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AN OVERVIEW OF THE GENERAL THEORY:
BEHAVIOR OF AN ECONOMIC SYSTEM
WITHOUT GOVERNMENT INTERVENTION

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Behavior of an economic system without government intervention.

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PREFACE

This paper is intended to be a chapter in a forthcoming "Second Edition" of John Maynard Keynes, The General Theory of Employment, Interest and Money, published in one single edition in 1936. The Second Edition is being edited by Geoffrey Harcourt and Peter Riach and will contain contributions by 30 or 40 authors. It is to be published by Routledge, it is hoped in 1996, the 60th birthday of the great book. Most of the contributions correspond to the chapters of the original book, and others are essays about the book or natural extensions of it. The chapter of the Second Edition I was asked to write might be regarded as a revision of Keynes's Chapter 18 "The General Theory of Employment Restated", but it is meant to be more inclusive and may appear as a preface or conclusion to the Second Edition.

Each of the proposed revised chapters of The General Theory is meant to be what the 1994 author thinks Keynes would have written if he had had the time and health to prepare a revised edition by 1946. This revision, written as if by Keynes some fifty years ago, is Part I of a Second Edition chapter. In part II the modern author gives his or her own view of the state of the topic in the 1990's. Those are the functions of Parts I and II of my paper.

It is a daunting task to take on the role of Keynes. It's presumptuous too. I know I can't write, either in content or style, as Keynes would have done. I have not tried to be a close scholar of the Keynes papers, inferring from them what his own second edition in the 1940s would have said. Although I have stuck close to the essential themes of 1936, as I understand them, I am sure that much of what I have written is colored by what I would like a second edition prepared by Keynes himself to have said. In Part II I discuss changes in Keynesian theory suggested by events in the world and in professional macroeconomics since World War II, and I argue that Keynes still has the better of the big debate.

CHAPTER ? PART I

AN OVERVIEW OF THE GENERAL THEORY

Behavior of an economic system without government intervention.

JAMES TOBIN as J.M. KEYNES

I take advantage of this second edition of The general theory of employment, interest and money to state once again the fundamental thesis of the book, and at the same time to mention some revisions resulting from my own second thoughts and from criticisms and discussions since the original publication.

The central questions before economists of our generation are, 'Does our market capitalist economy, left to itself, without government intervention, utilize fully its labor force and other productive resources? Does it systematically return, reasonably swiftly, to a full employment state whenever displaced from it?' The faith of classical economics assures us 'yes.' The answer of the general theory is 'no.'

The intellectual bankruptcy of classical economics is plain to see: for the chronic mass unemployment of the last two decades, it offers neither diagnosis nor prescription. The purpose of my book is to fill the void. Our first task is to understand the sources of the systemic failures that plague us. With understanding we can design remedies. Fortunately, it appears that the remedies lie in governmental fiscal and monetary policies and leave intact the basic political, economic, and social institutions of democracy and capitalism.

What is general about the 'general' theory of employment?

In classical theory, employment is determined jointly with the real wage, by the condition that the demand for and supply of labor hours are equal.

Demand for labor, at a given time and in given circumstances, depends on the marginal product of labor, which varies inversely with the volume of employment. Supply of labor depends on the marginal disutility of work -- the marginal utility of workers' alternative uses of time -- in terms of wage-goods. According to the market-clearing paradigm Marshall and his classical forebears taught us, we seek the consequences of various changes in circumstances and policies by examining their effects on those demand and supply curves and their intersection.

The general theory, quite simply, allows outcomes in which markets are not cleared, in which supplies and demands are not equal and may remain unequal for months and years at a time. In particular, for the economy as a whole, excess supply of labor is the usual condition. It takes the form of involuntary unemployment. As defined in chapter 2, involuntary unemployment is distinguished from two other types of unemployment, frictional and voluntary, and from unemployment resulting from monopolistic or regulatory interventions that set the real wage too high.

Excess supply of any traded commodity -- consumption goods, investment goods, intermediate goods, factors of production -- is the difference between supply and demand at the prevailing price of the commodity, the price on which supply and demand depend. Involuntary unemployment is the excess supply of labor at prevailing real wages. This is a simpler and more straightforward definition than I originally gave in chapter 2. The original definition also had the defect of suggesting that a reduction in the real wage would invariably be necessary to induce employers to offer more jobs. As I explain below, I now see that this need not be the case.

With given capital stock and technology, employment and output are closely linked. Labor is the principal variable factor in a closed economy, either directly or via intermediate goods. Observation suggests

that excess capacity of plant and equipment moves pari passu with unemployment of labor. Existing capital, with the particular technologies embodied in it, is often not substitutable for labor inputs. Even when it is, user costs (chapter 6 Appendix) may make substitution uneconomic.

In any event, involuntary unemployment of labor implies that national income is below its full employment capacity. The welfare of the society is unnaturally depressed. In my opinion, this market failure is easily the greatest flaw of capitalism.

Is involuntary unemployment an 'equilibrium'?

'Equilibrium' has several meanings. One is supply-equals-demand market-clearing. By this criterion, no situation of excess supply, specifically involuntary unemployment, is equilibrium. Only classical full employment is equilibrium. Semantics of this kind need not detain us.

A more useful concept of equilibrium is a position of rest — that is, a situation without any inherent systematic tendency to change. The general theory asserts that a multitude of outcomes with involuntary unemployment are conceivable positions of rest, no less so than the singular outcomes characterized by full employment and market-clearing. These equilibria do not, of course, exclude changes resulting from external factors — demographics, technology, government policies, individual tastes. The utility of economic analysis is precisely to reveal how those developments alter equilibria.

The general theory also assumes away some internal systematic sources of change. The equilibria described in its chapters do as a rule generate changes in stocks of capital and wealth, and these in turn affect subsequent equilibria. The theory focusses on short or medium runs, periods comparable to usual business cycles, short enough so that stock

changes are too small to alter the decisive propensities governing consumption, investment, and liquidity preference.

A skeptic may object that excess supply cannot be a position of rest in any market, because it is bound to trigger changes, if only in the prices of the traded commodities. In the labor market, the argument would be that competition for jobs among the involuntarily unemployed will cause the real wage to decline. This is more than a semantic question.

Chapter 2 argues that workers may not be able to reduce the real wage, even if they would like to. Markets set money prices, not real or relative prices. Labor markets set money wages, not real wages. Conceivably a situation of involuntary unemployment could be a position of rest in real variables, like output and employment, and in real prices, wages, and interest, even if not in nominal variables. That ought to be good enough for classical economists, because their theory aims to explain real variables independently of monetary 'veils.'

Aggregate demand as the constraint on output and employment

As I stressed in chapter 3, the principle of effective demand is the central idea of the general theory. In situations of involuntary unemployment and associated under-production, output and employment are constrained by aggregate demand for the products of labor. They are not constrained by the supply of willing workers or by the capacity of the economy to produce goods and services.

Note, to avoid misunderstanding, that 'demand' in this context does not refer to the schedule of the marginal product of labor. That schedule is the 'demand' curve for labor in the classical market-clearing analysis of the labor market. Abstracting from the effects of capital accumulation and technological progress, that schedule remains in place as shifts in

effective demand generate the fluctuations we know as business cycles — in employment, unemployment, national income, and capacity utilization.

