rises. So, a fall/rise in the central bank rate, there is a fall/rise in the long term interest rate along with a rise/fall in expected depreciation. Given that on the margin, the long term rate of interest net of the expected depreciation has to be equal to the expected short-term rate of interest, change in the latter is only partially reflected in the long term rate of interest and expected depreciation. Based on this, Kalecki [1939] argued that in a world of uncertainty, the only basis for making an expectation about the interest rate could at best be some sort of an average of its past values. So, at this step itself the fluctuations in the actual short-term of interest is evened out reflected in a relatively stable expected rate. Since investment is dependent on the long-term rate of interest, which itself does not follow a one-to-one relationship with the expected rate, the volatile movement of investment across the business cycles cannot be explained by interest rates. Moreover, it limits the scope of monetary policy as a countercyclical instrument during a business cycle.

2.2.2 Markup Pricing

Unlike Keynes [1936], Kalecki [1971] assumed imperfect competition in the markets. This has two effects on the Keynesian system.

First, firms, by virtue of being larger, face a kinked demand curve unlike a horizontal curve in the competitive case,\footnote{In the competitive case, a horizontal demand curve facing a firm means their investment curve is horizontal too, in which case interest rate plays a key role in determining the level of investment.} therefore, don’t indulge in price competition. As a result, their investment is purely determined by their expectations of demand, which makes their investment function vertical and, thereby, impervious to any change in the interest rates.

Second, there is markup pricing on the average variable cost, which is horizontal in output till it reaches full capacity of production. This clearly distinguishes a regime of output adjustment and price adjustment arising out of a change in investment\footnote{Bhaduri [1986] presents a neat algebraic as well as diagrammatic representation of this argument.}, which was shown by Kalecki [1971] using Marx’s two departments of investment and consumption goods sectors.
2.2.3 Summarising the Post Keynesian Macroeconomics

The macroeconomic structure of the post-Keynesian tradition can, thus be captured by the following:

\[
\begin{align*}
M & \leftarrow i_S \rightarrow i^e_S \rightarrow i_L + \rho(I) \\
\text{Flow Equilibrium} & \\
\text{Transmission mechanism} & \\
\end{align*}
\]

The overall process of macroeconomic equilibrium of this framework is shown in figure 3. So, the investment level determined by its two components creates an equivalent amount of savings in the second quadrant. Once the output generated in the process reaches the full employment/capacity level, the adjustment takes place through an increase in the level of prices with wages remaining fixed, thereby increasing the level of savings for that level of output or rotating the savings function anti-clockwise in the second quadrant.

Figure 3: Macroeconomic Equilibrium in the Post-Keynesian Framework
3 The New Keynesian Framework

Without any loss of generality, one could state that the other interpretation of Keynes [1936], popularly known as the new Keynesian economics today, reads the Keynesian problématique from the right to the left i.e.

\[ E \leftarrow \bar{w} \] : The Labour Market

Aggregate Supply \( \downarrow \)

\[ \bar{p} \] : The Product Market

Inflation \( \leftarrow \bar{p} \)

Aggregate Demand \( \downarrow \)

3.1 The IS-LM Model: A Precursor to New Keynesianism

A logical precursor to the new Keynesian tradition is the simple IS-LM-PC model\(^{12}\), which is where most of the undergraduate macroeconomic textbooks begin. So, one could easily imagine a traditional macroeconomic course starting from here with no coverage of the pedagogical material covered so far in this paper.

Joan Robinson had famously called this a ‘bastard’ version of Keynesianism, which was quite popular in the Cambridge in the US as opposed to the Cambridge in the UK. Let us see why these two interpretations, although seemingly similar, are actually poles apart in their theoretical structures.

To appreciate the difference between the two Cambridges, we should start with the IS curve. There are two components of demand: investment and consumption. Investment is an interest elastic downward sloping curve in the interest rates\(^{13}\). Consumption consists of autonomous consumption, which is an inverse function of prices because of the real balance effect (RBE), and an endogenous income-based component.

Consumption is often treated as a passive variable in the IS-LM framework but its obscure autonomous part is where the central difference lies. By making consumption inversely related to the prices, there is a self-adjusting part assumed in the framework. A fall in the prices, by increasing the value of the wealth, increases consumption. The centrality of the real balance effect in this framework is often lost sight of, whereas that is at the heart of the difference between the two Cambridges. How so? A price elastic consumption demand (akin to the microeconomic demand function) means a self-adjusting full employment system, if only the prices were allowed to

\(^{12}\)The three curves represent the investment-savings (IS) equilibrium, money demand and supply (LM) equilibrium and the Phillips curve (PC) relationship which determines the prices as a function of output.

