

Profit is central to both micro- and macroeconomics. The second part of this book elaborated on the microeconomic aspects: firms are active profit-seekers, price-setters, and cost-cutters operating under conditions of conflict and uncertainty created by their own actions. This is competition as it really exists, as the driving force in the determination of production decisions, technological change, relative prices, interest rates and asset prices, and exchange rates. Growth originates at the cellular level, and the measure of its success is the excess of the profit rate over the interest rate. This part of the book will draw out the linkages between real competition and effective demand.

Chapter 12 tracks the rise of modern macroeconomics beginning with Keynes's break with the prevailing orthodoxy and culminating with its recapture by neoWalrasian economics. Chapter 3 had previously established that emergent macroeconomic properties that cannot be reduced to the desired outcomes of all-seeing representative agents. Hence, micro features do not necessarily carry to the macro level and any given macro pattern may be consistent with many different (even contradictory) micro foundations. In order to distinguish among competing hypotheses we must consider the validity of their microeconomic assumptions. The classical notion of equilibrium-as-a-turbulent-process implies that we must be explicit about the time of gravitation, while the fact that growth originates at the cellular level means that we must work with growth rates or ratios of variables. In real competition, firms face downward sloping demand curves, set prices, have different costs, and partition into price-leaders and price-followers (regulating and non-regulating capitals). Finally, money is endogenous and non-neutral, and aggregate demand and supply are both rooted in profitability so that macroeconomics cannot be reduced to either supply- or demand-side approaches.

At an aggregate level, we can express ex ante excess demand as  $ED \equiv D - Y = [(C + I) - (Y - T)] + [G - T] + [EX - IM] = [I - S] + [G - T] + [EX - IM]$ , where  $D$  = aggregate demand for domestically available goods is the sum of consumption ( $C$ ), investment in desired stocks of fixed capital and inventories ( $I$ ), government ( $G$ ) and export ( $EX$ ) demands,  $T$  = total private sector taxes (households and business), and  $Y$  = domestically available supply is the sum of domestic supply ( $Y$ ) and imports ( $IM$ ). This accounting relation identifies the sectoral sources of excess demand. In the most abstract case with no government or foreign sector, excess demand reduces to the familiar balance between investment and savings  $ED = I - S$  which plays a critical role in Keynes's break with the orthodoxy of his day. Since sales in excess of supply depletes inventories, we can also derive the corresponding ex post national accounts identity by substituting unplanned inventory change  $-\Delta INV_u$  for excess demand  $ED$  to get  $[(I + \Delta INV_u) - S] + [G - T] + [EX - IM] = 0$ . Neither of these two identities is a "budget constraint," since  $ED$  can take on positive or negative values. It is only by further assuming aggregate demand–supply equilibrium  $ED = -\Delta INV_u \approx 0$  that the three balance identities are converted into the constraint  $[I - S] + [G - T] + [EX - IM] \approx 0$ . The question is: How long does equilibration take? Neoclassical theory typically assumes instantaneous and continuous equilibrium. Keynes usually focuses on comparative statics, so time disappears from view, but in some places he recognizes that production takes time—in which case the multiplier must be a temporal sequence. Modern Keynesian and post-Keynesian macroeconomic models characteristically avoid this issue by treating observed (annual or even quarterly) data as representing

equilibrium outcomes. Given that excess demand is reflected in unplanned inventory changes, I would argue that it is more sensible to consider the three- to five-year (twelve- to twenty-quarter) inventory cycle (business cycle) as the equilibrating process for aggregate demand and supply. This certainly casts a different light on the political and social implications of macroeconomic policy. Finally, harking back to the discussions in chapters 4 and 7, normal capacity output  $Y_n$  is defined as the normal (potential) output corresponding to the lowest average cost (cost being defined in the business sense). This point is generally below the maximum (engineering) output, so firms typically have substantial desired reserve capacity—which is precisely why they can rapidly increase output in the short run. True excess capacity would only exist if output is persistently below the normal level. Since firms introduce new plant and equipment with some normal capacity in mind, normal capacity utilization exists when the actual output–capital ratio is equal to the desired output–capital ratio. This is a particularly important form of stock–flow consistency, so it is an irony that it is generally ignored or even denied in the Keynesian tradition.

