

# J. Maynard Keynes

## Critique of the mainstream

### Intro

*The General Theory of Employment, Interest and Money* (1936) remains one of the most influential economic texts ever composed. It compares with Smith's *The Wealth of Nations* on the persuasiveness with respect to public policy. The analytical rigor of the text compares to that of Ricardo. In creating a zealous group of followers, Keynes is on par with Marx.

Keynes, like many other thinkers, began his career operating in the world of Marshall. In fact, Keynes had studied economics under both Henry Sidgwick and Alfred Marshall.

His interest in economics was mostly in service of policy. The contributions to theory and practice are best understood when placed in perspective to the war and inter-war years. World War 1 saw the breakdown of trade relations and the gold standard, followed by inflation, exchange rate instability, inflation, balance-of-payments disequilibria, and later deflation and mass unemployment on an international scale.

## The evolution of *The General Theory*

### Marshallian background: Says law

Keynes was schooled in the Marshallian tradition, a tradition with which he had a long struggle to escape. The economics profession, as represented by Marshall and in the Ricardo-Mill tradition, accepted Say's law; the implication being that overproduction and over accumulation of capital are not possible. Moreover, competition would ensure full employment via adjustment of the wage. Given these assumed results, economic analysis excluded inquiry to aggregate outcomes.

### Marshallian background: The quantity theory

Irving Fisher's transaction version of the quantity theory of money posits that changes in quantity of money drive changes in price. Marshall's formulation differed in that it emphasized changes in the use of money.

Marshall believed that people demand cash or equivalently, have a preference for liquidity, to bridge the time gap between the receipt of money income and its disbursement. Let the demand for cash be  $k$  and equal to the reciprocal of the velocity of money  $V$ . Then substitution and simple algebra lead to  $M = PT \cdot k$  where  $M$  is the quantity of money and is equal to the product of price ( $P$ ), volume of trade ( $T$ ), and the transactional demand for cash ( $k$ ). Given that  $k$  is assumed to be stable, the results of Marshall's and Fisher's theory are the same.

Marshall also recognized that people, acting irrationally, might demand money as an asset. If a rational person found themselves with excess cash balances, they would increase expenditures and thus, the price level would be maintained.

By assuming that forces which operate in the money market are independent of those in commodity markets, Marshall eloquently swept away any concern arising from demand for money as an asset and

the implications to the price level. Essentially, this assumption transforms a monetary economy into a barter economy. Any money received is spent on commodities and Say's law is maintained.

### Early writings

In Keynes's early work, particularly *The Economic Consequences of the Peace*, he began questioning the generally accepted conclusion that the economy tends towards full employment. In fact, there are few examples in the history of economic thought where we can see the relationship between the germination of economic analysis and its crystallization into theoretical propositions like that which is visible in Keynes *The Economic Consequences of the Peace* and *The General Theory*. Two other steppingstones to the development of Keynes masterpiece are his *Tract on Monetary Reform* and *Treatise on Money*. In the former, Keynes advocated for the central bank to issue notes independently of the gold standard to stabilize the economy; the policy prescription put forward treats money as an active agent affecting economic outcomes. In the latter work, Keynes divorces the decision to save from the decision to invest; the interest rate does not serve to equalize these two magnitudes.

### The revival of macroeconomic analysis

With the arrival of Keynes *General Theory*, economic analysis was directed away from Marshall's concern over the allocation of resources among alternative uses. The question became will the resources even be employed. The dogmatic belief that the economic problem is one of scarcity was challenged with the great depression. Persistent unemployment, even in the face of falling wages, led Keynes to focus on the ability of modern capitalistic economies to restore a full employment equilibrium.

### Keynes's key points

Keynes's critique of neoclassical economics focuses on the premise that flexible wages and prices generates full employment. The postulates on which the neoclassical theory rest are:

- Diminishing marginal product of labor.
- Equivalence between real wage (which reflects marginal disutility) and marginal product of labor.
- The negotiated nominal wage also determines the real wage.

