Political Economy, Public Policy and Technology

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ABSTRACT

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The declining state of industrialized economies since the early 1970s has produced a shift in attitudes towards macroeconomic policy, and indeed public policy in this field has changed. Government intervention in the economy is no longer seen as being able to promote economic growth, and is instead viewed as inhibiting prosperity. The revival of classical economics in government and academia is interpreted as constituting a rejection of Keynesianism, which is a philosophy that promotes government management of the economy in order to achieve economic, social and political goals. Keynesianism has also been criticized by Marxists, who argue that it simply keeps capitalism alive, and hence delays the reform of the political economy. Contemporary Marxist critiques of political economy, Keynesianism and social democracy are reviewed, and an analysis of the economic, social and political thoughts of John Maynard Keynes is provided. It is suggested that the rejection of Keynesianism is inappropriate, as it has not been properly understood nor applied by economists and policy-makers. Current attempts to improve upon the original theories of John Maynard Keynes, however, must take into account the important role that science and technology has played, and continues to play, in the long-term evolution of capitalism.

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Chapter I

INTRODUCTION: ECONOMIC CRISIS AND POLICY RESPONSE

The current decade has been a turbulent and often troubled decade for Canada, as citizens have had to deal with numerous economic and political challenges that have threatened their traditionally stable (and often staid) existence. Politically the decade began with the return to power of Pierre Trudeau and the Liberal Party, on a very nationalistic, centralist and interventionist platform. Only a few months later, the province of Quebec held its referendum on sovereignty-association, which in many respects challenged much of the core of Canadian sentiment, as well as the Liberal platform. The decline of the pro-sovereignty forces in Quebec, along with the flurry of constitutional activities, which resulted in the patriation of the Canadian Constitution, was ultimately followed by the rejection not only of the Liberals as a governing party, but of their political and economic styles as well. Confrontation and intervention were no longer desired political themes and means; harmony, national reconciliation and consultation, the new themes of the Progressive Conservative Party, were now the means to a better and more prosperous future. Their crown jewel, the Meech Lake Accord on Constitutional Reform, has provoked a highly-charged debate on the direction of constitutional activities in Canada, as the accord is viewed by many as being highly decentralist in nature. Recently, the language debate in Quebec has flared up again, partly because of the notwithstanding clause in the 1982 Constitution Act,

Act, which allows federal and provincial governments to enact legislation which is contrary to certain parts of the Constitution and the Charter of Rights and Freedoms. So the political field in Canada remains a turbulent one.

Economically, the same patterns exist. Government intervention in the market economy has been blamed for a decline in prosperity, resulting in high unemployment, inflation and deficits. The Trudeau government, early in the decade, quickly shed its interventionist disposition and adopted austerity measures to deal with the economic crisis, cutting government spending and driving interest rates to record highs. While inflation ultimately did fall, unemployment has remained stubbornly high. The pro-market and anti-government bias of the Progressive Conservatives, symbolized by deregulation, privatization, attempts to control government spending and cutting the deficit, has not changed the economic scenario: unemployment, after having averaged 9.8% from 1980 to 1987, in 1989 remains over 7.5%; furthermore, government deficits and aggregate debt levels, which are seen by many as threats to continued economic growth, continue to increase, rising from 27.6% of Gross National Product in the fiscal year 1980-81, to over 51% in fiscal year 1986-87[1]. This is despite the fact that Canada has been leading all OECD member countries in economic growth.

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[1]These figures are from Harold Chorney, Sound Finance and Other Delusions: Deficit and Debt Management in the Age of Neo-Liberal Economics, Working Papers in Public Administration and Public Policy (Montreal: Department of Political Science, Concordia University, 1988), pp. 26, 40.

The primary concern of this thesis is macroeconomic policy, which in the 1980s has been geared towards promoting economic growth through pro-market policies, the control of inflation, and debt and deficit reduction. Expressed in different terms, this policy approach can be seen as composing a rejection of "Keynesianism", which for now can be defined as representing an approach to macroeconomic policy that is based on a mistrust of the free market and its foundations in classical economics, and that promotes a role for government in managing the economy so that it attains certain economic, political and social goals. It is perhaps best embodied in the mixed economy or the welfare state, prominent in most industrialized countries since the end of World War II. In this type of system, government promotes not only economic growth but also provides many social services, and uses its authority to regulate private actors in society, forcing them to participate in this aspect of the political economy as well.

It will be suggested that Keynesianism has been too readily dismissed as a guiding philosophy for macroeconomic policy. The complexities of the writings of John Maynard Keynes, the simplification of his ideas, the exclusion from consideration of many of his tenets, and political and ideological differences have contributed to the misunderstanding of Keynesianism, and have consequently led to the proposition of opposing models and paradigms. The rejection of Keynesianism has shifted focus away from the merits of this philosophy as well as those of social democracy. It will be argued that Post-Keynesianism, or theoretical and practical attempts to improve and update the ideas of Keynes, still has much to offer in terms of promoting economic growth

and a more just and equitable political economy. Important considerations in such a paradigm are the historical trends of capitalism and the roles that science and technology play in the contemporary economy. The former will be discussed through an examination of the "long wave," a theoretical model which explores the long term evolution of capitalist economies; it therefore can serve as a useful tool in studying the rejection of Keynesianism and for examining current and future economic strategies. The latter will be examined in terms of their roles in economic growth and the long wave.

The key relationship for this kind of study of macroeconomic policy is therefore that of state and economy. Specifically, what is the role of the state in a capitalist society, and what are the implications for public policy development? The first two chapters will examine these issues, describing theoretical perspectives from the Marxist, social democratic and neo-classical traditions. Once the role of the state has been identified, it will be possible in Chapter IV to explore the role of science and technology in a capitalist economy. This will be done through the examination of the relationship between science, technology and long waves.

Chapter II, "Neo-Marxist Theories of the State," provides a description of contemporary Marxist critiques of capitalism, Keynesianism and the welfare state. The rejection by this school of Keynesianism and social democracy, seeing them as simply extending the life of capitalism and continuing the oppression of the working class, is particularly important.

Chapter III, "A Post-Keynesian Vision of the State," offers an account of the theories of John Maynard Keynes. Focusing largely on his economic ideas and their distortion and simplification by critics, this chapter also includes references to his political vision. It is suggested that the goal of Keynes' economic theories was to promote the realization of a humane, just and free society in which individuals were free to pursue their interests, but not to the detriment of the general society. This view is supported by references to post-Keynesianism and social democratic theory.

Chapter IV, "Capitalism, Technology and Long Waves," focuses the debate on the relationship between science, technology and macroeconomic policy. It introduces the concept of the long wave, as well as theories that examine the role that technology plays in stimulating economic growth. It will be argued that technological innovation has a significant role in producing economic growth, and that this is substantiated in several studies of long wave theory. The chapter also describes alternate views that are not directly related to long wave theory, or that suggest that technological innovation is related to central concerns of macroeconomic theory, such as investment and employment levels.

The concluding chapter recapitulates the topics of Chapters II through IV. Furthermore, it is suggested that post-Keynesianism, if it is to be a valid and feasible policy paradigm for managing macroeconomic policy, must recognize the importance of technological innovations, and must also incorporate science and technology policy into its policy pro-

posals. Furthermore, post-Keynesians must expend more energy in promoting their vision, to encourage its acceptance by the general population, so that it will be more readily accepted as a viable public policy paradigm.

Chapter II

NEO-MARXIST THEORIES OF THE STATE

The writings of Karl Marx, like those of all great thinkers who have challenged conventional wisdom, have generated an enormous amount of intellectual debate. The field of political economy has evolved since Marx, but his influence has nevertheless permeated a wide range of disciplines, from literature and sociology to urban studies and public policy and administration.[1]

The purpose of this chapter is to discuss contemporary Marxist theories of the state. Marx's general understanding of capitalism, and his exposition of the dominant role of capital in society, was developed in a laissez-faire economic system. Certainly the state played a major part in his theories, but the role of the state has changed considerably in the last one hundred and twenty-five years. His description of the cyclical (and in his view, self-destructive) tendencies of laissez-faire capitalism, and his emphasis on the importance of minority control of capital and the drive for capital accumulation, which he saw as perpetuating economic and social inequalities, occurred during a period of time in which the state was not a significant actor in the economy; rather, the balance of political power was determined by those who had economic power. Consequently, the state in bourgeois countries impeded economic

[1]See, for example, Robin Blackburn ed., Ideology in Social Science (New York: Pantheon, 1972), and Tom Bottomore, ed., A Dictionary of Marxist Thought (Cambridge, Mass.: Harvard University Press, 1983), for descriptions of the wide range of influence of Marxism.

and societal changes. Marx was challenging the dominant paradigm of the day, classical economics, and extended his analysis into the social and political arenas, in order to show the consequences of a bankrupt economic philosophy and system. His very simplified conclusion was that a state controlled by and working in the interests of the proletariat was necessary to overcome these societal inequalities.[2]

Many events have since occurred that have led to an evolution of Marxist thought; for example, Antonio Gramsci's concept of hegemony, introduced in the early twentieth century, was an important contribution to the school.[3] As well, the Bolshevik Revolution of 1917 and the installation of a Marxist-Leninist regime in the Soviet Union, the Great Depression of the 1930s, the rise of Keynesianism and the modern welfare state in western industrialized countries, and the revival of classical economics in its various forms (monetarism, new classical and rational expectations) have forced Marxism to adjust its methods and foci of analysis.

This chapter will not focus on Marx's economic and political theories, but rather will concentrate on contemporary neo-Marxist

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[2]See for example Karl Marx, Capital (New York: Vintage, 1977, 1981). A complete list of the works of Marx and Engels are included in the bibliography of A Dictionary of Marxist Thought, ed. Tom Bottomore. This bibliography also includes numerous references of writings on the various aspects of Marx's work.

[3]Hegemony refers to the process by which the values and beliefs of the ruling class are adopted, via political, economic and social structures, by the working class, even though it might not be in its best interest to do so. See Selections from the Prison Notebooks of Antonio Gramsci, edited and translated by Quintin Hoare and Geoffrey Nowell Smith, (New York: International Publishers, 1971).

thought, as it applies to "advanced" or "late" capitalism.[4] Specifically, with the rise of the welfare state, the nature of capitalism, as implied by its new labels, has changed, and the relationship between state and economy has become more complex.

Neo-Marxists have taken these factors into account, and, using Marx as a foundation, have developed new insights into the state-economy relationship. The balance of this chapter will describe the theories of four important neo-Marxists, Ralph Miliband, Claus Offe, John Keane and Leo Panitch, as they relate to contemporary capitalism.

RALPH MILIBAND

Miliband offers in The State and Capitalist Society[5] an orthodox Marxist interpretation of the role of the state in capitalist societies: unequal economic power creates unequal political power, and the state, reflecting this, responds to the interests of those possessing economic power.

His argument is based upon certain fundamental premises Perhaps the most important is that all people, whether they know it or not, are political beings, as all are affected by the state; however, only a small minority seek to influence or "gain attention" of the state.[6] Furthermore, he rejects the pluralist interpretation of the state, argu-

[4]These terms imply that the type of capitalism that Marx was describing was "early" capitalism, without a developed welfare state as we understand it today.

[5]Ralph Miliband, The State in Capitalist Society: An Analysis of the Western System of Power (London: Quartet Books, 1973).

[6]Ibid., p. 3.

ing that power in capitalist societies is not fragmented.[7] Rather, "The economic and political life of capitalist societies is primarily determined by the relationship, born of the capitalist mode of production, between these two classes - the class which on the one hand owns and controls, and the working class on the other."[8]

Power in fact is concentrated in the ruling class, composed of those who own the means of production,[9] and Miliband suggests that it is a very small percentage of people and privately-controlled institutions that control most of the means of production. This power is reinforced by the growing power of the state, which is not simply the government but also includes a great deal of public institutions, such as the judiciary and regulatory agencies.

Miliband also noted an increase in state powers as capitalist societies have evolved. Given that for him the state has always played an important role in capitalism, this trend will serve to only increase the power of the economic elites. This is so because of the important role that the business elite enjoys in the state: as an active participant in decision and policy-making, both in Cabinet and the civil service, and in the formation and expression of attitudes of political rulers.[10]

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[7]See Miliband, pp. 3-6 for this discussion.
[8]Ibid., p. 17.
[9]See Miliband, p. 23.
[10]See Miliband, Chapter 3, "The State System and the State Elite" for an elaboration of these ideas.

This explains, from Miliband's perspective, why the state's role in capitalist society is one of promoting, developing and solidifying capitalist economies. Not only are politicians affected by class allegiances, similar outlooks on fundamental issues, and by the pressures of capitalists upon them (for example, ensuring that capitalists will maintain reasonable levels of investment to create economic growth, or, in a different sense, the threat of capitalists withholding political donations), but the generally conservative nature of bureaucracy and of public servants reinforces this tendency.[11]

Because of the significant differences in the quality of life between the dominant class and the working class, and because of the control that the former has over the latter, in terms of economic opportunities and political and social influence/control, Miliband argues that the reform of the capitalist system is not a feasible option. Measures such as increased medical services or unemployment insurance only serve to entrench the system, and would therefore not benefit the workers. Despite outward appearances, the state would continue to protect and promote a system based on the exploitation of the working class.

It is in this sense that Miliband also attacks social democracy. While he suggests that its ideals are meritorious, he argues that when social democratic parties are in power, they tend to integrate into the framework of capitalism, thus demonstrating the limits of reform While the bourgeois freedoms of liberal or social democracies are better

[11]See Miliband, Chapter 4, "The Purpose and Role of Governments," and Chapter 5,"Servants of the State," for a discussion of these factors.

than having none at all, they are inadequate and need to be extended. For Miliband, this can only be done within a true socialist society, with a revolutionary worker's party based on hegemonic forces leading the way.

CLAUS OFFE

Offe's vision of the state in capitalist society, while sharing much of traditional Marxist analysis, tries to go beyond Marxist orthodoxy by focusing on a structuralist perspective. What are important for Offe, and what differentiates his views from those of many of his predecessors, are the institutional and non-institutional actors in advanced capitalist society, such as political parties and social movements, and how they interact with the state. More specifically, Offe's primary concern with late capitalism, and what distinguishes it from traditional descriptions of capitalism, is the rise of the welfare state.

What distinguishes "late" or "advanced" capitalism from its earlier forms is the rise and entrenchment of the "Keynesian Welfare State" ("KWS" will be used from now on in place of "Keynesian Welfare State"). Rising out of the ashes of the Great Depression of the 1930s and World War II, the advent of the welfare state allowed for two new important contributions: it was to help stabilize the cyclical fluctuations of laissez-faire capitalism, which would lead to more than two decades of great economic growth; it would also legitimate a role for government in providing social services, such as public health programs, welfare payments, social security and unemployment insurance.

The success of the post-war welfare state in these fields lead to its growth; however, once economic recession set in in the early 1970s, the gloss had faded. Critics of both the Left and the Right argued that the welfare state had served its purpose, and that new solutions were required. While their analysis of the situation is remarkably similar, their solutions, of course, are radically different: the Right argues for a less interventionist state, while the Left, particularly those of a Marxist persuasion, argue not for a reformed capitalism but for an overhaul of capitalism and the birth of the socialist state.[12]

Offe's main thesis is that the welfare state in a capitalist society must perform two contradictory functions: to promote capital accumulation (the function of commodification), and to promote policies, through non-market interventions in socio-economic welfare policy, that stabilize what John Keane calls the "self-crippling, cyclical dynamics" of the capitalist system (the function of decommodification).[13] These two functions, however, are not compatible in a pure laissez-faire economy, putting the welfare state in an awkward position, to say the least. John Keane has perhaps expressed it best, in saying "In a word, welfare state policies are required to do the impossible: they are forced to reorganize and restrict the mechanisms of capitalist accumulation in

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[12]For a detailed summary of the similarities and differences between the Left and Right critiques of the welfare state, see Claus Offe, Contradictions of the Welfare State, ed. John Keane (London: Hutchinson, 1984), Chapter 2, "'Ungovernability': The Renaissance of Conservative Theories of Crisis," and Chapter 6, "Some Contradictions of the Modern Welfare State."