\(^{13}\)Such an interpretation of Keynes makes the role of the monetary policy central to any adjustment in demand management in an economy because the central bank can influence the level of activity in the economy purely by changing the interest rates.
fall sufficiently to let the economy adjust to this position. What stops that from happening? Price rigidity arising out of the supply side of the economy through the Phillips curve is what provides the basis on which the system is sustained. If the Phillips curve were vertical, the economy would always be functioning at its full employment level. How much more un-Keynesian can it get? No wonder this version of Keynesianism could easily be challenged and destroyed during the 1970s by monetarism.

There is another route through which the price adjusting behaviour can bring about full employment i.e. the money market (LM). The IS-LM framework argues that a fall in the prices increases the real supply of money, which brings the interest rates down and this process can continue till investment reaches its value commensurate with the full employment output. This is normally called, quite incorrectly, the Keynes effect\footnote{Although Keynes [1936] discussed this possibility in the last part of his book, he added many caveats to this possibility and was sceptical of its role in increasing demand, let alone its self-adjusting role towards achieving full employment. We have already shown above the many slips between the cup and the lip and all those steps are equally valid for a rise in real supply of money.}.

With consumption and investment being price elastic, the aggregate demand (AD) curve is downward sloping in prices. If the aggregate supply curve (PC) cuts this AD curve at the point of full employment, the system will stabilise there. To contrast this with Keynes [1936], we could argue that Keynes’ own idea, in terms of the AD curve, can be captured by a vertical curve in prices (or at best very low price elasticity), the position of which is determined by the joint interaction of the MEC, interest rate and the propensity to consume and there is no reason why the full employment level of income will necessarily lie on this AD schedule. In other words, the AD curve cuts the income axis ahead of the full employment level. For the AD curve to price elastic, the real balance effect is central to the self-adjusting system in these traditions (including in the new Keynesian framework as shown below), an issue which will be discussed in more detail when we make the comparison between the two pedagogical approaches.

Minsky [1975] presents a scathing critique of this interpretation of Keynes so the readers can refer to this excellent critique presented from a post-Keynesian perspective. His central criticism against the IS-LM version is that ‘Keynes without uncertainty [as in the IS-LM version] is something like Hamlet without the Prince’. He bases his argument, among other things, on the stability of the IS and the LM curves, both of which, if interpreted in the Keynesian sense, should be volatile for reasons discussed extensively in the previous section.

We can close this section by referring to a succinct retort by [Robinson, 1971, 84] against the bastardisation of Keynes:

If Keynes’ own ideas were to be put into this [IS-LM] diagram, it would show IS as the volatile element, since it depends upon
expectations of profit; the case where full employment cannot be reached by monetary means would be shown by IS falling steeply and cutting the income axis to the left of full employment.

3.2 The Basic New Keynesian Framework

While the IS-LM-PC model shows that rigidity of prices can stop the economy just ahead of its full employment potential, it does not provide the logical structure which produces these rigidities. The new-Keynesian attempt is to provide microeconomic foundations to the otherwise ad hoc assertion of wage-price rigidities in the old IS-LM-PC version. While the broad structure remains intact (in terms of causality), the new Keynesian (NK) approach provides micro-foundations to the observed characteristics as seen in the simplified IS-LM-PC version. In fact, the NK approach is visualised in terms of similar three relationships\(^{15}\). A key difference from the IS-LM-PC arises from the treatment of the LM curve, which becomes flat in the NK framework since the central bank intervenes through the interest rates and not through controlling the money supply.

Research in this tradition has been practically divided on the output market and labour market. Involuntary unemployment has been explained by showing various mechanisms through which rigidity in real wages manifests itself. On the other hand, disequilibrium in the output market is generated through some form of price rigidity. Let us look at the labour market first. The causality here is critical since the fundamental source of instability is some form of rigidity in either the price or the wage or both.

3.2.1 Labour market and Real Wage Rigidity

Disparate attempts have been made in this tradition to explain why the labour market stabilises at real wage rates higher than the market clearing ones, thereby, generating involuntary unemployment. They can be categorised as follows: (a) efficiency wage due to adverse selection, labour turnover, shirking, fairness; (b) insiders wield a higher bargaining capacity than the outsiders (Snowdon and Vane [2005] present a comprehensive literature survey of this and other macroeconomic schools of thought).