When the economy is operating in this demand-constrained regime, Say's Law does not apply. Supply does not create its own demand. Advances in the economy's capacity to produce will not be realized in actual production unless effective demand increases equally, and there is no guarantee that it will. Indeed, we can say 'demand creates its own supply,' in the sense that businesses will be willing and able to produce more to satisfy new customers and that workers will gladly supply the needed additional labor. Increases in labor force and industrial capacity are neither necessary nor sufficient.

A full-employment market-cleared regime is quite different from a demand-constrained regime. Output and employment are supply-constrained. Additional effective demand by itself will not raise output; it will just generate price and wage inflation. In this regime, all the classical homilies apply. Thrift and industry are virtues, and the rules of efficient resource allocation come into their own. Alas, much harm is done by unthinking application of those principles in the wrong settings. The great philosopher Alfred North Whitehead warned us of the 'fallacy of misplaced concreteness,' wherein abstract generalizations and principles are applied in the wrong empirical circumstances.

Involuntary unemployment resulting from inadequate aggregate demand is mainly a malady of wealthy industrial capitalist economies, those of Britain, North America, and continental Europe. In these economies substantial proportions of the population work for wages in large hierarchically organized groups, employed at the will of profit-seeking companies. They are dependent for their families' livelihoods on those jobs. In less advanced lands most people are occupied in agriculture,

much of it subsistence farming or share-cropping, and others are self-employed craftsmen. Economic adversities generally are deficiencies of supply and do not involve unemployment. Despite its characteristic failures, industrialization implementing the miracles of modern science and engineering is the hope for conquering poverty throughout the world. The present industrial economies can contribute greatly to this development, most fruitfully if they learn to employ productively their own populations.

Is the wage always equal to the marginal product of labor?

In chapter 2 of the first edition I accepted as 'indefeasible' the first postulate of the classical theory of employment and wages, namely the schedule of declining marginal productivity of labor. I accepted the implication that employment and real wages are uniquely and negatively correlated, not only in classical equilibrium but also in the movements of output, employment, and wages that occur as effective demand fluctuates relative to full employment output.

In describing the classical theory of employment, I identified the marginal product schedule as one of the two blades of the Marshallian scissors. To keep my deviations from orthodox theory to the essential minimum, I accepted this blade while rejecting the other, the classical labor supply schedule. Adherence to the classical labor 'demand' curve in the first edition was natural on the assumption that competition among employing firms would keep product prices equal to marginal cost.

I leaned too far to the classical side, as I learned shortly after the book was published, thanks to the empirical studies of Dunlop and Tarshis. If the first classical postulate were correct, then we would expect real wages — measured in terms of labor's product rather than

workers' consumption -- to move counter-cyclically. However, Dunlop and Tarshis found that product-wages were, if anything, pro-cyclical.

This is not a fatal flaw in the general theory, quite the contrary. My essential propositions remain unscathed. All the theory requires is that there be excess supply in labor markets, whether employment-wage observations fall on the marginal product curve or below it, so long as they fall to the left of the classical supply schedule. If increases in aggregate demand can raise employment and output without diminishing real wages, so much the better! Employed workers as well as unemployed workers and capitalists will gain from higher economic activity. Nothing is lost by recognizing that imperfect competition and sluggish price adjustment may result in departures from marginal cost pricing, especially in short runs.

The principle of effective demand and the multiplier

The principle of effective demand is just common sense. Workers who are unable to sell as much labor as they would like at prevailing prices and wages have to restrict their demands for consumption goods. They do not buy as much as they would at those prices if they were not involuntarily unemployed. They cannot be confident of finding jobs in future, and even if they could be, they frequently do not have liquid assets and lines of credit enabling them to maintain their current spending. Therefore the budget constraint on their expenditures is tighter, generally much tighter, than it would be if they were employed to the extent they would like to be at existing wages, or at the (possibly somewhat different) wages that would prevail at full employment.

Similar constraints, with similar consequences, apply to capitalists who are compelled by demand shortages to operate below capacity the lands

and durable producers' goods they own.

These constraints on incomes and spending spread to sellers of consumption goods and, in turn, constrict their purchases in other markets. Demand-constrained firms limit their hiring of labor and their purchases of other inputs. The theory of the multiplier shows how an initial change in aggregate demand is magnified by chains of secondary effects on incomes and spendings throughout the economy. In demand-constrained regimes, any autonomous or unexpected increase in demand — for example, more investment spending by a business firm — has positive multiplier effects. Conversely, any decrease in demand — for example, an onset of thriftiness bringing a cut in consumption spending — tends to depress the whole economy.

The trained instincts of classical economists are to reject out of hand the idea of a reduction in economy-wide demand, as distinct from cuts in demands for particular commodities. Lost demand for shoes must pop up as greater demand for hats. Lost demand for consumption in total must pop up as new demand for capital investment. Or, as classical economists would put it, people may consume less today in order to consume more in future, and the investment spending that replaces current consumption is the preparation for that future bulge in consumption.

At the beginning of chapter 16 of the first edition, I pointed out the fallacy in this view. To strengthen the connection of my argument with the principle of effective demand, I have now moved these remarks to chapter 3. Futures markets are rare, and contingent futures markets even rarer. Decisions not to spend on goods and services now are not in fact coupled with any definite orders for future or contingent deliveries of goods and services. Typically they result in accumulations of financial assets, which can be spent on anything at any future time. The negative

multiplier effects or lower current spending propensities are not offset by specific and firm expectations of higher future demands.

We know that some wage-earners, some households, some businesses are constrained not just by their wealth, including the present value of their current and future net wage incomes, but also by their liquid wealth, the part of their wealth they can at once turn into spendable cash. Binding liquidity constraints are an important but extreme form of effective demand constraint. Some wage-earners, no doubt, depend on each week's wages to buy the goods for that week's consumption.

However, the effective demand principle does not depend on such short horizons, i.e. such short periods within which expenditures are limited by cash receipts. Expectations of future spells of unemployment, enhanced by present and recent experience, can limit the current consumption spending even of long-horizon households. Liquidity constraints and prospective effective demand constraints also limit business investments. Common observation suggests that households and businesses, and governments too, differ widely in the length of the future period over which expected resources are regarded as potentially available for spending today. These horizons, moreover, doubtless change over time with circumstances and behavior.

Do interest rate adjustments guarantee full employment?

For classical economists interest rates are the equilibrators of capital markets. They equate saving and investment. Their adjustment is crucial to the Say's Law story, which dismisses as vulgar superficiality the notion that an economy could suffer from shortfalls in demand for commodities in aggregate. After all, classical doctrine is that the real equilibrium of the economy is independent of nominal prices, and is

essentially the same as if it were the outcome of moneyless frictionless multilateral barter.

Can interest rates do the job? Money proper bears zero interest, and other interest rates cannot fall below that. Indeed the rates that are relevant for investment decisions cannot fall as far. Rates on long-term securities have to compensate lenders for risks of capital losses and satisfy their conventional views of what is adequate compensation. Those rates can often exceed what entrepreneurs, given their expectations of returns on capital, can afford to pay.