[13]These functions are explained in John Keane's "Introduction" to Claus Offe's Contradictions of the Welfare State, pp. 14-17.

order to allow those mechanisms to spontaneously take care of themselves."[14]

Offe argues that the unregulated flow of capital produces the need for decommodification policies, but that these policies (or the "social phenomena or results") are themselves not prerequisites for the economic process; therefore the negative impact of social phenomena on surplus creation must be limited.[15] The state must do whatever is required to promote capital accumulation, but not more than what is necessary. Hence the paradoxical situation of the state, as Keane noted.

Offe also detected the further contradiction that stems from the original. While the Left and the Right have offered detailed critiques of the welfare state in capitalist societies, neither side has been able to demonstrate that an alternative model without a welfare state is feasible.[16] This state of affairs has led Offe to state that "The contradiction is that while capitalism cannot coexist <u>with</u>, neither can it coexist <u>without</u> the welfare state."[17]

Because of this, Offe concludes that the welfare state is not able to deal with the cyclical crises of capitalism. The tensions created by promoting commodification and decommodification at the same time represent the "self-contradictory imperatives of state policy," and

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[14]Keane in Offe, p. 16.
[15]See Offe, pp. 40-42.
[16]Offe, pp. 157-158.
[17]Ibid., p. 153, his emphasis.

therefore cannot allow the state to produce a coherent response to the dynamic economic and social problem created by a capitalist economy.[18]

The resulting crisis of the welfare state has produced charges from both the Left and the Right that the consequence of this situation is that there is a state of "ungovernability." The demands that are made upon the welfare state are too great, and the welfare state's mechanisms to deal with the demands are too limited, leading to crisis symptoms in society, as expressed through a general loss of confidence in government and political parties. The results are increasingly polarized political parties and the rise of non-political social movements, such as the feminist and pacifist movements. Both intensify the crisis situation.[19]

Consequently, Offe rejects any models that attempt to work within the general framework of capitalism. The Right's proposals for less state intervention will not work, as the welfare state, as indicated above, is necessary to stabilize the cyclical and destructive tendencies of capitalism.

He also argues against both social democracy and corporatism. He suggests that "liberal corporatism", as has been attempted in Great Britain, Sweden, Austria and West Germany, is an unstable construct. In establishing sectoral representation (such as labour and capital), traditional political representation (such as political parties and representative or parliamentary democracy) is challenged or threatened.

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[18]Ibid., p. 61.
[19]See Offe, pp. 67-69.

As well, how do you decide what to negotiate, and are the results binding?[20]

Offe also dismisses the viability of the KWS as a possible model. While the KWS, when combined with competitive party politics, has been responsible for the prolonged post-WW II economic boom, the combination of the two has permitted mass democracy and a capitalist economy to coexist, something that 19th Century thinkers like Karl Marx and John Stuart Mill did not believe was possible.[21]

Competitive party politics, he argues, become bureaucratic in nature, and consequently restrain and contain mass working class interests and politics. The parties become controlled by party professionals, ideology becomes deradicalized, and collective identity is dissolved.[22]

The KWS, despite its ability to produce a sustained economic boom, is now more troublesome than helpful: its solutions, offering a cure, are in fact the disease.[23] The KWS has produced a new class accord in which labour, in exchange for certain rights (such as the right to create and maintain unions) and assurances (relatively low unemployment), has accepted the logic of profits and markets as motives of the economic system, a system in which labour is ultimately exploited, and therefore whose interests are neither protected nor

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[20]See Offe, pp. 72-73. Corporatism will be discussed in more detail later in this chapter, in the section on Leo Panitch.

[21]See Offe, Chapter 8, "Competitive Party Democracy and the Keynesian Welfare State," especially pp. 179-182.

[22]See Offe, pp. 183-187.

[23]Ibid., p. 149.

promoted. Furthermore, Keynesianism is seen as being a "positive sum game", in which each class takes into account the interests of the other class.[24]

Not only does Offe not see the KWS as promoting the interests of labour, but despite its record of growth, the KWS has produced a number of negative side effects: inflation; ungovernability; increased regulation and bureaucratization; high taxation; disincentives to work and invest; it has failed to alter income redistribution; and the "fiscal crisis of the state," as originally stated by O'Connor, has lead to the assault on social programs which benefit the masses. Consequently, those that the welfare state are supposed to protect are subject to greater risks, displacement and social inequities.[25]

Offe's thorough analysis of the welfare state in capitalist society leads to his rejection of capitalism, corporatism and Keynesianism. Instead, it is the rise of "eco-socialism" that will hopefully overcome "the blind and self-destructive logic of the self-valorization of capital."[26]

Eco-socialism represents the rise of non-institutionalized social movements in the political and economic arenas, such as the pacifist, feminist and environmentalist movements. Going beyond the traditional paradigms of political activity and representation, these move-

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[24]See Offe, pp. 193-195.

[25]The above factors are discussed in various sections of Offe's Contradictions of the Welfare State, such as pp. 67-72, 74-79, 147-149, 154-158, 196-201, 266.

[26]Ibid., Chapter 12, "Reflections on the Welfare State and the Future of Socialism: An Interview," p. 299.

ments present a new opportunity for the interests of the general population to be addressed. These movements are mass-based, and tend to be "unorganized and non-institutionalized, spontaneous and direct."[27] A factor in their favour, Offe argues, is that the members of such groups are not necessarily the underprivileged or peripheral elements of society, but are supported by the "steerers" and managers of Daniel Bell's post-industrial society - members of the new middle class, professional, and service sectors. This is significant because "they do not protest in the name of preserving a traditional past that is presently threatened by modernization and rationalization."[28] However, they are concerned with more than the economic aspects of life.

These movements represent an alternative to traditional political parties and the welfare state, and are a key component of the new path to democratic socialism, and, as Keane writes, more "social" politics. As the state becomes more drawn into the social sphere, through the function of decommodification, it becomes more subject to the pressures of interest groups and mass movements. The focus has shifted from traditional proposals to "take over" the state, to themes of non-statist alternatives.[29] The importance of Offe's analysis, therefore, is that "it implies that the highly differentiated and disunified character of welfare state interventions renders non-statist strategies of socialist resistance and transformation more viable in the present period."[30]

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[27]Ibid., p. 293.
[28]Ibid.
[29]See Keane's "Introduction" in Offe, pp. 30-31.
[30]Ibid., p. 31.

JOHN KEANE

Keane's perspective on the state in capitalist society is very similar to Offe's. The welfare state was able to solve the crisis of the 1930s, but now causes more problems than it solves.[31] But while Keane and Offe share this outlook, Keane's theories focus much more on the role that the welfare state plays in increasing bureaucratization in society.

This is the foundation of his critique of social democracy. He equates its defence of democracy with attempts to gain control of state institutions, in order to weaken the power of private capital (presumably through governmental economic and social interventions). However, social democracy of this nature largely continues bureaucratic domination and does not erode it.[32] Increasing bureaucratization leads to a greater proportion of personal daily life being subject to external control, largely by corporate and state bureaucracies.

These ideas are discussed in his contributions to the work of Claus Offe (editing, translating, and writing introductions), but are primarily explored in his collection of essays, Public Life and Late Capitalism: Toward a Social Theory of Democracy. He writes that "...these essays are guided by the conviction that the radical reform of late capitalist societies depends crucially upon the weakening of the power of corporate and state bureaucracies through the establishment and

[31]John Keane, Public Life and Late Capitalism: Toward a Socialist Theory of Democracy (Cambridge: Cambridge University Press, 1984), p. 14.

[32]Ibid., pp. 1-2.

strengthening of spheres of autonomous public life."[33] The concept of public spheres is similar to Offe's eco-socialism, although they are defined differently. A public sphere is produced when two or more people get together and question their wider relations of social and political power. Moreover, they set how they will live, and how they might act collectively in the future.[34] Here Keane is clearly referring to, as does Offe, the rise of new, mass-based social movements that are non-institutionalized and are outside traditional systems of political, social and economic power.

As such, Keane offers three theses: (1) "late capitalist societies live under the continuously lengthening shadow of professionally staffed, bureaucratic organizations."[35]; (2) there exists "The bureaucratic will to administer the populations of late capitalist countries."[36] Increasing amounts of our daily life are subject to bureaucratic organizations, which results in the depoliticization of the population, and leads to its minority control. He states that "This means...that ruling bureaucratic minorities seek to institute decisions in the absence of discussion and control from below."[37]; (3) "state-regulated capitalist systems are subject to disorganized and politicizing crisis tendencies," and bureaucratic administration generates demands for autonomous public action.[38] The difficulties associated with bureaucratic coordination, "policy bottlenecks" and planning fail-

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[33]Ibid., p. 2.
[34]See Keane, pp. 2-3.
[35]Ibid., p. 3
[36]Ibid., p. 4.
[37]Ibid., p. 5.
[38]Ibid., pp. 6-7.

ures create this situation, and increases the possibility of control from below.[39]

Ultimately, Keane, like Offe, has faith in the ability of new social movements to radically alter late capitalist societies. Their criticisms of the inefficient welfare state, its dependence on capital, and its inability to promote social welfare will hopefully lead to their increased influence in society and allow for mass politics. Their achievements would be significant: the repoliticization of the population, and the challenging of the bureaucratic tendencies of late capitalism.[40]

LEO PANITCH

The writings of Leo Panitch, insofar as they can be applied to this thesis, are significant because of his treatment of corporatism. Like Keane, Offe and Miliband, Panitch attacks Keynesianism and social democracy, arguing that they serve as a drag on the working class.[41] These models failed in times of economic booms to create a socialist consciousness, leading to the failure of working class institutions (such as trade unions and social democratic parties) in times of economic busts.[42] To support his views, Panitch uses the example of the 1970s to show that the method used by these models, namely increased

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[39]Ibid., pp. 7-8.

[40]See Keane, pp. 24-29.

[41]Leo Panitch, Working-Class Politics in Crisis: Essays on Labour and the State (London: Verso, 1986), p. 4.

[42]Ibid., p. 2.

state intervention, would not and could not work. It simply makes the welfare state more bureaucratic and inefficient.[43]

In his collection of essays on labour and the state,[44] Panitch explores the concept of corporatism and examines the manners in which it has been implemented in capitalist societies. He limits his theory of corporatism to specific structures in politics, such as tri-partite economic planning and income policy agencies.[45]

Panitch suggests that a useful definition of the corporatist paradigm is one in which it is understood to be "...a political structure within advanced capitalism which integrates organized socio-economic producer groups through a system of representation and co-operative mutual interaction at the leadership level and of mobilization and social control at the mass level..."[46] The premise of corporatism, he argues, is that class harmony is essential for society. This could be achieved if functional groups, especially capital and labour, "...were imbued with a conception of mutual rights and obligations."[47] However, the organizational schemes adopted were those of the old hierarchical patterns, which resulted in a "limited organizational pluralism" that attained the corporatist goal of social harmony.

A tri-partite system that benefited the working class could work if all the parties involved were of equal strength, but by adopting

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[43]Ibid., pp. 40-41.
[44]Ibid., op. cit.
[45]See Panitch, p. 161.
[46]Ibid., p. 136.
[47]Ibid., p. 132.

the logic and hierarchy of capital, this is not possible. Planning is therefore bound to fail, as "...planning's success rests on the participant's speaking the same language as management, given the state's prior acceptance of the prevailing authority structures in industry."[48] If the state is not neutral and autonomous, then corporatism does not serve the interests of labour.[49]

Panitch supports his views by examining corporatist structures in various countries. For example, he argues that this model did not work in Great Britain, and that it does not even work in Sweden, which is often cited as a social democratic society that has successfully implemented corporatist structures.[50] Ultimately, he argues, the instability of liberal democracy leads to an increased use of coercive tactics by the state.[51]

Panitch concludes that the argument that corporatism lends stability to democracy in advanced capitalist societies is more full of contradictions than corporatism itself.[52] Unions are asked to legitimate state policy when ultimately the state does not promote the interests of labour. He therefore states that "Corporatism must be seen as a system of state-structured collaboration. As such, its extension poses not an opportunity, but a danger to working-class organizations."[53] What is required is not corporatism but rather a system in which the

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[48]Ibid., p. 151.
[49]Ibid., p. 148.
[50]See Panitch, pp. 149-155. For Sweden, he gives the example of Sweden suspending the right to strike of public employees in 1971 as evidence supporting his position.
[51]See Panitch, pp. 153-154.
[52]Ibid., p. 156.
[53]Ibid., p. 209.

means of production are socially controlled, and that there exists popular support for such a goal. This can only be done by demonstrating the limits of capitalist democracy.[54]

CONCLUSION

Neo-Marxist theories of the state, including the ones examined above, provide thorough analytical critiques of contemporary capitalism. This is probably their most significant contribution to political economy. However, the remarkable ability of capitalism to withstand the frequent forecasts of its demise demonstrates a fundamental weakness of Marxist analysis, one that it has yet been able to overcome. Innovative contributions such as those of Offe and Keane indicate that this school of thought is leaving behind its rigid orthodoxy in exchange for a more creative understanding of capitalist society. Their proposals for a more participatory and democratic society via the emergence of new social movements are not utopian but do seem to be grounded in contemporary reality.[55]

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[54]Ibid., p. 46.

[55]The proliferation of interest groups and lobbies in recent years has certainly expanded the realm of politics and policy-making, making them at least slightly less elitist. There would seem to exist a foundation for a more democratic and participatory policy-making process, although the extent to which this is possible is tempered by factors such as the structure of political, economic and social institutions in the body politic, as well as its political culture. For a discussion of the role and nature of pressure groups, see Maurice Duverger, Party Politics and Pressure Groups: A Comparative Introduction, trans. David Wagoner (New York: Thomas Y. Crowell Company, 1972). For a discussion of contemporary Canadian pressure group activities, see A. Paul Pross, Group Politics and Public Policy (Toronto: Oxford University Press, 1986).

However, with regards to the possibility of a non-capitalist political economy (or a severely-reformed model of the current one), neo-Marxists tend to disagree with social democrats. The Marxist critiques of social democracy and Keynesianism are, I will argue, misplaced and inaccurate. Their critiques of the KWS are based on the view that the introduction of Keynes' theories into the government sphere, and particularly into the economic realm, have ultimately resulted in economic and political stagnation. The failure of Keynesian policies and the resulting economic and political crises have put the state in a no-win situation: to redress the economic situation, state expenditures must be reduced, and government intervention in the economy must be minimized. Since the great explosion in state activities and expenditures was due to the significant surge in the provision of social programs, it follows that this is the first area that must be attacked in austerity policies, which creates new political crises. Given that austerity policies of this nature affect the masses far more than they do the bourgeoisie, this scenario lends credence to the Marxist argument that Keynesianism has not altered the historical inequities of capitalism, and that ultimately it must reaffirm these inequities. The "Keynesian Revolution" only strengthened the status quo.

However, the complexity of Keynes' ideas were rarely appreciated. Keynesianism as an economic and political doctrine extends far beyond the narrow parameters which it is normally assigned. Both critics and practitioners of "Keynesianism" never understood this. Consequently it was never truly implemented by governments in industrialized countries, so to critique Keynesianism in the manner of the Marxists is

quite misleading and inaccurate. The following chapter will these issues in more detail, in an attempt to provide a more accurate account of Keynesianism, to explain its distortions, and to illustrate that when it is combined with a social democratic vision of society, Keynesianism does indeed offer a viable paradigm of political economy.

Chapter III

A POST-KEYNESIAN VISION OF THE STATE

The views of John Maynard Keynes will be used as a foundation for a social democratic model of society. A distinction will be made between the theories of Keynes and those that have been ascribed to him, demonstrating that Keynes' actual views lend themselves to a workable social democratic model, and not to the "bloated", inefficient welfare state that is usually associated with Keynesianism. This becomes more apparent when more contemporary theories are added to the model, as the post-Keynesian school has updated and strengthened Keynes' original ideas.

This chapter will explore Keynesian and post-Keynesian ideas. Furthermore, the work of theorists such as Colin Crouch and Charles Lindblom will be discussed. The end result will be a non-Marxist social democratic theory of the state.