Efficiency Wage Theories These theories maintain that the productivity of workers are directly proportional to the level of real wages. So, the same number of workers could produce more if the real wages are more. Does that mean that you keep increasing real wages? No, because the rate of increase of effort itself diminishes as the real wages rise. Firms would try to minimize the wage cost per efficiency units, so it possible that this

\(^{15}\)For an intermediate and graduate levels of the NK approach, readers are encouraged to refer to Bofinger et al. [2006] and Galí [2009] respectively.
efficiency real wage is greater than the market clearing equilibrium wage. These theories also attempt to explain why the efficiency rises with real wages.

Adverse selection model talks of the signalling by the firms through higher real wages to the workers with best abilities and avoid the ‘lemons’ in the labour market (Weiss [1980]). Salop [1979] showed that turnover costs of hiring and firing workers is very high so, the firms are willing to pay higher real wages to deter them from quitting. To control shirking by the workers, which is otherwise difficult to measure, firms are willing to pay higher real wages (Shapiro and Stiglitz [1984]). Workers might not just be worried about their wages alone but also the relative wages, so the firms in their attempt to being ‘fair’ to their workers pay higher wages Akerlof [1982].

Insider-Outsider Models These models focus on the reasons for why those unemployed do not offer labour at lower than prevailing wages, thereby, bringing the labour market equilibrium where the all offering work are indeed employed. Here, unlike the case of efficiency wages where the firms are willing to pay extra for higher productivity, it is the interaction between the insiders and the outsiders who ensure that real wages are not bid down.

Knowing that there are costs involved with firing the insiders and hiring the outsiders, for eg. search costs, severance pay and litigation costs, training the new employees, the outsiders use this as a leverage to negotiate for higher real wages. Presence of labour unions increases this leverage further as they can decide to go for actions like strikes, shut-downs, thereby increasing the costs till their demands are met. To avoid these costs, firms acquiesce to these demands, thereby, creating a wage differential between the insiders and the outsiders.

A canonical representation of such a disequilibrium in the labour market is shown in figure 4. In the fourth quadrant, the level of unemployment $U$ is generated because the real wages fail to adjust to their ‘natural’ level. This is shown through the arrow originating on the y-axis in the fourth quadrant.

3.2.2 Product Market and Price Rigidity

Aggregate demand plays only a passive role because it is assumed to be sufficiently elastic to price changes (similar to the IS-LM version). So, if only the prices were completely flexible (a vertical supply schedule), there would never be a problem of lack of aggregate demand because price adjustment will take care of any disequilibrium in the output market. Therefore, most of the theories in this tradition focus on the reason for why prices are rigid to adjust whether as a result of imperfect competition in the product markets. Cyclical movements in output take place because of the interaction between an upward sloping aggregate supply curve and a downward sloping aggregate demand curve.
Aggregate Supply Function  The aggregate supply curve is central to this framework. The attempt here is to show that prices are not completely flexible so there is always part price and part quantity adjustment to any macroeconomic shock that takes place whether from the demand or the supply side. Such shocks, therefore, persist through fluctuations in output and employment around the full-employment equilibrium. Before we go into the reasons for why prices are rigid, let’s see how this generates an aggregate supply curve which is positively sloped in the inflation-output plane.

The new Keynesian price mechanism is derived from microfoundations of optimal pricing by firms with some degree of price rigidity. It is captured by assuming that in each period, a random fraction of firms do not reset their price based on the profit maximization exercise i.e. marginal revenue equals the marginal cost Calvo [1983]. As the output rises, marginal costs rise, which should have translated into a rise in prices but not all firms do that simultaneously. Hence, the prices rise but not to the same extent as they would have had all firms followed the profit maximisation exercise. The fact that there is always a fraction of firms sticking to their past prices creates some degree of rigidity in the overall inflation, the degree of which is directly proportional to that fraction. This gives us a positively sloped aggregate supply curve. Now, let’s see why the prices are rigid in the first place.

