

ROSTON'S THEORY OF GROWTH:  
A CANADIAN CASE-STUDY

W.W.ROSTOW'S THEORY OF ECONOMIC GROWTH:  
A CANADIAN CASE-STUDY

By  
MARTIN HENRY JOHN FINCH, B.A.

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AUTHOR: Martin Henry John Finch, B.A. (Oxon.)

SUPERVISOR: Professor W.D.G.Hunter

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SCOPE AND CONTENTS: The central purpose of this study is to examine the attempt by W.W.Rostow to express the process of economic growth in a set of five stages, and to apply the stages system to the Canadian economy. A summary of the theory of stages is made from the full range of his writings, and its usefulness is appraised in the light of the many criticisms which have been made of it. The three central stages of growth are then applied to the development of the Canadian economy in the period 1820-1960. For each stage a comparison is made with the more usual interpretation in terms of the staple theory.

## PREFACE

The research on which this thesis is based, and much of the writing of it, was undertaken while I was a Graduate Teaching Fellow in the Department of Political Economy, McMaster University, in the academic year 1962-63. I wish to thank the University for making the Teaching Fellowship available to me, and the Faculty members of the Department of Political Economy for their helpful comments and generous interest in the progress of this study.

In particular I owe a very large debt of gratitude to my supervisor, Professor W.D.G.Hunter. It was he who first suggested the line of enquiry I have pursued here. Had it not been for his constant help and encouragement the project would have foundered long ago.

TABLE OF CONTENTS

DESCRIPTIVE NOTE . . . . . ii  
PREFACE . . . . . iii  
I. INTRODUCTION . . . . . 1  
II. THE STAGES OF ECONOMIC GROWTH . . . . . 20  
III. AN EXAMINATION OF THE STAGES OF ECONOMIC GROWTH . . . . . 33  
IV. THE PRECONDITIONS OF CANADIAN ECONOMIC GROWTH . . . . . 55  
V. THE TAKE-OFF STAGE IN THE CANADIAN ECONOMY . . . . . 75  
VI. THE MATURING OF THE CANADIAN ECONOMY I . . . . . 91  
VII. THE MATURING OF THE CANADIAN ECONOMY II . . . . . 106  
VIII. CONCLUSIONS . . . . . 134  
BIBLIOGRAPHY . . . . . 138

## I

### INTRODUCTION

To present in a single small volume a theory which generalises the sweep of modern history is a task whose difficulty and potential importance it would be hard to exaggerate; and to emphasise in its presentation the arbitrary and limited nature of the undertaking seems scarcely necessary. Yet part of the considerable attractiveness of the theory contained in The Stages of Economic Growth<sup>1</sup> has been attributed precisely to the fact that it leaves little out of account.<sup>2</sup> Ostensibly the book is concerned to reduce the process of economic growth to five constituent stages, by laying bare the salient characteristics of growth in a wide range of national economies, such that it may be considered a contribution to the growing literature on the problem of economic development. But it would be misleading to suggest that Rostow's theory has much in common with formal models of growth. In part it reflects a historian's impatience with the inability of economists to cope with variables which it is difficult to measure and whose impact is felt over a long period of time, and which are therefore generally assumed to be constant for the purposes of analysis. In part also the book may be regarded as the contribution of an American to his side's conduct of the cold war (with the result that some of his ideas have been widely 'popularised'). Perhaps for both these reasons Rostow emphasises the role of political and social factors in economic growth, and is led to suggest that his way of

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<sup>1</sup>W.W.Rostow, The Stages of Economic Growth, (Cambridge: at the University Press, 1960). Page numbers in parenthesis in the text refer to this work.

<sup>2</sup>P.T.Bauer and C.Wilson, "The Stages of Growth", Economica, XXIX, No. 114, (May 1962), 194.

looking at things constitutes an alternative to Marxian theory. An evaluation of the claim appears later in this chapter; but the very fact that it can be made with at least prima facie plausibility is some indication of the enormous scope of this work.

This thesis does not attempt to follow Rostow into all the areas which he has explored. Its main concern is to examine the first six of Rostow's ten chapters -- those which discuss in detail the stages of economic growth -- and his other writings on the theme of the stages. The comparison between Russian and American growth, the relationship between the stages and the problems of peace and war, and the analysis of Communism as a disease of the transition -- topics which form the bulk of the remaining four chapters -- are almost completely ignored. This is not of course because they are unimportant, nor because Rostow's treatment of them is not open to criticism. It is rather that to offer an adequate assessment would require additional specialist knowledge which I do not have. And as Cairncross points out, the connection between the two halves of the book is extremely tenuous.<sup>3</sup> In short this thesis is not an extended review of a book, but an examination of a theory which has its most complete, though not its only, exposition in that book.

The importance of Rostow's ideas is clearly demonstrated by their reception by both lay and academic audiences. Versions of the stages schema have been laid before widely differing sections of the public;<sup>4</sup> and the widespread comment which the doctrine aroused has not therefore been the monopoly of economists and historians,

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<sup>3</sup>A.K.Cairncross, "The Stages of Economic Growth", Economic History Review, 2nd. Series, XIII, No. 3, (1961), 452.

<sup>4</sup>The stages were conceived in a set of lectures delivered to undergraduates at Cambridge in 1958. Apart from The Stages of Economic Growth, Rostow has since expounded his doctrine in a large number of periodicals, ranging from Economic History Review, 2nd. Series, XII, No. 1, (August 1959), to Life (April 11, 1960), and from Harvard Business Review, XXXVIII, No. 1, (January/February 1960), to Pravda.

though inevitably the most systematic treatments of it appear in the learned journals.<sup>5</sup> That opinion should in general be very critical need cause no surprise, since the manner in which the theory is presented tempts the conclusion that Rostow has intentionally written a polemic. If so it is the volume of comment, rather than its verdict, which is the measure of his achievement.

The justification for this thesis is that the stages of growth are a profound half-truth, and as such may be more important than a trivial truth. The conclusion to Chapter III might well suggest that there is little to be said with confidence in favour of the stages of economic growth, and that the value of this thesis is questionable. But an additional justification is provided by the last three chapters -- not simply because the recent economic history of Canada is receptive to analysis along the lines suggested by Rostow, but because the only sure test of the theory is through a number of case-studies, of which this is one.

Although this thesis is only concerned with the substance of Rostow's theory of stages, a few words on his presentation of it are appropriate. One most startling fact is the extreme brevity and sketchiness of the theory, which Rostow accounts for as follows: The views presented here might have been elaborated, in a more conventional treatise, at greater length, in greater detail, and with greater professional refinement. But there may be some virtue in articulating new ideas briefly and simply to an intelligent non-professional audience. There are devices of obscurity and diversionary temptations that are denied the teachers of undergraduates. (pp. ix-x).

We may regret that Rostow did not go on to name this virtue, and it can scarcely be argued that greater detail and professional refinement would have rendered the theory less intelligible since, as is pointed out in Chapter II, it is sometimes impossible to understand Rostow's meaning, and largely because he fails to offer a systematic development of his ideas. This is a fault of the book,

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<sup>5</sup>The main points emerging from the most important of these are discussed in Chapter III.



which is lessened however by the possibility that The Stages of Economic Growth is written as a polemic; if so one could scarcely expect Rostow to draw its teeth by admitting the fact.

No doubt some critics have been alienated by the casual presentation of the theory in conjunction with the modestly sweeping claims which accompany the book.<sup>6</sup> They cannot have been sweetened by Rostow's use of misleading language, the more so since the "non-professional" audience, whether intelligent or not, would be less likely to understand the tricks employed. The objection here is not to the low standard of writing throughout the book but to the specific use of metaphorical language to convey false meanings or to conceal deficiencies in the analysis. "Take-off into self-sustained growth" and "compound interest" are the obvious examples to be cited: the suggestions that economic growth becomes automatic after a critical point has been reached and that growth normally occurs at a regular rate are both dangerous and, in the light of historical evidence, false. Similarly, the source of the "drive to maturity" goes unexplained. This criticism of the way in which Rostow presents his theory is not made to cast a general doubt on the validity of his less loaded concepts, but to emphasise the difficulty encountered both in giving an accurate summary of the theory and in offering an assessment of it.

This chapter will close by introducing the analysis contained in the second half of the thesis -- the application of the stages of growth to the Canadian economy. Before that however we shall prepare the way for Chapter II and Chapter III, in which the theory of stages is respectively stated and criticised, by considering the

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<sup>6</sup>In addition to Rostow's own assertion that he is generalising from a significant portion of modern history, his claimed alternative to Marxian theory is endorsed by the publisher as "comprehensive, realistic and soundly based". The most cursory examination of The Stages of Economic Growth reveals how inappropriate are at least two of the adjectives.

authenticity of Rostow's claim to be an alternative to Marx, and by discussing some general points in relation to the use of a stages approach in the writing of history.

It might be supposed that whether or not Rostow's stages of economic growth are an alternative to Marx's theory of modern history is a matter of no great importance. Among the least impressive claims that a hypothesis can make is to replace some other theory; if there is any substance to the claim then this should be evident from the hypothesis itself, without the assistance of additional argument. This may not be quite fair to Rostow, in whose scheme of things the attempt to explain away Communism is clearly very important, and who would therefore be predisposed to throw doubt on Marxism. Since this thesis is not concerned with Rostow's political analysis, the reasons why we shall attempt to weigh the claim are first, to see what can be learned of the nature of Rostow's theory, and second, to view in relation to another theory the problems with which Rostow is dealing.

It is not immediately clear precisely what Rostow provides an alternative to, nor in what sense the stages of growth are an alternative. Marxism is an enormous body of doctrine to dispose of so summarily; and while its parts do certainly cohere into a whole, it is also true that they are sufficiently separate to be considered in isolation, so that some areas of the doctrine may be regarded as more valid than others.<sup>7</sup> Rostow does not distinguish and deal individually with, for example, the economic interpretation of history and the theory of social classes; his criticisms of Marx may only apply to particular aspects of the doctrine, but his conclusion is made quite generally, and thus we are entitled to expect the stages of growth to cover much the same ground as the whole of Marx's theory of history.

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<sup>7</sup>This is J.A. Schumpeter's approach in Capitalism, Socialism and Democracy, (London: Allen & Unwin, 3rd. Edn. 1950), esp. p. 9.

This is certainly borne out by the meaning of an alternative, which in this case should attempt to explain the phenomena with which Marxism deals. It by no means follows that the analytic tools should be the same: the fact that both theories employ a set of stages is less important than that they are designed to analyse different series of events and are propelled not simply by different forces but by generically different types of process. Such similarities are likely to be quite superficial and add nothing to the power of the stages of economic growth as an alternative to Marxism.

Marx was not of course the only author of a theory of modern history before Rostow, and the sense in which the one may be an alternative for the other has still therefore to be discovered.

Rostow solved the problem by suggesting that

in its essence, Marxism is also (i.e. like the stages of growth) a theory of how traditional societies came to build compound interest into their structures by learning the tricks of modern industrial technology; and of the stages that will follow until they reach that ultimate stage of affluence which, in Marx's view, was not Socialism, under the dictatorship of the proletariat, but true Communism. (p. 145).