Section II outlines the basis structure of the pre-Keynesian macroeconomics that had replaced the classical analysis of real capitalism with a postclassical analysis of a fictitious idealized system (chapters 7 and 8). Keynes took aim at certain core propositions which he attributed to the orthodoxy of his time, even though these notions were not fully formalized at the time of his attack: rational maximizing agents operating with perfect knowledge under perfect competition and stable expectations about the future; markets, including the labor market, that always “cleared” quickly and efficiently, so that full employment was the “normal state of affairs”; aggregate demand that adapted to full employment aggregate supply (Say’s Law) through automatic adjustments in the real interest rate in the market for loanable funds; and a general price level determined by the quantity of money. Real variables (including the real interest rate linked to the real profit rate) were determined in commodity and labor markets (the “classical dichotomy”) and nominal values were determined through the effects of the money supply on the general price level (the Quantity Theory of Money). Money was viewed as neutral on the grounds that it had no effect on the equilibrium values of real variables. Not surprisingly, government intervention was “neither necessary nor desirable.” An increase in supply of labor would lead an equal increase in employment but only at a lower real wage. Conversely, attempts by unions and the state to increase real wages above their market (presumed to be equilibrium) levels would only result in unemployment. To understand the logic of the basic neoclassical model, it is useful to recall that at the abstract level aggregate excess demand  $ED = [I - S]$ . Neoclassical theory assumes that private investment constituted a demand for loanable funds, that private savings provided the corresponding supply of loanable funds and that both responded solely to the real interest rate. Then equilibrium in the loanable funds market ensured that  $I = S$  and hence  $ED = 0$  (i.e., that aggregate demand would adjust to full employment aggregate supply). In the end, the system was supposed to quickly and efficiently produce an aggregate quantity of output that provides full employment and simultaneously generates an aggregate demand sufficient to realize this same output. On this reasoning the widespread unemployment in the 1920s and subsequently in the Great Depression of the 1930s would soon be eliminated if the market was allowed to run its course. Government intervention would only be counterproductive, it was thought.

Section III takes up Keynes’s break with the teachings of his day. Persistent mass unemployment following World War I convinced him that real markets did not work in the manner

prescribed in the textbooks. Long before he wrote the General Theory, he was proposing that governments all over Europe engage in large-scale deficit-financed public expenditures. At the same time, he was struggling to identify the crucial theoretical flaws in the orthodox argument, ultimately zeroing in on two critical claims: that the real wage would move quickly to restore full employment; and that the real interest rate would automatically move to create the necessary amount of aggregate demand. His first step was to note that since production takes time, individual firms must hire workers and purchase inputs on the basis of profit anticipated from expected demand. On the other hand, actual aggregate demand arises from individual household consumption expenditures linked to income generated by current production; and individual business investment expenditures motivated by long-term profit expectations which were notoriously volatile, subject to “tides of irrational optimism and pessimism.” He handled this aspect of his argument by taking investment as given in the short run but capable of rapid change from one short run to the other. There was no reason to believe that actual aggregate demand generated by the expenditures of many millions of consumers and firms would just match the expected demand that motivated the individual firms so that imbalance would be a normal state of affairs. Keynes leaves this aside in order to focus on the determinants of the equilibrium level of output and employment. With investment being “given” in the short run, savings must do the adjusting. But savings is the part of income which is not consumed and consumption is dependent on income created by production. So in the end production and hence employment must adjust to make savings equal to investment (i.e., to make aggregate supply equal to aggregate demand). This is Keynes’s answer to Say’s Law. A key assumption is that savings is a stable fraction of income: if investment rises by 100 and savings is one-fifth of income, output must rise by 500 to make savings return into balance with investment: the Keynesian multiplier. The same logic implies that a rise in the savings rate (greater thriftiness) will make aggregate savings exceed investment so that output and employment must fall in order to bring savings back into line with investment—hence, the Keynesian Paradox of Thrift.

All of this is predicated on investment being given in the short run, so it leads naturally to the question of how investment reacts. Like Marx, Keynes views investment as driven by its expected net profitability which is the difference between the expected profit rate (the marginal efficiency of investment) and the interest rate. It is plausible that a rise in unemployment would dampen profit expectations and raise the cost of borrowing in the face of increased risk, both of which would cause investment to fall and worsen matters. Keynes was clearly aware of the central neoclassical claim that unemployment would lower the real wage and thereby raise the normal-capacity rate of profit so that investment, output, and employment would eventually rise. He countered with a series of objections: wage-bargains are in terms of money, not real wages, so a fall in aggregate demand that generated unemployment would also lower prices and initially raise the real wage, thereby making matters worse; lower wages would reduce cost and tend to reduce prices, so the real wage might even rise from this effect also; even if money wages were lowered this might make things worse by decreasing consumption and hence aggregate demand; and any reduction in prices might also undermine business confidence and further dampen profit expectations. On the side of the interest rate, he substituted his own liquidity preference theory for the neoclassical loanable funds argument. The interest rate, says Keynes, is determined by the demand and supply for money balances. Money supply is determined by the state. Money demand depends on income and the interest rate viewed as the reward for parting with the liquidity benefit of holding money, the latter being motivated by the need to hold money as insurance against rainy days, to facilitate