Conceivably expectations of inflation could make borrowers willing to borrow at rates consistent with the zero floor on the yield of money. But in depressed economic conditions expectations of deflation are more likely. They make money and other liquid assets preferable to real capital, and thus discourage potential borrowers and investors.

Even in normal times, when rates of interest compatible with investment prospects are not so low, interest rates do not automatically maintain full employment in the face of shortfalls of effective demand. By 'automatically', I mean without deliberate policy by the monetary authority to increase the quantity of money. The reason is that a reduction in the rate of interest will generally raise the demand for money, from which fact it follows that the rate cannot fall unless the supply of money is increased. Of course, the interest rate can fall along with a decline in economic activity and in the volume of transactions supported by the money stock. But that scenario does not restore or maintain full employment.

The issue is whether full employment will prevail in the face of a negative demand shock if the central bank 'does nothing.' I have taken a constant money supply as doing nothing, and argued that it will not

suffice. Things are still worse if we recognize that if the central bank and Treasury are passive the money stock itself will decline in periods of slack economic activity. This will surely be true if money stock is interpreted to include bank deposits. Even if the stock of currency and bank reserves is held constant, increased public preference for currency over deposits and increased liquidity preferences of banks themselves will hold down their stocks of money and credit.

Money and other liquid assets

At this point I should mention a confusion about the meaning of 'money' in my first edition, a confusion that can lead to misunderstanding even though it does not affect the central message of the book. The needed corrections have been made in the texts of chapters 12-17.

Sometimes I seemed to refer to 'cash' in the narrow senses of currency and coin and of bank deposits actually used as transactions media. Elsewhere I obviously had in mind a broader category, including close substitutes for cash, other 'liquid' assets denominated in the monetary unit of account, safe against defaults and losses of market value, readily convertible into cash — time deposits, savings accounts, short-term Treasury bills and bankers' acceptances, etc.

The narrow category is relevant for my transactions motive, the broader category for my precautionary and speculative motives. I am grateful to Mrs. Robinson and Mr. Kaldor for straightening out this matter, and showing how the interest sensitivity of demand for money applies to both concepts. The interest forgone by holding cash rather than other liquid assets is the rate on those instruments. The interest forgone by holding liquid assets in general is the 'liquidity preference' premium of rates on longer-maturity bonds and illiquid loans above rates

on liquid assets.

Do flexible money wages and prices guarantee full employment?

Let's review the logic of the controversy between the general theory and classical economics. I do not interpret Professor Pigou and other orthodox theorists as saying that advanced capitalist economies can never for a moment suffer from shortfalls of aggregate demand and attendant declines in employment and industrial activity. I do interpret them as saying that these economies possess powerful natural adjustment mechanisms that will return them to full employment equilibrium -- on their own, without the help of any government measures. Thanks to their faith in these adjustments, classical economists can assert that no under-employment situation is an equilibrium. Some of them, like Professor Pigou, might in special circumstances pragmatically welcome temporary government help, like public employment projects, to strengthen and speed the adjustments. Others, fearing adverse longer-run effects of government intrusions, would trust the natural recuperative processes to take their course.

We economists have all learned, and many of us teach, that the remedy for excess supply in any market is a reduction in price. If this is prevented by combinations in restraint of trade or by government regulations, then those impediments to competition should be removed. Applied to economy-wide unemployment, this doctrine places the blame on trade unions and governments, not on any failures of competitive markets. The obvious disproportion between this explanation and the mass unemployment of the last two decades demanded a new diagnosis, and a new prescription. That was and is the purpose of The general theory.

In chapter 2 I set forth three propositions: (1) Money wages remain

fairly stable in the face of fluctuations in unemployment because of the nature of labor markets, not because of monopolies or laws. (2) The stability of money wages is no obstacle to reductions of involuntary unemployment via increases in effective demand, even if those should involve reductions of real wages. (3) Downward flexibility of money wages would not reduce real wages and increase employment.

Why the focus on money wages? The classical theory of employment runs, of course, in terms of real wages. But in a monetary economy, offers of jobs and of work and bargains between employers and employees are expressed in terms of money. There is nothing artificial or irrational about the stability of money wages and their insensitivity to excess supply. Money wages are set or negotiated in thousands of decentralized markets. Employers and employees in each market are primarily motivated by their wage relative to wages elsewhere. In any one firm or industry or occupation, workers resist cuts in money wages which they regard as damaging their status relative to those of workers in other markets. At the same time, they would not resist a universal reduction in real wages that would leave relative positions unchanged, such as a general rise in prices of wage-goods would bring about. Attention to relative wages imparts considerable sluggishness to money-wage adjustments throughout the economy.

The third proposition says that the analogy to price adjustments in particular markets fails for the economy as a whole. Unlike workers in a small market, the national labor force cannot lower the national average real wage. If the competition of unemployed workers actually did reduce money wages, employers competing for sales would lower prices proportionately. The result would be that employment too would remain unchanged. All that would happen is an economy-wide proportionate

reduction of money wages and prices.

In chapter 19 I recognized that universal price reduction, were it brought about by the impersonal forces of markets, could bring about the same results as an increase in the quantity of money by the central bank. Accordingly, it could lower interest rates, induce additional investment, and increase effective demand, output, and employment. But as a practical matter why not accomplish this result with less social trauma by monetary policy? And as a theoretical matter, there remains the possibility that an increase in the real quantity of money, by either route, will not in fact lower the interest rates relevant to real demand for goods and services and labor, because they are already as low as they can get.

To protect orthodoxy from this breach in its defenses, Professor Pigou and others have advanced another argument, alleging a direct positive effect of a general reduction in money prices on effective real demand, even though interest rates are not reduced. The argument is that spending responds positively to wealth, and that the real wealth embodied in money-denominated assets is greater when money prices are lower.

A peculiarity of Professor Pigou's argument is that he gives it a long-run focus by setting it in a stationary state. One would expect that, given indefinite time to adapt, the whole structure of monetary assets and debts would have been scaled down in the same proportion as money prices and wages.

More a propos, it would seem, is a short-run focus, in which prices fall to levels lower than were anticipated when money-denominated securities were issued and debts contracted. A limitation of this argument, as Mr. Kalecki reminded Professor Pigou, is that debt burdens are increased at the same time, and for private contracts by the same amount. It is an interesting question whether taxpayers feel burdened by

government debt and feel increasingly so when deflation increases its real value. I am inclined to doubt that many people calculate in this manner. In any case, the increase in private net wealth associated with deflation must be small relative to national income. Moreover, since debtors' propensities to spend from wealth are likely to exceed those of creditors, the net change in spending could go either way. In chapter 19 I emphasized the negative effects of increasing debt burdens, and Professor Fisher has made a convincing case that debt burdens augmented by deflation exacerbated the great depression in the United States.

I also agree with Professor Fisher that, whatever may be the effects of lowering the level of money wages and prices, the process of moving to a lower level is counterproductive. Expectations of deflation are equivalent to an increase in interest rates.