JOHN MAYNARD KEYNES

Keynes was a prolific writer and provocative thinker, a reflection of the times in London (and specifically Bloomsbury) just after the turn of the century. His views of the state and of capitalism are not necessarily to be found in any one text, for like all great thinkers, Keynes' ideas were constantly evolving and therefore in flux. While

this perhaps lends itself to a deeper understanding of the topics that interested him, it also contributed to the misunderstanding of his thoughts. Certainly Keynes was interested in economic matters, but he was also a social theorist, philosopher and logician, and was also active in political and cultural arenas.[1]

Keynes' primary concern was for the establishment of a more caring and humane society, one in which individual freedoms were guaranteed. Economic prosperity was an important element if this was to be achieved, but contrary to the prevailing orthodoxy of the times, Keynes did not fear government intervention in both the economic and social spheres; in fact government could help achieve and maintain these goals. To do so effectively, however, collective or aggregate concerns, as well as individual concerns, would have to be addressed.

Keynes' views on the economy were developed with two issues in mind: how to restore and maintain full employment,[2] and how to get the

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[1]There are several biographies of Keynes. See among others Charles H. Hession, John Maynard Keynes (London: Collier Macmillan, 1984), and Robert Skidelsky, John Maynard Keynes (London: Macmillan, 1983). For a treatment of his economic thinking see D.E. Moggridge, Keynes (London: Macmillan, 1976). As well, one should consult The Collected Writings of John Maynard Keynes, 30 vols., ed. D.E. Moggridge, published by Macmillan and Cambridge University Press for the Royal Economic Society, 1979.

[2]Full employment simply means that a country's economy is able to provide jobs for all who wish to work. In a full employment economy, the only unemployed people would be those who are between jobs or who voluntarily withdraw from the labour market. Measured statistically, this rate varies from country to country. For Canada, 4% is accepted by many economists as a desirable rate of unemployment. Some feel that this target is too optimistic, but it should be noted that several countries have managed to achieve rates below 3%. For a comparative examination of unemployment levels and labour market policies see Goran Therborn, Why Some Peoples are More Unemployed Than Others: The Strange Paradox of Growth and Unemployment (London: Verso, 1986).

economy to meet the needs of society. In this sense it is not enough for an economy to merely provide jobs. Not only should these jobs be well-paying, but other concerns of workers, such as income redistribution, job safety and health care should also be met. Furthermore, regulations and social programs should be instituted to ensure that citizens are not exploited, and that they are given the opportunity to pursue their goals and desires. In other words, the purely economic should not dominate nor control the social. Writing during a period of great and constant change, both politically (two world wars, changing national boundaries) and economically (the burden of war reparations on Germany, the speculative nature of the 1920's, the Great Depression of the 1930's), Keynes could not help but be affected by the turmoil. Economic stability was needed to go along with political and individual freedoms.

Despite being trained in the classical tradition, Keynes gradually outgrew this paradigm, with its reliance on Say's Law (supply creates its own demand) and Walras' Law (markets will always clear, because of the presence of an "invisible auctioneer"). The transition was becoming evident in his A Treatise on Money,[3] and was confirmed by a series of writings in the late 1920's and early to mid 1930's, culminating with the publication in 1936 of The General Theory of Employment, Interest and Money.[4]

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[3]Keynes acknowledges changes in his way of thinking in the preface. See John Maynard Keynes, A Treatise on Money, 2 vols. (London: Macmillan, 1930). See Moggridge, op. cit., particularly Chapter 4, "The Period of Transition, 1925-31" for a description of the changes in Keynes' monetary theories.

[4]John Maynard Keynes, The General Theory of Employment, Interest and Money (London: Macmillan, 1936).

In the General Theory, Keynes attempted to demonstrate that the classical model of economics was a special case, and that it could only work under certain circumstances. Because certain conditions could not be met (such as the fact that a decrease in real wages does not necessarily lead to a decrease in the number of people looking for work)[5] he argued that the classical model could not explain nor, more importantly, could not offer solutions for the Great Depression. Capitalism is an inherently flawed system which is cyclical by nature; there is not necessarily a tendency to achieve full employment. Uncertainty affects people's expectations. For example, if a potential investor for whatever reason feels pessimistic about the future, he or she might choose not to invest their capital. The result of this decision is a lower private investment level which, if not replaced by state investment, will result in greater unemployment.

The key concept in this dilemma is that of demand. Cutting wages only cuts the demand for goods and services, thus leading to a glut on the supply side of the economy. Manufacturers and those offering services can only drop their supply price so much before they take a loss; as prices fall, profits eventually fall, creating a shrinking economy. The only way to eliminate the glut is to put money in the hands of people, especially those who are out of work.

Indeed, putting people back to work is the best solution to the problem; for this to happen, new investment is needed to increase production and to employ more people. But the whole situation can break

[5]General Theory, p. 15.

down if not enough capital is invested, not enough people are hired, or if workers do not get enough in wages, leading to a lower rate of aggregate demand. Because of the fragile state of affairs, Keynes believed that government should measure and be responsible for the investment process. Only it has the means to fulfill the measurement function, and to compare actual investment levels to the levels needed for full employment. If a gap existed between the two, government should invest directly, preferably in socially productive areas, or channel private capital to these areas, to put people to work.

All of this is fine, but why is the state of affairs so fragile to begin with? Keynes argued that the level of private investment is a difficult thing to predict, because a wide variety of factors are involved in the decision to invest or not. Ultimately investment depends on the state of expectations of investors. If people felt confident about the future, then they would be likely to invest; if not, then they probably would not. Because employment is dependent upon investment, employment is really also dependent upon expectations. So as levels of expectations change, so does the level of employment, for the latter is not only dependent upon current expectations, but upon former expectations as well.[6]

These views are embodied in the concept of the marginal efficiency of capital, which is defined as "...being equal to that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital-asset during its life

[6]See The General Theory, pp. 47-48.

just equal to its supply price."[7] In other words, a holder of capital will decide to invest if the future expected returns are greater than if this person decided to simply save or lend this capital stock.

However, Keynes noted that the existing instability in capitalist economies persisted nevertheless. This was due to the fact that mathematical expectations or calculations did not always determine investment; speculation, "spontaneous optimism," the hoarding of capital, and "animal spirits" contributed as much if not more to the investment decision.[8]

It is for this reason that Keynes argued that the government should be responsible for organizing direct investment, for the market calculation of the marginal efficiency of capital fluctuates too greatly for full employment to be constant. As Keynes stated:

> ...economic prosperity is excessively dependent on a political and social atmosphere which is congenial to the average businessman. If the fear of a Labour Government or a New Deal depresses enterprise, this need not be a result of a reasonable calculation or of a plot with political intent; it is the mere consequence of upsetting the delicate balance of spontaneous optimism.[9]

Keynes' model therefore called for direct government investment, preferably in socially productiv public works, whenever there was a gap between private investment and the full employment level of

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[7]General Theory, p. 135.

[8]See The General Theory, Chapter 12, "The State of Long-Term Expectation," pp. 147-164, and Chapter 22, "Notes on the Trade Cycle," pp. 313-332, especially pp. 315-324.

[9]General Theory, p. 162.

investment. This would be reinforced by a more equitable distribution of wealth in society. People with a high propensity to consume but little disposable income, namely the working class and the unemployed, would have more money to spend, which would in turn strengthen effective demand. Those with excess capital, such as the rentier class (which lives off speculation and interest on their capital without necessarily investing in society productively), should not be in such a privileged position.

The solution would be to create an economy in which investment was made easier and which benefited both individuals and society. The remedy is to increase the volume of capital to such a point until it was no longer scarce. The "functionless investor" would no longer be rewarded, as the rate of interest would have to fall as capital would be less scarce, thereby weakening the power of the rentier class; furthermore, those with ideas and initiative would be able to invest for their own and for society's good, for a reasonable reward.[10] The levers of monetary policy (increasing the money supply and the resulting adjusted interest rates), along with the levers of fiscal policy (influencing the propensity to consume and the socialization of investment), could be used to create a situation in which the scarcity of capital and the excessive dependence on the rentier class for investment would be considerably removed. Keynes discusses this in the "Economic Possibilities for our Grandchildren," explaining that only then would the group that truly loved money be exposed, and that it would be a small minority.

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[10]See The General Theory, pp. 376-377.

Keynes states that:

> The love of money as a possession - as distinguished from the love of money as a means to the enjoyments and realities of life - will be recognised for what it is, a somewhat disgusting morbidity, one of those semi-criminal, semi-pathological propensities which one hands over with a shudder to the specialists in mental disease.[11]

In other words, if society could be structured in such a way so that all of our needs were met, not only would we have more time and ability to pursue our personal interests, but the fetish of money-making would be exposed. Contemporary social and economic methods, values and practices could be replaced by a more humanistic way of life.

So Keynes was really much more than an economist. He was concerned with the impact of war on humanity, and the consequences of negative feelings after a w r;[12] the negative aspects of an unregulated capitalistic economy, and the great s cial and individual tragedies that have resulted from economic depressions; and was generally concerned with and thought about political events, not only in his native Great Britain but internationally as well.[13]

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[11]John Maynard Keynes, Essays in Persuasion (New York: W.W. Norton and Company, 1963), p. 369.

[12]For Keynes' writings on war see The Economic Consequences of the Peace (New York: Harcourt, Brace and Howe, 1920); The Collected Writings of John Maynard Keynes, vol. III: A Revision of the Treaty, and vol. XVII: Activities 1920-1922: Treaty Revision and Reconstruction; and Essays in Persuasion, Section I, "The Treaty of Peace."

[13]See Keynes' various essays on "Politics" in Essays in Persuasion, Section IV.

Unfortunately Keynes is remembered by his critics only as an economist who was able to come up with a short-term solution to the Great Depression.[14] Furthermore, this is not even necessarily seen as being a great achievement by today's critics. For example Michael Parkin, a leading Canadian monetarist economist, has written that:

> "...[one] reason for studying the Keynesian model is that it remains the only, even rudimentary, explanation that we have for the event known as the Great Depression. ... Keynes did not offer a rational explanation of that phenomenon. ... Nevertheless, Keynes does provide us with an explanation which, rudimentary and unsatisfactory though it may be, is the only one available. Even though Keynes' explanation for the Great Depression is not a satisfactory one,..."[15]

Instead of building upon the obvious successes of a Keynesian program and improving upon its defects (as post-Keynesians have attempted to do), a majority of economists and policy-makers, relying upon a simplified understanding of Keynesianism, preferred to concentrate on the perceived negative long-term consequences of his policies: inflation and later stagflation, and a welfare state that was overloaded

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[14]Unfortunately this was overshadowed by the fact that his policies were only crudely applied after the beginning of World War II, when it became necessary for countries to increase production dramatically for the war effort. Keynes recognized that war was often seen and used by politicians as an "acceptable" means for solving economic crises, but deplored this method of policy. Perhaps more importantly, going back to the Treaty of Versailles and the end of World War I, Keynes argued that poor economic policy could contribute to negative feelings that might result in a war. In this case, he argued against the massive reparations payments that were imposed on Germany as a penalty for its role in World War I, even though it was not possible for Germany, with its war-ravaged economy and countryside, to do so. Needless to say, this had a great impact on events that led to the beginning of World War II. See Keynes, The Economic Consequences of the Peace.

[15]Michael Parkin, Modern Macroeconomics (Scarborough: Prentice-Hall Canada,1982), p. 197, my emphasis.

and inefficient, and which caused massive and permanent public debts. As was noted in the previous chapter, these criticisms have come from both sides of the ideological spectrum, from both the neo-conservatives and the neo-Marxists.[16]

But are the criticisms fair? Certainly these phenomena have occurred to some extent after the acceptance and implementation of Keynesianism, but in fact there is a a great body of literature that suggests that in fact the "Keynesian Revolution" never took place, mainly because the more radical and long-term aspects of his views were never tried; furthermore, certain fundamentals of his economic theories were misunderstood and hence not applied properly.[17] So while the welfare state has grown in size in an attempt to stabilize the cyclical tendencies of the capitalist economy and to offer and improve upon services for the general population, the "crisis" situation that it finds itself in is not necessarily due to Keynesianism; in fact, if the ideas of Keynes were implemented and improved, such a situation would mostly be non-existent.

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[16]See Claus Offe, Contradictions of the Welfare State, Chapter 2, "'Ungovernability': The Renaissance of Conservative Theories of the State"; Chapter 6, "Some Contradictions of the Modern Welfare State"; and Chapter II of this thesis.

[17]There is a great body of literature on the subject of the distortion and misinterpretation of Keynes' ideas. See among others Joan Robinson, "What has Become of the Keynesian Revolution?", in Essays on John Maynard Keynes, ed. Milo Keynes (Cambridge: Cambridge University Press, 1975), pp. 123-131; Harold Chorney, "The Power of Reason and the Legacy of Keynes," Canadian Journal of Political and Social Theory vol. VIII, no. 3 (Fall 1984): 162-169; John Hotson, Stagnation and the Bastard Keynesians (Waterloo: University of Waterloo Press, 1976); and Axel Leijonhufvud, On Keynesian Economics and the Economics of Keynes (London: Oxford University Press, 1968).

"Bastardized" Keynesianism:

This term, coined by Joan Robinson, was created to describe the misinterpretation of Keynes' theories, which were being taught as the "real thing." While not wishing to enter into the complexities of economic theory, two related areas deserve special consideration: how Keynes' theories were interpreted and taught, and the charge that Keynes did not have a theory of stagflation and inflation.

Keynes' theories were misinterpreted for a variety of reasons: he was a prolific and complex thinker, so at times he contradicted himself or did not clearly express his thought; as well, because of poor health and his involvement in other projects, Keynes did not actively participate in the discussion of his views following the publication of the General Theory in 1936. Consequently, economists such as J.R. Hicks, with his I.S.-L.M. Curve, and later on Paul Samuelson, with his neo-classical synthesis, were able to present a misleading interpretation of Keynes' ideas.[18]

Briefly, Hicks attempted to offer his own interpretation of Keynes' monetary theory. Ideas that were not present in Keynes' work, such as investment being equal to savings, were attributed to him. This would exclude the possibility of hoarding taking place in the economy, which, for Keynes was an important contributor to recession. Being

[18]See J.R. Hicks, "Mr. Keynes and the 'Classics': A Suggested Interpretation," Econometrica vol. V, no. 2 (April 1937): 147-159, and any edition of Paul Samuelson's text, Economics (New York: McGraw-Hill).

built on inaccurate assumptions, Hicks' model did not accurately reflect Keynes' ideas.[19]

Samuelson's neo-classical synthesis featured a "45 degree cross," which was the Aggregate Supply Curve angled at 45 degrees. This curve did not allow for any inflation except for excess demand inflation, so when inflationary pressures presented themselves, the only solution was to reduce Aggregate Demand (consumption, investment, or government expenditures), the dangers of which were discussed earlier in this chapter, in order to "cool down" the economy. The irony of this situation is that Keynes never did write about such an Aggregate Supply Curve, so when Keynes' critics charged that he had no theory of inflation (apart from reducing Aggregate Demand), they were really criticizing Samuelson's interpretation. However, the damage had been done; because of the widespread use of Samuelson's text by economics professors and students, particularly in the United States and Canada, his model had become the standard interpretation of Keynes, and consequently is used in most other economics texts as representing the Keynesian model.[20]

In fact Keynes had a rather developed theory of inflation and stagflation, in which he recognized that it was very possible that inflation could rise before full employment was reached.[21] Furthermore,

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[19]See Leijonhufvud, op. cit., for a critique of Hicks' interpretation of Keynes.

[20]See for example Paul Samuelson's Economics, 10th ed. (New York: McGraw-Hill, 1976), Chapter 11, "Saving, Consumption, and Investment," Chapter 12, "Income Determination: The Simple Multiplier Theory," and in particular Chapter 13, "Income Determination: Fiscal Policy, Inflation, and Thriftiness."

[21]The General Theory, pp. 296-297.

in response to critics' accusations that Keynes' theories were not mathematically proven, it must be noted that the Fundamental Equations in his A Treatise on Money provide such a mathematically-proven theory.[22]

This brief overview is not intended to demonstrate in this work Keynes' theory of inflation and stagflation; rather, it shows that Keynes did have such theory, contrary to the views of his critics. The significance of this is that when stagflation occurred in most western industrialized in the 1970s, many economists, academics and policy-makers argued that Keynesianism had broken down and that a new approach was necessary.[23] But in fact what had collapsed was a watered down, bastardized version of Keynes' theories.