transactions, and perhaps to invest some time later. All of these motivations depend on the state of confidence in the future, which is precisely why a collapse of confidence triggered by a crisis could precipitate a flight from financial assets into cash and provoke a rise in the interest rate at the very time that a fall was needed. Even if the state were to step in and reduce the interest rate, this might not override the fall in confidence. For all of these reasons, in a crisis it would be far better to use fiscal policy and have the state directly pump up aggregate demand through deficit spending, just as he had earlier advocated in the aftermath of World War I.

Keynes's argument got quickly trapped within the static confines of the Hicksian IS–LM framework. In Keynes's own argument, equilibrium output is determined by investment through the multiplier (IS), and investment depends on the excess of a volatile expected rate of profit over the interest rate. Hicks eliminates the expected profit rate so that investment is reduced to a simple passive function of the interest rate. It then becomes a mystery when in the face of bleak expectations (as in the current crisis) a reduction in the interest rate does not spur investment. His treatment of money demand (LM) similarly downplays volatility in money holding decisions so that money demand becomes to a stable positive function of the level of current (rather than expected) income and a negative function the interest rate (since a higher interest rate of financial assets will induce agents to hold less idle money balances). IS–LM equilibrium then requires a particular combination of income (output) and interest rate. The Hicksian formulation was extended to allow for government and export demand, in which case expansionary fiscal policy was supposed to raise the equilibrium level of output at the cost of a higher (nominal) interest rate. On the other hand, expansionary monetary policy would increase the money supply at a given price level and shift the LM curve outward thereby raising the equilibrium output but lowering the interest rate. It follows that the state could always exercise some combination of fiscal and monetary policy to bring output to the full employment level without affecting the interest rate or even the price level. The IS–LM framework also retains the Keynesian paradox of thrift in attenuated form because a reduction in the savings rate at a given level of investment raises the IS curve which raises the level of output (the paradox of thrift) but also raises the equilibrium interest rate which mitigates but does not overturn the initial effect.

At this level of abstraction, the price level rises only when aggregate demand exceeds full employment output. Robinson had already proposed that prices would start rising somewhat before this point, and by the early 1960s this idea was operationalized by adding an inflation–unemployment curve to the basic Keynesian toolbox. Phillips had originally found that the rate of change of money wages rose in a nonlinear manner when unemployment fell below some critical level. This was restated as a stable inflation–unemployment curve along which Keynesian policymakers had the option of trading a higher inflation rate for a lower unemployment rate. Everything seemed manageable at first, but then things began to fall apart. A stable Phillips curve implied that inflation would fall as unemployment rose, yet by the 1970s, unemployment had risen and inflation had also risen. By the 1980s, the Phillips curve had disappeared in all major countries and “Hydraulic” Keynesianism was finished. We see in chapter 14 that there is indeed a clearly visible and stable Phillips-type curve, but it is not in terms of the rate of change of money wages or even prices. Knowledge of its existence might have enabled the Keynesian to provide a coherent defense against the monetarist and New Classical counter-revolutionaries.

Section IV analyzes the rise of neo-Walrasian economics which was set up in the 1950s and 1960s by Samuelson's enormously influential mathematical restatement of (Marshallian) economics. Friedman's revival of the Quantity Theory of Money (QTM) transformed Keynes's money demand–supply relation into the hypothesis that velocity of circulation of money was stable in any given institutional configuration. His empirical work with Anna Schwartz concluded that an increase in per capita money supply would primarily lead to an increase in nominal income per capita. Given “long and variable” lags between the two, it was best to maintain stable growth of the former in order to maintain stable growth in the latter. He subsequently added the hypothesis that in a static economy real output “can be regarded as constant,” as in the “flex-price full employment” version of the IS–LM model in which equilibrium real output is determined by the labor supply and the equilibrium real interest rate is immune to monetary factors. Then an increase in the money supply translates solely into an increase in the price level and a money supply growing faster than output gives rise to steady price increases (i.e., inflation). The trouble was that by the 1970s, the supposed stable empirical relation between the money supply and the price level “had utterly fallen apart” all over the advanced world despite various efforts to rescue it by changing the definition of money. So in the end the new QTM lasted no longer than the Keynesian theory it sought to displace. By this time, all macroeconomic theories faced the difficulty of explaining rising unemployment occurring hand in hand with rising (rather than falling) inflation. Both Phelps and Friedman argued that observed unemployment was really the result of structural characteristics of actual labor and commodity markets, including market imperfections, stochastic variability in demands and supplies, the costs of mobility, and so on. The key point was that these real world characteristics led to a “natural rate” of unemployment dependent only on real factors as opposed to monetary ones. Both authors concluded that while unanticipated increases in aggregate demand would lead to temporary increases in real output and employment insofar as workers and firms initially failed to recognize that prices would rise, this stimulus would dissipate over time as prices rose so that unemployment would return to its natural level. Hence, Keynesian policies seeking to maintain an unemployment rate below the natural one would have to continually pump up the system through unexpected increases in aggregate demand whose cumulative effect would be an ever-increasing rate of inflation. This led to the Non-Accelerating-Inflation-Rate-of-Unemployment (NAIRU) argument that the natural rate of unemployment is the only rate at which the inflation rate will be stable (see chapter 15).