From these postulates it is concluded that if unemployment exists, it is because workers are unwilling or unable to except a real wage that equals their marginal product. To increase employment, wages must fall back into equality with the marginal product.

Keynes rejected this conclusion. Rather, he posited that money wages are bargained or set by institutional factors and the level of employment and output determines the marginal product of labor and therefore, real wages. Real wages are not independent of employment; moreover, real wages do not fall with a reduction in money wages which are a primary source from which the demand for goods derives.

Recall that, in the neoclassical model, prices are determined by the quantity of money and volume of transactions. Thus, a reduction in nominal wages reduces real wages and serves as a reliable mechanism for stimulating employment. Persistent unemployment is considered voluntary.

Keynes did not accept that workers are voluntarily unemployed if they are unwilling to accept reduced money wages. Would they refuse work at the going wage if there were an increase in the general price level? If yes, then Keynes accepted them as being voluntarily unemployed.

Workers resist cuts to money wages even in the face of unemployment; however, workers will continue to supply labor in the face of rising prices. This begs the question why workers react to this money illusion. Workers resist cuts to preserve their relative position with respect to other wage-earning households.

Involuntary unemployment, according to Keynes, results from insufficient aggregate demand. Wage cuts reduces workers ability to spend and thus, reduces aggregate demand, exacerbating the unemployment problem. Rather than resulting from wages which are too high, an economic downturn is more likely to result from asset prices which are too low. We can see here the justification for his policy prescription that the central bank should reduce interest rates in an attempt to drive up asset values.

### Theory of the interest rate

While neoclassical thinkers accept the reality of cyclical fluctuations, they maintain that flexible prices (including both the wage and interest) prevent long-run overproduction and unemployment. Excess income is channeled to investment. The interest rate is determined by the intersection of the schedules of the supply of and demand for loanable funds. People would rather spend than save, it follows that supply is a positive function of the interest rate. Diminishing productivity of capital results in demand being a negative function of the interest rate. The interest rate adjusts, bringing equilibrium to the loanable funds market.

Keynes challenged the notion that the interest rate channels savings into investment. Individuals desire to hold money as an asset in addition to their transactional needs. People demand money for its liquidity to hedge uncertainty. From this premise Keynes concluded that interest is the price for parting with liquidity, not a reward for abstinence.

Keynes further attacked the neoclassical theory of interest on the ground that the rate is indeterminate. The savings schedule cannot be known until income is known there is a different savings schedule for every possible level of income. Income cannot be known until the level of investment is known. Investment depends on the marginal efficiency of capital and the interest rate. It follows that the schedules of savings-supply and investment-demand are interdependent and thus, the interest rate is indeterminate within this framework. The interest rate is a monetary phenomenon and can only be explained as such.

### Concluding comments

Pre-Keynes, the economic problem was conceived of as the struggle between scarcity and wants. In the times of Malthus and Ricardo, this was expressed in the debates on the corn laws. Marshall and the marginalists changed the focus to the level of the individual but did not change the conception of the problem as one of scarcity.

Poverty in the midst of plenty became a part of the economic problem with Keynes. Not only does a capitalist economy not tend to full employment, but there are inherent forces which generate instability. Marx, like Keynes, also saw the market economy's inability to adjust. The difference is that Marx attributed the problem to a declining rate of profit where capital accumulation inhibited

investment. Keynes, on the other hand, attributed the impediment to investment as insufficient aggregate demand.

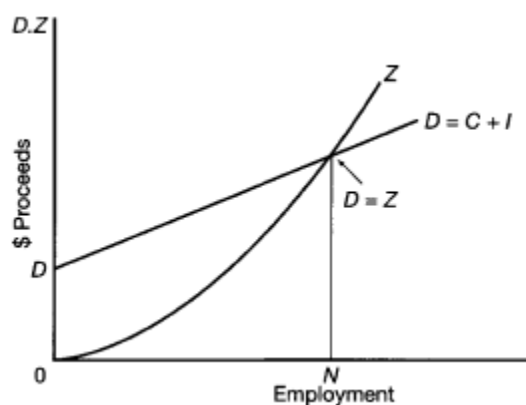
## Keynes theory of employment, output, and income.