For these reasons, I do not regard Professor Pigou's counterthrust as a refutation of the general theory on an abstract theoretical plane, a *fortiori* on the plane of practical policy. Indeed I remain of the opinion that a fairly stable money wage will result in less volatility both of output and employment and of prices.

Long-run issues and uncertainties

The general theory is not a theory of the stationary state or of long-run economic growth. Nevertheless it does have some implications for them. These arise from the effects of accumulation of wealth and capital on saving and investment. I anticipate that improvements in productivity due to capital accumulation and technological progress will steadily raise potential per capita incomes and consumption standards. If I am right about the psychology of consumption and saving, the propensity to save will steadily rise. Accumulation of capital, faster than employment and

output grow, will at the same time reduce the marginal efficiency of capital. The decline in capitalist incomes as returns on capital vanish is a consummation devoutly to be wished.

However, my theory suggests that these developments will make the maintenance of high employment more and more difficult. The problem will be to lower interest rates enough to induce investment sufficient to use the potentially large supplies of saving. Public investment and collective consumption may be necessary to prevent wasteful unemployment, and may be socially desirable as well.

I pointed out in chapter 18 that the under-employment equilibria described by the general theory appear to be quite stable, and I attributed their stability to the relative inflexibility of money wages. Drastic changes in the stock of money, as measured in prices or wage-units, generally do not occur. As a result, interest rates relevant to the inducement to invest are not volatile, either. Given these characteristics, the economy is vulnerable to shifts in long-run expectations and capital investment, the principal sources of economic fluctuations. My analysis of long-run developments suggests that downward inflexibility of interest rates can make involuntary unemployment an increasingly severe problem.

However, Mr. Harrod's ingenious dynamic theory reaches a more optimistic conclusion, evidently because he assumes that technological progress is the equivalent of growth in the labor force and keeps the marginal efficiency of capital from falling. He also assumes that the propensity to save remains constant in the face of growth in per capita income. Thus he is more optimistic than I am for the long run, whilst his theory apparently implies greater cyclical instability. On these questions we must await further analysis and additional experience.

CHAPTER 7: PART II

A 1994 perspective

By James Tobin

Reprise of the great macroeconomic debate

The central questions are the same as in 1936 and 1940, and so are the answers. In the meantime, the classical economics from which Keynes revolted has been reborn several times, as monetarism, new classical macroeconomics, and real business cycle theory. In one or more of these reincarnations, it is riding high among professional economists, financial and business leaders, central bankers, and other makers of macroeconomic policy. Classical ideas have almost regained the orthodox status they enjoyed before 1936.

The origins and rise of the classical counter-revolution can be laid in part to real-world events and disappointments. Just as the great depression of the 1930s created a receptive audience for Maynard Keynes, so the great stagflation of the 1970s fostered believers in Milton Friedman and Robert Lucas. The economics profession shared the disenchantments of the general public with government activities of all kinds, including Keynesian demand management.

Yet the counter-revolution reflected also a strong dialectic internal to the profession itself. It was a reaction against the so-called 'neoclassical synthesis' of the 1950s and early 1960s, which had made Keynesian macroeconomics an equal partner with neoclassical microeconomics in mainstream doctrine. Although the authors of the synthesis were much closer to the original general theory than the tradition that developed subsequently, they did modify what then seemed

standard Keynesian doctrine, in two main ways.

One was to recognize the importance of monetary policy, relieving fiscal policy of the whole burden of demand management. The addition of an independent instrument made it possible in principle to achieve macroeconomic goals without prejudicing social and political decisions on resource allocation and income distribution. The second point was related. It was to underline the importance of neoclassical welfare economics principles in making macroeconomic policy. The fact that output is demand-constrained means that society loses nothing by putting idle labor to work, and gains the product of its employment. As Keynes said, inviting people to dig up bottles filled with banknotes -- and to put others to work as they spend the banknotes -- is better than nothing. He preferred intrinsically useful projects. If -- and only if -- they are practically feasible and politically acceptable, they are the true opportunity costs of make-work expedients, just as they would be at full employment.

Nevertheless the marriage of Keynesian macro and neoclassical micro was always somewhat uncomfortable. Keynesian assertions of the massive market failures represented by persistent excesses of supply invited disbelief among teachers and students dazzled by the general-equilibrium paradigm. When Adam Smith's 'invisible hand', made rigorous by Arrow and Debreu, was applied to macroeconomics, Panglossian conclusions were inevitable. To many of the most powerful intellects in the profession in the last twenty-five years, that logic was more persuasive than realism.

Leading classical theorists today are more extreme and less pragmatic than their predecessors of Keynes's time. Professor Pigou and his contemporaries allowed demand-deficient departures from full employment equilibrium, while arguing that natural market mechanisms would in good

time rectify them. Their successors assume that there are no such departures, however temporary. Markets are always clearing. Prices are perfectly flexible, responding instantaneously to shocks in demand or supply. Observed paths of market outcomes track these fluctuations in supply-equals-demand equilibria.

For labor markets, the implication is that there is never involuntary unemployment (other than what results from wage regulations imposed by governments or unions). Employment is always full, but the rates of employment and unemployment at 'full employment' change continuously.

Today's classical economics is much more sophisticated — methodologically, theoretically, mathematically, econometrically — than its pre-Keynesian forebear. Technical advances in the profession have provided powerful ammunition for renewed fighting on the same old battleground. The classical counter-revolution offers powerful analytical tools and challenging puzzles to use them on. These are magnets for the best young minds in the profession, just as the innovations of the Keynesian revolution were in their day.

Evidence for an empirical verdict favoring Keynes

On the central empirical issues, explaining unemployment, excess capacity, and fluctuations in business activity and prescribing remedies for them, the classical economists of 1990 are no more successful than those of 1930. The moving-equilibrium model of real business cycle theory just doesn't fit the facts. In the policy arena, classical ideas have dominated European governments and central banks for fifteen or twenty years, and chronic double-digit unemployment rates are the result.

Fancy econometrics is not needed to mobilize evidence against the real business cycle theory view that observed fluctuations in output and

employment are movements in price-cleared equilibrium. Here are a number of regularities of U.S. business cycles which falsify that hypothesis.

1. Unemployment itself. If people are voluntarily choosing not to work at prevailing wages, why do they report themselves as unemployed, rather than as 'not in labor force'?

2. Behavior of real wages. Real business cycle theory attributes unemployment to voluntary intertemporal choice. Workers drop out when they perceive that real wages, the opportunity costs of leisure, are temporarily low. This might be an explanation of cyclical movements in employment if real wages were strongly pro-cyclical. But there is no such systematic regularity. Nor is there empirical evidence of sensitivity of labor supply to current and expected real wages.

3. Unemployment and vacancies. New classicals ask us to believe that the labor market is in equilibrium at 9 percent unemployment just as truly as it is at 5 percent. If so, there would be no reason to expect the balance between unemployment and job vacancies to differ. Both unemployment and vacancies would be more numerous in recessions. However, a strong negative association between unemployment and vacancy rates, as would be expected in Keynesian theory, is obvious in the U.S. and other market capitalist economies.