It is true that the substance of the second half of this quotation is important in Marxian theory. But neither it nor the first half has any claim to be the essence of Marxism which, if it exists at all, must surely be the economic interpretation of history. It makes very good sense to speak of Marx as a philosopher, a sociologist or an economist; but in each case his command of the discipline is either directed to the explanation of historical phenomena or is derived from the study of history. Moreover the power of Marx as a prophet depends to a great extent on his understanding of the past, such that historical materialism may reasonably be considered central to the body of his thought.

The interpretation of history offered by the doctrine, in its strict form at least, gives a unique status to the forms of production (the substructure) as determinants of the religion, ideology, ethics and institutions of society (the superstructure).

The nature of the substructure is in turn determined by the state of evolution of the productive forces and the relations of production. It is the social class which finds a vested interest in the preservation of the existing relations of production which orders and shapes the superstructure to its own advantage; but since the forces of production are constantly and rapidly changing, and hence requiring changes in the relations of production, the attempt to maintain a status quo leads to social tension and ultimately to social conflict. The superstructure is incapable of generating change in itself, and can only be altered by the dominance of a new social class which emerges victorious from the conflict.

This version of the theory is of course very much abbreviated and as likely to mislead as to inform. But it should at least be clear that the economic interpretation of history gives rise to a quite specific theory of political and social evolution which, even if it does fail to give a swift solution to all problems, does provide, as Baran and Hobsbawm express it, "an indispensable approach to the understanding of historical constellations".<sup>8</sup> ✓

There is no doubt that this is also what Rostow wishes to provide; and in spite of his misunderstanding of the essence of Marxism he clearly recognises the need to supplant historical materialism.<sup>9</sup> Yet here too his comprehension of Marx is quite deficient, a fact convincingly revealed by the following two quotations:

The first and most fundamental difference between the two analyses lies in the view taken of human motivation. Marx's system is, like classical economics, a set of more or less sophisticated logical deductions from the notion of profit maximization, if profit maximization is extended to cover, loosely, economic advantage . . . In the stages-of-growth sequence man is viewed as a more complex unit. He seeks, not merely economic advantage, but also power, leisure, adventure, continuity of experience and security; he is

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<sup>8</sup>P.A. Baran and E.J. Hobsbawm, "The Stages of Economic Growth", Kyklos, XIV, (1961), 238.

<sup>9</sup>See The Stages of Economic Growth, p. 2.

concerned with his family, the familiar values of his regional and national culture, and a bit of fun down at the local. (p. 149).

The economic interpretation of history does not mean that men are, consciously or unconsciously, wholly or primarily, actuated by economic motives. On the contrary, the explanation of the role and mechanism of non-economic motives and the analysis of the way in which social reality mirrors itself in the individual psyche is an essential element of the theory and one of its most significant contributions. Marx did not hold that religion, metaphysics, schools of art, ethical ideas, and political volitions were either reducible to economic motives or of no importance. He only tried to unveil the economic conditions which shape them and account for their rise and fall.<sup>10</sup>

Rostow thus interprets Marx to exclude all motives other than that which works for economic advantage; not only are they unimportant in shaping the social and political structure, but since Rostow's Marxian man is deprived his "bit of fun down at the local" such motives presumably do not exist at all. It is little wonder that Rostow found the Marxist solution "unsatisfactory" (p. ix), though it is surprising that he should allow himself to be deceived: plausibility is no attribute of the Rostow-Marx thesis. The error, whose commission Schumpeter anticipated, is quite simple; my behaviour may be ultimately determined by the social class structure, but this does not entail that my motives are not other than economic. Historical materialism requires only that the economic system should be the basic condition of an evolutionary process in the superstructure. Within that framework there is scope for a range of human action as wide as Rostow's "complex unit" could envisage.

According to Rostow there are two propositions to be derived from the economic interpretation of history, of which that relating to the economic motive is one. In the second -- that "the political, social and cultural characteristics of societies are a function of how the political process is conducted" (p. 145) -- he becomes orthodox. But most of his energy has been dissipated in showing

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<sup>10</sup> Schumpeter (op. cit.) pp. 10-11.

that there are motives other than the economic, and so the alternative to this proposition is little more than a flat denial of it.

Although the stages-of-growth are an economic way of looking at whole societies, they in no sense imply that the worlds of politics, social organisation, and of culture are a mere superstructure built upon and derived uniquely from the economy. On the contrary, we accept from the beginning the perception on which Marx, in the end, turned his back and which Engels was only willing to acknowledge whole-heartedly as a very old man; namely that societies are interacting organisms. While it is true that economic change has political and social consequences, economic change is, itself, viewed here as the consequence of political and social as well as narrowly economic forces. (p. 2).<sup>11</sup>

In order to present an alternative to a theory it is not strictly necessary to disprove that theory (though to do so might add weight to the alternative); we may accept therefore that Rostow was not satisfied with the Marxist understanding of history, and thus sought to replace it "from the beginning". But in offering his alternative Rostow seems to be saying no more than that the superstructure is not determined uniquely by the economic system. Marxism has surely been important because it countered the more obvious and imprecise view that societies are "interacting organisms". If we accept Rostow's understanding of the process of change, all we have done is to reject the Marxist interpretation.<sup>12</sup>

It is pointed out below that Rostow rightly insists on the importance of political and social causation in his theory of

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<sup>11</sup>My emphasis.

<sup>12</sup>It is not absolutely certain that we have even done that. Rostow's mention of Engels is probably a reference to the following passage: "According to the materialist conception of history, the determining element . . . is ultimately the production and reproduction in real life. More than this neither Marx nor I have ever asserted. If, therefore, somebody twists this into the statement that the economic element is the only determining one, he transforms it into a meaningless, abstract and absurd phrase. The economic situation is the basis, but the various elements of the superstructure . . . also exercise their influence upon the historical struggle, and in many cases preponderate in determining their form." P. Engels, Correspondence, pp. 475-476, quoted in R.N. Carew Hunt, The Theory and Practice of Communism, (London: Penguin Books, 1963), p. 76.

the process of economic growth.<sup>13</sup> But nowhere is the linkage between economic and non-economic factors systematically worked out; there are numerous references in The Stages of Economic Growth to examples of interaction, and in the break-up of the traditional society a political force is given the status of prime mover, but these examples are evidently not conceived as parts of a whole theory. To say that the various characteristics of society interact, in no special manner or sequence, is as precise as Rostow can be.

We have already argued that there is no parallel between the use which Marx and Rostow make of a stages approach, since Rostow employs no theoretical method comparable with the dialectic and since the processes they are analysing are not the same. Rostow would probably contest this last proposition, since the first of the "broad similarities" between his sequence and that of Marx is stated as follows: "they are both views of how whole societies evolve, seen from an economic perspective; both are explorations of the problems and consequences for whole societies of building compound interest into their habits and institutions". (p. 148). But it is clear that even though the stages of economic growth have implications for the rest of society, the basis for the division into stages is the level of development in the economy and the analytic implications of this level. Rostow is able to generalise on what is likely to be happening to the rest of society in any one stage, but these happenings are in no case important enough to enter the definition of the stage and can be dispensed with if and when the pinch is felt. Socialism is not therefore the same sort of stage as the drive to maturity. Nor are the culminations of the two processes the same -- Rostow's state of affluence has nothing in common with that of Marx. There is a superficial sense in which the first part of the preceding quotation is true; it falls down however in supposing that there is only one economic

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<sup>13</sup> See Chapter II.

perspective, and that social evolution is as important to Rostow's theory as it is to Marxism.

Finally, we may note that although Rostow would deny that the class struggle is the unique determinant of his progression of stages, like Marxism it "would accept the reality of group and class interests in the political and social process, linked to interests of economic advantage". (p. 148). Whether or not this is true would seem to depend on the meaning of 'accept'. There is nothing in the stages system which positively rejects the possibility of a class struggle, but there are very few references indeed to the social implications of group interests. Thus the movement into the preconditions period is partly attributable to the rise of a new social elite at the expense of the land-owning class, and during the drive to maturity the possibility of trade union movements becomes stronger (though for reasons which go unexplained). Indeed one of the remarkable features of the stages of growth as a theory of social change is their peculiarly bloodless character. To suppose on the basis of the theory that there was a complete harmony of interest in the process of economic development would be more plausible than to read into it an account of class struggle which would make the theory comparable to Marxism on this score.

The claim that the stages of growth are an alternative to Marxism is thus extremely difficult to sustain. This does not of course reduce the stature of the theory which must stand or fall by its own merits. The purpose of the last few pages has not been to show that Rostow is more or less correct, or more or less important than Marx, but to improve the perspective of the stages theory by removing a confusion. If Rostow's theory has been shown to be deficient by comparison with that of Marx, then this simply reflects the fact that it is incumbent on Rostow to show how they are the same sort of theory. It is no shortcoming of the stages of economic growth that they are not.



If there is any novelty in Rostow's presentation of the growth process, it consists less in the employment of a stages approach than in the resurrection of this method of analysis. It was with the German historical school of the later nineteenth century that the conception of history as an evolutionary process, which might be represented in the form of stages, enjoyed its greatest popularity.<sup>14</sup> The close connection between such a view and the prevailing notion of progress is obvious. But the schemas which resulted from this conception tended not to have a very favourable reception. Schumpeter's axiom -- "the better a historian, the more averse he is to such constructions"<sup>15</sup> -- was of course excessively severe simply because it was axiomatic. Nonetheless such systems have been heavily criticised, and two strands of argument have tended to be central to the attack. First, the division of a process into a set of constituent stages is arbitrary and meaningless unless both the factors which make each stage unique and the forces which propel the system and give continuity to the stages are demonstrated. Second, in the effort to apply theoretical constructs to empirical data -- a task incidentally in which Rostow is keenly interested -- there is a temptation to build stages which are 'ideal' rather than realistic. There is nothing necessarily illegitimate in such a procedure; the danger is that it breeds ambiguity between the requirements of the abstracted model and those

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<sup>14</sup>For a critique of such attempts, see especially B.F. Hoselitz, "Theories of Stages of Economic Growth", in B.F. Hoselitz, ed., Theories of Economic Growth, (The Free Press of Glencoe, Ill., 1960).

<sup>15</sup>J.A. Schumpeter, History of Economic Analysis, (New York: Oxford University Press, 1954), p. 442.

of any particular case.<sup>16</sup>

The attraction of a system of stages is very great. To explain it one does not necessarily have to share Gras' cynical suspicion of ulterior motive in the mind of the system-builder.<sup>17</sup> Fundamentally it offers the prospect of interpretation of events which might otherwise go unexplained. This is of course a possibility open to more conventional historical research. The exclusive claim of a system of stages seems to be in its ability to bring order, in a special sense, from random events. The historian who places an event within a trend does not characteristically make predictions on the consequences of this event on other than his knowledge and understanding of human behaviour. It is probably only in this sense that it is true to say that history repeats itself. The system-builder's special claim is to go on from placing the initial event to predict with certainty a succession of events (or "conditions" of society<sup>18</sup>). He detects an irreversible rhythm - of order in change -- a position which unfortunately leaves him open to the charge that his interpretation makes history both a -mechanical and a dramatic process ( a charge which is indeed laid against Rostow), but which also admirably equips him to predict as inevitable a state of the world which he finds pleasing. The march of history becomes not only meaningful but perhaps also in some sense purposeful.