The "Deradicalization" of Keynes:

An important component of the notion of "bastardized Keynesianism" is the argument that many of Keynes' ideas were never accepted nor implemented, and is rooted in the view that "Keynesianism" was followed in such a fashion that only the most necessary aspects of his theories were implemented. Of paramount importance was the solution to the

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[22]See A Treatise on Money, vol. 1, pp. 123-139. For a discussion of prices and inflation in Keynes' work, see John Hotson, "The Fall of Bastard Keynesianism and the Rise of Legitimate Keynesianism," in The Subtle Anatomy of Capitalism, ed. Jesse Schwartz (Santa Monica: Goodyear Publishing Company, 1977), pp. 327-345, and Harold Chorney, "Keynes et le problème de l'inflation: les racines du retour à une 'saine gestion financière,'" in La "Théorie Générale" et le Keynésianisme, eds. Gérard Boismenu and Gilles Dostaler (Montreal: Association Canadienne-Française pour l'Avancement des Sciences, 1987), pp. 149-162.

[23]For example, see Robert Skidelsky, "The Decline of Keynesian Politics," in State and Economy in Contemporary Capitalism, ed. Colin Crouch (London: Croom Helm, 1979), pp. 55-56.

riddle of the Great Depression and high unemployment rates. Once Keynesianism (and World War II) solved the short-term problems, it was safe to return to the old methods of sound finance and classical economics. For example, President Roosevelt's administration intervened whenever it was necessary to control the ravages of the Depression, but once the economy improved, he found it safe to practice sound finance. However, once he attempted to balance government budgets, under pressure from the business community, unemployment quickly rose again.[24]

The Roosevelt response to the Depression clearly demonstrates the "deradicalization" thesis. The consequence of this interpretation of Keynes is that he was reduced to being an essentially counter-cyclical thinker: when times are bad, government should spend, and when times are good, government should balance the budget. But this does not take into account Keynes' exposition of the instability of the investment process and ignores his call for the socialization of investment, does not consider his desire for a more equitable distribution of wealth and the "euthanasia of the rentier class," and certainly does not reflect his desire for an end to the "economic problem."

Indeed, as was seen with the Roosevelt example above, political resistance is an important factor in the deradicalization of Keynes. Kalecki's "political business cycle" argument suggests that the business community pressures government for a stable political economy (which

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[24]Michael Bleaney, The Rise and Fall of Keynesian Economics (London: Macmillan, 1985), pp. 41-52, and Michal Kalecki, "Political Aspects of Full Employment," in his Selected Essays on the Dynamics of the Capitalist Economy (Cambridge: Cambridge University Press, 1972), pp. 144-145.

from its perspective is one that has little government intervention and a low-paid and docile labour force), in order to maintain levels of confidence for private investment. This promotes the doctrine of sound finance and laissez-faire, and hence runs against Keynesian philosophy.[25] Politically, this is the greatest obstacle that Keynesianism faces.

When contemporary critics of Keynesian and post-Keynesian thought suggest that this school can no longer offer viable policy proposals to solve our economic problems, it is this understanding of Keynes that they are addressing: the Keynesian approach that simply is concerned with demand management, and does not have a viable theory for dealing with stagflation, which as was seen above is not the case.

But the "narrow" interpretation of Keynes' thought has continued to be the dominant one. It has affected both the neo-Marxist and neo-conservative critiques of Keynes and the welfare state (see Chapter II), and has become a strong current in various streams of intellectual discourse. For example, Robert Skidelsky has suggested that the stagflation of the late 1970s represented the decline of Keynesianism. Apart from the fact that Keynes did indeed have a theory of stagflation and inflation, the Keynesian vision that Skidelsky gives is indeed a narrow one, limiting it to government determination of aggregate output. He writes that:

> To be sure, Keynes talked about a 'somewhat comprehensive socialisation of investment'. But all he appears to have meant by this vague and

[25]See Kalecki, "Political Aspects of Full Employment."

> alarming phrase was that the government should be prepared to augment private investment sufficiently to produce full employment.[26]

However, this understanding of Keynes is disputable. Many have argued that this narrow interpretation of Keynes is not necessarily an accurate nor a correct interpretation. Contrary to Skidelsky, Andrew Martin argues that a wider vision of Keynesian policy, which "points to the much broader conception of the state's role," is still a viable policy alternative. However, while the political desire to implement a Keynesian program might no longer exist (and it is safe to say that it was never universally accepted in the first place), this is still fundamentally different from arguing that this type of program does not work.[27]

But Keynes' critics have not focused on these issues; they have simply argued that Keynesianism was a very good short-term solution to the Depression, but that it is not able to deal with the complexities of modern-day economies. However, given that these critics have either ignored or dismissed Keynes' more radical ideas, and that they have misinterpreted many of his economic ideas, perhaps it is they who do not understand the complexities of Keynesian theory.

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[26]Skidelsky, op. cit., p. 57.

[27]See Andrew Martin, "The Dynamics of Change in a Keynesian Political Economy: The Swedish Case and its Implications," in State and Economy in Contemporary Capitalism, ed. Colin Crouch (London: Croom Helm, 1979), pp. 88-89. This theme is also presented in Harold Chorney, "The Power of Reason and the Legacy of Keynes," op. cit.

Recent Developments:

The rejection of Keynesianism was quickly followed by the rise of neo-conservatism in the first world, symbolized by the adoption of economic policies influenced by the monetarist, new classical, supply side, and rational expectations schools. In Canada this was marked by the adoption of monetarism by the Bank of Canada in 1975. But the world's economic woes have not been solved by such policies; despite the return of lower price levels and a general proclamation of a prolonged economic recovery by politicians and the media, unemployment rates have remained stubbornly high. In Canada, for example, the average unemployment rate for the 1980s is over 9%.[28] Furthermore, attacks on the budget deficit and the public debt in the name of sound finance only perpetuate the unemployment problem, and divert attention away from the social side of the economy. Government expenditures must be cut, and as was pointed out in the previous chapter, all too often it is social programs that are the primary targets.[29] Other methods of "improving" the budget balance, such as closing tax loopholes for the wealthy and for corporations, or simply by putting more people back to work through government-directed investment programs, are not considered.[30] Self-

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[28]For the years 1980 to 1987, the average unemployment rate is 9.8%. See Harold Chorney, Sound Finance and Other Delusions: Deficit and Debt Management in the Age of Neo-Liberal Economics, Working Papers in Public Administration and Public Policy (Montreal: Department of Political Science, Concordia University, 1988), p. 26.

[29]Following the re-election of the Progressive Conservatives in 1988, the Canadian business community has strongly argued for a reduction in the deficit. It suggests that social programs must be streamlined, and that universality should no longer be the guiding principle in their application and management.

[30]For a critical analysis of recent Canadian Government tax policies, see Allan M. Maslove, Distributional Impacts of Personal Income Tax Reform, 1984 to 1988 (Ottawa: The Institute for Research on Public Policy, 1988), and Harold Chorney and Andrew Molloy, "The Myth of

interest and the political motivations of the elite, from their perspective, must prevail.

This shows a total disregard for Keynes' analysis of capitalist economies. The policies that he showed were responsible for creating economic disequilibrium have once again returned to the forefront of public policy, and Keynesians and post-Keynesians are again being attacked. The irony in accepting the philosophy of sound finance, rejecting government-directed investment, passively accepting historically high levels of unemployment, and implementing a regressive taxation scheme is that the Keynesian Welfare State is not Keynesian at all!! Certainly, once welfare state programs are offered, they are difficult to remove, both politically and socially. But the "raison d'etre" and the philosophy of the system have been totally obliterated. Consequently, "ungovernability" or "overload" theses, when combined with the fiscal crisis of the state argument,[31] become more attractive and produce attempts to reform or rationalize the welfare state. However, if a system has never been truly implemented, can one really say that it has failed?

Tax Reform: The Mulroney Government's Tax Changes," in Canada Under Mulroney: An End of Term Report, eds. Andrew B. Gollner and Daniel Salée (Montreal: Véhicule Press, 1988), pp. 206-227. For a general treatment of Canadian macroeconomic policy and the controversy surrounding the budget deficit, see Chorney, Sound Finance, and David Wolfe, "The Politics of the Budget Deficit," in The Politics of Economic Policy, ed. G. Bruce Doern, Research Study No. 40, Royal Commission on the Economic Union and Development Prospects for Canada (Toronto: University of Toronto Press, 1985), pp. 111-162.

[31]James O'Connor, The Fiscal Crisis of the State (New York: St. Martin's Press, 1973).

To counteract these attacks, post-Keynesians have been forced to refine Keynes' original ideas and adapt them to new economic circumstances. For example, the rise of the multi-national corporation and the development of new technological fields such as microelectronics and telecommunications are important considerations that became significant only towards the end of Keynes' life.

Post-Keynesian analysis and economic models have concentrated on the need to restore and maintain full employment. This objective could be achieved through an incomes policy, tied in with a comprehensive investment strategy that targeted productive investment. This includes "social" investments, the development of the economic infrastructure and the promotion growth industries, all of which would combine to increase productivity and economic growth. Based on Keynes' original understanding of capitalism, these models focus on maintaining sufficiently high investment levels, wealth redistribution, and a "loose" monetary policy (low real interest rates and significant increases in the money supply). Ultimately, such models would allow for low inflation and economic growth, and would direct the political economy in the direction that Keynes had envisaged in the General Theory and in the "Economic Possibilities For Our Grandchildren."[32]

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[32]There is a great body of literature on post-Keynesian economics. See for example A Guide to Post-Keynesian Economics, ed. Alfred S. Eichner (White Plains, New York: M.E. Sharpe, Inc., 1978; John Cornwall, The Conditions for Economic Recovery (Armonk, New York: M.E. Sharpe, Inc., 1983); John Cornwall, ed., After Stagflation: Alternatives to Economic Decline (London: Basil Blackwood, 1984). For a treatment of Canadian macroeconomics from a Post-Keynesian perspective, see Harold Chorney, Sound Finance; John Calvert, Government Limited: The Corporate Takeover of the Public Sector in Canada (Ottawa: The Canadian Centre for Policy Alternatives, 1984); John Cornwall and Wendy Maclean, Economic Recovery for Canada: A Policy Framework (Ottawa: Canadian Institute for Economic Policy, 1984).

Furthermore, these models attempt to put the budget deficit and the public debt in proper perspective. Contrary to critics' charges that they represent a threat to economic prosperity and are a tax on future generations, these models show that unless full employment is achieved, the deficit and the public debt have important roles to play in preventing further recession. Cutting them in times of less than full employment is tantamount to cutting Aggregate Demand, and will introduce recessionary waves into the economy. Robert Eisner has shown the negative effects of budget cutting in the United States economy, and has also given statistical evidence of two interesting yet usually forgotten issues. First, methods of calculating the deficit and public debt grossly exaggerate the size of these indicators, and secondly, there is a direct statistical correlation between the size of the budget deficit and the Dow Jones Industrial average on the New York Stock Exchange: the higher the deficit, the higher the Dow Jones average. This clearly demonstrates the stimulatory impact of deficits on economic growth, and also demonstrates the danger of attacking the debt and deficit in the name of sound finance.[33] Consequently, the best method of improving the budgetary position of the government would be to get people back to work, as social expenditures would be reduced (through lower welfare and unemployment insurance payments), and tax revenues would increase.

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[33]See Robert Eisner, How Real is the Federal Deficit (New York: Free Press, 1986).

Summary:

The writings of John Maynard Keynes, complex (and at times contradictory) as they may be, have left a challenge for contemporary economists, social theorists and policy-makers: how are purely economic matters (at least on a surface level) to be reconciled with political matters? Keynes attempted to show the pitfalls of a pure laissez-faire economic system, suggesting (as did Marx) that it is not necessarily headed towards a full employment equilibrium, the political and social consequences of which could be drastic. However, he was also fearful of a purely state-run economy and society.[34]

Individual political liberties could ultimately be protected in a system in which there was some element of equality of condition, where income disparities were minimal, and where basic human needs were met. A stable economy is necessary for these to be achieved, but more importantly, if a long period of prosperity is achieved and capital is no longer scarce, then perhaps economic concerns would no longer be paramount and humanity could concern itself with more rewarding endeavours.

This could ultimately be achieved in a very regulated capitalist economy. Keynes optimistically believed that it was possible for government to monitor the economy, and to act in a rational and humanis-

[34]See Keynes' essays "The End of Laissez-Faire" and "A Short View of Russia" in Essays in Persuasion, op. cit., and Keynes' correspondence with George Bernard Shaw on Marxism and Soviet communism, in The Collected Writings of John Maynard Keynes, vol. XXVIII, Social, Political and Literary Writings, pp. 30-42.

tic fashion to maintain economic growth. However, government should not stifle individual initiatives and opportunities. Keeping some elements of a market economy intact, yet also guaranteeing that the negative consequences of the market were kept in check, was his response to totally unregulated and totally regulated political economies.

A SOCIAL DEMOCRATIC THEORY OF THE STATE

A Keynesian / social democratic theory of the state must be able to meet the challenges and criticisms posed by its critics. In terms of Marxist critiques, it must be able to demonstrate that labour and the working class can gain, and not necessarily be exploited, under such a model. In terms of neo-conservative critiques, it must show that this model can respond to the needs of the population, and can allow for economic growth and stability without rampant inflation.

Contrary to much of neo-Marxist theory, with Claus Offe and John Keane being important exceptions, the state in capitalist society does not only respond to the interests of capital: it must also pay attention to the general population. As such, structures, institutions, events and programs like social services, elections and freedom of speech represent key factors that do not fit cleanly into Marxist theory.

Charles Lindblom recognizes the duality of government focus. He uses the concept of "polyarchy" to define a certain set of rules that are part of a political system and that determine and "...limit the

struggle for authority, specifying a particularly orderly and peaceful process to replace armed conflict, threat of force, and other crude contests."[35] In essence it allows the general population to have some input in choosing its leaders. Furthermore, polyarchies allow citizens to "...inform and misinform themselves, express themselves wisely or foolishly, and organize into political groups in order to decide how best to cast their votes and to influence others."[36] So citizens have responsibilities and duties that they can fulfill, although whether they do so or not is another matter.[37] However polyarchy, in a general sense, allows for what are commonly seen as being "democratic" rights: free elections, the right to vote, freedom of expression, and the freedom to join organizations.[38]

But this is only one side of Lindblom's analysis. Lindblom is seeking to explain why liberal democracy takes place only in market-oriented systems,[39] and as such is forced to examine state-economy relations. Indeed these relations are very integrated, as he writes that "...much of politics is economics, and most of economics is also politics."[40]

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[35]Charles E. Lindblom, Politics and Markets: The World's Political Economic Systems (New York: Basic Books, 1977), p. 133.

[36]Ibid.

[37]On this matter, see Alexander Meiklejohn, Political Freedom: The Constitutional Powers of the People (New York: Oxford University Press, 1965), particularly Chapter 1, "The Rulers and the Ruled", for a critical discussion of citizen responsibility and self-government in a democratic state.

[38]The complete list is given in Lindblom, p. 133.

[39]Ibid., p. 5, although not all market-oriented systems are liberal democracies. On p. 116. He states that "However poorly the market is harnessed to democratic purposes, only within market-oriented systems does political democracy arise."

[40]Ibid., p. 8.

Consequently, he examines capitalist economies in liberal democratic societies and discusses the dominant role of business. He recognizes that while government must serve the needs of the population, it must also serve the interests of the business community, because of its significant control of the means of production.

He suggests that market systems arise from the simple exchange relation (two or more people or groups, each having something to offer, hoping for a response), and that exchange relations are ultimately governed by a societal "moral code" and authority. With the addition of money and prices, exchange can become a method of social organization.[41] Furthermore, exchange depends, in this type of system, on the ownership of property. Consequently it is the entrepreneur that exercises authority in the market system.

Lindblom discusses the inconsistency of the free market system, in that it argues that free markets enhance the liberties of individuals. However he points out that "...it is not at all obvious that free exchange makes (or leaves) the less propertied members of that society free."[42] Nevertheless, the creation of markets (such as the labour and consumer markets) and the evolution of a "societal code" surrounding the market system ensure its authority.