4. Quits and layoffs. If recessions and prosperities are both supply-equals-demand equilibria, there is no reason to expect the relative frequencies of voluntary quits of jobs and involuntary separations from jobs to vary over the business cycle. But of course there are regularly many more layoffs, relative to quits, when unemployment is high and vacancies are scarce. There are many more 'job losers' relative to 'job leavers' in recessions.

5. Excess capacity. Utilization of plant and equipment varies

cyclically, parallel to utilization of labor. Presumably machines do not choose leisure voluntarily.

6. Unfilled orders and delivery delays. These move pro-cyclically, again suggesting strongly that demand is much higher relative to potential supply in prosperities than in recessions.

7. Monetary effects on output. According to the classical 'money is a veil' principle, monetary events and policies should affect only nominal prices. Real outcomes should be independent of them. The evidence that this is not true is overwhelming.

The GENERAL Theory: equilibrium or disequilibrium?

What is general about the General Theory is that it covers situations in which certain markets are not cleared at existing prices. The failure of some markets to clear affects in turn the outcomes of other markets, including those, financial markets in particular, that do clear. The theory includes economy-wide market-clearing as a special case.

The essential message is that clearing of labor markets in aggregate by prices is infrequent and exceptional: the normal case is net excess supply of labor, — that is, involuntary unemployment in excess of job vacancies. In this sense Keynesian theory is definitely and definitionally not equilibrium theory.

Some general-equilibrium theorists have observed that the economy might well have two or more competitive market-clearing equilibria, some involving higher employment and social welfare than others. They suggest that Keynes meant, or should have meant, that the economy can get stuck in a sub-optimal equilibrium. They mean well but wholly misunderstand Keynes. None of their equilibria involve involuntary unemployment, and monetary phenomena play no role.

Does the general theory describe equilibrium in the sense of a position of rest? There are several possible Keynesian answers:

The first, asserted in Book I, is 'yes'. Given the parameters of the system -- propensity to consume, liquidity preference, quantity of money, marginal efficiency of capital schedule, inherited money wage, stocks of capital and wealth -- all variables, both real and nominal, are determined and will not change on their own.

The second, also set forth in book I, is a hypothetical modification of the first: Suppose, contrary to fact, that nominal wages and prices do move downward in response to excess supplies of labor and complementary inputs. Real variables will not move; the rate of involuntary unemployment will not change. Employment and output are determined by the propensity to consume and the inducement to invest, neither of which is affected by nominal variables. As students know or used to know, this argument follows from either or both of two conditions: liquidity trap and insensitivity of consumption and investment to interest rates.

Whether or not this qualifies as equilibrium, it turns out in book V to be a special case, embarrassing to Pigou and other classicals to be sure but also embarrassing to Keynes. For values of liquidity and investment parameters he regarded as normal, lower money wages and prices would in principle be associated with higher effective demand and employment.

The third answer is not explicit in the book. There are inklings of it in chapter 19 and in other writings of Keynes. But it is a post hoc alternative interpretation, and not one congenial to Keynes's trained methodological instincts. This would be to recognize the classical full-employment market-cleared outcome as the equilibrium, and the deviations from it as described and analyzed in The General Theory as disequilibria.

This third approach involves explicit dynamic analysis, exploring the stability or instability of the classical equilibrium, and the reliability and speed of the economy's unassisted natural recuperative mechanisms. These are, after all, the central issues of the debate, then and now. In chapter 19 Keynes's argument that the very process of deflation of money wages and prices would tend to increase rather than decrease unemployment is a dynamic argument against the stability of the classical equilibrium. So also is Keynes's 1939 dismissal of the Pigou effect, which he, like Irving Fisher, thought would be no match for the negative demand effects of deflation due to unanticipated debt burdens and bankruptcies.

In chapter 19 common sense arguments like these are understated, because they do not fit into the traditional methods of comparative statics to which Keynes was committed by training and habit. Playing the game on the static equilibrium field probably lost the general theory acceptance among economists, too many of whom uncritically swallowed the Pigou effect as a decisive logical refutation.

In my opinion, a dynamic disequilibrium interpretation serves best the essential purposes of the general theory. Imagine a series of short periods, perhaps as long as two years or as short as two quarters. Keynes refers to periods of time during which we can 'take as given the existing skill and quantities of available labour, the existing quality and quantity of available equipment' and other slowly changing or exogenous circumstances and parameters. These include psychological factors underlying consumption, investment, and liquidity preference; the money wage; and the quantity of money. The equations of the theory, implicit in the book or explicit in Hicks's IS/LM exposition, then determine national income, employment, interest rate, and related macro variables.

The outcomes of one period are data for the next. Saving increases wealth, investment augments capital, employment and unemployment affect money wages and prices. Such systematic changes will alter propensities to consume and invest. In addition, external circumstances -- attitudes, expectations, central bank policies -- may change arbitrarily. The process goes on.

This is the structure of most empirical econometric models, used by businesses and governments for forecasting and for policy analysis. Those models are naturally Keynesian, elaborate IS/LM models of aggregate demand plus equations relating money wages and prices to unemployment and capacity utilization.

The important issue, the one between Keynes and Pigou, is whether unemployment in any period triggers a process that raises employment next period and eventually leads to full employment. That is a question of the stability of a stationary equilibrium or of a particular dynamic path, for example a steady balanced growth path.

Keynes was aware that his theory of the determination of aggregate demand did not really lead to a position-of-rest equilibrium, because it implied saving and investment. The resulting accumulations of wealth and capital necessarily alter subsequent determinants of aggregate demand. The only true equilibrium in this sense is the stationary state, or its equivalent in the steady state of a growth model. Keynes was initially suspicious of, but ultimately intrigued by, Harrod's dynamics, in which deficient demand and unemployment would arise naturally as disequilibria, departures from the full-employment steady-state growth path.

'Disequilibrium' analysis in this sense is to be distinguished from another meaning of the word, namely to refer to the existence of excess supplies and demands. In the 1970s a school of self-styled

'disequilibrium' theorists applied the tools of static general equilibrium theory to the determination of quantities when prices are arbitrarily fixed. The equilibrium to which their models were disequilibria was that of price-cleared competitive markets. These investigators were concerned with the interdependencies of the excess supplies and demands among markets, assuming for example that actual purchases and sales would always be the smaller of supply and demand. They were, in short, extending Keynes's principle of effective demand to a multiple-market setting.

This 'disequilibrium theory' could be regarded as a multi-commodity generalization of the 'fixprice' method (J.R. Hicks's term) of macroeconomic analysis. Although some of the authors thought they were giving the general theory a formal logical structure it previously lacked, they added little macroeconomic content to Keynesian multiplier theory.

The role of imperfect flexibility of money wages and prices
Keynes's general theory is nowadays typically described in textbooks and classrooms as crucially dependent on an arbitrary and unexplained assumption, that money wages or product prices or both are rigid. 'Fixprice' expositions of multipliers and IS/LM models invite this caricature. Since rigidity is contrary to both theory and observation, the easy next step is to dismiss Keynesian theory in favor of its 'flexprice' competitors.

This misrepresentation is usually accompanied by another one, namely that the sources of Keynesian difficulties are nominal shocks, to the stock or velocity of money, which are converted into real demand shocks only by rigidities of nominal wages and prices. In fact, the general

theory postulates real shocks to effective demand, much more difficult to absorb by flexibility of nominal wages and prices than nominal shocks.