New Keynesian models are based on firms engaged in imperfect competition i.e., the firms instead of being price takers are price makers. So, the firms choose both the price and output depending on the principles of profit maximisation. A firm will increase its production by one unit only if the additional revenue generated is greater than the additional production cost. This additional revenue itself will depend on the extent of an increase in sales and the fall in prices. If the sales increases proportionately higher than the fall in prices, additional revenue will be generated (this proportion is measured by the elasticity of demand). On the other hand, the increase in marginal cost will depend on the increase in labour cost arising out of the falling marginal productivity of labour. Firm’s profit maximising point will be where the additional revenue is equal to the additional cost i.e. the famous microeconomic condition for imperfectly competitive markets, marginal revenue is equal to the marginal cost. So, the price chosen will be such that this condition is satisfied. This makes the prices a function of nominal wages, marginal productivity of labour and elasticity of demand (which is inversely related to the markup).

Despite this being the profit maximising principle, there are firms which might not let the prices change even if the condition so demands. And one of the most written about reasons is the theory of menu costs. These costs could involve printing of new price lists and menus as well as renegotiating contracts with both the downstream and upstream firms. While they seem trivial in explaining macroeconomic fluctuations, they produce large
macroeconomic fluctuations as shown by Mankiw [1985], Akerlof and Yellen [1985]. So, the firms do not just take the cost of production into account but also these menu costs while deciding whether to change their prices. Higher the menu costs higher will be the resilience shown by prices to move towards their profit maximising levels.

There were, however, doubts cast within this tradition on the extent to which small menu costs could explain the rigidity in prices. So, the menu cost theory was appended by other real rigidities. It was argued that the other real factors like the marginal productivity of labour or the elasticity of demand could behave in a way that even relatively low menu costs could generate significant price rigidities. So, it is possible that a fall in industry level output does not generate a fall in prices because either the desired markup might rise (elasticity of demand falls) as a result of greater collusion or the marginal cost does not fall or both.

In Fig. 4, I show the implications of price rigidity generating an upward sloping aggregate supply curve (the New Keynesian Phillips Curve or NKPC in short), which makes output adjustment necessary for any macroeconomic equilibrium. So, the causality in the product market moves from price rigidity to output, which is below its ‘natural’ level (that determined by flexible prices and wages) as shown by the direction of the arrows in the second quadrant. It is important to see that if the prices had been completely flexible, the NKPC will be vertical at the ‘natural’ level of output (shown by the dotted line). At this point in the absence of wage-price rigidities, the labour market equilibrium is given by the profit maximisation condition of marginal revenue is equal to the marginal cost i.e. labour demand curve, which is derived from the production and demand functions under conditions of imperfect competition, is equal to the labour supply curve determined by the labour-leisure choice of the workers (equilibrium combination shown by dotted lines in the fourth quadrant). It can also be seen that with an upward sloping NKPC, a fall in output as a result of a demand shock leads to an actual fall in output which does not get self-corrected since the prices do not adjust fully.

Aggregate Demand Function The aggregate demand curve of the New Keynesian framework is arrived through intertemporal optimisation of a representative consumer who is trying to find an optimal bundle of labour and consumption today given the budget constraint which, apart from the current income, includes the income coming from purchase of bonds out of current savings (Galí [2009]). This intertemporal optimisation condition results in today’s consumption being directly related to the expected consumption tomorrow and inversely related to the expected real rate of interest (inversely related to the expected bond price) minus the discount rate. The inverse relation results from the fact that a higher expected rate of interest
means a higher opportunity cost for today’s consumption while a higher discount rate gives lesser importance to tomorrow’s consumption. So, what matters is the net impact of the two in deciding the optimal path of consumption. This consumption function, in a baseline model, is converted into the output-interest rate space by abstracting away from other sources of demand i.e. all output is consumed.

To understand this framework, we need to bring its two components, aggregate demand and supply in the same frame. While the aggregate supply function is located in the output-inflation plane, the demand function is in the output-interest rate plane. They can be made compatible by converting the demand function into the output-inflation plane. It can be done in two ways depending on the assumption of exogenous or endogenous money. In the case of exogenous money, for an exogenously given rate of growth of money supply, the aggregate demand (AD) curve will be negatively related to the rate of inflation because a fall in inflation means an increase in real balances and, hence, a higher real balance effect. In the case of endogenous money, the central bank can play the role of ensuring the inverse relationship. A fall in inflation loosens the hands of the central bank to decrease the interest rates and expand the level of output and vice versa. So, we still

Figure 4: Macroeconomic Equilibrium in the New-Keynesian Framework
find a downward sloping demand curve but it is generated through policy intervention. This curve is also called the reaction function (RF as shown in fig. 4) as it depicts the movements in output as a reaction of the policy intervention of the central bank.