But if an interpretation of a process in terms of stages can make special analytic claims for itself, then obviously it must

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<sup>16</sup> Some criticisms and requirements of a stages approach to economic history are discussed in H.Giersch, "Stages and Spurts of Economic Development", International Social Science Bulletin, VI, No. 2, (1954); N.S.B.Gras, "Stages in Economic History", Journal of Economic and Business History, II, No. 3, (May 1950); and B.F. Hoselitz (op. cit.).

<sup>17</sup> Gras (op. cit.), 417-418.

<sup>18</sup> Gras' phrase.

bear special responsibilities. In particular it must be able to refute the allegation that its stages are arbitrary and meaningless, as noted earlier, and the precise implications of a stages approach must therefore be considered.

As Schumpeter observes, historians are not evolutionists by profession: they become so "only when they try to arrange states of society -- economic, political, cultural, or general ones -- into sequences that are supposed to be necessary in the sense that each such state is the necessary and sufficient condition for the emergence of the one that follows it".<sup>19</sup> A stage is not the result of arbitrary division if it possesses at least some characteristics which are peculiar to itself. Taken on its own, this criterion might mean no more than that the stage should be distinguishable. In Schumpeter's definition of the system-builder, the task of identifying different states of society is evidently thought to be anterior to that of grouping them in a sequence. Such a view is however confusing no less than simplifying. A set of stages has neither use nor meaning if it fails to indicate for each individual stage those factors which make each subsequent stage in some sense, but not necessarily logically, inevitable. It follows that these two criteria -- particularity of the individual stage and continuity of the sequence -- need not necessarily be conceived of as distinct. Though the schema is likely to be more helpful if the stages conform to obvious divisions, it also seems to be true that obedience to the second criterion presupposes fulfilment of the first.

Thus the essence of a stages approach to a historical process is the recognition of a sequence of states which are linked by changes in certain key variables. The further conditions which should be imposed on such a system will depend on the claims made for it and its proposed application. Though it is possible that

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<sup>19</sup> Schumpeter, History of Economic Analysis, p. 442.

a set of stages should be devised to explain some social phenomenon in any particular society, the important schemas have been those which offered an interpretation of processes common to most or all societies. It was their generality which made them both potentially useful and contentious. Within this framework it is possible in theory to distinguish two types of systems.

The first is somewhat less rigorous in its construction than the second. It attempts to be little more than a historical generalisation, inevitably abbreviated and systematised. Since it is essentially an empirical model, historical evidence is the appropriate test of its validity. If it complies with the two criteria of stages offered earlier, then it has a certain analytic power in that it demonstrates for each stage the factors which produce each subsequent stage. But consistent with its empirical foundation, it is essentially a working hypothesis. The claims made on its behalf are unlikely to be sweeping, and it is therefore receptive to modification and adaptation. Indeed the type of criticism it stimulates is likely to be constructive such that the usefulness of the model is a result of, rather than in spite of, its lack of interpretative generalisation.<sup>20</sup>

The second type of system dwells in a curious half-light, which we shall find that Rostow shares, where the necessity of a logical truth is invoked to support an empirical hypothesis. In form such a system may resemble the previous type, but it has more in common with the schema of 'ideal' constructs. For the claim which is made for it is not that it gives an explanation of the way in which a process has in fact occurred or will in the future occur, but that wherever this process has occurred or will occur it must follow the given sequence of stages. Unlike the previous type, the basis of this model is analytic rather than empirical, contained in a set of laws of change. It would seem that

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<sup>20</sup>It seems to be this kind of model which Gras (op. cit.) suggests should be the aim of future system-builders.

Gerschenkron has such models in mind when he remarks that his system differs from others, "the common feature of which was the assumption that all economies were supposed regularly to pass through the same individual stages as they moved along the road of economic progress".<sup>21</sup> Uniformity is certainly the central idea of the model, and difficulties therefore arise when notice is taken of exceptions. In theory of course they do not occur in a genuinely tautological model, and it is very doubtful whether they can be a legitimate form of attack for the critic of the model. These confusions basically arise from an incorrect use of the language of logic, which cannot be appropriate in the field of historical research. It may alternatively be argued that the laws of change should be construed not as truths which are given by the model but as fundamental assumptions on which the model rests, and in the form of empirical propositions. Clearly these issues, important though they are, cannot be settled by general discussion, and we shall have occasion to return to them in considering the status of Rostow's theory. It is true to say however that such a model presents complexities which are considerably more difficult to handle than those of the purely empirical system; and the appropriate tests in turn are likely to be more stringent.

To assess the usefulness of a system is very different from the task of determining its validity. Indeed for the tautology one's conclusions would be completely contrary. But the random insights which may result from an unlikely set of stages do so, as Rostow's critics point out, in spite of rather than because of the stages schema. Nonetheless, the very fact that a stages approach lends itself so well to polemical treatment is likely to mean that a contribution presented in such a form will excite greater interest than more conventional discussion.

Such value is however incidental. The fundamental claim

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<sup>21</sup> A. Gerschenkron, Economic Backwardness in Historical Perspective, (Cambridge, Mass.: The Belknap Press, 1962), p. 355.

of a stages system to add to knowledge and understanding lies in its analytic power. This, as was suggested earlier, will depend on the success with which key variables in each stage are isolated. If they are not, then the phasing of a historical process becomes a meaningless essay in classification. But to indicate those factors which at any point are crucial to the rest of the process has great analytic significance, even though this can scarcely be regarded as a monopoly of the system-builder. The justification for his efforts depends on the precision with which he dates the necessary changes and describes the nature and degree of change which will ensure the subsequent stage. It seems to be the prospect of obtaining this kind of information which the conventional historian is denied.

The power of a stages system to predict change is frequently cited as part of its meaning.<sup>22</sup> It is not clear however why this should be thought to be additional to its capacity to analyse past events. It would be foolish to expect in any empirical generalisation a blue-print for the future. Equally, a well-founded hypothesis should offer some guide to future events, but only to the extent to which its analysis of the past has been accurate. Of a system which claims to be "not merely a way of generalising certain factual observations about the sequence of development of modern societies", (p. 12),<sup>23</sup> we are apparently entitled to expect rather more: Chapter III will be devoted in part to finding out whether or not we shall be disappointed.

The final four chapters of this thesis are given over to

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<sup>22</sup>For example: "The test is whether the system makes the past more intelligible and the future more predictable", H.J.Habakkuk, review of The Stages of Economic Growth, Economic Journal, LXXI, No. 283, (September 1961), 604.

<sup>23</sup>The passage of which this is part is quoted in full and discussed below, p. 34

an application of the stages system to Canadian experience in economic development. These chapters require little in the way of formal introduction. Each chapter is prefaced by remarks appropriate to the stage with which it deals; Chapter IV in particular emphasises the limitations of the undertaking in general. It will be sufficient here to make certain observations about the second half of the thesis as a whole.

It cannot be stressed too strongly that we shall not be introducing any new information in the sections on Canada, for which the material has been collected entirely from secondary sources. These chapters are nothing more than an attempt to apply Rostow's analysis to what is known of the history of the Canadian economy. Also, for each stage we shall compare the interpretation given by the stages analysis with the more conventional understanding in terms of the staple theory.

It is clear from observations in The Stages of Economic Growth that Rostow regards the Canadian case as fulfilling the requirements of his system. However we have had previous occasion to notice that Rostow is not invariably his own best advocate, and we shall therefore not feel bound to accept as binding his remarks on Canada. The dates which he puts forward for the stages in Canada are accepted, but in any case there is little possibility of disputing them. For the remainder we shall make no attempt to apply or interpret what Rostow has to say specifically about Canada; and this seems quite correct in that Rostow made use of Canada as an example, and is not therefore committed to these remarks in the way that he is to the substance of the stages system.

The first and last of the stages are omitted with respect to Canada. The reason why the traditional society is not considered is given at the beginning of Chapter IV. The age of high mass-consumption suffers from considerable deficiencies of analysis, the most important of which is that it is not the same sort of stage

as its four predecessors.<sup>24</sup> This is convincingly demonstrated in the case of Canada, since high mass-consumption is alleged by Rostow to begin 25 years before the economy reaches the end of the fourth stage. This aspect of Rostow's theory has therefore been ignored, not from a desire to make out as good a case as possible for Rostow, but because time spent on the fifth stage would very largely be time wasted. An exception is made for the sectoral growth pattern of the last stage, which requires consideration since it overlaps with that of the fourth stage.

✓ The purpose of these chapters is two-fold. In the first place we wish to see whether the stages system makes the process of Canadian economic growth more intelligible, and it is for this reason that we make a comparison for each period with the staple theory. The second line of enquiry will be to see whether the Canadian case is evidence for the stages system. The limitations of such an enquiry are fairly clear: it entails first that Rostow's model must be reduced to the status of empirical hypothesis from its original deductive basis. This implies the second limitation, that however favourable the results of the application of the theory to Canada, we are not entitled to assume that the theory has been proved correct. Such a judgment must wait on the publication of a wide range of empirical studies. The deficiencies of the present analysis as a contribution to such a collection of studies are probably too obvious to require any apology. But this thesis is not the only attempt which has been made to apply the stages of economic growth to Canada; and if the conclusions of the earlier essay are not convincingly proved wrong, one may hope that at least some seeds of doubt are sown.<sup>25</sup>

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<sup>24</sup> See below, pp. 49-52.

<sup>25</sup> A criticism of G.W. Bertram, "Economic Growth in Canadian Industry, 1870-1915: The Staple Model and the Take-Off Hypothesis", Canadian Journal of Economics and Political Science, XXIX, No. 2, (May 1963), is made in some detail in Chapter V.



## II

### THE STAGES OF ECONOMIC GROWTH

Rostow's system of stages receives its most detailed treatment in his book The Stages of Economic Growth,<sup>1</sup> and it is mainly from this source that the model is considered. There is however a certain unity to Rostow's thought on economic history in general, which is evident from the frequency with which his writings reappear in substantially or literally the same form: and certain phrases which are peculiarly Rostovian and which may represent concepts fundamental to his thought are to be found liberally dispersed throughout his work. The statement of his stages system contained in the first half of this chapter is therefore taken largely from the main source; however where there are deficiencies in the initial presentation and there is evidence that Rostow has sought to correct them -- this is specially true of his theory of production, dealt with in the second half -- then other works are taken to be equally authoritative. The purpose of this chapter is simply to present Rostow's theory, and any comment on it is restricted to the manner of its presentation.

Of the five stages of growth, there is little doubt that the third, embodying the notion of the take-off, is the most important. Rostow did in fact introduce this concept several years earlier than the rest of the stages,<sup>2</sup> which has, in conjunction

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<sup>1</sup>W.W.Rostow, The Stages of Economic Growth, (Cambridge: at the University Press, 1960). Page numbers in parenthesis in the text refer to this work.