Book V makes it clear enough that Keynes was not assuming wage or price rigidities. He believed wages and prices were flexible, but not perfectly so. Imagine a spectrum of flexibility from perfect flexibility — instantaneous jumps in prices sufficient to maintain continuous market-clearing — to perfect rigidity — nominal wages and/or prices wholly unresponsive to excess supplies and demands. The general theory is in the middle of the spectrum, not at either extreme. So is the real world. New classical macroeconomics is at the perfect-flexibility extreme. The real world is not.

This point is crucial to the basic debate about the efficacy of downward money wage and price flexibility in maintaining or restoring full employment. Perfect flexibility is the only point on the spectrum that guarantees market-clearing, almost tautologically. Keynes's principle of effective demand and Keynes's multipliers apply everywhere else.

Keynesian propositions hold not just at the rigidity extreme but for imperfect flexibility as well. Once excess-supply-reducing price adjustments are acknowledged to take real time, the destabilizing effects of the process — falling prices rather than fallen prices — become important. In the context of the great macroeconomic debate, expectations of declining money wages and prices are bad for aggregate real demand. They raise real interest rates. In comparison, the real balance effect will be at best weak and at worst wrong in sign. The only hope for stability, in the absence of active government policy and the expectation of it, is the so-called 'Keynes effect' of chapter 19 — lower prices with given nominal money stock lead to lower interest rates.

Necessary and sufficient conditions for the stability of the classical full employment equilibrium via real-time price adjustments can be shown formally. Instability is a distinct possibility. Moreover, given the nonlinearities of the relevant equations, the system may be stable in the neighborhood of equilibrium but unstable to large displacements. These possible instabilities are superimposed on other well-known dynamics, related to quantity expectations, sales, production, and stocks. (Tobin, 1975).

The above argument concerns the possible instability of the classical full-employment equilibrium, and the time required for adjustment even if the process is stable. A still worse possibility is that no market-clearing equilibrium exists, general-equilibrium proofs to the contrary failing because markets are incomplete. The most likely scenario would be that aggregate demand falls short of potential output — saving exceeds investment — at all positive interest rates. Equilibrium would require a negative interest rate, inconceivable if inflation is non-positive. That problem could be remedied in theory by a discrete fall in nominal prices accompanied by expectations of subsequent inflation. (Keynes himself did not assert that the classical market-clearing equilibrium does not exist, only that it is just one of many positions of rest.)

Expectations, rational and Keynesian

Another criterion of equilibrium is the fulfillment of the expectations that govern economic behavior, or to put the same point the other way round the formation of expectations that will be realized. Theorists have long built this condition into their models as a necessary characteristic of stationary states or steady-growth paths.

Modern rational expectations theory stresses this as a necessary

property of credible models, even for non-stationary processes. Of course, Keynes's own approach to expectations was radically different. For one thing, he stressed the diversity of expectations and of estimates of probabilities among economic agents. He would not attribute these differences just to 'asymmetries of information,' because he thought that there is really no possible objective 'information' about the factors that determine investment payoffs in the distant future. The uncertainties are beyond the grasp of actuarial calculus. In their ignorance people act on simple extrapolations, on social conventions, on hunches and emotions. Unpredictable changes in the psychologies of wealth-owners, entrepreneurs, and investors are the main sources of fluctuations in aggregate demand, employment, and output.

Rational expectations are usually invoked in competitive market-clearing models, where the expectations involved are of prices, the decisive data for individual agents' demands and supplies. In the general theory, quantities — incomes, sales, jobs — are, independently of wages and prices, important determinants of the behavior of businesses and households. For example, if people expect with good reason that recessions in aggregate demand will be reversed, their confidence will strengthen and speed recovery. Expectations of countercyclical demand management could be a major source of stability. But if complacent central banks and governments do not act to overcome recession or stagnation, loss of confidence could turn recession into prolonged depression. This is a plausible interpretation of 1930-31 in the United States, and of the period since 1980 in Europe.

In the last fifty years, theorists have boldly extended the neoclassical domain into remote futures and contingent states of nature. Agents' utility functions, production sets, expectations and probability

estimates then determine lifetime and intergenerational consumption and investment plans. Formal general equilibrium theory, utility and all that, is stretched beyond credibility. New classical economists assert that fluctuations of economic activity that Keynesians regard as pathological are really the playing-out of rational individual and social intertemporal programs. Keynes would not be surprised that real business cycle theorists are not able to explain the obvious facts of cycles.

The 'Beveridge curve' and the criterion of full employment

This second edition's revision of the definition of involuntary unemployment is a welcome simplification. The hypothetical test in the 1936 definition had always been a stumbling block. Moreover, the new definition is consistent with the measurement of unemployment in sample surveys, like the monthly population surveys of the U.S. census, which classify persons as unemployed if they are not working and have been seeking jobs.

Defining involuntary unemployment as excess supply at prevailing wages and prices makes it clear that it refers to jobless persons who are willing to work at the wages employed workers of comparable qualifications are receiving. Critics who say that skilled machinists are not involuntarily unemployed if they turn down dish-washing jobs miss the point.

A measure of excess supply symmetrical to unemployment is unfilled job vacancies. Unemployment and vacancies generally exist simultaneously. Beveridge's definition of full employment for the economy as a whole makes conceptual sense: a situation in which unemployment does not exceed vacancies. In chapter 2 Keynes acknowledges frictional unemployment but does not discuss it. Following Beveridge, unemployment matched by

vacancies can be considered frictional -- or, if chronic, structural.

A 'Beveridge curve' plots vacancies against unemployment, both as percentages of labor force. In this space, points to the left of the 45-degree ray meet Beveridge's criterion of full employment. The curve is generally downward-sloping, convex to the origin. Its point of intersection with the 45-degree ray defines full employment in the sense that the indicated unemployment is all frictional/structural. Any higher unemployment rate includes some non-frictional involuntary unemployment, Keynesian in the sense it is removable by expansion of aggregate effective demand for goods and services.

FIGURE 1, BEVERIDGE CURVE, GOES ABOUT HERE

Movements along a given Beveridge curve are generated by variations of aggregate demand, northwest if positive, southeast if negative. Shifts of the Beveridge curve represent structural changes in labor markets. Outward shifts are adverse, increasing frictional/structural unemployment at the expense of unemployment remediable by Keynesian medicine.

Unfortunately it is impossible to make commensurable measurements of unemployment and job vacancies. At unemployment rates that appear to be the minima consistent with stable inflation, measured vacancies are far fewer than measured unemployment. Empirical Beveridge curves can be drawn anyway, but the practical locus of zero excess supply lies below the 45-degree ray. The apparatus remains a useful framework in the frequent debates whether observed increases in unemployment are reversible by demand expansion or are structural.

Both vacancies and unemployment can logically be determinants of money wage increases or decreases, vacancies because they motivate employers to raise wage offers, unemployment because it motivates workers to accept lower offers. In empirical regressions, both effects are significant and

important. The Phillips curve and the natural rate of unemployment are altered when the Beveridge curve shifts.