As such, it challenges polyarchal authority. Businessmen become a type of "public official" because of the great economic and moral power that they hold. Since politicians wish to promote economic

[41] Ibid., pp. 33-34.
[42] Ibid., p. 46.

growth, increase employment and restrain inflation, they are necessarily affected by the decisions of businessmen. Because it is not a command economy, politicians must induce business to perform. He states that "...businessmen do not get everything they want. But they get a great deal. And when they do not get enough, recession or stagnation is a consequence."[43]

The result is that in a liberal democracy or polyarchy, there are two, and not one, powers: the state and elected officials, and business. While conflict is inevitable, Lindblom suggests that business activities in political parties, pressure groups and electoral activities supplement its "privileged position" and reduces the outward appearance of conflict. This is enhanced by "...the possibility that businessmen achieve an indoctrination of citizens so that citizens' volitions serve not their own interests but the interests of businessmen. Citizens then become allies of businessmen. The privileged position of business comes to be widely accepted."[44] In light of this, he states that polyarchal policy "...never pursues central planning of production and is always tied to market systems."[45]

But can this situation be overcome to promote the interests of all citizens, and not just those of the business class? Marxists (and certainly Lindblom's analysis is in many ways similar to a Marxist analysis) would think not. However, Colin Crouch suggests that it could be overcome, "...since scope for autonomous working-class pressure (an

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[43]Ibid., p. 187.
[44]Ibid., p. 202.
[45]Ibid., p. 200.

aspect of polyarchy) is built in at the level of theory..."[46] Consequently Crouch tries to develop a non-Marxist theory of the state, based on Lindblom's analysis, that sees the state as not simply being a creature of class, but as a "web of institutions", which has a monopoly of coercion, and is ultimately guided by a pursuit of "social stability."[47]

While Crouch acknowledges the contribution of Marxist thought to the understanding of the capitalist-state relationship,[48] he ultimately rejects Marxism as having an incomplete theory of the state because of theoretical flaws in its analysis. After surveying the ideas of a number of Marxist theorists he concludes that problems arise due to their understanding (or misunderstanding) of class and because they offer a rigid definition of capitalism.[49] For example, he suggests that capitalists do not trust the state, for fear that it might respond to the interests and demands of labour. This is something that Marxists do not acknowledge.[50]

Crouch believes that labour can gain more power within capitalist society. The model that will allow for this is not the traditional liberal democratic model of society and the state, but rather some form of corporatism. However, the success of such a model is highly depen-

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[46]Colin Crouch, "The State, Capital and Liberal Democracy," in State and Economy in Contemporary Capitalism, ed. Colin Crouch (London: Croom Helm, 1979), p. 39.

[47]See Crouch, pp. 39-40.

[48]Crouch states that "...only Marxism has a theoretical apparatus capable of tackling the relationship between the political and the economic,". Ibid., p.13.

[49]See Crouch, pp. 24-36 for his description and analysis of Marxist theories of the state.

[50]Ibid., p. 27.

dent upon whether or not capital is able to control the new system.[51] During the post-WW II years, labour was able to disrupt the system (through strikes, for example) but was not allowed to participate actively in economic decision-making. But the international economic decline that has taken place since the mid-1970s has hampered this arrangement; while some look to labour for cutbacks and concessions, politically there is only so much that can be taken (or given, perhaps?) without some structural changes. Crouch suggests that increased labour participation in economic decision-making might just be the solution, so that "...the concession of power [is] being exchanged for the greater restraint in pressing demands that can be expected from interests that have a full share in making decisions."[52]

However, such a model might not guarantee success: societal factors and the mobilization of participating groups will have an impact on the outcome. For example, Crouch cites the differences between Swedish and West German labour to demonstrate the different outcomes that are possible; the more active and demanding Swedes have been more successful in obtaining greater power. Furthermore, a successful model will require real participation by groups involved: will the power-sharing be real, or will it be more of a token gesture?[53]

Ultimately Crouch is hopeful that changes along these lines will increase labour's power in a reformed capitalist society. He states that "...<u>to the extent that</u> these changes do lead to a genuine

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[51]Ibid., pp. 45-46.
[52]Ibid., p. 46.
[53]See Crouch, pp. 46-47.

increase in decision-sharing they will constitute an increase in the responsiveness of the state to working-class interests."[54] Increased participation could create more demands for services, decrease alienation from the welfare state, and increase democracy; however he does recognize the fact that if only token changes occur, the end result might only be temporary stability.[55]

But while people like Offe and Keane see the future democratization of society being rooted in new social movements, Crouch suggests that marginal groups will have only a marginal impact; it is the established and more powerful groups that will be more able to deal with capital.[56] Indeed Crouch offers the view that such a model might not be feasible, but it is possible that it could succeed. In noting that constant warnings of impending collapse by the Marxists have failed to materialize, he states that "It may well be that a capitalist society is unable to accommodate developments which threaten the dominance of capital. But to assert that it will be so as an iron law is to go beyond the predictive ability of social science."[57]

CONCLUSION

The goal of this chapter was to indicate that there is a political and economic model of state and society that on the one hand allows for an activist role for government to regulate the cyclical nature of capitalism, yet on the other hand also maintains and promotes individual

[54]Ibid., p. 48, his emphasis.
[55]Ibid., p. 51.
[56]Ibid., p. 52.
[57]Ibid.

liberties and freedoms, and aims to prevent the exploitation of labour. Neo-Marxist theorists suggest, as do neo-conservative theorists, that such a system is not feasible. The former point to the bureaucratization of the welfare state, the fiscal crisis of the state, the continued dominance of capital and the further exploitation and weakness of the working class to support their views; the latter note that large public debts and an increase in demands upon government lead inevitably to an "ungovernability" crisis.

However, a social democratic model based on post-Keynesian principles meets many of the charges. First of all, when put in historical perspective, current levels of debt and deficits are not that high;[58] furthermore, the recent rises in debt and deficit levels in many ways can be attributed to attempts to restrain government spending, which has a net effect of depressing the economy. The current economic "boom," as the popular media and many politicians refer to economic performances of the past six years in western industrialized countries (ignoring of course relatively high levels of unemployment), has been fueled by government spending; witness the significant rise in the United States' deficit and debt levels in the 1980s. However, most politicians and economists refuse to go the final step and recognize the importance of government spending to supplement Aggregate Demand, preferring instead to fret about the debt.

Once government debt is put in its proper perspective, the balance of the model becomes more justifiable. If debt is not necessar-

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[58]See Harold Chorney, Sound Finance, pp. 32-37.

ily detrimental, especially in poor economic times, then cutbacks in state spending aimed at solving the fiscal crisis of the state become unnecessary. The welfare state can instead focus on providing more services to people, and concentrate on improving social life in general. Certainly government, like any large organization, can and must offer more personalized and efficient services without alienating the population at large. But the principles of government intervention and the welfare state, which within a representative democracy are the best means of ensuring citizens some element of control and influence over the state of affairs, must not be questioned.

Perhaps capital will continue to resist any movement towards such a model, but it must be remembered that it will also often concede certain matters if it feels that its long-term interests are being protected, and that it also benefits handsomely from government intervention in the economy (through regulation and the purchases of privately-made goods, for example). More coordination and cooperation between labour, capital, government and social movements could allow for such a model to succeed, although there is the possibility, as Crouch points out, that capital will refuse to concede any significant power.

Ultimately what is needed is a better understanding of public finance that will provide the economic justification for government activity in the economy. From there, government will be able to pursue programs and services that benefit the population, and will allow for mass democratic participation and control over a more significant amount of political and economic affairs. Education and increased political

activity are necessary methods for achieving these ends. If this fails, and if capital continues to resist demands for a more democratic political economy, one could expect either a continuation of the status quo, or, perhaps, more "radical" political activity.

The following chapter explores the cyclical nature of capitalist economies, and focuses on long waves. It will examine the role that science and technology plays in economic growth, and demonstrate that technology and long waves must be considered when exploring macroeconomic policy and political economy.

Chapter IV

CAPITALISM, LONG WAVES AND TECHNOLOGY

The previous chapter attempted to demonstrate that a political economy that features a significant role for government is possible, and hence refutes many of the criticisms that have been aimed at the Keynesian Welfare State. Central to the post-Keynesian model posited in Chapter III is a renewed understanding of public finance and the positive role that deficits and debt can have on an economy. This must be combined with other issues pertinent to an understanding of capitalism, such as: the importance of aggregate demand and the maintaining of high levels of investment to allow for full employment; the psychological nature of capitalism as relates to investment and speculation; the negative impact of a significantly unequal distribution of wealth in society; and the instability of laissez-faire capitalism, its cyclical nature, and the possibility of equilibrium at less than full employment. Taken together, this understanding of capitalism allows for the development of a new perspective of economic society that balances individual and collective needs and interests.

The problems experienced in contemporary capitalist economies over the last two decades has produced a series of interesting reactions, both on a systemic or theoretical level (neo-Marxist, neo-conservative and post-Keynesian approaches to understanding political economy and broad proposals as to future directions that industrialized

economies should take), as well as on an applied level (featuring practical solutions and policy proposals). While the former have been examined in some detail in Chapters II and III, the latter have not been satisfactorily dealt with. This chapter will introduce and explore the policy field that has probably been cited most frequently as being the key to renewed and sustained economic growth, namely science and technology.

The economic stagnation that was experienced in the early 1970's in western industrialized countries and that has continued into the late 1980s has produced a great search for solutions, and has also produced a renewed interest in the theoretical concept of the long wave Long wave theory, forwarded by economists like Nikolai Kondratieff and Joseph Schumpeter, is a theory that suggests that industrialized countries go through a 50 to 65 year cycle of prolonged economic growth, followed by prolonged recession and depression, until a recovery takes place. When it was realized that Japan's strategy of first importing technologies and then developing domestic technologies had allowed it to remain relatively immune from the economic malaise that had afflicted other economies, science and technology quickly became a primary area of focus. Policy-makers became interested in the diffusion of technological innovations into other areas of the economy. The idea of technological diffusion as a possible source of economic growth, particularly in a period of recession or depression, comes from Joseph Schumpeter and more recently Gerhard Mensch, who explored the notion that depressed economic times triggered radical innovations. Mensch in particular has argued that radical innovations were more likely to "swarm" or "bunch" in the

depression phase of the long wave, the result of which would be a return to prosperity. Their ideas will be explored later in this chapter.

Canada has not been exempt from the preoccupation with science and technology. While being concerned with S&T issues at a relatively early stage of its existence, the formation of the Lamontagne Committee[1] in 1968 served official notice that Canada was concerned about her future, and was interested in the possibilities that S&T could offer in making that future a better one. More recently, research and development (R&D) has been an espoused cornerstone of Prime Minister Mulroney's economic strategy. For example, his party had promised in the 1984 election campaign to double the Gross Expenditure on Research and Development (GERD) as a percentage of Gross National Product; in January 1988 his government pledged to spend $1.3 billion in S&T from 1988 to 1993; it announced that a network of "centres of excellence" would be established in Canadian universities; the integration of the Ministry of State for Science and Technology (MOSST) and the Department for Regional and Industrial Expansion (DRIE) into a larger and more powerful Department of Industry, Science and Technology (DIST), which would function as the government's "economic flagship" department, with a senior Cabinet Minister, Robert de Cotret, a member of the powerful Planning and Priorities Committee; the creation of "InnovAction" in early 1987, a program that was designed to improve federal government management of S&T, and that would attempt to strengthen Canadian S&T activities in both areas of traditional strength and in weak or promising areas; Prime Minister

[1]The Special Senate Committee on Science Policy was chaired by Senator Maurice Lamontagne, a noted economist, ex-politician and Cabinet Minister.

Mulroney's chairing of a non-partisan National Advisory Board on Science and Technology, which lends at least on the leadership level a significant boost to the Canadian S&T effort; and finally, the federal government's signing with the provinces of a National Science and Technology Policy in March 1987.[2] Consequently, this flurry of activities has resulted in a great deal of attention for science and technology in the media.[3] However, it remains to be seen if the government will follow through on its promises, if its actions will be integrated into overall government policy, and if its goals are indeed attainable.[4]

This chapter examines the role that science and technology plays in contemporary capitalism. Specifically, the concept of the long

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[2]For an analysis of Canadian science and technology policy see Paul Dufour and Yves Gingras, "Development of Canadian Science and Technology," Science and Public Policy, vol. 15, no. 1 (February 1988): 13-18; John de la Mothe and Louis-Marc Ducharme, "Science in Canada: Towards an Innovation Policy Framework," Futures (forthcoming April 1989); and John de la Mothe and David Henderson, "Science, Government and Consensus: What the U.S. Might Learn From Canadian Science Policy," Issues in Science and Technology (forthcoming June 1989).

[3]There are numerous examples of commentary in the written press, particularly by business columnists and by experts in the field contributing articles.

[4]It should be noted that the legislation confirming the creation of the new department had not passed through Parliament as of February 1989. As well, a February 1989 Cabinet shuffle following the November 1988 re-election of Brian Mulroney's Progressive Conservative Government has made Harvie Andre, an engineer and former engineering professor, responsible for Industry, Science and Technology, and has made William Winegard, also an engineer and a former President of Guelph University, his junior Minister. While the impact of the changes cannot be known for some time, it must be noted that both Ministers are not members of the key "Priority and Planning" Cabinet committee. Furthermore, will the proposed expenditures on S&T survive the government's attempt to greatly reduce the budget deficit? What will be the impact of reduced expenditures on S&T related actors and industries? Finally, one must attempt to appreciate the complexities of these actions. For example, promising to double GERD as a percentage of GNP does not simply mean that government must double its spending. Each increase in R&D expenditures contributes to an increase in GNP, so to double GERD as a percentage of GNP will over time require more money than what one might initially assume.

wave business cycle will be introduced, and will be the primary tool for examining the relationship between science and capitalism. A key concept that will be explored is "technological innovation," which refers to changes that occur in the economic sphere due to the introduction of new technologies or to the improvement of existing technologies. Methods of production and management can be affected by these innovations. There is a correlation between innovations in the economic and social spheres of society (the latter referring to the educational system, for example), but this issue is not discussed here.[5] An attempt will be made to shed some light on the following questions, which will be discussed in this chapter as well as in the concluding chapter: What role does science and technology play in creating economic growth? How does S&T relate to the issue of investment and aggregate demand in industrialized societies? Finally, can a science and technology policy, when integrated into the post-Keynesian model described in the previous chapter, offer a solution (either partial or complete) for overcoming the economic and political problems of contemporary capitalism?

LONG WAVES

The theoretical concept of the long wave has often been identified with the Russian economist Nikolai Kondratieff, although much evidence exists that demonstrates that in fact the Dutch economist J. van Gelderen was the original creator of this theory.[6] Early long wave

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[5]For a discussion of this topic see Carlota Perez, "Technologies in the Economic and Social Systems," Futures (October 1983): 357-375.

[6]See J.J van Duijn, The Long Wave in Economic Life (London: George Allen & Unwin, 1983), pp. 59-68 for a discussion of early long wave theorists. He suggests that Kondratieff first mentioned a long

theorists were primarily concerned with long-term fluctuations in price levels, production and capital goods, but as time went by, other factors gained importance as to their cause and what affected them, including scientific discoveries, technological innovation, investment trends, population growth and the socio-political environment.

Despite the disputes as to who should be credited with initially proposing the concept of long waves and when it took place, long waves were acknowledged as a valid and accepted theory in the field of economics only following the publication of Joseph Schumpeter's Business Cycles in 1939. His lengthy and thorough examination of the causes of economic growth in capitalist economies led him to conclude that there existed not only short and intermediate business cycles, which was the accepted contemporary understanding, but that there also existed a long wave that lasted between fifty and sixty-five years. His findings revolutionized economic theory and gave credence and publicity for the relatively unknown works of Kondratieff and van Gelderen.

The long wave can be defined as a phenomenon that appears to occur in western industrialized economies. Over a period of approximately fifty to sixty-five years, the economy passes through a cycle in which there are four phases: (1) depression: economic activity is stagnant, there is excess industrial capacity, price levels are low, and unemployment is high; (2) recovery: economic activity begins to pick up, greater aggregate demand forces producers to increase their capacity,

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wave in an article in 1922, while van Gelderen's first article on the subject was published in 1913.

unemployment starts to fall, and generally economic growth occurs; (3) prosperity/maturity: the economic recovery is in full bloom, as aggregate demand is high, unemployment is low, and price levels might be increasing; however at the end of this phase economic activity starts to slow down, as aggregate demand decreases (as people tend to save more when they are making more money or are regularly employed), and slowly excess capacity begins to build up; (4) recession: this is the start of the downswing. Excess capacity becomes a serious problem, as capital goods producers "overshoot" demand; consequently investment declines, producing stagnation (deflation and higher unemployment). Just as there is not a definite length of the entire long cycle, each phase is not necessarily of the same length. The length of each phase depends on factors such as government policy, the nature of the international economic order, and the activities of the domestic business community.