<sup>2</sup>Although the take-off received its formal exposition in W.W.Rostow, "The Take-off into Self-Sustained Growth", Economic Journal, LXVI, No. 261, (March 1956), references are made to the take-off in Rostow's The Process of Economic Growth, (New York: W.W.Norton & Co., 1952).

with the fact that the take-off appears as a stage "substantially reprinted, with excisions" (p. x) from the earlier article, inevitably invited the comment that the other stages are little more than appendages to it.<sup>3</sup>

This judgment might apply more strongly perhaps to the first stage than to any of its successors. The traditional society appears to be conceived in terms which make it appropriate as a residual at one end of the system. It accordingly receives scanty treatment. The central fact about such a society is that a ceiling exists on the level of attainable output. The reason for this is that production functions are limited by an inability to apply technology, or more probably a complete absence of it. For in the phrase "pre-Newtonian attitudes", which he later discusses at rather greater length,<sup>4</sup> Rostow summarises that conception of the physical world which regards it as a datum and incapable of systematic manipulation. Changes in the production functions are not ruled out, to the extent that they are affected by war, disease, and chance discoveries of a technical nature. But such changes are, probably by definition, only random in the traditional society.

There are two other characteristics of the traditional society which may be noted. The first is, predictably, that the low level of productivity makes necessary a high allocation of resources to agriculture. Second, power is likely to rest with the land-owners and is offset only to a limited extent by the central political force. Within this framework, society is closely organised on the basis of family connections and obligations.

Such an account is open to a wide range of criticism. But since "we are, after all, merely clearing the way in order to

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<sup>3</sup>As, for example, F.A. Baran and E.J. Hobsbawm, "The Stages of Economic Growth", Mytilos, XIV, (1961), 235.

<sup>4</sup>W.W. Rostow, "Industrialization and Economic Growth", First International Conference of Economic History, Stockholm, 1954, Contributions and Communications, (Paris - The Hague: Mouton & Co., 1960), pp. 23-24.

get at the subject of this book; that is, the post-traditional societies" (p. 6), this limitation must be borne in mind in assessing the value of the stage.

No reservation of this sort attaches to the second stage, in which the preconditions for take-off are laid. Rostow distinguishes initially between societies which were traditional in the sense of the preceding stage, and a group, of which the British Dominions and the United States are examples, which were largely created by emigration from Britain and partly because of this "never became so deeply caught up in the structures, politics and values of the traditional society" (p. 17). In the distinction which Rostow then draws between economic and non-economic factors in this transitional phase, the latter are clearly less appropriate to an analysis of those countries "born free".

The essence of the economic preconditions for take-off is briefly that the rate of investment should rise by an amount sufficient to outstrip the rate of growth of population. The economic factors which make this possible largely centre on the performance of two sectors. In the first the general requirement is that there should be a rapid increase in productivity in the exploitation of some naturally productive resource: in general this refers to improvements in agriculture but is also applicable to raw material production, and Rostow therefore defines the sector as agriculture and the extractive industries. The role of agriculture in this stage receives more detailed treatment, and its functions are reduced to three: to supply more food, to use its rising income to demand more manufactured goods, and to "yield up a substantial part of its surplus income to the modern sector" (pp. 23-24). The second sector is dealt with at rather less length, although the role of improvements in social overhead capital is presumably no less important; indeed in one respect their significance is not confined to the narrowly economic, since the characteristics of this type of investment, especially in transport, are likely to impel some form of state action or assistance.

In its non-economic aspects, Rostow analyses the prime moving force as a 'reactive nationalism'. The relevant areas of the theory of social change -- emergence of a new elite, diffusion of a new scale of values -- are, he believes, becoming familiar enough, and he has elsewhere elaborated on his understanding of them.<sup>5</sup> Though they are of course immensely important, they are to be regarded primarily as manifestations of another force. If there is a single key to the process whereby economic development is initiated, it is that "traditional societies were fractured -- losing their unity, cohesion, and prestige -- by contact with more advanced societies".<sup>6</sup> This type of argument is made to apply to Britain, even though it is not the whole answer, on the basis of the threat of intrusion by foreign powers. In such a social context nationalism is fostered, and in appropriate circumstances it is directed to economic modernisation.

It is likely to be as the result of some sharp stimulus that the economy moves into the third stage, the period of the take-off. This is of course the critical phase of the system in which, if successful, economic growth becomes "self-sustained" and "compound interest gets built into the society's structure" (p. 36). The changes which are necessary for take-off receive more rigorous treatment than those for the other stages, and three conditions are isolated:

1. a rise in the rate of productive investment from, say, 5% or less to over 10% of national income (or net national product (NNP));
2. the development of one or more substantial manufacturing sectors, with a high rate of growth;
3. the existence or quick emergence of a political social and institutional framework which exploits the impulses to expansion in the modern sector and the potential external economy effects of the take-off and gives to growth an on-going character. (p. 39).

The first of these conditions is foreshadowed by a very

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<sup>5</sup>Rostow, "Industrialization and Economic Growth", (op. cit.) especially pp. 26-29.

<sup>6</sup>Ibid., p. 26.

similar requirement in the preconditions stage. As part of the take-off its purpose is to summarise the process by which increasing per capita incomes are generated. The bases for Rostow's arithmetic are the assumptions of a rate of population increase of between 1% and 1½% per annum and a marginal capital-output ratio for an economy in the early stages of development of 3½ : 1. To achieve a 2% per annum increase in RNP thus requires an investment rate of at least 10% of RNP.

The three conditions are probably to be taken as necessary and sufficient for the success of a take-off. In addition, however, Rostow analyses three further factors which are described as the "inner structure" of the take-off. The first is the supply of loanable funds, which is associated historically either with shifts in the control of income flows or with the ploughback of profits in expanding sectors. Three conditions are regarded as necessary for the mobilisation of funds: that unconsumed income is not hoarded; that banking institutions should provide an adequate supply of working capital; and that the rapidly growing sectors should plough back a substantial proportion of their profits.

The second factor in the inner structure is the emergence of a class of entrepreneurs, a problem which causes less trouble in those countries which were never traditional societies, and which also requires three conditions for its solution: that there should emerge an appropriate system of values; that the new elite should be denied the more conventional routes to power and prestige; and that it should be possible in the traditional society for those seeking material advance to acquire eminence.

The third factor is the existence of a leading sector in the take-off, the implication of the second of the conditions necessary and sufficient for the take-off. Such a leading sector is likely to be, in Rostow's classification, a primary growth sector, "where possibilities for innovation or for the exploitation of newly profitable or hitherto unexplored resources yield a high growth-rate and set in motion expansionary forces elsewhere in

the economy". (p. 52). Historically there has been a wide variety of such sectors, so that "there is, clearly, no one sectoral sequence for take-off, no single sector which constitutes the magic key". (p. 57). However there are four basic factors which together constitute a leading sector: effective demand for the product of the sector must be enlarged; new production functions must be introduced into the sector; there must be a flow of capital adequate to "detonate the take-off" in the sector, and later a high rate of reinvested profit; and the sector must be such that its expansion induces a chain of requirements for increased capacity and new production functions in the rest of the economy.

In the fourth of the stages of growth, the economy passes from the take-off period to the drive to maturity and maturity itself. Rostow is aware of the dangers of offering a definition of economic maturity for in one section he mentions some of the problems involved. However it is more important for our purposes to note that Rostow in different places gives three definitions or sets of conditions, whose interrelationship is not clearly evident.

The first of these is stated as "the period when a society has effectively applied the range of (then) modern technology to the bulk of its resources". (p. 59). New leading sectors come to replace the one which was responsible for the take-off, and the industrial process is consequently differentiated. In defining any given economy as mature, however, allowance may have to be made for certain areas which are more backward than the rest of the country -- the Southern United States and Quebec are cited as examples.

It is probably correct to regard this as the important definition of maturity -- it certainly receives prominence in Rostow's discussion of the stage. Elsewhere maturity is described as the stage "in which an economy demonstrates that it has the technological and entrepreneurial skills to produce not everything,

but anything that it chooses to produce".<sup>7</sup> (p. 10). More straightforward are two of the three descriptions of what happens to an economy as it matures. First there are important changes in the character and role of the working force. Associated with urbanisation is a much smaller proportion of labour in the agricultural sector, and probably a much smaller proportion who are unskilled. Real wages are likely to be rising and trade unionism may be important.

Second, the character of industrial leadership undergoes change. The independent entrepreneur tends to be replaced by a class of professional managers -- and although this is not suggested by Rostow himself, one might expect increasing concentration in industry to accompany this change.

Finally, "the society as a whole becomes a little bored with the miracle of industrialization". (p. 72). Groups emerge within society who protest against "industrialization as a unique and overriding objective" (loc. cit.), and they may apparently be a literary as well as political force. With the exception of this latter process, these descriptions do have great empirical significance, and it is unfortunate that Rostow did not choose to indicate whether and in what sense they should be regarded as conditions of economic maturity.

At some point of time not too long after maturity has been reached, society is faced with a choice between three major objectives. It may, first, choose the national pursuit of external power and influence. Second, it may devote its resources to the creation of a welfare state -- a task which the free market economy is not fitted to perform. In either case the opportunity of moving into the fifth stage of economic growth is, temporarily at least, rejected. For it is the pursuit of the third objective, ". . . the expansion of consumption levels beyond basic food,

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<sup>7</sup>This passage is fully quoted and its meaning examined below, p. 48.

shelter, and clothing, not only to better food, shelter, and clothing but into the range of mass consumption of durable consumers' goods and services . . . " (p. 74), which identifies the age of high mass-consumption.

Beyond this statement of the stage, Rostow offers very little further analysis of it. The experience of the United States is dealt with in some detail, together with the sequence of choices made by Western Europe, and some importance is attached to the "diffusion of the private automobile". The stage is presumably to be identified by the role consumers have played in sustaining growth, and their demand has characteristically been for durable goods.

The age of high mass-consumption formally completes the set of stages of economic growth. But the sense of unease which the final stage generates (partly from limitations in its definition, though criticism is deferred until later) is evidently shared by Rostow, if not for the same reasons. He is at least not unwilling to contemplate what lies "beyond consumption", although he declines to predict. Whether his system could accommodate a sixth stage is unfortunately a question which goes unanswered.

One final aspect -- and perhaps the most important -- of the stages system remains to be dealt with. Rostow insists in his introductory summary of The Stages of Economic Growth that "These stages are not merely descriptive . . . They have an inner logic and continuity. They have an analytic bone-structure, rooted in a dynamic theory of production". (pp. 12-15). Regrettably it is not at all clear from this source what Rostow understands by this theory of production; the following statement of it is therefore an attempt to link together largely disconnected but apparently related parts, supplemented by relevant aspects of some of Rostow's other writings. The dangers of both procedures, and of interpolation in particular, are noted and hopefully avoided.

Central to the theory seems to be a conception of development as the product of advance in various sectors:



We require a dynamic theory of production which isolates not only the distribution of income between consumption, saving, and investment (and the balance of production between consumers and capital goods) but which focuses directly and in some detail on the composition of investment and on developments within particular sectors of the economy . . . When the conventional limits on the theory of production are widened, it is possible to define theoretical equilibrium positions not only for output, investment, and consumption as a whole, but for each sector of the economy. (p. 15).