New Classicals operate within this framework. They adhere to the notion of a natural rate of unemployment and to the notion that only surprises in economic policy can bring about temporary deviations from the natural rate of unemployment. But they transfer their allegiance from Marshall to Walras by explicitly assuming perfect competition, complete price, wage, and interest rate flexibility, perfect arbitrage, continuous market clearing, and the absence of money illusion (so that only relative prices matter for agent decisions). And they bring a new weapon to the fray: the concept of rational expectations in which theoretical agents populating a model universe must be presumed to “know” the structure of model in which they exist and to make use of this information in an efficient manner. Lucas combines the natural rate hypothesis with the notion of model-consistent expectations that are also hyperrational. As with earlier arguments, only unexpected changes in policy (surprises) will change economic outcomes, but now there can be no extended effects because once the policy is in place hyper-rational agents immediately catch on so the economy jumps back to the natural rate of unemployment and prices shoot up. A further distinctive feature of the New Classical argument is the claim that the “structure” of the macro-economy is

itself the result of dynamic optimization by representative agents so that the structure itself must change as agents adjust their behavior to new policies. This “Lucas critique” became highly popular at a theoretical level, although the empirical evidence was far less kind. I have already argued the contrary hypothesis that aggregates are generally “robustly indifferent” to the details of individual actions (chapter 3, section III). Given the New Classical assumptions of continuous market clearing and completely flexible wages and prices, temporary misperceptions in the face of surprises become crucial in explaining the positive correlations between demand, inflation, real output, and employment over the business cycle. But by the early 1980s the evidence against the monetary surprise and “informational confusion” hypotheses began to mount. Real Business Cycle Theory (RBCT) developed by retaining the hypotheses of rational expectations and continuous market clearing and adding random productivity shocks to generate aggregate fluctuations that mimicked business cycles. Agents were still assumed to have rational expectations, the aggregate economy was still treated as an interaction between a representative firm and a representative household and business cycles were taken to be strictly equilibrium phenomena. A technology shock was assumed to be propagated through the economy by the consumption smoothing response of households, the investment (“time to build”) responses of businesses, and by intertemporal substitution between labor and leisure. Full employment always obtains, so any drop in the employment is simply due to the fact that workers choose to substitute leisure for labor. In such a framework monetary policy is sidelined because it cannot influence real variables and there is no distinction between the short and long run (so that fluctuations are inseparable from trends) because the economy is continuously in equilibrium. RBCT theorists eschew econometric testing of their hypothesis in favor of simulations of “toy” models whose parameters are selected (calibrated) to make the model mimic (some) observed patterns and then changed to investigate the supposed impact of changes in policies and structure. Not surprisingly, there has been considerable criticism of the empirical significance of RBCT models. New Keynesian economists also begin from standard micro foundations and the general equilibrium framework in which it is embedded, but they focus on introducing a plethora of “imperfections” such as costly price adjustments and imperfect competition in markets for commodities, labor, and credit. Given the inadequacy of the underlying theory there are a large number of potential imperfections from which to choose so New Keynesian economics now “consists of a ‘bewildering array’ of theories . . . [whose] ‘quasi religious’ adherence to microfoundations has become a disease” (Snowdon and Vane 2005, 343, 360–364, 429). New Behavioral Economics operates on the standard micro foundations themselves by incorporating asymmetric information, credit rationing, group norms of fairness, imperfect competition, rule-of-thumb behavior, and the weaknesses of certain cultures. The trouble is that each of these is meant as a single modification of the standard micro foundations, rather than starting from a different point altogether (chapter 3).