This definition is probably acceptable to most if not all economists who have studied this area. Disputes exist, as will be seen later in this chapter, as to the causes of long waves, whether they are deterministic in nature, and whether successive long waves are related or are independent phenomena.[7] The balance of this chapter will focus on four distinct yet related factors that affect long waves, namely scientific discovery, technological innovation, investment and profit-seeking, but will be based on the view that scientific discoveries and technological innovations are key elements in long wave theory. The

[7]For a good overview of various theories of long waves, see among others van Duijn, op. cit., and Maurice Lamontagne, Business Cycles in Canada (Toronto: James Lorimer & Company, 1984).

purpose is to understand even further and elaborate the understanding of capitalism presented in the previous chapters.

SCHUMPETER'S TECHNOLOGICAL LONG WAVE

Schumpeter's work is the foundation of subsequent examinations of the role of science and technology in the long wave, but it has not produced a uniform approach to the field. For example, Schumpeter's own ideas on long waves changed significantly within a ten year period. As well, contemporary long wave theories range from the purely deterministic view of Mensch to the views of Freeman, Clark and Soete, who see technology and science as playing an important but non-deterministic role in the long wave. These theories will be examined later in this chapter, after first describing Schumpeter's original model.

Schumpeter saw technological innovations as being the cause of the growth phase of the long wave. Inventions, which he defined as the discovery of something new, like a product or a production process, did not become significant until they became innovations. The transformation occurred when an invention entered the economic sphere: ". . .in short, any 'doing things differently' in the realm of economic life - all those are instances of what we shall refer to by the term Innovation."[8] In other words, it is possible to have an invention without innovation taking place.

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[8]Joseph Schumpeter, Business Cycles, vol. 1 (New York: McGraw-Hill, 1939), p. 84.

"Economic evolution" refers to the changes in the economic process that have been produced by innovation, as well as the effects and responses of the system. Evolution is not smooth; rather it "...is lopsided, discontinuous [and] disharmonious by nature - that the disharmony is inherent in the very modus operandi of the factors of progress."[9] This is caused by innovation. An invention occurs, and then the innovation takes place. It adapts the invention either to the needs of society or to the needs of a newly-created industry based on the invention.

Before describing the actual process, it is first necessary to briefly list the assumptions that Schumpeter made.[10] (1) Both major and minor innovations require the construction of new plant and equipment (or the rebuilding or modification of the old plant), which takes up time and outlay. (2) He argued that every innovation should be seen as if it was "...embodied in a New Firm founded for the purpose."[11] In other words, when the purpose or the goal of the innovation is met or becomes obsolete, then the firm "loses life". (3) New innovations are associated with "new men"[12] and their assumption into leadership. Because the new men, for Schumpeter, are great entrepreneurs and not necessarily just owners of capital, they are able to create new firms.

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[9]Ibid., p. 102.

[10]They are given in Schumpeter, pp. 93-104.

[11]Ibid., p. 94.

[12]Schumpeter believed that the new men were the heroes of capitalism; as such they were more than businessmen. Driven by desire, ideas and a willingness to take risks to change the status quo for personal and societal advancement, the new men were also in a sense cultural heroes. It is interesting to note that in the current era of neo-conservatism, society has returned to celebrating businessmen like Donald Trump, Frank Lorenzo and T. Boone Pickens, admiring them for their ability to make large profits. Their status is enhanced by their high profile in the media.

This is because the key to entrepreneurial activity is coming up with an idea, and then arranging to get the capital necessary to implement the idea; owning capital does not guarantee innovation. The ownership of capital simply makes it easier to become an entrepreneur. These views reflect Schumpeter's training in classical economics, but as will be seen later, these views changed somewhat in a subsequent book, Capitalism, Socialism and Democracy.

Schumpeter argued that innovation takes place because of the anticipation of profits. Profit "...is the premium put upon successful innovation in capitalist society and is temporary by nature: it will vanish in the subsequent process of competition and adaptation."[13] In fact he argued that most large private fortunes were linked directly or indirectly to successful innovation.

It is in the nature of firms to try to capture a larger share of their market. In a price-sensitive market, firms do this by attempting to cut their production costs. If a firm is able to do this, say by producing the same amount of goods for less money, then Schumpeter would argue that somewhere, innovation has taken place. A primary consequence of innovation, therefore, is that it constantly changes a firm's cost curves.[14]

Once innovation is successfully implemented, others (especially direct competitors or firms in a subsidiary industry) wish to copy or improve it, in order to cut their costs and to remain competitive.

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[13]Ibid., pp. 105-106.
[14]Ibid., pp. 88-91.

Consequently innovations tend to: (1) cluster in a certain time frame, and (2) concentrate in certain sectors of the economy or industries at one period in time. However progress is not smooth as some firms in an industry move ahead, while others remain behind. Firms may resist innovation because the "old way" is dependable, or because they disapprove of new machinery or new production techniques. Others may resist innovation and "sabotage progress" not through price competition but through defensive methods, such as appealing for protective legislation.[15]

Successful innovation also leads to the creation of credit, as firms borrow money to finance investments in innovation. Because of the anticipation of profit, an entrepreneur is willing to absorb the cost of interest. Schumpeter argued that the returns from innovation support the capitalist class, and that these returns would disappear if innovation was to stop. He also argued that innovation is a major determinant of the rate of interest, because entrepreneurs are willing to borrow in order to invest in the innovation process.[16]

The economic process, for Schumpeter, works as follows.[17] Once the innovation takes place, the "leader" sets up a new firm, builds a plant, and orders new equipment. To pay for this, he or she borrows from the bank. Other firms soon follow. As the number of firms increases, the path of innovation becomes smoother, because obstacles related to the innovation are gradually removed, especially as more

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[15]See Schumpeter, pp. 100-102, 108.
[16]Ibid., pp. 124-125, 114, 159.
[17]This is summarized from Schumpeter, pp. 131-143.

experience is gained. The technique or innovation can now easily be copied or modified, which opens up many new opportunities.

Once plants start to produce, revenues accrue. Some firms start to pay for their borrowed capital, and are still able to make a profit. But as the output of innovation increases, its effects start to show. The innovation becomes standardized, embedded in the production process and diffused throughout the economy. The wage bill of labour becomes more significant as its price drops. The result, in this price-sensitive market, is that some firms will be winners while others will be losers. Firms that can adapt to the changes produced by innovation survive, due largely to modernizing or rationalizing the production process. Those firms that cannot adapt meet their "economic death." The end result is that the state of equilibrium, which in classical economic theory the market is always in or is headed towards, is disrupted.

This process is also known as the "innovation life cycle." According to van Duijn, this cycle, which is marked by demand structure and the type of innovative activity, has four phases:[18]

(1) Introduction: "there are many product innovations as different technological options exist, and little is known about the nature of demand."

(2) Growth: "there is increasing acceptance by customers, with a decreasing number of product innovations. Sales growth leads to a

[18]Taken from van Duijn, The Long Wave in Economic Life, p. 133.

standardization of technology, and there are cost-reducing process innovations."

(3) Maturity: "the output ratio slows down, and competition through product differentiation increases; innovations concern improvements. Process innovations are labour saving."

(4) Decline: declining sales. Attempts are made to escape saturation through changes in technology, and the use of labour-saving process innovations continues."

The final period represents the end of the spurt of economic growth. When the price of the product drops, firms begin to sell it increasingly closer to the actual cost of production. Many firms stop making a profit and consequently lose the will to innovate. In essence, the firm has spent itself. Furthermore, the state of disequilibrium caused by innovation makes planning by firms more difficult, as they are constantly adjusting to changing conditions. This not only increases the risk of failure, but also causes many firms to wait for more stable conditions before attempting to create and implement new innovations. Entrepreneurial activity slows down until it nearly stops. The economic slowdown caused by entrepreneurs spending and borrowing less money increases the downward pressure on prices, creating a condition of "autodeflation."

Schumpeter argued that this situation would continue until new innovations were created. Because money and credit react to underlying

economic pressures, a slowdown in innovation and entrepreneurial activity necessarily results in a general economic slowdown. When the new men produce new innovations, the cycle starts over again. He believed that the "ups and downs" were related in a cyclical fashion. First, progress alters a stable world (equilibrium is disrupted), and second, instability leads to an increase in the volume of errors made by entrepreneurs, which contributes to the widespread depressive effects of the cycle.

However, Schumpeter argued that there was no uniform long cycle (although its length was approximately between fifty and sixty-five years), because the shape of the various phases depends on factors such as the structure of firms, how they foster innovation, the exogenous supply of R&D (such as the number and quality of researchers, research results, etc.) and their financial strength.[19]

As well, the existence of other waves affects the shape of the long wave. Schumpeter examined a secondary wave, which can perhaps be described as the boom before the boom actually occurs. For example, if a new plant is built in a town, it has a positive impact on the local economy. Spending on capital goods will eventually lead to more spending on consumer goods, creating prosperity. This forces old firms to react to the new investment. It also increases speculation, as most people believe that the rate of growth will not change. (This is similar to the factors that affect one's willingness to invest, as discussed in the previous chapter.) Because of the great amount of new

[19]Ibid., p. 143.

activity that is generated, Schumpeter argued that the secondary wave is more important than the primary wave. He also said that the innovative wave hides behind the general wave of prosperity, which is why most economists did not recognize the importance of technological innovations.[20]

The great increase in activity related to the secondary wave not only creates prosperity, but also creates expectations of continued growth. People borrow to take advantage of the situation, but this also increases indebtedness. However, the speculative activities of the secondary wave worsen the downward trend of the economy. There are many more unproductive loans which do not increase productivity, and which, with a slower rate of economic activity, can also force profits and prices downward. With economic adjustments taking place, many of the speculative ventures collapse, the end result being that part of the debt structure crumbles.[21] Stagnation will continue until new innovations spark a recovery.

Schumpeter also expressed a belief in the coexistence of several waves.[22] First, if innovations are the cause of economic fluctuations, then it follows that the innovations will not occur at the same time. In this sense the short wave (commonly known as the inventory cycle, which lasts from three to five years) and the intermediate wave (also known as the Juglar or investment cycle, which lasts from seven to ten years) can affect the long wave. Second, because the waves are not

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[20]Ibid., pp. 145-146.
[21]See Schumpeter, pp. 146-148.
[22]Summarized from Schumpeter, pp. 166-179.

disconnected, when innovation occurs, the effect it has is likely to produce an innovation in the same or related field. Third, a basic innovation affects other fields. For example, the advent of innovations in steel production, vessel containment and low-scale heavy automation not only made possible railroad transportation, but it also created its own industry, and had a significant transformative impact on the entire economy. Some effects are seen immediately, while other effects require more time before they become visible. In the railroad example, the opening of a new line to a town has the immediate effect of increasing the potential of transporting people and goods to other towns. In the long run, the effect of the new line might be that the town has become a major center of production, because its manufacturers have a new and cheaper method of transporting goods to their markets.

Schumpeter accepted the idea that the short, intermediate and long waves were related. While they were each of a different order, they all had in common the fact that innovation was the ultimate cause of them. However, because there are both major and minor innovations,[23] one innovation can have a different impact on each of the three waves. For example, a minor innovation can have a fairly significant impact on the short cycle, but have little impact on the long wave. Moreover, he argued that the waves were very interdependent, so that short waves of innovation can play around one longer wave of innovation. For example,

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[23]A major or basic innovation is something that has a great impact on people, and the way in which we conduct our lives and businesses; electrification and the automobile are examples. Minor or process innovations are really innovations that have relatively little impact; examples include power steering in automobiles and more efficient light bulbs.

the Industrial Revolution can be seen as many small waves of innovation becoming one upward rise of the long wave.

Schumpeter's theory was one of the first of its kind. Innovation as the major determinant of business cycles was not a view that was commonly accepted by other economists of his day, but it has had a lasting effect. Subsequent economists have explored his theory, but while they have not necessarily followed his belief in classical economics, the primary concept proved to be intriguing enough to merit further investigation.

POST-SCHUMPETARIAN THEORIES

Once Schumpeter had introduced his innovation theory, other economists quickly picked up the debate as to the role of science and technology in the economy. While he was of a different economic orientation than Schumpeter, Alvin Hansen, a leading American Keynesian economist, argued as did Schumpeter that new technologies were an important factor upon which net investment depended.[24] He noted that "in the long periods of good times quite revolutionary new techniques are introduced which profoundly change the character of the whole economy. In the periods of the prolonged hard times these exceptional technological developments are damped down or run out."[25]

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[24]Other factors included population growth, expansion into new lands, and the discovery of new resources, although he saw these becoming less important as time passed by. See Alvin Hansen, Fiscal Policy and Business Cycles (New York: W.W. Norton and Co., 1941), p. 328.

[25]Ibid., p. 33.

Hansen believed that new technologies have a significant effect on investment and incomes. While innovations usually lead to increased investment and greater incomes, if the innovations do not favour quick expansion, then incomes and prices will fall, and will not keep pace with output.[26] This is because innovations can reach a saturation point whereby they no longer have the same impact. Even a slowing down in the rate of growth can lower the rate of investment in related firms and industries. This was the case with the railroads in America, he argued A slowdown in railroad expansion led to a significant decline in subsidiary industries linked to the railroads.[27] This led him to state that "new construction must continue to rise at a constant rate if new investment in the underlying subsidiary industries is to be maintained at...the pace set."[28]

Therefore, whether one adheres to the perspective of Schumpeter or Hansen, technology is seen as playing an important role in the long wave. It fuels the boom period of the wave, and after the new technologies have been exploited as much as possible, and if there are no new technologies to continue the boom, then the expansion stops and recession sets in.[29] However successful innovation, and therefore economic expansion, is unpredictable because Hansen follows Schumpeter in saying that innovation cannot be depended upon as being a regular occurrence, because it comes in "leaps and bounds."

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[26]Ibid., pp. 37-38.
[27]Ibid., pp. 39-40.
[28]Ibid., p. 40.
[29]Ibid., pp. 344-345.

But policy can nevertheless be oriented around innovati n. Being a Keynesian economist, he recognized that investment levels must be sustained to ensure that aggregate demand remains high enough to maintain full employment and continued economic growth. For extensive expansion to take place, it is important to link new industries to innovation. This is because he saw the field of technology as being one of the few remaining outlets for new investment. The pool of investment capital was growing larger, so it was the only source of hope for private investment to achieve full employment.[30] As well, he believed that technological innovation led to lower prices for consumer goods. He stated that:

> The cost-reducing innovation induces new investment, and this results in an increase in employment while the new investment is made, and, subsequently, in a reduction in consumer's good prices after the new investment pours out an increased production of goods.[31]

Hansen also addressed those who feared "technological unemployment," and said that they should not worry. Innovation creates new industries and serves as an outlet for investment capital. As this helps to increase investment levels, it promotes employment creation and compensates for job losses in declining industries. Therefore he argued for more, and not less, technological innovation.[32]

What Hansen feared was the cessation of growth due to a lack of investment. If economic growth is to be sustained, innovation must con-

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[30]See Hansen, pp. 361-364.
[31]Ibid., p. 333.
[32]Ibid., pp. 361-2.

stantly be promoted. However, while this was only dependent on the "new men" in Schumpeter's perfect competition model, Hansen saw things quite differently. He feared the problem of an oligopolistic economy with strong labour unions. In this type of economy, price is no longer the key factor; rather, in order to avoid capital losses, cost-saving innovations might not be introduced until the economies of the new technique at least cover the undepreciated value of the old machines or capital goods. This problem is multiplied when it is considered that large established corporations have a great edge over the new men. These corporations have more extensive research facilities, and also possess the necessary capital (or have easier access to capital) to seek or stimulate innovation that would best serve their interests. This would not be possible, however, in Schumpeter's price-competitive economy.[33]

The different economic philosophies of the two men influence the distinction between their models. Schumpeter the classical, with his laissez-faire vision, sees the turmoil caused by innovation as the great equalizer. Because of the clustering of innovations, and because they are partially dependent on the new men, oligopolistic tendencies are not a concern for him, as he said that capital alone cannot ensure innovation; it only helps the innovative process.