The factors which determine these "sectoral optimum positions" are the levels of income and population, and tastes, on the demand side, and the state of technology and quality of entrepreneurship on the side of supply. Rostow seemingly makes no attempt to define one of these equilibrium positions, nor is it evident from his exposition how one would go about the task. He does suggest however that "the economic history of growing societies takes a part of its rude shape from the effort of societies to approximate the optimum sectoral paths". (p. 14). He later suggests (p. 52) that sectors can, for analytic purposes, be grouped in three categories; primary growth, which are a likely source for leading sectors; supplementary growth, in which advance occurs as a requirement of or response to a primary growth sector; and derived-growth, where advance is a function of some overall, such as real income or population.

A key position in the growth process is therefore occupied by leading sectors, in which growth initially occurs at a very rapid rate, but for which, in company with all sectors, "deceleration is the normal optimum path". (p. 15). Rostow does in fact expound a similar theory elsewhere. In a paper published in 1955, he argues that "in some meaningful sense, over-all growth appears to be based, at certain periods, on the direct and indirect consequences of extremely rapid growth in certain particular key sectors".<sup>8</sup> And in a later article Rostow defends the following propositions:

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<sup>8</sup>W.W. Rostow, "Trends in the Allocation of Resources in Secular Growth", L.M. Dupriez, ed., Economic Progress, (Louvain: Institut de Recherches Economiques et Sociales, 1959), p. 270.

Within the framework set by the consumption function and the rate of increase in the working force, the rate of growth of an economy at any period is decisively affected by the momentum (or lack of momentum) in certain leading sectors. These leading sectors derive their high momentum from the entrance into the economy and the subsequent diffusion of new cost reducing production functions and/or from the rapid increase in output of products which enjoy high income elasticity of demand. The leading sectors have certain direct effects on other sectors by setting up a powerful effective demand for new inputs; and they provide to the economy a wide range of external economy effects which, as it were, spill over outside the directly affected sectors.<sup>9</sup>

This, in conjunction with the 'sectoral deceleration' thesis, leads to "a view which makes economic history, at its hard core, the story of a succession of leading sectors, at an early high-momentum stage of their evolution, carrying growth forward as the old leaders flag, by imparting to the economy as a whole a wide ranging set of direct and indirect impulses to expansion".<sup>10</sup>

This paper appeared rather less than a year after the introduction to The Stages of Economic Growth was written, and it is unlikely that in those months Rostow's theory of growth underwent any substantial change. Certainly, with the possible exception of a reluctance to speak of leading sectors in the preconditions period in the earlier statement, the two presentations of the theory are perfectly consistent. Hence when the theory comes to be assessed the two statements will be treated as substantially the same.

From this summary of Rostow's theory of production it is not obvious how or why it should be related to the stages of growth. Rostow himself supplies an answer to the second question: "In essence it is the fact that sectors tend to have a rapid growth-phase, early in their life, that makes it possible and useful to regard economic history as a sequence of stages rather than merely as a continuum". (p. 14). The suggestion here, though it is not

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<sup>9</sup>W.W.Rostow, "The Problem of Achieving and Maintaining a High Rate of Economic Growth: A Historian's View", American Economic Review, Papers and Proceedings, L, No. 2, (May 1960), 106.

<sup>10</sup>Ibid., 107.

pursued, is that there are definite spurts and discontinuities to be detected in the process of growth. It would probably not be true to suppose however that the decline of each leading sector, creating a discontinuity, also marks the end of a stage. For although this is true of the take-off stage, one would expect a "succession of leading sectors" to include more than three.

The simple fact, then, that the growth rate of sectors is uneven through time is an insufficient basis for the division of the growth process into stages. In part this inadequacy is made up by the analytic distinction of three types of sectors. In part also, changing price- and income-elasticities of demand, both private and social, have determined the course of growth, although how far Rostow intended this to be an integral part of his theory is uncertain. High price-elasticity of demand obviously plays a crucial role in the emergence of a leading sector, such that one would in effect expect it to be a sine qua non of the process. Clearly also, choices taken collectively or socially have influenced the course of development in all countries; but it seems to be enough simply to notice this fact, and in Rostow's theory it forms an inessential part.

The application of the 'dynamic theory of production' is somewhat less impressive than its formulation, and in order to find out how it is related to the stages system one is almost obliged to search each of the stages for references to the development of particular sectors. For after its appearance in the chapter summarising the stages, to which it is not specifically related, the theory of production is not referred to again. In fact the only additional analysis consists of the distinction between primary, supplementary and derived-growth sectors, and this is confined to the chapter dealing with the take-off.

In the preconditions period, emphasis is placed on the performance of two sectors -- agriculture and the extractive industries, for which specific tasks are laid down, and the social overhead sector, which is treated in a more general way. In this

formulation of the stage the task of earning foreign exchange is allocated to the former sector; in later statements the key sectors in the transitional era are expanded to three, with the inclusion of an "export sector".<sup>11</sup> But in neither case is mention made of a leading sector in the stage, although on the basis of this quotation we may provisionally elevate agriculture to the rank of leader:

Population increases, urbanisation, and increased foreign exchange requirements for fixed and working capital are all thus likely to conspire to exert a peculiar pressure on the agricultural sector in the transitional process. Put another way, the rate of increase in output in agriculture may set the limit within which the transition to modernisation proceeds. (p. 23).

The leading sector in the take-off is mainly determined, as a primary growth sector, by technological innovation. The supplementary growth sectors owe their impetus to this sector, and their growth pattern is dictated by the fate of this leader and its successors. It is conceivable, but unlikely, that one or more supplementary sectors should come to lead the growth process in the drive to maturity stage. It is more probable that the leading sector again conforms to the primary growth pattern, in which technology and resources are once again determinants; but the pattern of growth is shaped in addition by the nature of the take-off, and perhaps also by government policy. (p. 59). The discontinuity between stages which Rostow hints at is very likely to be found here as resources are regrouped to catch up with growth in the primary sector. As a result the discontinuity may well be marked by a trade cycle depression, an effect which one would expect to be exaggerated by the usual dependence on one sector for the take-off.

Whereas the first two categories of sectors are shaped (directly or indirectly) by supply factors, "the derived-growth

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<sup>11</sup>W.W. Rostow, "Economics for the Nuclear Age", Harvard Business Review, XLVIII, No. 1, (January/February 1960); "Industrialization and Economic Growth", (op. cit.).

sectors are linked essentially to changes in demand (while subject also to continuing changes in production functions of a less dramatic character). In the age of high mass-consumption leading sectors become more dependent on demand factors than in earlier stages". (p. 53). In the fifth stage, then, growth continues to be led by a few sectors: the chief characteristic of the stage is however that these sectors are no longer shaped by the exigencies of supply.

The discovery of the 'dynamic theory of production' thus consists primarily in the piecing together of clues, only some of which are provided in The Stages of Economic Growth. As a result this statement of what appears to be the theory has inevitably been disjointed, and a brief summary of it therefore seems desirable. Much of recent economic history, it is argued, can be interpreted in terms of leading sectors, the succession of which is marked by different and definable characteristics, and which have been mainly responsible for sustained economic growth. Because leading sectors show initially a high rate of growth, it is both possible and useful for certain purposes to present the process of growth as a sequence of stages. At least until the fifth stage is reached, leading sectors are characteristically of the primary growth type.

### III

#### AN EXAMINATION OF THE STAGES OF ECONOMIC GROWTH

In the preceding chapter, Rostow's theory of the stages of economic growth is presented in some detail. Although it is true that the theory is widely known, it does not follow that it is equally widely understood. Indeed the very fact that some of the catch-phrases from the theory are achieving such considerable currency suggests the danger that their precise meaning may be overlooked, and certainly justifies a full statement of what is, in terms of influence at least, a very important theory. Accordingly, with the exception of comment on the presentation of various aspects of the theory, the statement of it is made as descriptively as possible. Gaps are filled only where there can be no doubt of the intended meaning, and this is taken, especially in the treatment of the theory of production, to justify interpolation.

This does not, however, entail a faithful reproduction of The Stages of Economic Growth and the group of related papers. There is, first, a considerable amount in these formulations of the stages theory which is not strictly relevant, at least for our purposes. But in particular the attempt is made to present the theory, without distortion, in a form which makes it suitable for the analysis and criticism which it is the purpose of this chapter to put forward. This has involved the neglect of a considerable amount of empirical evidence and an emphasis on the analytic aspects -- the factors identifying each stage, the factors which make each succeeding stage in some sense inevitable, and the underlying dynamic theory of production.

That it should be thought appropriate to place emphasis here, rather than on the factual data which could be marshalled in support of or opposition to the theory, might seem to presuppose a

judgment on its nature. Only in a limited sense is this true. An assessment of the status of the theory does in fact precede the examination of it; but as suggested elsewhere, Rostow has a definite idea about the type of theory it is that he offers, a fact that makes his reliance on evidence the more confusing. This is of course not to deny the importance of empirical substantiation of the theory, and in the four following chapters we are testing not only the ability of the stages of growth to cast light on Canadian economic history, but also the extent to which Canadian experience supports the stages theory. This however is a very different kind of test from the one adopted in the rest of this chapter, and one which, however useful, cannot be conclusive for the theory.

In the Introduction to this thesis it is argued that systems of stages can conveniently be considered in two categories. The first, in which systems are predominantly based on historical generalisation, may be assessed by the conformity of its members to experience. Difficulty arises in the attempt to secure an appropriate criterion for the second type by the claim of necessity which is made for the sequence of stages. In the following passage Rostow leaves little room for doubt as to the category in which his stages should be placed: "These stages are not merely descriptive. They are not merely a way of generalising certain factual observations about the sequence of development of modern societies. They have an inner logic and continuity".<sup>1</sup> Rostow also suggests strongly that observations from history and from contemporary experience are by way of illustration rather than justification (p. 3). It follows therefore that unless the status of the theory is reduced (as it is here in the four succeeding chapters) it is equally

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<sup>1</sup>W.W.Rostow, The Stages of Economic Growth, (Cambridge: at the University Press, 1960), pp. 12-13. Page numbers in parenthesis in the text refer to this work.

impossible to falsify it on empirical grounds.<sup>2</sup> Rostow is criticised by Cairncross precisely on the grounds that "He is perhaps too anxious . . . to compress the texture of events into too narrow a framework of logic".<sup>3</sup> Within the given terms of reference the most apt assessment is obtained by determining whether the "inner logic and continuity" does in fact exist.

It has already been remarked that if a model makes special claims for itself then it must bear special responsibilities. In the case of Rostow's system it is possible to bring out certain of its properties which in the author's formulation are not always made clear. First, it should be possible to allocate all national economies to one or other of the stages. Second, not only has economic growth in the past proceeded by these stages and according to the sectoral pattern of development, but in the future (perhaps with Checkland's suggested assumption that nothing unpredictable will happen)<sup>4</sup> economic growth will conform to the same pattern.

These are clearly sweeping claims, and they provoke a number of questions which could prove to be awkward. Is it possible to miss out a stage, or for an economy to slip back into one which it has already passed through? Could an economy remain indefinitely in one of the three middle stages? Could it ever be said of a post-take-off economy that there was no leading sector and no forces making to produce one? If the construction of the stages system has been sufficiently rigorous, then a close examination of the

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<sup>2</sup>This may account for a reluctance on the part of P.Wiles to descend to the particular. See "Don on Rostow", Encounter, XIII, No. 6, (December 1959).