4 A Comparative View of the Two Interpretations

I believe building an empirical case against either of these interpretations of Keynes is difficult because of the problem of endogeneity with macroeconomic data. To give a concrete example, the view on whether savings causes investment or the other way round is almost impossible to prove through a pure empirical exercise since in the ex post sense the relationship is an identity and since neither of these variables can be observed in \textit{ex ante} sense, which is what will conclusively prove the causality, it is near impossible to drive theoretical judgements based on such an empirical exercise. Empirical attempts at proving it one way or the other has required heroic efforts without much gain in terms of understanding the world (Gordon [1997]). In my view, such contentious issues in macroeconomics can only be resolved through consistent theoretical arguments and policy interventions and studying their effects to accept or discard these alternative structures.

4.1 Limitations of the real balance effect (RBE)

It must be clear by now to the readers that price and interest elasticity of aggregate and investment demands respectively is what differentiates the two sides of the Keynesian spectrum. While Keynes [1936] and post-Keynesians argue both these functions to be relatively inelastic, the new Keynesian/new Classical version requires them to be sufficiently elastic to allow the full employment levels of output and investment to fall on these curves respectively.

An elastic aggregate demand function requires a real balance effect to be at work in the case of exogenous money and a sufficiently responsive investment function and a proactive interest policy in the case of endogenous money. Are these justifiable assumptions to make in the world that we live in? I would like to argue that they are not.

\textbf{Exogenous Money} First, there have been serious doubts cast on the existence of the real balance effect ([Patnaik, 2009, 35-6], Palley [1996]). This requires, in the case of exogenous money, the increase in the consumption demand of those who gain from the appreciation of their wealth such as creditors to be more than the fall in consumption demand of those whose wealth falls such as debtors.

Second, the RBE coming into operation requires the presence of inelastic expectations, because in the event of a fall in prices (or inflation) if the agents
believe them to fall further, then they might just postpone consumption for a future date instead of consuming today. By *assuming* rational expectations, which is inelastic by definition, this important issue which was an integral part of the disequilibrium macroeconomics tradition has been brushed under the carpet. A consistent theoretical apparatus cannot be built on convenient assumptions.

Third, for the other real balance effect through the investment channel, an increase in the supply of real balance should not lead to a commensurate increase in the liquidity preference otherwise the interest rate will not fall. But in a situation where the expectations about the economy are pessimistic, an expectation of an interest inelastic liquidity preference might not be justified. If anything, as Keynes [1936] had argued the conditions that create a pessimistic expectations about investment (a fall in MEC) also create conditions for high liquidity preference (a rise in the interest rate).

**Endogenous Money** Fourth, in the case of endogenous money, where RBE cannot exist by definition, interest elasticity of either consumption or investment requires the working people or the firms to be oblivious of their current income or profits respectively. If the current incomes or profits are low because of loss of jobs or slack in industry demand, a fall in the interest rate will hardly bring about an increase in either consumption or investment purely based on the fall in the discount rate of future consumption or the cost of loans. Moreover, the households might be credit constrained even if we were to accept that despite low current incomes they would like to increase their consumption. Also, the firms might not see fall in the cost of loans as an incentive to invest more when their factories are currently running below capacity. In fact, we could imagine a *kinked* investment function akin to the kinked demand curve. In such a case a fall in the interest rate will not bring about a sufficient rise in investment (or may be no rise in it especially in conditions of severe lack of demand) for the full employment level of investment to fall on this kinked schedule. In other words, the investment/consumption curve may cut the income axis ahead of the full employment level. If this were the case, no fall in the interest rate will bring about a sufficient rise in the level of output for the economy to self-adjust to its potential. Those who argue that a negative rate of interest can solve this problem either by allowing a negative nominal rate of interest or letting the inflation rise are mistaken precisely for this reason that they assume the investment schedule to be sufficiently elastic.

Fifth, even if the aggregate demand function were interest elastic, there is no obvious mechanism through which the central bank might be able to target a specific long term rate of interest, which might be demand determined in conditions where the liquidity preference of the people rises by more than the fall in the policy rate. In such a situation a fall in the interest
rate might not have the adequate impact on the long term rate of interest, which is what affects investment.

With all these objections about the elasticity of the aggregate and investment demand schedules, one can safely argue that assuming these to be a stable function under conditions of volatility, such as what entails in Capitalism under general circumstances, is unjustified. Policy based on these assumptions are even more unjustified since they have a direct impact on the livelihood of the people.