### The principle of aggregate effective demand

Economic analysis focused on the aggregate economy dates back to at least the Physiocrats. *The Tableau* demonstrated a concern with macroeconomic phenomena. The importance of consumption in maintaining the circular flow remains a fundamental concept in macro today: production creates income and expenditures create the demand that production satisfies.

Keynes notes that one of the first difficulties that must be addressed in an aggregate analysis is the choice of units. It is necessary to express both physical magnitudes and monetary magnitudes. To simplify, Keynes restricts his analysis to the short run where organization, technique, and equipment are fixed. Changes in the level of economic activity were expressed by labor units of employment and monetary aspects of change in terms of a constant money wage unit.

In Keynes analysis, the level of economic activity is determined by the interaction of aggregate demand and supply schedules. The level of activity is not necessarily full employment. The aggregate demand schedule relates expected sales to employment associated with varying amounts of output. The supply schedule, which Keynes called the  $Z$  function, depicts proceeds required to cover factor costs including profit and is a function of employment  $N$ .  $Z = \phi(N)$



Since we are in the short run, capital is constant, and the supply function increases in  $N$ . The  $Z$  function is expressed in money terms and reflects Keynes view on the importance of the role of money. Aggregate demand is determined by expenditures on goods and services. Graphically, the A.D. function is shown to be dependent on consumption and investment and increases with increases in employment. At the equilibrium where  $D=Z$ , employment is determined.

### Determination of consumption expenditures.

The focus on the aggregate demand requires examination of its components.

Consumption was hypothesized to be a stable function of income. As income fluctuates, so too does consumption, albeit at less than 1:1. The stability of consumption results from customs and habits. Changes in consumption are normally represented as a movement along the consumption function, not

as a shift. Consumption has, in addition to the propensity to consume from income (b), an autonomous component (a) which is independent of income (Y).

$$c = a + bY_d$$

The marginal propensity to consume and the multiplier

Richard Kahn fathered the concept of the multiplier, stating that an increase in investment will increase output even more than the initial expansion. Keynes incorporated the multiplier and transformed it from a tool for analyzing employment effects of public investment into a tool for analyzing the income effect of investment.

The multiplier principle elucidated two fundamentals concerning the relationship between investment and income. Expenditure or new money can have an expansionary effect on an economy with unemployed resources that is greater than the initial expenditure. The expansionary process is limited by leakages: not all income received is spent.

Investment expenditure: the role of expectations and uncertainty

Increases in consumption generally rely upon prior increases to income. Keynes emphasized the volume of investment was the crucial economic magnitude. In seeking to understand the investment decision, Keynes focused on three elements: the cost of capital goods, expected yield, and the rate of interest.

If expected revenue from investment exceeds the supply price, investment is more likely to occur. Capital is long lived and generates a stream of revenue (R) into the future.

$$R_1, R_2, \dots R_n$$

The marginal efficiency of capital (MEC) is the relationship between the prospective income from an additional unit of capital and the cost of producing it.

“the rate of discount which will make the present value of the series of annuities given by the returns expected from the capital asset during its life just equal to its supply price.”

Let K represent the supply price and R the return over n years, then the MEC can be arrived at by solving for r. The MEC is the rate which equalizes the expected income and supply price.

$$K_c = \frac{R_1}{1+r} + \frac{R_2}{(1+r)^2} + \dots \frac{R_n}{(1+r)^n}$$

If the MEC (r) is greater than the interest rate (i), invest occurs. With increased investment, the MEC has a tendency to fall. Investment will halt when r=i.

Income from capital depends on its relative scarcity, not its productivity. Thus, Keynes placed great emphasis on the role of expectations in governing the pace of investment. The importance of expectations is compounded upon recognition that the stream of revenue extends into the future and thus, a great deal of uncertainty plagues the investment decision. The future is uncertain, and uncertainty is not amenable to the calculus of probability.