<sup>3</sup>A.K.Cairncross, "The Stages of Economic Growth", Economic History Review, 2nd. Series, XIII, No. 3, (1961), 450-451.

<sup>4</sup>S.G.Checkland, "Theories of Economic and Social Evolution: The Rostow Challenge", Scottish Journal of Political Economy, VII, Pt. 3, (November 1960), 184.



stages themselves should reveal the answers to such questions. Before the stages are appraised however, we may take notice of a possible escape-route. If the system is a purely theoretical model rather than a generalisation from experience, it is open to Rostow to dismiss any mutation by saying that an economy which apparently achieves advancement by any other route has not really achieved economic development. To do this would involve defining economic development as the passage through the five stages of growth, a step which needless to say he is unwilling overtly to take. Even so, the sort of question which Rostow implicitly invites us to ask is not "Why does growth occur in this way?" but rather "Why must it?"

Of the first of the stages of growth, the traditional society, there is no need for extensive criticism. As a description of the feudal and 'traditional empire' models which it is designed to cover, the characteristics of the stage are a gross simplification. But it is more important to notice that "the fundamental technical reason" for the lack of economic expansion in both models is that "economic invention and innovation in traditional societies was not a regular feature of their life".<sup>5</sup> This may well be true, but the significance of it cannot be very great (except of course as a mark of identification of the traditional society) since the force which breaks up the equilibrium of such a society is named in the following stage as a reactive nationalism. There must therefore be more powerful forces, presumably non-economic in character, which operate to maintain the traditional society. These forces are then broken by political circumstance and the scene is set for the establishment of the preconditions for take-off.

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<sup>5</sup>W.W. Rostow, "Industrialization and Economic Growth", First International Conference of Economic History, Stockholm, 1960, Contributions and Communications, (Paris-The Hague: Mouton & Co., 1960), pp. 19-20.

Contact with more advanced countries -- or nationalistic rivalry -- is a necessary condition for the second stage. It is by no means sufficient, since "nationalism can be turned in any one of several directions" (p. 29), and of these economic modernisation is only one. For the basis of the preconditions to be established, the value-structure of the new elite must obtain precedence over both the old order and the competing factions, especially the militarist, in the "transitional coalitions". In its economic dimensions, the second stage must witness some appreciable advance in three sectors, which had not been possible earlier ultimately because of the prevailing social framework and the lack of political necessity. The linkage between the first two stages is clearly political. The lack of systematic innovation by contrast is not the barrier to modernisation, since this deficiency is made up automatically as the attitudes of the "new men" are diffused through society.

A theory of this sort to explain the transition from economic backwardness to industrialisation would probably secure a wide measure of acceptance. It certainly has a definite affinity with the concept of demonstration effects, which is generally thought to be valid. But since we are concerned here with the transition not to industrialisation but to an intermediate period we must examine more carefully the structure of the preconditions stage.

In order that the take-off shall be successful, the economy has beforehand to adapt itself in certain ways. Specifically these requirements are laid down as improved productivity in, or formation of, agricultural, social overhead, and export sectors. In addition the performance of a number of tasks is allocated to the central government. There is, first, a certain ambiguity here, which we shall notice again in dealing with the fourth stage. It is not stated explicitly whether these changes are to be regarded as descriptive of the preconditions, or whether they are necessary attributes of the stage. Rostow is, it seems, committed to the latter, which in turn commits him to the view that economic growth

is impossible until the stage is completed.

Such an interpretation of the transition seems highly unrealistic. Changes of this nature in the economy are by now of course undisputed features of the process of growth. They may even be regarded as conditions of further growth.<sup>6</sup> But to describe them as preconditions of growth is to set up a logical barrier which in the light of contemporary theory and available evidence is not warranted. Excess capacity in transport facilities may, by one means or another, stimulate traffic. Why then should not industry encourage the expansion of a deficient transportation system? As Habakkuk points out,

In England the principal changes in transport and in agriculture took place during rather than before the period of accelerated growth; in Russia the relevant agricultural developments occurred late in the decade after the take-off had got under way, and in China they are occurring in the middle of the period to which Professor Rostow assigns her take-off.<sup>7</sup>

It may well be significant that whereas Rostow offers dates (albeit approximate in certain cases) for the last three stages for an appreciable number of economies, in no case does he attempt to define the period in which the preconditions have been established. There can be no doubt of course that the stages were devised to summarise chronologically the process of growth, and that the normal condition of a growing economy should be to pass through the sequence in order. Even so, Rostow's chart (opposite p. 1) indicates that there may be exceptions. But if preconditions are to be distinguished from conditions on the basis that they are a logical rather than chronological concept, then there is no

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<sup>6</sup> But see H. J. Habakkuk, review of The Stages of Economic Growth, Economic Journal, LXXI, No. 283, (September 1961), 602: "In many cases the increase of agricultural output and the creation of overhead social capital are not conditions whose pre-existence explains the acceleration of growth; they are part of the acceleration which needs to be explained".

<sup>7</sup> Ibid., 601-602.

reason why they should precede the take-off. If this is correct then nonsense is made of the preconditions stage.

It seems that we are faced with two alternatives in assessing this stage. If for 'preconditions' we may read 'conditions' then the changes described should occur before the take-off. Why this should be so, and how historical evidence is to be reconciled, are questions to which the answers are far from clear. If the character of the changes is such that they entail self-sustained growth, then the relationship has become a disguised tautology. This, the probable explanation, need not matter since it is in keeping with the nature of the schema. In this case however there are two unfortunate results: first, the evidence of overlapping between stages destroys the chronological relevance of the second stage; and second, the fact that the changes are described almost entirely in qualitative terms indicates that we can only be sure they have occurred after the event; in other words, evidence of a successful take-off presupposes that the preconditions were fulfilled. This is a severe limitation on the usefulness of the stage.

The very close relationship between the second and third stages is emphasized by Rostow's own treatment of the take-off. Of the three conditions, apparently necessary and sufficient for the success of the stage, only one would seem to be an exclusive attribute of the stage. The first, a rise in the rate of investment to over 10% of NNP, is anticipated in the previous stage (pp. 19-20) although, as belonging to "aggregative analysis", it does not receive full consideration there. The third is defined as "the existence or quick emergence of a political social and institutional framework which exploits the impulses to expansion . . . and gives to growth an on-going character". (p. 39).<sup>8</sup> Since this framework may already be in existence before the take-off begins, it is difficult to see why it should be regarded as an integral

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<sup>8</sup> My emphasis.

part of the take-off stage, or how it differs from the preconditions of take-off. Similarly, with respect to the inner structure of the take-off, some increase in the supply of loanable funds and the emergence of a certain number of entrepreneurs is presupposed in the requirements of the preconditions stage.

The rationale of the take-off is however clearly laid out. As a result of certain structural changes which have previously taken place in the economy, the sharp stimulus which normally induces the take-off is met by a "positive, sustained, and self-reinforcing response" (p. 37), and the result is self-sustained growth. The nature of the successful stimulus seems to depend only to a small extent on the nature of the country in which it occurs. Political revolution, technological innovation, new markets, or a shift in the terms of trade are suggested as examples; and there are two points from this which are worth noting. First, the possibility of abortive take-offs is clearly implied; and second, the preconditions do not impel the following stage. The actual linkage is provided by a factor which seems to be quite random -- though of course take-off is impossible without the preconditions.

It is very difficult to understand why Rostow should allow the requirement of an increase in the rate of investment to appear in both the second and third stages. The emphasis which it receives as part of the definition of the take-off almost suggests that its inclusion in the earlier stage is a mistake. Clearly the length of time over which the condition is fulfilled is very important; if the crucial increase in the rate of investment is not bound to occur in the relatively short period of the take-off but may begin at some undetermined point in the previous stage, then the apparently precise nature of the condition is greatly weakened.

If we ignore the reference to the rate of investment in the preconditions period, this necessary condition of the take-off may still be criticised on both empirical and theoretical grounds. After comparing for an appreciable range of countries Rostow's

take-off dates with data put forward by Kuznets, Hagen concludes: "It is not possible to interpret these data in a way that offers support for the take-off thesis. Similarly data for other countries presented by Kuznets conflicts with the thesis."<sup>9</sup> In the case of Japan the investment rate did not reach 10% until well after the take-off period -- for Sweden the lag was even greater. Investment in Argentina on the other hand exceeded 10% three decades before the take-off began. The reason for the lack of flexibility in the investment requirement, a feature of development which is not borne out by experience, is contained in the assumptions which Rostow made about the rate of population increase and the marginal capital-output ratio. That the former is likely to be between 1% and 1 $\frac{1}{2}$ % is reasonable enough. But it is extremely dangerous to give a broad estimate of the magnitude of the other determinant, as Lewis convincingly demonstrates.<sup>10</sup> Rostow "takes" the ratio to be 3 $\frac{1}{2}$  : 1; but since there are likely to be wide divergences not only between countries but between regional areas and industries, and since there are no authoritative figures for the ratio in developing countries, Rostow's estimate would seem to be a guess based on the ratio in advanced countries. It follows that it would be unwise to place too much reliance on the exact figures given for the increase in the investment rate.

It has been suggested above that the characteristics of the take-off are much less distinctive than one would expect of the key stage. Nonetheless there are certain features of the growth process which are unique to this stage, and they must now be consid-

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<sup>9</sup>E.S.Hagen, On The Theory of Social Change, (Homewood, Ill.: The Dorsey Press, 1962), p. 520. The data are contained in S. Kuznets, "Quantitative Aspects of the Economic Growth of Nations. VI: Long-Term Trends in Capital Formation Proportions", Economic Development and Cultural Change, IX, No. 4, part II, (July 1961).

<sup>10</sup>W.A.Lewis, The Theory of Economic Growth, (London: Allen & Unwin, 1955), Chapter V, especially pp. 201-207.

ered. The fact that the take-off originates with some sharp stimulus suggests that there should be some discontinuity evident, if not in the rate of investment, then in industrial output. Whether this ought to mean more, as Cairncross argues,<sup>11</sup> than a simple acceleration of growth is probably a matter of definition. Whether it does mean more is very doubtful, although Rostow offers no direct guidance on this point.

The source of the increased rate of growth in the national product is "the development of one or more substantial manufacturing sectors, with a high rate of growth" (the second of the necessary conditions for the stage), the requirements of such a sector being "that its processes set in motion a chain of further modern sector requirements and that its expansion provides the potentiality of external economy effects, industrial in character". (p. 39n.). This is the first of the leading sectors, and also the main engine which powers the take-off into self-sustained growth. The most obvious question which this feature of the take-off provokes is whether or not Rostow is saying anything remarkable. We may note first of all that Rostow nowhere indicates what he means by a sector -- the usual divisions between agriculture, industry, export and social overhead, for example are evidently too broad, and from the cases which he cites he apparently has in mind particular industries. It would of course be almost incredible if all industries in an economy should grow at the same rate. To observe or stipulate that one or more industries (or sectors) should grow at a faster rate than the others is to emphasise little more than common-sense would indicate.

Moreover no industries exist without some kind of backward or forward linkages. Since the precise scale of the external economy effects is not indicated, there seems to be no reason why, for instance, the export sector in the previous stage should not fulfil

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<sup>11</sup> Op. cit., 454.

the stipulations laid down for the primary growth sector in the take-off.