4.2 Finance and the role of interest rate

The new Keynesian tradition is quite limited in its treatment of the financial markets. Even the money market enters in their ‘real’ system only in conditions of rigid prices, in the absence of which money determines only the nominal variables. As has been elaborated in detail above, in Keynes [1936], money plays a key role in determining the level of employment in the presence of flexible prices. Even though flexible prices are not what we generally observe in the real world, the theoretical superiority of Keynes [1936] shows us the key cause of instability and unemployment under capitalism.

It is important to see here an important difference even on the issue of money. It is normally assumed that since the NK framework gives importance to money, it’s closer in spirit to Keynes [1936]. I believe it’s the mirror image of Keynes [1936]’s own take on money. In Keynes [1936], while money can cause a downturn, it cannot effect a reversal, at least not on its own. In the NK approach it’s the exact opposite i.e. money may not cause a downturn but it can effect a reversal. So, even in this limited sense, money is treated quite differently between these traditions.

But the central difference between the two approaches lies in their treatment of the credit market and finance. Since the focus on the NK approach is on the interest rate and monetary policy, it gives less importance to the role of credit in determining the level of investment and employment in the economy as opposed to a key role it plays in the post Keynesian tradition as shown above. So, while the current global crisis can easily fit into a Minsky-Kalecki framework, it’s hard to fit it in any conventional macroeconomic textbook framework. I believe on this count alone, the alternative interpretation of Keynes deserves space in macroeconomic pedagogy.

4.3 Limited Policy Choices

4.3.1 Supply-Side Policies and the Labour Market

Lindbeck and Snower [1988] argue that the bargaining power of the insiders need to be reduced whereas those of the outsiders increased for the involuntary unemployment to be reduced. So, the policy recommendations with respect to the insiders are as follows: (a) reducing the hiring and firing costs
through softening of job security legislation; (b) reformed labour laws to lessen the powers of the trade unions and the likelihood of strikes. On the other hand, to enhance the powers of the outsiders, following steps could be taken: (a) to increase the marginal productivity of labour through improved training; (b) improving labour mobility; (c) profit-sharing arrangements which bring greater flexibility to wages; (d) keep the unemployment compensations low so that they act as an incentive for job search.

Quite aside from the limited understanding of the rigidity of real wages as the cause for unemployment, these theories fail to see the demand side effect of wages precisely because of building their theoretical structure from microfoundations and simplistically adding it up to get the macroeconomic picture. It’s as if macroeconomics does not have any existence except as an addition of micro conditions. Their understanding of the labour market is an acute reflection of that. While it’s true that a fall in the real wages might bring down the cost for the employers but it also brings down the demand for their goods so unless one assumes the Say’s law, such a fall in the real wages will inevitably lead to a fall in employment, which is the exact opposite of what the NK approach argues for.

4.3.2 Dominance of Monetary Policy

In the sphere of active state policy, the dominant policy instrument in the NK approach is the interest rate. An optimal policy rule is such that the central bank tries to minimize the loss function arising from the deviation of the actual level of output and rate of inflation from the targeted one. As a rule of thumb, an approximation of this exercise is now called the Taylor’s rule.

Any demand shock in the economy could be dealt with the monetary policy instruments. An initial fall in the output will prompt the central bank to decrease the interest rates, which for a given discount rate, increase the level of consumption today in the baseline model. This will mitigate the initial problem purely through a calibrated interest policy approach. So, in normal recessions, monetary policy should be allowed to bring about stabilisation in the economy. A supply shock leads to an increase in inflation at all levels of output (AS shifts up). The central bank intervenes by increasing the rate of interest, thereby, controlling output and hence bringing inflation down (movement down the new AS curve).

The limitation of monetary policy in influencing the level of activity has been discussed above so let me now focus on its inflation targeting role. For the monetary policy to be able to affect inflation, the NKPC has to be an upward sloping curve in the inflation output space because that allows for a trade-off between the two. If, however, the Phillips curve is horizontal, as shown in the post-Keynesian tradition, even in this limited sense inflation targeting will end up becoming a stagflationary policy since in an attempt to
target a specific rate of inflation, an increase in the interest rate would mean a fall in the level of demand without any commensurate fall in inflation. But why should the Phillips curve be flat? 