Hansen the Keynesian, on the other hand, is far less trusting of the perfect market. More concerned about the possible detrimental effects of the concentration of capital, he sought to ensure that innovation was promoted to guarantee that investment levels remained high

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[33]See Hansen, pp. 362-364, 380.

enough to maintain full employment. The great danger was that those with capital would simply not invest. While it would serve their short-term interests, for the economy it could mean economic stagnation. While Schumpeter accepted the laissez-faire economy, and therefore the ups and downs of the business cycles, Hansen was primarily concerned with continued economic growth, full employment, and the growing influence of big business in the investment process.

Interestingly enough, in Capitalism, Socialism and Democracy,[34] published one year after Hansen's Fiscal Policy and Business Cycles and three years after Business Cycles, Schumpeter had revised his position, bringing it much closer to the views of Hansen. However he was still a strong believer in laissez-faire capitalism. In a book devoted largely to his prediction of the end of capitalism,[35] he suggested that economic processes under capitalism would lead to a growing concentration of industry. Large oligopolistic firms would increasingly control economic activities instead of entrepreneurs, and they would be able to control research and development activities according to their own needs and timetables; the pressures of the free competitive market would not necessarily compel them to immediately introduce innovations. Price competition is a casualty of the evolution of capitalism, as firms,

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[34]Joseph Schumpeter, Capitalism, Socialism and Democracy (New York: Harper and Brothers, 1942).

[35]The end of capitalism was foreseen not because of the failure of capitalism as an economic system but because of its successes. In the prologue to Part II, "Can Capitalism Survive?", he wrote "The thesis I shall endeavor to establish is that the actual and prospective performance of the capitalist system is such as to negative the idea of its breaking down under the weight of economic failure, but that its very success undermines the social institutions which protect it, and 'inevitably' creates conditions in which it will not be able to live and which strongly point to socialism as the heir apparent." Ibid., p. 61.

growing larger and stronger from previous successes, seek to protect themselves and their investments from the risky nature of innovation and new technologies.[36]

This theme, and in general the examination of economic and social structures in western societies, became more popular in the post - World War II era as concerns were raised about their apparent tendencies towards increasing concentration and elitism. C. Wright Mills became a leading American critic of the structure of American society.[37] As well, other American Marxists like Paul Baran and Paul Sweezy produced penetrating critiques of American society. Their book Monopoly Capitalism,[38] published in 1966 when the USA was at the peak of the post-war boom, put forth the thesis that American capitalism, symbolized by the large multi-national corporations, was a wasteful system that benefited the wealthy and the multinationals to the detriment of the poor and the middle class. Attacking liberal pluralism, they suggested that monopoly was a normal outcome of capitalism, an argument that is really not that different from Schumpeter's in Capitalism, Socialism and Democracy. They argued that price mechanisms do not work in this type of model. Furthermore, huge economic surpluses are created but are not consumed, as the great majority of wealth is controlled by the economic and social elite. Surplus must therefore be reduced through the lowering of investment levels, creating stagnation. The message is simple:

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[36]See Capitalism, Socialism and Democracy, Chapter VIII, "Monopolistic Practices", pp. 87-106.

[37]See for example C. Wright Mills, The Power Elite (New York: Oxford University Press, 1957).

[38]Paul A. Baran and Paul M. Sweezy, Monopoly Capital: An Essay on the American Economic and Social Order (New York: Modern Reader Paperbacks, 1966).

if surplus is not absorbed, then surplus is not created. New areas of investment must be found to soak up capital. One obvious area is new technology, although whether the authors would have seen this as a viable option is very debatable.[39]

While they are not seen as long wave theorists, the work of Baran and Sweezy, and in general "underconsumptionist theory,"[40] is important to long wave theory, because of the argument that monopoly capitalism produces a chronic tendency towards stagnation.

The concerns of Schumpeter and Hansen, on the one hand, and Marxist critics like Baran and Sweezy, on the other, are addressed in John Kenneth Galbraith's The New Industrial State. Although Baran and Sweezy would not agree with Galbraith's conclusions, seeing him as too liberal, Galbraith nevertheless discusses the growing power of the large corporation and its role in controlling technology and technological innovation. Defining technology as "...the systematic application of scientific or other organized knowledge to practical tasks",[41] he noted that the greater the sophistication of technology, the greater are the requirements and the consequences of that technology. He suggested that there are six major consequences of technology:[42] (1) "An increasing

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[39]In a personal interview with Paul Sweezy when he visited Montreal in November 1988, he somewhat pessimistically rejected the possibility of new technologies serving as an outlet for new investment, arguing that control of capital, and its consequences, are the most important factors.

[40]Underconsumptionist theory suggests that stagnation is caused by a lack of consumption in the economy, particularly because the lower classes of society do not have enough purchasing power.

[41]John Kenneth Galbraith, The New Industrial State (New York: Signet Books, 1967), p. 24.

[42]Ibid., pp. 25-29.

span of time separates the beginning from the completion of any task." (2) "There is an increase in the capital that is committed to production aside from that occasioned by increased output." (3) "With increasing technology the commitment of time and money tends to be made even more inflexibly to the performance of a task." As the technology becomes more specialized, tools, machinery and workers become inflexible in that they can often perform but one task. (4) "Technology requires specialized manpower." (5) "The inevitable counterpart of specialization is organization." In other words, there is a need for the coordination of the specialists. (6) "From the time and capital that must be committed, the inflexibility of this commitment, the needs of large organization and the problems of market performance under conditions of advanced technology, comes the necessity of planning." You must plan in the present for future needs, and more importantly you must be able to foresee future conditions.

Galbraith's thesis is that the American economy is dominated by five or six hundred large corporations, and that it is only the large corporation that is truly able to manage the requirements of technology It is able to meet the substantial capital investment necessary, and has the organizational abilities to invest in new technology. To counter the oligopolistic character of the economy, there is a need for state intervention and planning. The state finances research and purchases goods in order to ensure its presence, leading him to suggest that "Modern technology thus defines a growing function of the modern state."[43]

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[43]Ibid., p. 17.

The greater the involvement of technology in production, the greater is the need for planning, as unknown market response is too risky, given the large financial investment in the new technology. Planning therefore replaces the natural market forces of supply by (1) attempting to prevent unforeseen consequences, and (2) as the first factor is difficult to achieve, then the large corporations try as much as possible to control material costs and the amount of labour needed.[44]

The corporation is able to control market influences because of its large size, which allows for diversity in manufacturing. For example, if one project loses money, then the losses might be covered by profits in other areas, which increases the need for planning, as risk-taking must be coordinated. Market forces can be controlled in three ways: (1) through vertical integration, which ensures supplies at known costs and reduces uncertainty in the supply market; (2) by controlling the market, which reduces the manoeuverability of a firm's buyers and sellers; (3) by having contracts with other firms, in order to specify or control for prices of supplies or goods, the amounts bought or sold, and the length of the contract.[45] So clearly, for Galbraith the notion of an economy with market-determined prices is a myth.[46]

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[44]Ibid., pp. 35-37.

[45]See Galbraith, pp. 38-42.

[46]See Galbraith, Chapter XVI, "Prices in the Industrial System", and Chapter XVII, "Prices in the Industrial System (continued)". He writes that "...industrial planning requires that prices be under control. Modern technology reduces, we have seen, the reliability of the market. And it increases the commitment of time and capital that are required in production. For this reason prices cannot be left to the vagaries of the unmanaged market." (p. 199.)

Because of the large amounts of time and capital required for investing in new technology, and because industrial planning vis-a-vis the market is linked to size - the larger the firm, the easier it is to plan - large corporations are in a very favourable position for controlling new technology as well as the economy.

Power goes to those people who have something scarce, in a capitalist economy, it goes to those that control capital. Nevertheless, Galbraith argues that power has shifted in the modern economy, from those who own and control capital to the "technostructure." It refers to "organized intelligence," and is composed of those who possess technological and technical expertise. He describes the process as follows:

> Power has, in fact, passed to what anyone in search of novelty might be justified in calling a new factor of production. This is the association of men of diverse technical knowledge, experience or other talent which modern technology and planning require. It extends from the leadership of the modern industrial enterprise down to just short of the labor force and embraces a large number of people and a large variety of talent. It is on the effectiveness of this organization, as most business doctrine now implicitly agrees, that the success of the modern enterprise now depends. Were this organization dismembered or otherwise lost, there is no certainty that it could be put together again. To enlarge it to undertake new tasks is an expensive and sometimes uncertain undertaking. Here one now finds the problem of an uncertainly high price at the margin. And here one finds the accompanying power.[47]

[47]Ibid., pp. 69-70.

The technostructure represents the real source of power in the corporation because of its planning ability, as well as its independence from the capital markets, because it grows its own earnings. But in fact corporate structures are devised so as to protect the technostructure, so that planning and the mobilization of capital, which are needed to meet the requirements of technology, can take place. Corporate growth becomes an essential, since the technostructure accounts for a significant portion of the corporation's largest budget. Without growth, the technostructure could be cut back, so in the interests of protecting itself, growth becomes the focus.[48]

Technology becomes the means to the end; "technological virtuosity" is seen as being the secondary goal of the corporation, after the achievement of a certain level of profits and rate of growth. The lesser goal can be fulfilled only when the primary goals have been achieved, but it cannot interfere with the main goals; if it does, then its role will be curtailed.[49]

The technostructure justifies its control over technology by equating its goals with society's. Increased production and productivity, progress, new technologies, promoting the notion of the need for technological change, and demonstrating the preference for consumption goods over leisure - all are identified with social progress and a higher standard of living. Whatever increases this standard is justified and legitimized. Technological change becomes an "approved social

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[48]Ibid., pp. 181-182.
[49]Ibid., p. 186.

function."[50] Once this occurs, then it becomes much easier for the technostructure to pursue its own agenda.

The new industrial state is further supported by the corporation-state relationship.[51] The educational system expands in the general direction towards the needs of the industrial system, training future workers (mostly white-collar) and retraining blue-collar workers. Furthermore, a large public sector is needed to stabilize aggregate demand and to purchase the goods produced by the industrial system. It is also necessary for subsidizing research and development, largely in the military field (in the United States). Large military research contracts in turn subsidize these corporation's private innovations, for private gain. Military research is essentially riskless, and cushions private risk-taking. Hence the strong relationship between the state, the military, and the industrial system.[52]

The relationship can best be described as state money subsidizing corporate profits via military contracts, and reflects the hypocrisy of the free market myth. As Galbraith sarcastically notes, "Men will look back in amusement at the pretense that once caused people to refer to General Dynamics and North American Aviation and A.T.&T as <u>private</u> business."[53] In fact, this relationship removes the uncertainty of the market and secures the planning process, causing it to become the central feature of the new industrial state, while of course maintaining

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[50]See pp. 174, 350-351.

[51]On this issue, see also David Noble, <u>America by Design</u> (New York: Oxford University Press, 1978).

[52]This is also the theme of C. Wright Mill's <u>The Power Elite</u>.

[53]Ibid., p. 400, his emphasis. See also pp. 42, 334-335, 361, 399.

the free enterprise rhetoric. Galbraith writes that "...this has become for the participants a very attractive part of the industrial system. The fully planned economy, so far from being unpopular, is warmly regarded by those who know it best."[54]

Galbraith's views suggest a different perspective of technology, namely that those who control it can and do use it for their own interests. The disturbing aspect of this is that it is encouraged by the state. The "post-Schumpeter" critiques that have been discussed in this section reflect the continuing concern about the importance of science and technology. However, they also demonstrate the weakness of the free market model of the long wave. The growing pools of capital, and who controls them, have become equally important issues. Having the power to control technological innovation, and also having the perhaps unforeseen ability to inflict stagnation on an economy greatly affects business cycles and the political economy. While not dealing directly with long waves, Galbraith, Baran and Sweezy have greatly contributed to an understanding of the special relationship between technology and capitalism. The following section examines more contemporary observations of technology, capital and long waves.

TECHNOLOGY, CAPITAL AND LONG WAVES

The rising inflation and unemployment rates that began in the late 1960s, as was noted earlier, led to a rejection of Keynesianism and produced a search for new policy alternatives. Stagflation reached a

[54]Ibid., p. 42.

peak in the late 1970s, and was followed by the recession of the early 1980s, which was marked by high interest and unemployment rates. The combination of the worst recession since the Great Depression of the 1930s in particular, and the extended period of declining economic performance in general, produced a renewed interest in long wave theory. Attempts were made to explain this long economic slump and to offer remedies for curing the situation. Were the rather pessimistic observations of Hansen, Schumpeter (in Capitalism, Socialism and Democracy,) Baran and Sweezy, Galbraith, as well as the Marxist critics cited in Chapter II accurate?

Contemporary long wave theorists appear to suggest that they were not accurate, although they have often recognized and acknowledged many of their concerns. This section will describe some of these theorists and their reactions to the most recent economic decline

Gerhard Mensch:

Mensch's views are essentially deterministic: major technological innovations are responsible for sustained economic growth, and economic stagnation is the result of a lack of major innovations. Building on Schumpeter's innovation theory of the long wave, he suggests that in periods of stagnation, capital cannot be invested in "...overgrown, unprofitable branches of industry...", but that promising new areas that have been neglected during times of prosperity do offer potential profitability for capital.[55] Consequently, new dynamism is injected into

[55]Gerhard Mensch, Stalemate in Technology: Innovations Overcome the Depression (Cambridge, Mass.: Ballinger, 1979), p. 9.

the economy, creating a situation in which new basic innovations tend to cluster, sending the economy into a new wave of prosperity.

The period of stagnation that occurs until a new period of prosperity arrives is the "stalemate of technology." Growth industries, which are the result of new basic innovations, flourish because they meet human and industrial needs. Eventually, these industries, and consequently the economy, become stagnant as they become more efficient, and their output of goods no longer matches the demands of the population. It is possible that during the downswing stagflation may arrive. During this period firms focus on minor or process innovations, reflecting attempts to rationalize production and maintain or consolidate their market position. When the depression phase arrives, incentives are greater to come up with major innovations, in order to restore profitability or restore its likelihood. New areas, therefore, "soak up" excess capital and labour. Mensch describes the process in the following terms:

> Stagnation in the economy is a sign of discrepancies between people's needs and the economy's supply. Firms adjust to changed needs via product and service innovations. Innovations cause changes in the division of labor. Basic innovations open up new areas of activity and consumption, and improvement innovations encourage further technical and organizational progress in these areas. ...[D]espite the general efficiency of the market mechanism, structural and functional difficulties will ensue in special circumstances. They can build up to critical levels at times. Generally, the market mechanism channels innovation and investment into the growth cycles of modern industries, which - given the organizational structure of the economy - will not continue their growth <u>indefi-</u>

> nitely but will eventually exhaust their momentum.[56]

He suggests that it is the technological stalemate that stimulates innovation activities, or prepares the economy for such activities. To create prosperity, new markets must be found or created; innovation is the key. Mensch provides empirical data that supports his contention that basic innovations do not occur regularly, but rather that they occur at the end of a technological stalemate.[57]

His belief that basic innovations are the key to ending economic stagnation, and that the market process, combined with government policy, channels activity into new areas, creating a clustering of innovations, is very similar to Schumpeter's original model. As will now be seen, another similarity with Schumpeter is the debate that his model has provoked.

Critics of Mensch: Freeman, Clark and Soete:

Freeman, Clark and Soete accept Mensch's notion of the "technological stalemate" and his emphasis on the distinction between major and minor innovations. However, they reject his contention that depressions trigger basic innovations through a reduction in the time that inventions become innovations.[58] Instead, they argue that the

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[56]Ibid., p. 82, his emphasis.

[57]See particularly Mensch, Chapter 4, "The Ebb and Flow of Basic Innovations", pp. 119-136.