## Keynes's key points about the uncertainty and decision making

The vision of a world in which decisions must be made in the face of radical uncertainty represents a key departure of Keynes from the neoclassical model. The future is not just unknown, it is unknowable. Uncertainty affects the marginal efficiency of capital, investment, and willingness to part with liquidity.

Interest is the compensation for parting with liquidity and the determination of the interest rate is a monetary phenomenon which arises from the store-of-value function of money. The desire to hold money as a store of wealth is another key departure for Keynes. There are three motives for demanding money, according to Keynes: transactions, precautionary, and speculative. The transactions motive increases with economic activity. The precautionary motive also rises with greater economic activity. These first two motives are interest inelastic. The speculative motive, however, is a function of the interest rate.

## Keynes monetary theory

The money supply: its origin in the finance process

From Keynes's treatment of investment emerges his conception on the origin of money. Money is created when credit is extended. Banks are one of the primary creators of money, the government being another. Money, according to Keynes, originates in the finance process, a view which contrasts greatly with the mainstream view of money as an exogenous magnitude. The mainstream view treats money as if it simply dumped out of a helicopter.

With greater investment, the money supply is increased; however, it is the interest rate that changes, not the level of prices as suggested in the quantity theory or money.

Liquidity preference: the demand for money

To better understand liquidity preference or, equivalently, the demand for money as a store of value in the face of uncertainty, let's consider the behavior of bond yields. Assume the existence of an organized market, then a fixed-income bond is a close substitute for money as it is highly liquid. However, the bond is susceptible to price fluctuations which alters its yield. If the price rises, then the ratio of income to price falls; in this situation, the yield, which is the income earned from taking a position in a less liquid asset, also falls. Low interest rates and bond yields may be less desirable than cash to a holder of wealth. A high bond price (or equivalently, a low yield) creates a situation in which the income can be completely wiped out by a small drop in price. The preference for liquidity for speculative purposes is likely to be substantial if expectations are such that bond prices are at or near their maximum.

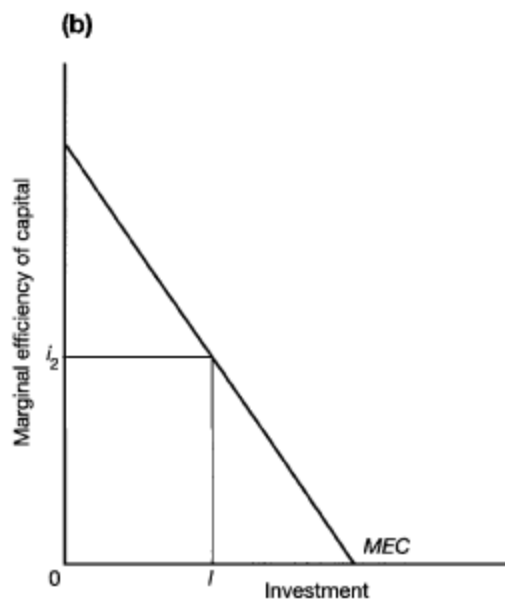
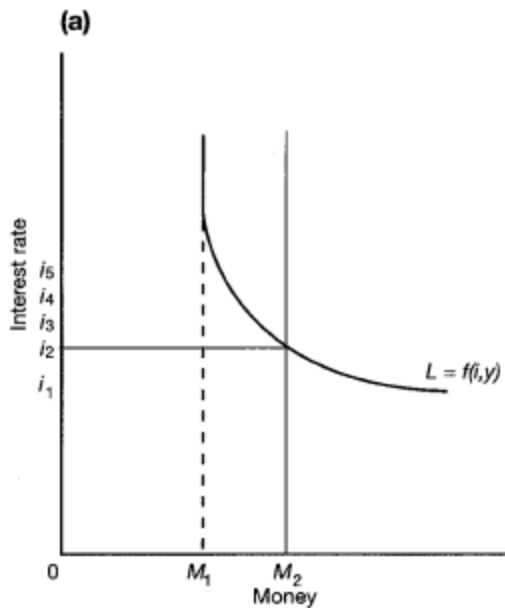


Figure a shows a curve representing the demand for money as a function of income and the interest rate. The total demand for money is the sum of transaction, precautionary, and speculative motives.

$$L = f(i, y) = L_t + L_p + L_s$$

Recall that the interest rate is a monetary phenomenon resulting from the behavior of banks, both the central bank and commercial banks who supply money by extending credit, in response to the demand by individuals, firms, and government.