NKPC slopes upwards because the underlying marginal cost curve slopes upwards\textsuperscript{16} There are two reasons for why the NKPC is upward sloping: diseconomies of scale and increasing bargaining power of workers as the labour market tightens. Both of these assumptions are incorrect at least till the economy starts hitting the inflationary barrier. At the macroeconomic level an increase in output entails an increase in labour and capital, so, there is an increase in scale that is taking place as we move up the marginal cost curve. Since there is no reason why there should be diseconomies in scale, this route of increasing cost is unjustifiable. As for the increasing bargaining power of workers with employment, that might be the case only at higher rates of employment, which could generate an inverse-L shaped marginal cost curve with the upward portion starting where the bargaining power becomes threatening. If, however, there are increasing returns to scale, then even this increase can be nullified. Thus, we get an inflation curve which has a horizontal portion and then slopes upwards (see figure 3). What if the economy is stuck in this portion i.e. with low employment and no impending inflation instability? Any attempt to target inflation in such a portion of the Phillips curve will be counterproductive and yet a narrow inflation targeting framework would signal the policy makers to push the economy towards stagflation whenever the inflation rises (cost-push inflation).

Moreover, interest based policy of inflation targeting can itself be inflationary. This is so because inflation itself may depend on the nominal interest rate due to the cost channel of monetary policy for a given spectrum of their profit margins (Patnaik [1997], Lima and Setterfield [2010]).

As opposed to this, Keynes [1936] and post-Keynesians have argued in favour of an active fiscal policy with a supporting role by the monetary policy. This is particularly relevant in conditions where the investment function is interest inelastic such as what the world has been facing since 2008. Fiscal policy is considered to have a direct impact on the level of output, private investment and employment. It refutes the three major objections to fiscal policy: crowding out of private investment as the interest rates rise, inflation as a result of monetisation of this deficit and increased foreign indebtedness to finance the fiscal deficit. First, a higher government expenditure in a world where interest rates are determined by the central bank cannot lead

\textsuperscript{16}Galí [2009] develops a 2-step NKPC with the first step determining the relationship between prices and marginal cost and the second between marginal cost and output. While the positive slope of the NKPC arises from the second step, the innocuous assumption of an upward sloping marginal cost curve never catches the sight of most readers of the NK framework. However, this is where the fallacy of conflating microeconomics with macroeconomics lies.
to an increase in the interest rate and affect private investment adversely. On the contrary, it increases the level of capacity utilisation for private firms, so their levels of profits also swell. This is the *crowding-in* effect. Second, monetisation of deficit is not the case of too-much-money-chasing-too-few goods since running of the deficit itself adds to the pool of goods. Third, increased foreign indebtedness has to do with the leakage of demand from the economy through imports resulting from an expansionary process but that has nothing to do with government expenditure *per se*. In fact, by controlling the kind of activities which are less import intensive, such an expenditure, unlike private investment which is not directly under control of the government, can plug these leakages.

\[
\begin{align*}
M & \leftarrow iS \\
& \rightarrow iS \rightarrow \frac{I}{L} + \rho(I) \\
& \rightarrow Y
\end{align*}
\]

Why should the working people suffer because of the poor tool box of the policy makers which puts all their eggs in just one basket of monetary policy whether to target inflation or unemployment? It is in the arena of policy making that theoretical frameworks should be tested and I have argued above that the NK framework fares not so well in conditions of recessions or cost-push inflations.

### 4.4 Liquidity Trap Vs Flat money demand curve

It can be seen that in their theoretical and, hence, in their policy approach, they have put Keynes [1936] on its head. The only condition in which they do not give primacy to monetary policy is in conditions of *deep* recessions as is happening today where economists like Krugman are talking in a somewhat Keynesian language. What difference does a deep recession make? It brings liquidity trap into the picture. If the level of output falls to such an extent that it is impossible to stimulate the economy through monetary policy since there is a lower bound of zero to the interest rates, active fiscal policy will be required. Sans this possibility, expansionary fiscal policy is distortionary. In this respect, they are consistently anti-Keynesian. So, the same economists in the mainstream framework, who are talking the language of Keynes, will become anti-Keynesian as soon as the Great Recession is over.