Inflation

The General Theory was written during the great depression. An economics student in 1996, encountering the book for the first time, will be surprised to find so little attention to inflation. But after all the price pathology of the times was deflation. The same reader, accustomed to contemporary worries about how to induce people to hold money and promises to pay money in the abundant quantities in which they are issued, might also be baffled to read in chapter 17 that the basic economic difficulty is the public's voracious appetite for money and liquid near-moneys, combined with their inelasticity of supply. In that chapter those apparently riskless monetary assets are tough competition for real durable goods, given all the uncertainties of their returns.

The general theory takes for granted that, whatever happens to money wages and prices in short runs, people confidently expect something close to long-run price stability. They make wage bargains in the monetary unit of account, a fact that Keynes stresses in arguing that an economy's workers do not and perhaps cannot set real wages. Clearly, the situation would be quite different if money wages were systematically indexed to the prices of the goods workers produce and consume. Likewise, Keynes worries very little about the Fisherian distinction of real and nominal interest rates, except in the context of deflation.

Beginning in the 1960s a principal battleground of macroeconomic debate has been the relation between unemployment rates and inflation. The formation and consequences of inflationary expectations have played a major role both in analysis both of labor markets and of markets for

money and other financial assets. A third edition of The General Theory would have to remedy these omissions.

In a Keynesian demand-constrained regime, output and employment will increase in response to additional real demand, whether resulting from shocks to private consumption and investment or from deliberate fiscal or monetary policies. Keynes postulated a sharp boundary, full employment, between this regime and the supply-constrained regime. Inflation is the consequence of demand expansion beyond the productive capacity of the economy.

'Full employment' is thus somewhat similar conceptually to the 'natural rate of unemployment.' Of course, it is hard to tell where the economy stands at any moment relative to full employment, or relative to the more pragmatic 'NAIRU', which can be taken not as a thorough economy-wide market-clearing equilibrium but as a balance between excess-demand and excess-supply markets. These concepts are in practice zones rather than points.

Keynes envisaged with equanimity possible wage and price increases while employment is less than full. He was not thinking literally of a reverse L-shaped relation between price level and aggregate output. He acknowledged in chapter 21 that money wages and prices could rise as sectoral bottlenecks and labor shortages are encountered. Workers' resistance to cuts in money wages, even when they will accept cuts in real wages due to increases in prices of wage-goods, imparts in Keynes's view some inflationary bias to the economy. It is easier to make those microeconomic reallocations inevitable in a dynamic economy if the trend of money wages, perhaps also prices, is positive.

In the general theory, evidently, money wages and prices are inherited from the past, possibly changed in the current period, and bequeathed to

the future. The story is not so different from a Phillips curve. At high rates of utilization short of full employment, money wages might increase repeatedly, period after period, even when output is still demand-constrained. The price path would depend also on the trend of productivity. For Keynes, this scenario is not 'true inflation,' the explosive spiral associated with excess aggregate demand.

The main thing many economists remember about The General Theory is the skepticism expressed in chapter 2 on the downward flexibility of money wages even when labor is in large excess supply. It seems irrational money illusion, the more so because Keynes asserts that the same workers would accept cuts in real wages resulting from increases in the prices of wage-goods. But the rationale Keynes offers for this apparent inconsistency is unexceptionable: Workers are mainly worried about their wages relative to those of other groups. In a decentralized system of wage-setting, they bargain locally, and for money wages, not real wages. Each group of workers fears that a cut in money wages will turn out to be a cut in relative wages. In contrast, a rise in the cost of living, hitting all workers impartially, is acceptable.

This argument leaves unexplained how the 'inside' workers, those employed, can keep their money wages up if unemployed 'outsiders' are willing to take their places for less. Keynes was well aware of the empirical fact that the availability of cheaper workers at the factory gate rarely lowers wages. It takes acute financial distress on the employers' side to reduce wages. But, having chosen to challenge classical theory on its own ground, pure competition throughout the economy, Keynes was not in a good position to appeal to imperfectly competitive realities. Even so, his discussions of labor markets sound more like collective bargaining than atomistic competition. Anyway

Keynesians today can invoke recent models that attribute the powers of insiders to costs of turnover and of demoralization.

Those powers are not absolute. Deep and prolonged recessions, which imperil the solvency of employer firms, endanger the jobs, seniority, and fringe benefits of insiders. Barriers to downward flexibility of money wages melt. The period 1981-83 in the United States is a recent example.

Downward flexibility at unemployment rates high enough to break established wage norms is the counterpart of upward flexibility at full employment. The upshot is a Phillips curve shaped like an elongated horizontal S. Between the two extremes of flexibility there is a long nearly horizontal range, in which money wages are fairly insensitive to current unemployment rates. This intermediate range is where most economies usually reside. (Tobin 1955)

Nothing in The General Theory or other writings of its author says that output can always be increased by events or policies that expand effective demand or by tolerating higher and higher inflation. Keynesian macroeconomic policy does not consist in riding recklessly up the short-run Phillips curve, heedless of the limitations of labor supply and productive capacity. Keynesians know the distinction between demand-constrained and supply-constrained regimes. They know that the medicines the doctor orders are, or should be, different in the two regimes. Ignoring such distinctions is the fallacy of the new classicals, who say that, because an overdose of demand stimulus would harm a well patient, none of the medicine should be given a sick patient either. Classical faith that demand-deficient economies will recover on their own failed theoretical and empirical challenge in Keynes's day. It fails now again, more than half a century later.

NOTES TO FIGURES

Figure 1a. Beveridge Curves in Theory

The arrows along curve A show the path of short-run cyclical recovery, in response to increasing effective demand relative to potential real national product. Cyclical recessions follow the same curve in reverse. Inflation pressures would accentuate as the economy moves up a given Beveridge curve, like A, and abate as it moves down.

The 45-degree $V=U$ line is the Beveridge criterion of full employment. Points above that line meet the criterion.

Shift of the whole curve to B would be a favorable change in the efficiency of labor markets, reducing frictional or structural unemployment. Shift to C would be an adverse structural change.

Figure 1b. Empirical Beveridge Curves: United States 1956-94.

Here the Unemployment Rate refers to civilian workers, as reported by the U.S. Bureau of Labor Statistics. The 1994 figure is the new series, averaged over the first nine months. The proxy for vacancies is the Conference Board index (1985=100) of help-wanted advertising in newspapers, normalized by dividing it by the B.L.S. series for civilian employment (1985=1.0). The employment series is also new in 1994 and averaged over only nine months. For this Normalized Help Wanted Index I am indebted to Professor James Medoff of Harvard University.

The two variables in Figure 1b are not commensurate; therefore it is not possible to draw a ray corresponding to the $V=U$ 45-degree line of Figure 1a.

In Figure 1b there seem to be three clusters: I, 1957-1971; II, 1975-1986; III, 1989-1994, plus some transitional observations in years between the clusters. Within each cluster, the points have been connected

sequentially, and these paths look like Beveridge curves. The shift from I to II was quite adverse, another indicator of the stagflation of the 1970s and its aftermath. The shift from II to III looks favorable, almost a return to I. It's too early to tell. But it suggests a decrease in the full employment rate of unemployment and a favorable shift in the Phillips curve.