[58]Christopher Freeman, John Clark, and Luc Soete, Unemployment and Technical Innovation: A Study of Long Waves and Economic Development (Westport, Conn.: Greenwood Press, 1982). Their critique is found in

depression phase inhibits or delays the search for and the introduction of basic innovations, while admitting that some basic innovations may nevertheless be introduced in this phase.[59]

Their first criticism of Mensch is rooted in their dispute as to the accuracy of his dating of when basic innovations actually occurred. They argue that Mensch's use of empirically weak sources of data weakens his argument considerably. When combined with the difficulty in estimating actual dates of invention and innovation, recognizing differences in opinions as to the actual dates, and classification problems (what is, and what is not a basic innovation), they suggest that it is indeed very difficult to agree with the conclusions that Mensch derives from his supporting data. Furthermore, they disagree with efforts that have attempted to validate Mensch's work, such as the work of Kleinknecht, stating that it too suffers from the same weaknesses.[60] It should be noted that Freeman, Clark and Soete's own estimation of the actual dates of the introduction of basic innovations is somewhat at odds with Mensch's dates.[61]

They also reject Mensch's contention that depressions trigger basic innovations, and that their lead times (the time it takes for an invention to be transformed into an innovation) are reduced in depressions as well. While their analysis shows that there is some merit to

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Chapter 3, "Mensch's Theory of 'Bunching' of Basic Innovations", pp. 44-63.

[59]Ibid., p. 81.

[60]Ibid., p. 49. See also Alfred Kleinknecht, "Observations on the Schumpeterian Swarming of Innovations," in Long Waves in the World Economy, ed. Christopher Freeman (London: Frances Pinter, 1984), pp. 48-62.

[61]Ibid., pp. 45-51.

the notion of the "bunching" of innovations (which they acknowledge), they argue that more reliable data and a greater analysis of the situation is necessary before one can state that there exists a causal relationship between innovations and the long wave (that depressions trigger basic innovations, or that the boom of the long wave crowds them out).

Their understanding of the relationship between long waves and science and technology is centered on the concept of "clustering" or "swarming," but as they relate to what they call "new technology systems." It is the diffusion of basic innovations that matters, and not simply their date of introduction; the impact of diffusion spawns new research in the same and similar fields, produces imitators, and in economic terms, creates the multiplier effect that generates economic growth. The rise of new industries (and the decline of old ones) are the consequences of swarming.[62] They summarize their position as follows:

> ...the "swarming" of innovative behaviour, which gives rise to economic fluctuations in Schumpeter's model, arises from the imitation and diffusion process and from the bunching of technically related families of innovations and inventions, rather than from a depression-induced bunching of a set of individual basic innovations.[63]

[62]Ibid., p. 65.

[63]John Clark, Christopher Freeman and Luc Soete, "Long Waves, Inventions, and Innovations," in Long Waves in the World Economy, ed. Christopher Freeman (London: Frances Pinter, 1984), p. 76.

Depressions, in their view, would delay innovation; any bunching of innovations would most likely occur in the recovery phase of the long wave.[64]

Of great importance in understanding new technology systems is the notion of the "technological web," in which "...the 'clusters' of innovations are associated with a technological web, with the growth of new industries and services involving distinct new groupings of firms with their own 'subculture' and distinct technology, and with new patterns of consumer behaviour."[65] So clearly they support the idea that a family or industry evolves around one or more basic innovations, which is a major theme of Schumpeter's model, and to which Hansen referred to as well.

This leads them to explore the idea of "natural trajectories" of technologies, which describes the "...process of cumulative exploitation of new ideas...".[66] These trajectories can apply to a specific industry, such as the automobile industry, or to generally important discoveries and processes, such as mechanization and electrification. They apply general natural trajectories (electrification, mechanization, automation) to their understanding of the long wave in the following fashion:

> First, a basic innovation - the steam engine, the electric motor or the computer - and a small cluster of related basic innovations create possibilities of revolutionary changes in the

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[64]Ibid.

[65]Freeman, Clark and Soete, Unemployment and Technical Innovation, p. 68.

[66]Ibid., p. 73.

> methods of production in a wide variety of industries and services. Firms which are producing and designing the new types of capital goods experience a surge of extremely rapid growth and many new firms enter these industries (Coombs 1981). Secondly, the other fast-growing industries of the upswing of the long wave, which are in a position to do so, make use of these natural trajectories to exploit economies of scale and to achieve very high rates of productivity increase. The scale of their investment permits large-scale introduction of new technology. Here, we could expect further clusters of process innovations and instrument innovations, some specific to particular industries and others of more general importance. Thirdly, as the sustained expansion generates labour shortages and inflationary pressures on labour costs, profitability tends to decline and there is an increasing induced demand for labour-saving technical innovation throughout the economy, exploiting the potentiality of the most recent general natural trajectories. Applications here, however, may often be small scale and piece meal because of existing structures and traditions, and the lack of resources and skills. Some old- established but declining industries may succeed in achieving big productivity increases through rationalization and structural adaptation, accompanied by more investment, but the full exploitation of the potentiality of major new technologies in these sectors may often have to await another major expansionary phase.[67]

Clark, Freeman and Soete recognize the importance of invention and innovation in understanding patterns of economic growth in western industrialized societies. While this is also true for understanding the nature of long waves, their view is not a deterministic one. The innovation process, over time, is uneven and difficult to predict, for there are numerous other factors that contribute to the long wave and the quest for sustained economic prosperity, such as social pressures, investment patterns of private capital, and government policy. So while

[67]Ibid., p. 74.

science and technology (or science and technology policy) cannot offer all the solutions, they see them as being an important ingredient in solving economic problems.

Other Long Wave Theories:

Other theorists have focused on the importance of capital in the long wave, with science and technology having a significant yet secondary role. Ernest Mandel, a Marxist scholar, suggests that the key factor is the average rate of profit. Fluctuations in the average rate of profit are the cause of the upswing and the downswing of the long wave: when the average rate of profit increases, the economy enters into a sustained upswing; when the average rate decreases, a downswing is the result.[68]

Mandel also notes that these movements can be affected by several factors, such as changes in the rate of surplus value and changes in the composition and turnover of capital.[69] Furthermore, he argues that the internal logic of capitalism can explain the arrival of a downturn following a long upswing. In the anticipation of greater profits, the capital goods sector rapidly expands, but once saturation takes place, rationalization replaces expansion as the primary concern of capitalists. This leads to a contraction of investment. However, he states that to understand the transition period from a period of stagnation to an upswing in the long wave, exogenous factors that affect the

[68]Ernest Mandel, Long Waves of Capitalist Development (Cambridge: Cambridge University Press, 1980), pp. 9-14.

[69]Ibid., p. 14.

capitalist environment must be considered, such as the class struggle, the geo-political environment and other non-economic issues.[70] Hence his conviction that each cycle is a distinct historical period.

Mandel argues that the upswing of the long wave encourages and stimulates technological innovation. It is in these heady times, when average rates of profit and capital accumulation are increasing, that capitalists are willing to invest the large sums necessary for the creation of radical innovations that will transform social and economic life. This is the difference from "piecemeal current innovations that do not revolutionize basic techniques"[71] and which therefore have less impact. Hence Mandel concludes "...that there is rhythmic alternation between intensified research and initial basic innovation, during depressive long waves, and intensified radical innovation, during expansionist long waves.[72] So technological innovation, in this model, is dependent on the state of the average rate of profit.

Another model in which innovation plays a secondary role is the MIT System Dynamics National Model (SDNM), and its leading promoter, Jay Forrester. The model attempts to incorporate social and economic policies and processes, labour mobility and the industrial and financial sectors of the economy, but from the perspective of the corporation, and not from macroeconomic theory. The original purpose of the simulation

[70]Ibid., p. 21.
[71]Ibid., p. 40.
[72]Ibid., pp. 40-41.

was to understand the complexities of a political economy, in order to produce alternate corporate and national policies.[73]

However, it was noted that the model demonstrated fluctuations in in the capital goods sector were similar to a long wave, which led Forrester to explore long wave theory. He describes his theory as follows:

> The process involves an overbuilding of the capital sectors in which they grow beyond the capital output rate needed for long-term equilibrium. In the process, capital plant throughout the economy is overbuilt beyond the level justified by the marginal productivity of capital. Finally, the overexpansion is ended by the hiatus of a great depression during which excess capital plant is physically worn out and financially depreciated on the account books until the stage has been cleared for a new era of rebuilding.[74]

In this model as in Mandel's, technology plays only a secondary role. Indeed Forrester believes that even without innovation, long wave fluctuations would exist; rather, he sees "...the long wave as compressing technological change into certain time intervals and as altering the opportunities for innovation."[75] The rise of the long wave does revolve around certain processes, technologies and combinations of same, but once they are established, there is a significant resistance to innovation; investments will be made in "safe" fields, and efforts will be made to improve existing technologies. This explains the lack of

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[73]See Jay W. Forrester, "Innovation and Economic Change," in Long Waves in the World Economy, ed. Christopher Freeman (London: Frances Pinter, 1984), pp. 127-128, for a description of the model.

[74]Ibid., p. 129.

[75]Ibid., p. 131.

innovations towards the peak of the long wave and the subsequent decline. New innovations appear once buoyant times return, and when capital is again being invested.

The micro-base of the SDNM, it is suggested, provides for an integrated theory of the long wave based on the capital goods sector.[76] Indeed, John Sterman suggests that rather than focusing on one cause of the long wave, the SDNM takes into account the relationship between physical factors of the economy (capital goods production), individual decision-making and the "bounded rationality" of decision-makers, and the "potential for inherently oscillatory behaviour" when these forces interplay;[77] this problem is compounded when numerous other economic factors are introduced, such as innovation, inflation and interest rates. The combination of these factors, it is argued, explains the shortages and surpluses of capital goods, the relative insignificance, at least on a theoretical level, of technological innovation, and consequently the cyclical nature of the long wave.

CONCLUSION

The concept of the long wave has once again been restored to an important position in economic theory. While competing theories and their proponents dispute the exact nature, causes and influences of this wave, its existence can no longer be easily dismissed. Recognizing this

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[76]John D. Sterman, "An Integrated Theory of the Long Wave," Futures (April 1985): 104.

[77]Ibid.

can therefore contribute to a better understanding of capitalist political economies.

The concerns of post-Keynesianism, as outlined in the previous chapter, must therefore be modified or take into account factors that have been raised in this chapter. Certainly fluctuations in investment, the control of capital, speculation and non-inflationary growth remain key factors in identifying the problems in industrialized economies, but to this list one must add the long-term trends of the capitalist economy in order to truly understand the workings of this system. Therefore issues such as the control of technology, science and technology's role in economic growth, and their relationship to traditional macroeconomic concerns are of prime importance.

Technology policy therefore becomes a key factor in contemporary political economy and in attempts to even out the boom and bust nature of capitalism: to truly end the cyclical nature of the economy and remove its destructive effects, science and technology must be incorporated into economic and political policy, rather than simply being seen as a constant in macroeconomic models (as has often been the case).

The various long wave theories presented in this chapter obviously does not put one into a position of stating that one theory is proper, and that others are misguided, not, at least, without extensive empirical undertakings; rather, the purpose of this chapter has been to demonstrate the important role of technology and technological innova-

tions in the economy. The notion that technological innovations are directly responsible for economic growth and the upswing of the long wave is in many ways irrelevant or moot; the macroeconomy is far too complex to offer simplistic answers or solutions. What is obvious, though, is that technology does play a role, and does offer an outlet for the growing pool of capital that if otherwise is not invested, can again contribute to stagnation or recession. As Freeman, Clark and Soete state, "We are not suggesting that technology policies alone can be successful in solving...fundamental social, political and economic problems... However, we do believe that well-conceived technology policies are a vital ingredient of any strategy designed to combat the twin crises of unemployment and inflation."[78] The concluding chapter will reflect on this consideration, particularly as it relates to a post-Keynesian model of political economy.

[78]Freeman, Clark and Soete, Unemployment and Technical Innovation, p. 200.

Chapter V

CONCLUSION

This thesis has focused largely on macroeconomic policy and the causes of economic growth. The increase in unemployment and inflation levels since the early 1970s produced attacks on the Keynesian Welfare State, an institution that was put in place in most western industrialized countries following the end of World War II. Critics of both the Left and the Right argued, for different reasons, that Keynesianism as an economic philosophy was no longer able to provide stable economic and social conditions. Stagflation and increasing social tensions were proof of this.

Chapter II described neo-Marxist theories of the state, and outlined their critiques of capitalism, Keynesianism and social democracy. It was suggested that certain theorists were attempting to escape the rigid orthodoxy of Marxist philosophy, through an examination of the welfare state and social movements. However, their arguments were weakened by the resilience of the capitalist system. Furthermore, it was argued that their attacks on Keynesianism were misplaced, as what they were attacking was "bastardized Keynesianism."

Chapter III attempted to clarify the economic and political thoughts of John Maynard Keynes. It showed that Keynes' theories were far more complex than was normally attributed to them, and that conse-

quently there was a difference between the thoughts of Keynes and what was called "Keynesianism." His desire for a freer and more just society was the motivation behind his exploration of economic theory. This allowed him to escape the confines of classical economics, the policies of which were largely responsible for the Great Depression of the 1930s. The chapter also included references to social democratic theory, in an attempt to demonstrate the feasibility of Keynesianism as a paradigm of political economy.

Chapter IV examined the role of science and technology in economic growth. Through a survey of the literature on long waves, it was argued that technology and the rate of technological innovation are important factors in the rate of economic growth. However, doubt was shed on deterministic theories that suggest that there is a causal relationship between technological innovations and economic growth. Other important factors, including the control of technology, the structure of social, political and economic institutions, and the nature of government policy must also be taken into account.

However, long wave theory does indicate that science and technology policy can play an important role in general economic policy, regardless of whether or not innovation is the primary cause of long-term economic growth. Consequently, any economic strategy, including the general framework presented in Chapter III, must incorporate this important field into its policy proposals. Classical economic theory, including the work of Keynes, largely ignored technological change,

instead assuming that it was a constant.[1] The evidence suggests that this must be remedied.

But is it enough to simply suggest or put forth policy proposals? One great weakness of public policy and public administration as a subfield of political science is that the former is based to a large extent on logic and rationale - "This is how things are, so this is how they can be improved." However, political science is in many ways a study of the irrational. For example, if a potential governing party wishes to be elected, its leader must present a good image on television and be able to speak eloquently to a pack of reporters. It is not enough for him or her to simply put forth reasoned public policy proposals. The implication is that for any public policy to actually be implemented, the merits of such a program are but one consideration.

Therefore when considering public policy, one must also examine the state of politics and the nature of political culture in a society. "Keynesianism" was rejected not only because of a misunderstanding and misapplication of Keynes' ideas, but also because certain groups in society were and still are not interested in the social and political connotations that it carries. Marxists dismiss it because in their view Keynesianism simply prolongs the life of capitalism and delays the creation of a socialist state. Neo-conservatives attack it because of an ideological bias against state intervention. Entrenched ideological

[1]Martin Fransman, "The Shaping of Technical Change," in Technology, Innovation and Change, ed. Brian Elliott (Edinburgh: The University of Edinburgh, 1986), p. 10.

beliefs, unfortunately, carry much weight and have a greater impact than is desirable.

As such, it is perhaps unlikely that a true Keynesian model will ever be implemented. Political opposition is strong, and support from the general population, as the Marxists have found out over the years, is weak. If effectively used, the popular media could be used to gain public support, but this is just as likely to produce opposition as well.

But one should not be overly-pessimistic. After close to fifteen years of neo-conservative politics in most western countries, there is evidence that populations are starting to react against such policies. Continued high unemployment levels, despite promises of economic growth and proclamations that the economy is booming, are forcing governments to take notice of public opinion. Alternative economic strategies are receiving more attention from the media, so more people are becoming aware of the the consequences of neo-conservative economic policy. Moreover, other issues have forced governments to react to strong public pressures. The concern over the environment has even forced the most ideological of the neo-conservatives, Prime Minister Thatcher of Great Britain, to intervene in the marketplace through environmental regulations.

So all hope should not be lost. The problem in most liberal democracies is the relatively low level of political participation by citizens. It therefore becomes important for public policy specialists

to not only devise policy, but to discover methods to ensure that proposals are well-received and supported. Post-Keynesianism is a thoughtful and reasoned response to perceived political, social and economic problems. Now its adherents must find a way to let the population know this.

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