The concept of a primary growth sector, which analytically is valid though its empirical value is limited by difficulties of identification,<sup>12</sup> is not a sufficient basis for distinguishing between the take-off and subsequent stages. It does seem to separate the second and third stages, since Rostow does not identify leading or primary growth sectors until the take-off. The exclusion of leading sectors in the preconditions stage is understandable, since what these sectors lead is self-sustained growth. But there is no evident reason for excluding primary growth sectors: might these not grow (and decelerate) without stimulating either supplementary growth sectors or self-sustained growth?

That the take-off coincides with an increase in the rate of growth in the economy is accepted, though by itself one might suppose that this scarcely justifies the identification of a stage. Growth after take-off is however alleged to have an additional attribute, that of being self-sustained; and compound interest is said to "get built into the society's structure". Mention was made in the Introduction of Rostow's use of metaphorical and misleading language, and these two phrases, perhaps more than any other, have been singled out for criticism. Their content must therefore be evaluated to see if they add anything distinctive to the take-off stage.

Of compound interest Rostow explains that "This phrase is used as a shorthand way of suggesting that growth normally proceeds by geometric progression, much as a savings account if interest is left to compound with principal". (p. 2n.). This statement is surprising on two counts. First, where the phrase appears in the text, it is said to become after take-off a condition of the habits

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<sup>12</sup>W.W.Rostow, "The Problem of Achieving and Maintaining a High Rate of Economic Growth: A Historian's View", American Economic Review, Papers and Proceedings, I, No. 2, (May 1960), 108.



and institutional structure of society (see pp. 7, 36), and is apparently related to the proposition that after this stage growth is the normal condition of the society. This seems to mean nothing at all, except perhaps as an awkward way of saying that social institutions come to be adapted to the needs of an increasingly industrial society: but Rostow's elaboration of the phrase clearly bears little relation to its meaning in use. Second, it touches absurdity to suggest that growth "normally" occurs at a constant rate. The mass of empirical data which could be employed to disprove this assertion is made unnecessary by Rostow's own contradictions of it. Towards the end of take-off, new leading sectors rise "to supplant the older leading sectors of the take-off, where deceleration has increasingly slowed the pace of expansion". (p. 59).<sup>13</sup> Between the fourth and fifth stages, "relative stagnation" is a possibility (p. 60n.). The suggestion, then, that "compound interest" has any literal meaning is most unlikely, and certainly not established.

If it has any exact meaning at all, it would seem to be already implied in its companion "self-sustained growth". To some extent these concepts overlap, such that it is possible to interpret the latter, following most of Rostow's critics, simply as growth proceeding by geometric progression. Thus Habakkuk suggests that unless the phrase means that growth has normally taken place at a constant rate, which is not true, then the adjective "self-sustained" adds nothing.<sup>14</sup> It is not difficult to dismiss the phrase in this way, but it might be unfortunate to do so.

The question which seems to be posed is not whether growth occurs at a more regular pace after take-off, but whether growth assumes different characteristics at this stage. A difficulty

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<sup>13</sup>The nature of the retarded growth rate at this juncture is further examined in "Industrialisation and Economic Growth", (op. cit.), pp. 32-33.

<sup>14</sup>Op. cit., 603.

arises of course in trying to establish what sustains growth in the preconditions period, if this is somehow different from what follows.

It is clearly not that in the earlier stage the economy is allowed injections from the state or from foreign capital, since these are both allotted key functions in the take-off. The solution appears to lie in taking "self-sustained" in the sense of self-reinforcing; and in a later paper Rostow elaborates on this theme.<sup>15</sup> Modernisation in the preconditions stage is self-reinforcing to the extent of greater contact with modern societies, the rise of trade and cities, and the emergence of new and less 'traditional' generations.

But the second major feature of the transition is that there are limits to the pace of this slide towards modernisation. The rate of training of modern men is dependent on the scale of travel and education abroad and on the creation of modern institutions within the society; the rate of increase of trade and the growth of cities have built-in limitations, as well as the possibility of wide variation depending on the particular economic setting in which the transition occurs, notably the degree of population pressure; and the rhythm of human life itself sets limits to the sequence of generations and their perspectives. And beyond these technical damping factors there is the possibility of wide variation in the extent to which different traditional cultures and social structures prove amenable to modernisation or resistant to its requirements.<sup>16</sup>

Thus in the preconditions stage there is both a ceiling and a floor to the self-reinforcing effects of economic progress. During the take-off the ceiling apparently disappears, and five reinforcing "feedback" effects become evident: the range of political controversy tends to narrow to one of method rather than one of purpose; increased communications enhance the sense of nationhood; agriculture becomes increasingly commercialised; the pace of urbanisation is increased; and the relative power in the political process of professional and technical groups is strengthened.

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<sup>15</sup> See "Industrialization and Economic Growth", (op. cit.), especially pp. 28-30. The rest of this paragraph is based on the analysis to be found there.

<sup>16</sup> Ibid., p. 28.

It seems to be in this sense, if any, that the take-off is into self-sustained growth and compound interest gets built into the society's structure. The concepts may not be named aptly, but the idea that the path of economic progress becomes increasingly more easy is, for the early period of growth, highly plausible. Even so this is insufficient to justify the concept of the take-off, since in order to differentiate between the self-reinforcing effects of growth in the two stages we need to be satisfied that there are factors operative in the take-off period, and not before, which serve to remove the ceiling on the self-sustaining capacity of the growth process. Rostow does not in fact demonstrate these factors -- indeed it is difficult to conceive of an analytic basis for his doing so -- nor does he indicate why there should be a discontinuity in the process by which economic modernisation reinforces itself.

Nonetheless it seems to be a necessary condition of the stage that by its conclusion society should have been "radically transformed" such that there are no social or institutional barriers to impede further economic progress, growth therefore being the normal state of the economy after the take-off. It is here that the criticism of over-dramatisation fits well, for the effect of linking this transformation with one stage seems to be to make growth thereafter an almost automatic process. One might ask, with Habakkuk, what evidence there is that there has been only one decisive phase in the history of each growing economy,<sup>17</sup> or even what sense it makes to speak of growth as the "normal" condition of an economy.

The movement into the fourth of the stages, the drive to maturity, is marked by deceleration in the original leading sector and the emergence of new leaders, probably of the primary growth type, which support expansion until maturity is reached. The stage

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<sup>17</sup>Op. cit., 601.

is in form therefore an intermediate period, identifiable only by the increased range of industries in which growth occurs, and terminated by a state of the economy which it is difficult to define and, for any given economy, difficult to date. One might suppose that it is usual between any two points of time in the growth process for the number of industries to increase; and we have Rostow's own word for it that the analytic distinction between types of sectoral growth is difficult to substantiate empirically.

In view of these difficulties it is perhaps natural that, on the assumption that the end of the take-off can be recognised, discussion on the legitimacy of the stage tends to centre on the meaning of Rostow's definitions of maturity. Of these, the most important suffers from extreme vagueness; as Bauer and Wilson point out, it is quite conceivable that the primitive societies of neolithic Europe had effectively applied the range of (then) modern technology to the bulk of their resources.<sup>18</sup> If Rostow intends the state of maturity to be the culmination of the processes at work in the fourth stage, then he is presumably trying to indicate that industrial diversification should result in the spread of modern techniques over a wide area of economic activity. There are however a number of angles from which this definition appears unsatisfactory. First, it is questionable whether it is meaningful to speak of resources except in terms of a given technology. A resource is, by definition, a thing which has an economic use. If there is no technology by which the thing can be harnessed, then the thing has no use and cannot be a resource. Against this it can be argued that an amount of known but unemployed technology allows us to speak of resources even when they have not been brought into use; and that it is when this amount has been almost exhausted that Rostow speaks of maturity.

This introduces the second problem, that of measuring the

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<sup>18</sup> P. T. Bauer and C. Wilson, "The Stages of Growth", Economica, XXXIX, No. 114, (May 1962), 196.

"backlog of unabsorbed technology". It is surely true to say that, except in the traditional society, there is always a certain amount of backlog, so that unless there is some quantitative measurement and some 'permissible' backlog, it scarcely makes sense to say that the range of modern technology has ever been applied. Third, there is the possibility of attaining maturity and subsequently losing it. If the state of technology was to remain relatively unchanged over a period of time and the quantity of known resources was to increase at a rate faster than that at which they could be brought into use: or if new technologies were to be discovered such that quantities of previously useless materials should become resources: then on the assumption that the economy was mature at the beginning of the period it would, according to Rostow's definition, have ceased to be mature by the end of the period.

The alternative definition of maturity, which receives considerably less prominence, is given as:

The stage in which an economy demonstrates that it has the technological and entrepreneurial skills to produce not everything, but anything that it chooses to produce. It may lack . . . the raw materials or other supply conditions required to produce a given type of output economically; but its dependence is a matter of economic choice or political priority rather than a technological or institutional necessity. (p. 10).

This is perhaps more close to the conventional understanding of economic maturity. But while it would be wrong to overemphasise its importance by extensive criticism, certain comments are clearly invited. Thus if the second sentence in the quotation is not to contradict the first, then Rostow must mean that the skills are present to produce everything, but not everything simultaneously. With one important exception, an economy normally 'chooses' to produce those things which it is best fitted to produce, or for which it expects to become reasonably well fitted at some time in the future. One questions how an economy can demonstrate its ability to produce anything short of producing everything. The exception, which may also be the solution to this problem, is the

case in which an economy is bound by military or strategic necessity to produce goods which it would not normally produce; and this, though it is not clear, may represent Rostow's meaning. Absolute self-sufficiency is of course virtually unattainable, and the lack of a vital raw material might demand a higher level of technological skill in any one economy, such that an index of self-sufficiency as an indication of maturity would be difficult to construct. In any case if it is accepted that absolute self-sufficiency is either too rare or involves too great a drop in living standards to be useful as a definition of maturity, then we are bound to reject Rostow's second definition, since this is what it seems to imply. If it implies something less, then he has not specified how much less, and the definition is consequently not useful.

Finally, the three processes which are said to occur as maturity moves to its close should assist in the identification of the stage, even though we are not told whether they are necessary conditions of the stage or merely descriptive of it. But even if the latter interpretation is adopted (which logically would permit the processes to be absent during the stage), the descriptions must be specific if they are to be helpful. This condition is fulfilled in the account of the declining proportion of the labour force in agriculture during the stage -- roughly from 40% to 20%. But it is no help to learn that the urban population is growing if this process may have started in the second stage, nor that the change in the character of the labour force is not necessarily from unskilled to skilled (it may be the reverse), but rather ". . . a shift to those who design or handle complex machines, keep office records and manage big bureaucracies, rather than lay railway tracks or puddle steel, or handle rather crudely masses of unskilled labour". (p. 71).