But even in this limited sense, they have misunderstood Keynes [1936]. The relative ineffectiveness of monetary policy does not arise only in conditions of the so-called liquidity trap, which Keynes [1936] has brushed aside as a rare occurrence not worthy of discussion. Downward inflexibility of interest rates does not arise out of liquidity trap alone, it can arise even at higher...
rates of interest since it merely requires the agents to become risk averse on a large scale. So, for example at higher rates of interest, if the rate of interest falls as a result of policy, the agents might expect the interest rates to fall further, in which case, they will increase their liquidity preference and prevent the market determined interest rate from falling. The money demand curve, therefore, can be perfectly elastic not just at low liquidity trap rates of interest but at any rate of interest. This means that even under normal recessions and not necessarily severe ones, active monetary policy alone might not inject demand into the system. A strict adherence to monetary policy in the absence of a liquidity trap condition merely prolongs the recovery of an economy, which would have done well to shed its monetarist hawk position and embraced a more pro-people fiscal policy of intervening directly in the market.

4.5 Views on Short Vs Long Run

Last but not the least, the ultimate difference between the two frameworks arises from their view of the long run functioning of the economy. Since a comprehensive treatment of this topic is beyond the scope of this paper and in itself is worthy of another pedagogical paper on similar lines, I will merely make some basic points here.

It is normally assumed in the NK framework that from the short to the long run of rigid to flexible prices, the latter consists of a movement along the full employment frontier. The economy is driven by technological factors alone, whether determined exogenously (Solow/Cass-Koopmans models) or endogenously (new growth theory), thereby, making money neutral in the long run. From the famous quantity theory of money equation, we know that the product of money supply \((M)\) and its velocity \((V)\) is equal to the product of prices \((p)\) and output \((O)\). With the rate of growth of output determined outside the monetary system, the rate of growth of money \((g_m)\) in excess of the natural rate of growth of output \((g_n)\) merely leads to an equivalent increase in inflation \((\pi)\). It is here that monetarism comes our most clearly despite the claim of these theories of being ‘Keynesian’.

\[
MV \rightarrow pO \\
g_m - g_n \rightarrow \pi
\]

In contrast to this view of the long run, the Keynesian/post-Keynesian view of the long run is defined by a period when investment itself changes instead of being fixed like in the short run. Investment is a function of the demand in the economy and the rate of growth of the economy is driven endogenously by the rate of growth of demand. The natural rate of growth adjusts to this rate of growth either through a change in the technological
rate of growth which adapts to the conditions in the labour market\textsuperscript{17} or through a change in migration\textsuperscript{18} or both. Inflation in the long run, on the other hand, is determined by cost factors or the degree of monopolisation of an economy. Such an understanding of an economy reverses the causality in the quantity of money equation not just in the short run but \textit{also in the long run}. In other words, cost-determined inflation and demand-determined rate of growth of output ($g$) determine the rate of growth of money supply and not the other way round.

\[
MV \leftarrow pO \\
g_m \leftarrow \pi + g
\]

5 Conclusion

Despite my preferences of the PK approach over the NK approach, just as others might have of NK over PK, my point was to raise the issue of holistic teaching. Such an approach of teaching both the interpretations should be followed on both sides of the Keynesian spectrum. In light of this, the current paper attempted to address how Macroeconomics ought to be taught to students at the advanced intermediate level, which gives them an overall perspective on the subject. The level of mathematical sophistication in the NK framework, which is often considered the reason for its superiority, should not make it impervious to criticism especially since policies, which drive people’s lives, are essentially flowing out of this exclusive view of capitalism. Let me end with a quote from [Davidson, 2006, p. 151-2], a post-Keynesian, on the relative methodological sophistication, which might be a bit provocative but nonetheless necessary for shaking the souls of economists who believe in a blinkered vision of teaching economics:

Post-Keynesians recognize that their logical model is neither fully developed, nor as neat and precise, as the mainstream model. After all, the number of person-hours put into developing the orthodox model exceeds those invested in the post-Keynesian analysis several million-fold. Nevertheless, post-Keynesians believe that it is better to develop a model which emphasizes the special characteristics of the economic world in which we live than to continually refine and polish a beautifully precise, but irrelevant, model. Moreover, when one is dealing with human activity and institutions, one may be, in the nature of things,

\textsuperscript{17}The pace of labour saving technological change in the North based on the labour market tightening is something which should have immediately caught the eye of neoclassical growth theorists

\textsuperscript{18}That capitalism in the white settlement areas has survived under conditions of tighter labour markets through large scale migrations both from within the North and South is hardly a surprise but it is completely ignored in the neoclassical growth theory
outside the realm of the formally precise. For Keynes, as well as for post-Keynesians, the guiding motto is ‘it is better to be roughly right than precisely wrong!’ [Emphasis added]

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