Figure 1a
Beveridge Curves in Theory

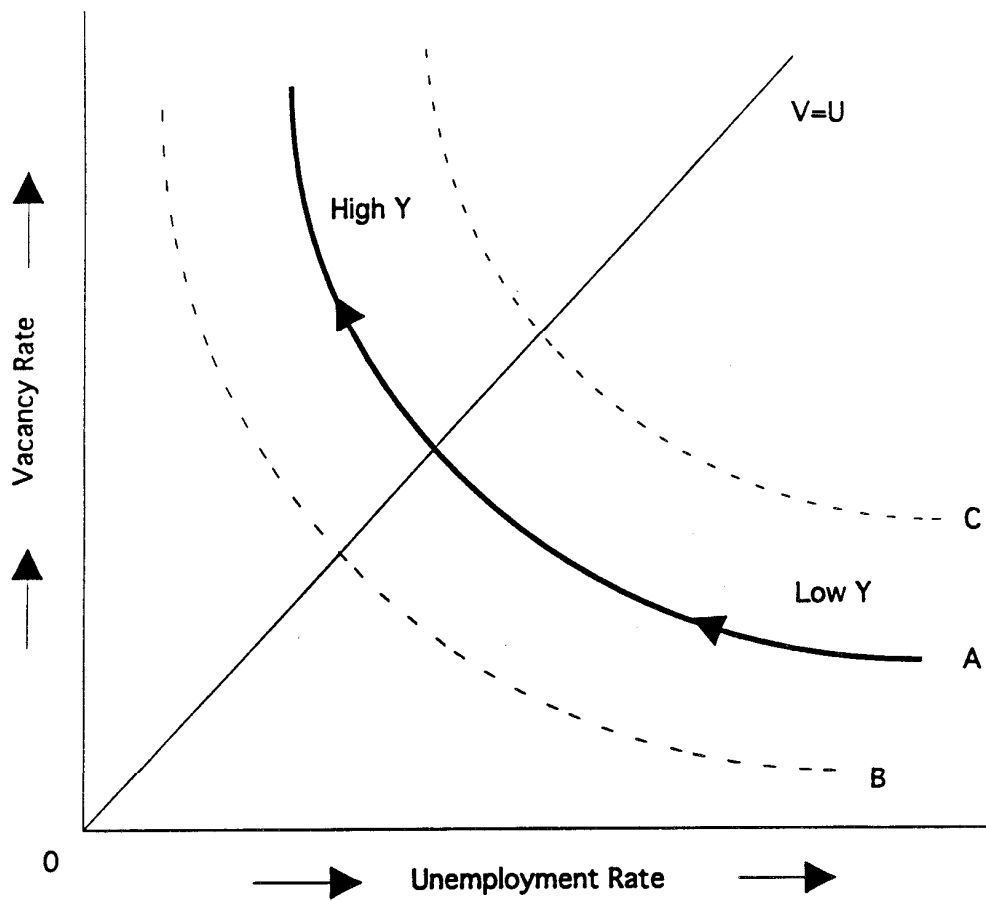
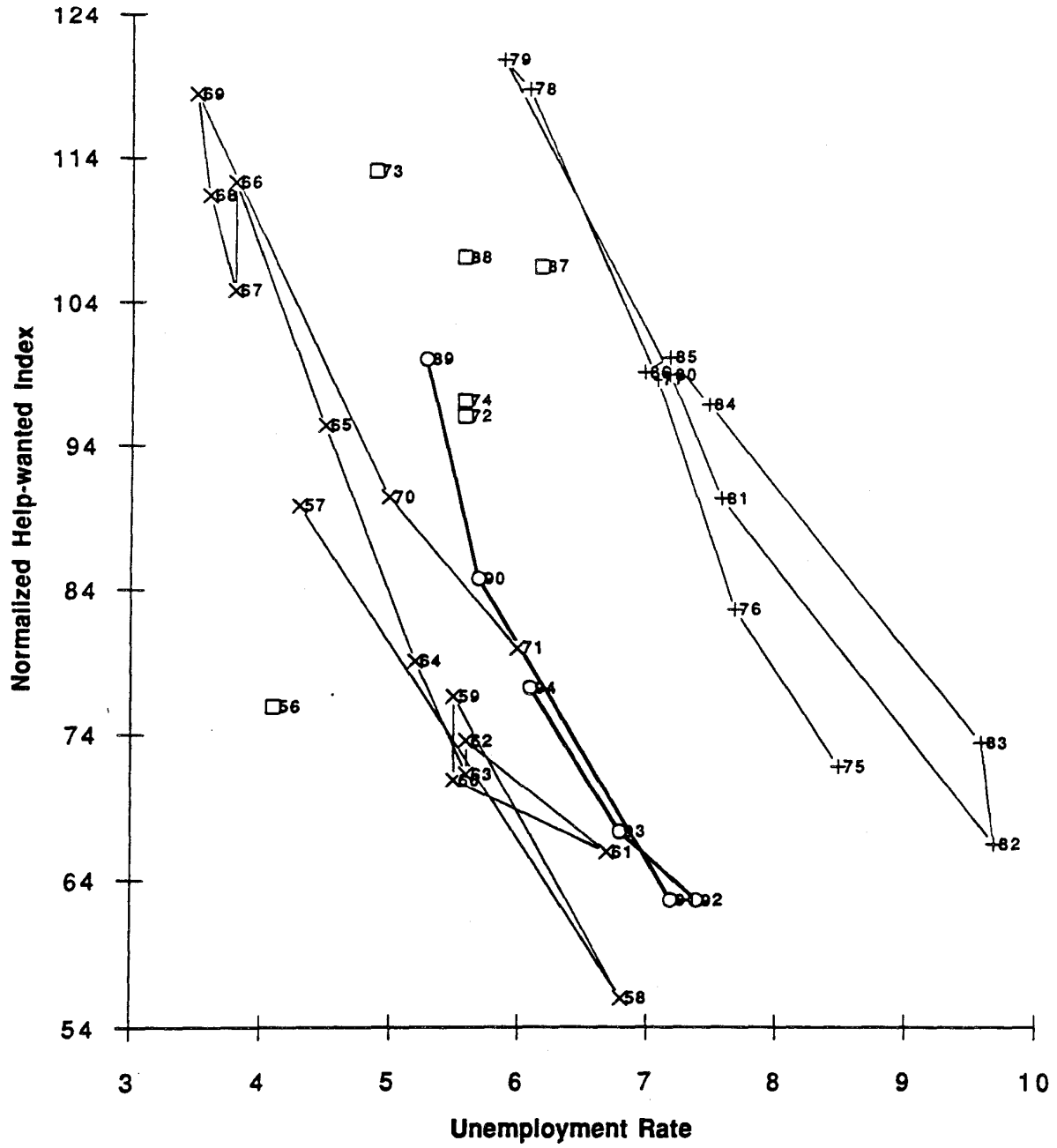


Figure 1b
 Empirical Beveridge Curves: United States 1956-94



CH ? AN OVERVIEW OF THE GENERAL THEORY

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