Sections V and VI examine the macroeconomics of the heterodox “imperfektionist” tradition whose micro foundations were previously analyzed in chapter 8. Kalecki’s macroeconomics is similar to Keynes’s in its short-run focus and its distinction between induced and autonomous components of aggregate demand. His original argument on effective demand was actually in terms of “free competition” which made it even more congruent to Keynes. Investment is given in the short run but over the longer run it responds positively to the gap between the prospective rate of profit and the rate of interest. The interest rate is determined by monetary factors and the profit rate is determined by the wage share and the rate of capacity utilization. Unlike Keynes, Kalecki

incorporates class into his analysis by partitioning total income into that of workers and capitalists and assuming that each group has a fixed (marginal) propensity to save. The Kaleckian multiplier relation is therefore the same as the Keynesian one except that the aggregate propensity to save depends on the ratio of profits to wages, which is in turn determined by the monopoly markups that firms add to their prime costs. Markup pricing also implies that for given materials and labor coefficients, money prices are proportional to money wages. Then price inflation must be rooted in money wage increases. Kalecki's argument further implies that for a given degree of monopoly the real wage and the wage share are not affected either by the unemployment rate or by worker struggles. Yet he was uncomfortable with the conclusion that the working class was powerless to change its own standard of living, so near the end of his life he modified his framework to allow for the possibility that the threat of labor militancy could induce businesses to reduce their markups. In that case a reduction in the unemployment rate that leads to a higher money wage might also lead to a higher real wage and wage share. From this point of view, Kalecki's modified framework would be consistent with three types of Phillips curves (money wage, real wage, and wage share) whose theoretical and empirical foundations are examined in chapter 14. Like Keynes, Kalecki opposes the orthodox claim that an increase in real wages will reduce profitability and hence raise unemployment. His principle objection can be expressed as the proposition that an increase in real wages will have two opposing effects on the actual rate of profit: it will lower the normal rate of profit but will raise the rate of capacity utilization by increasing workers' consumption demand. This highlights the key role of capacity utilization as a free variable. In the end, fiscal policy could be used to pump up output and employment while monetary policy could be used to mitigate any upward pressure on the interest rate. Kalecki was nonetheless pessimistic about the political likelihood of maintaining full employment because it would threaten the power of the capitalist class.

The post-Keynesian tradition encompasses Keynesian and Kaleckian wings that share five central beliefs: aggregate demand drives output, money is endogenously created through the banking system, both persistent excess capacity and unemployment are the normal outcomes of market processes, and the state can achieve (effective) full employment with tolerable levels of inflation. Section VI analyzes the works of Paul Davidson, the leading representative of the Keynesian wing; Godley and Taylor representing the Kaleckian-Structuralist wing; and Lavoie representing the post-Keynesian wing. Several general points are identified as being important to the subsequent classical synthesis of real competition and effective demand (chapter 14). The notion that aggregate demand drives production requires that investment be independent of the supply of savings, which as both Keynes and Kalecki belatedly admitted, requires that it be initially financed entirely out of bank credit. The assumption that business savings be a fixed proportion of net income or profits implies that the business savings (retained earnings) are not linked to the needs of investment finance, which is contrary to business practice and empirical evidence. The idea that capacity utilization is a "free variable" even in the long run implies that firms are never able to eliminate genuine excess capacity, which makes no sense at the microeconomic level. Harrod's own argument that capacity utilization hews to some normal level has been largely ignored by the post-Keynesian tradition, which is quite curious because it represents an important form of stock-flow consistency. Consider the post-Keynesian claim that wage-led and profit-led growth are alternative regimes rather than alternate phases of an adjustment process. A rise in real wages will have a positive impact on worker consumption at existing levels of employment and a negative impact on the normal-capacity profit rate. Even if the former effect outweighs the latter in the short run, as most post-Keynesian authors

claim, the reestablishment of a normal rate of capacity utilization will lead to a fall in the actual rate of profit as it returns to the new lower normal rate and hence to a fall in the rate of growth. Then what is gained through a rise in the levels of output and employment is subsequently paid for through a slowdown in their rates of growth (chapter 13). Finally, the belief that persistent involuntary unemployment can be eliminated through appropriate fiscal and monetary policies runs up against the argument in Marx and Goodwin that capitalism generates and maintains a “normal” rate of involuntary unemployment—as opposed to the voluntary recusal from labor which is assumed in the neoclassical “natural” rate of unemployment. Chapter 14 is devoted to the analysis and implications of the normal rate of unemployment. We will see that attempts to maintain unemployment below the normal rate need not trigger inflation, let alone accelerating inflation (chapter 15).