Again, in figure a,  $OM_1$  is the demand for money that satisfies transactions and precautionary motives while  $M_1M_2$  is the demand for money that satisfies the speculative motive. The interest rate does not

equate savings and investment, but rather in the Keynesian framework it equates supply and demand of money.

The interest rate and the marginal efficiency of capital (MEC) determine the level of investment. The MEC is the schedule that relates demand for capital to expected return and is a negative function of the interest rate. At interest rate  $i_2$ , the level of investment is  $OI$  as seen in figure b. The central bank can manipulate the interest rate by buying and selling bonds. However, there is a lower bound below which the interest cannot fall. In figure a, the interest floor is given by  $i_1$ . This “liquidity trap” is a primary impediment to monetary policy.

Money in the Keynesian framework is very different than in the neoclassical framework. For Keynes, money is an active determinant of income, output, and employment. Once expectations about future streams of revenue have been formed, the interest rate determines the level of investment. Once income is determined, given the stock of money in existence, wealth holders decide on the allocation across financial assets.

Thus, the state of expectations, liquidity preference, the rate of interest, and prospective yield are interrelated.

#### The dynamic aspects of Keynes's analysis

Keynes elected to operate in the short run, holding the stock of capital fixed. His concern with investment did not consider the capital-creating effect of investment. Roy Harrod took address this shortcoming with his “Essay in Dynamic Theory.” In this essay, Harrod asserts that given the capital-creating effect of investment, the economy must grow or deal with unemployed resources.

Domar followed Harrod in contributing to a dynamic model in the Keynesian tradition. In so doing, the Harrod-Domar model brings productive capacity to the center of the analysis. Income must grow at a sufficient rate to continue to absorb the productivity gains from a growing capital stock. The rate of growth of income which leaves everyone satisfied with their production decision is the “warranted rate of growth.” Another important concept in the Harrod-Domar model is the natural rate of growth which describes the rate of growth consistent with full employment. The equilibrium of the Harrod-Domar model exhibits knife-edge instability as there are no forces which push the economy towards full-employment equilibrium; in fact, disequilibrium in this model is self-perpetuating and reinforcing.

#### Concluding remarks

The level of employment depends on the level of aggregate demand.

Flexible prices are not sufficient to generate full employment. Full employment is only one of many possible outcomes.

It is through fiscal policy that the government can most effectively fulfill its responsibility to generate acceptable levels of employment.

While the circumstances of the 1930's set the stage for the Keynesian Revolution, his contribution of effective demand remains a milestone in the history of economic thought. The earlier quantity theory conceived of aggregate demand as the product of the stock of money and velocity, whereas Keynes presents it as the sum of consumption and investment expenditures. Moreover, in the quantity theory no analytical distinction is made between consumption and investment spending; it is implicitly assumed



that any income not spent on consumption is directed to investment through the loanable funds market: it is the world of Say's law.

Accompanying Keynes effective demand are the demand for money as an asset that helps to quell the disquietude of uncertainty and the stock of money as a variable that responds to the animal spirits of investors.

If unemployment exists, lowering wages will not increase employment. If the unemployment is occurring in a situation with low interest rates, there may be no mechanism to restore full employment.

There is no doubt that Keynes made a significant and profound contribution to economic theory. Following publication of *The General Theory*, concern for macro phenomena nearly surpassed the professions earlier infatuation with allocation. Keynes, like Marx, has generated a substantial following many of whom are critical of the mainstream. The vigor their theoretical and methodological argument remains the primary reason that economics is characterized by competing paradigms rather than a single paradigm like in many natural sciences.