There is much to be said for the view that the presence of the age of high mass-consumption in this system of stages is unjustified. The linkage which Rostow offers between this stage and its

predecessor is very slight indeed. In terms of the theory of production, there is no analytic basis for the emergence of derived-growth sectors in the sense in which supplementary sectors are a necessary consequence of growth in a leading primary sector. Whereas the character of the primary sector is determined jointly by the nature of the resource endowment and possibilities for profitable innovation, the selection of demand as the determining factor of derived-growth sectors seems somewhat arbitrary. The basis for it, though even this is not stated, is presumably the existence of higher real incomes in the domestic economy, which makes profitable the exploitation of consumers' demand. Nonetheless there will be presumably be at least some limitations dictated by supply conditions, although they may not be as important as in earlier stages. Even if demand is the final determinant of growth in this stage, it would surely be difficult to establish a general case for the view that demand has played a distinctively different role such as to justify the creation of an additional stage.

It is not necessary that an economy should proceed to this stage, since alternative routes which an economy may take are the "national pursuit of external power and influence" and the creation of a welfare state. The fifth stage differs fundamentally from its predecessors therefore in that there are no compelling factors, economic or political, to bring it about, and that its existence requires a political decision. It may be noted incidentally that to suppose politicians deliberately address themselves to the triple choice of what they may do with their freshly-matured economy is highly artificial; nor is there any reason given why the presentation of these three alternatives should be unique to a mature economy beyond the observation that ". . . the balance of attention of society, as it approached and went beyond maturity, shifted from supply to demand, from problems of production to problems of consumption, and of welfare in the widest sense". (p. 73).

More important is the fact that this stage has no part to play in a stages-of-growth sequence. It is clear from the nature

of the other two alternatives that in a very important sense growth has ceased to be a problem by the time maturity is reached; although what Rostow describes in the post-maturity period has implications for the economy, he is essentially describing a political and not an economic process.

This is not to deny the key role which political factors play in the earlier stages, nor to dispute that they should do so. When Rostow writes that "such influence as I have had in the analysis of economic growth, from the publication of The Process of Economic Growth (1952) forward, has been in the direction of underlining the decisive importance of non-economic factors in the process of economic growth",<sup>19</sup> he is refuting the charge, with full justification, that the stages system is uniquely determined by economic factors.

The importance of "reactive nationalism" in breaking up the traditional society is repeatedly emphasised. But we may doubt that this example represents the same kind of political causation as occurs after maturity is reached, or whether the political factors are operating on the same process. Reactive nationalism is important because it will inevitably have at least some impact on the shape of the economy, and because it is an identifiable force whose origins can be explained. In outlining the triple choice which may bring into being the final stage, Rostow makes no mention of underlying forces which are at work. As far as one can tell, the choice suddenly arises, and apparently there is no possibility of predicting the general direction which societies will take.

Moreover it seems that economic growth is no longer the process under discussion once maturity is achieved. By definition, the economy is capable at that point of its development of producing anything that it chooses to produce. If so, then economic growth, in the sense of the establishment of a viable economy, has been successfully completed. This is of course far from the whole

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<sup>19</sup>W.W.Rostow, "Rostow's Rebuttal", Fortune, LXXI, No. 1, (January 1960).



meaning of economic growth, but it is the meaning with which Rostow has been concerned up to that point. Before maturity, economic growth is subject to a number of influences, but the ultimate limitation on the shape and direction of the economy is given by its own degree of development; and it is predominantly for the analysis of changes in this limitation as growth proceeds that gives the system of stages and the theory of production their potential importance. By contrast, the fifth stage is an account of a political decision which is loosely related to the level of development in the economy and which may have implications for the economy.

Each of the five stages is to a greater or lesser extent open to criticism. Although Rostow does attempt to identify factors unique to each stage and responsible for each succeeding stage, which should be his main task as a system-builder, he is not always successful. In the case of the second stage it is argued that the nature of the factors called "preconditions" is such as to resist the attempt to push them into a stage of their own, so that there is a tension between the logical and chronological demands of the system. Elsewhere the major criticism is that the stages are insufficiently distinct -- either because the same things are expected to happen in two different stages or, where changes in variables are specified, these changes are not quantified in such a way as to make them recognisable.

This latter complaint can be generalised to indicate both the formal strength and empirical weakness of the system. Rostow's critics have frequent occasion to point out that he has dealt only with 'success stories' of economic growth, and that he has failed to take account of cases in which apparent take-offs have ended in failure to achieve regular growth. To some extent this criticism is surprising, since one would expect it to be a property of the system that fulfilment of the preconditions, again with Checkland's

assumption,<sup>20</sup> should make inevitable the rest of the stages, at least as far as maturity.

To ensure this however, Rostow's trick is either to insert 'blanket' conditions for the succeeding stage, or to define the conditions in terms of their bringing about the next stage. As an illustration of both these devices, the third of the necessary conditions for take-off<sup>21</sup> is excellent. Elsewhere the amount of capital required in this stage is defined as sufficient to "detonate" the take-off (p. 57); moreover the stimulus which initiates the take-off can only be recognised if the economy makes the appropriate response to it, and only then can it be said that the preconditions are fulfilled. Thus the stages are such that they can only be recognised after they have occurred -- there is no a priori test for discovering whether self-sustained growth is happening -- and even though their take-off periods were almost half-way over when The Stages of Economic Growth was written, "it is still too soon to judge either the present Indian or Chinese Communist take-off efforts successful". (p. 38).

No final judgment on the stages of growth is indicated. As a system it is imperfect, but neither right nor wrong. In general its critics have torn it to shreds but conceded that much of it is based on acutely perceptive insight, and a more adequate assessment of its value will clearly depend on the findings of empirical investigation conducted on the lines indicated by it. The criticism contained in this chapter tends to be more sympathetic than most of the treatments of the stages, and there are a number of reasons for this. First, the majority of commentaries have appeared as reviews or review articles, a medium which is highly conducive to destructive criticism. Second, and related to this, we are considering not The Stages of Economic Growth by itself but with the

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<sup>20</sup> See above, p. 35.

<sup>21</sup> Quoted above, p. 25.

assistance of Rostow's subsequent and, on the whole, more scholarly writings which develop its themes. - And finally we are not prejudiced by the political analysis and claims to be an alternative to Marx, which one suspects have coloured the judgments of some. This, the substance of the second half of the book, is confined to the Introduction. It is noted there that some of the value and importance of a stages system is likely to derive from its adaptability to polemical treatment.<sup>22</sup> In this case it is difficult to avoid the conclusion that Rostow recognises that in the light of present knowledge much of his stages system is pretentious: Checkland gave the most apt judgment in speaking of "The Rostow Challenge".<sup>23</sup>

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<sup>22</sup>Above, p. 16.

<sup>23</sup>Op. cit.

#### IV

#### THE PRECONDITIONS OF CANADIAN ECONOMIC GROWTH

The major criticism which is made in the previous chapter of the second of Rostow's stages concerns the ambiguity in the meaning of a precondition.<sup>1</sup> It is argued there that if the fulfilment of the preconditions logically entails movement into the succeeding stage, then we have stumbled on a tautology whose existence denies the stage any important empirical value. Alternatively, the interpretation of preconditions as conditions, by removing their logical status, raises the problem of the historical evidence which fails to fit the schema. The fact that Rostow largely fails to quantify the changes which satisfy the requirements of this stage suggests that the former may well be the correct view.

In this chapter, as in the three which follow it, the discussion is not prejudiced by any adverse general conclusions reached earlier about the stages of growth. This is because the sort of test to be applied here is quite different from the one used above. In Chapter III we accept Rostow's proposition that the stages of economic growth are more than a generalisation of certain factual observations, and the theory is therefore considered with a severity appropriate to such a claim. But in superimposing the theory on one instance of economic development, and describing the sort of fit which results, we are testing not a generalised model but the ability of a hypothesis to explain the phenomena of a single case. It is thus possible that whereas the conclusions of Chapter III tend to be adverse the results of the following chapters may prove favourable to the theory. While this is in no sense a test-case, and the applicability of Rostow's theory to

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<sup>1</sup> Above, pp. 38-39.

Canadian economic history may have no wider significance, nonetheless it is only when a number of such studies have been completed that a conclusive assessment of the theory may be forthcoming.

The fact that in the rest of this thesis we disregard the verdicts reached in the theoretical examination of the stages of growth does not mean that the analysis on which those verdicts are based is also not relevant. On the contrary, much of Chapter III may be regarded as eliciting the meaning of Rostow's theory, and this is clearly important to the investigation which follows.

The purpose of this chapter is to apply the concept of a preconditions stage to the evolution of the Canadian economy. This is done primarily by seeing how far the requirements of the stage are fulfilled in the case of Canada. At the end of the chapter we attempt to evaluate the importance of these findings, in particular by comparing them with the interpretation given by the staples approach.

As one of the group of nations which were "born free" Canada's preconditions period is an exception to the general rule. The fundamental changes in attitudes which were necessary in the usual case need not be looked for in Canada since the traditional society has virtually never existed.<sup>2</sup> The conditions of the

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<sup>2</sup>This may do rather less than justice to French settlement along the St. Lawrence: "The economic life of New France was organised along very traditionalistic, almost medieval lines. The colony as a whole was burdened by the cost of supporting a large civil, military, and ecclesiastical bureaucracy, and almost every aspect of social life was subject to detailed regulation. Agriculture and land settlement took place within the semi-feudal framework of the seigneurial system, while manufacture and trade were regulated in a manner reminiscent of the medieval guilds . . . In these circumstances it was not surprising that large sectors of the colonial economy remained virtually isolated from commercial transactions of any sort"; W.T. Easterbrook and H.G.J. Aitken, Canadian Economic History, (Toronto: Macmillan, 1956), pp. 88-89. However, this transplanting was unique in Canada, and at no time does it make sense to speak of Canada as a traditional society, a view in which we agree with Rostow.

transition in Canada were therefore " . . . mainly economic and technical. The creation of the preconditions for take-off was largely a matter of building social overhead capital -- railways, ports and roads -- and of finding an economic setting in which a shift from agriculture and trade to manufacture was profitable".<sup>3</sup> Freed from the task then of detecting change in intangibles, it would be reasonable to hope that the identification of a preconditions period in Canada might be performed with greater precision. Unfortunately this is still far from the case.

✓ The first difficulty arises from Rostow's failure to specify the period of time which he believes sufficient for the fulfilment of the preconditions. Whereas the take-off can be limited to twenty years, and the drive to maturity to sixty years, it is presumably not possible to generalise about the second stage: nor does Rostow attempt to date the stage in the case of any particular country. For Canada the preconditions must have been complete by 1895, the year which saw the beginning of the take-off. In a sense the previous two hundred years may be regarded as the duration of the preconditions stage, since as we have seen the traditional society was never properly established in Canada. Nonetheless the developments indicated by the stage occurred in Canada in the period following the early decades of the nineteenth century, and it is these sixty or seventy years that we examine in this chapter. The fact that it is not possible to give a precise date for the beginning of the stage does not seem to be very important.

The construction of social overhead capital, in Canada as in Rostow's formulation, was largely a matter of investment in transportation. With the decline in the fur trade and the opening of the Erie Canal in 1825 commercial interests in Montreal came to place a new emphasis on the possibility of developing the St.

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<sup>3</sup>W.W.Rostow, The Stages of Economic Growth, (Cambridge: at the University Press, 1960), pp. 17-18.

Lawrence as the principal trade route between Europe and the continental hinterland served by the Great Lakes. But although the first Welland Canal was opened in 1829, the completion of the entire system was obliged to wait on the Act of Union and an imperial loan of \$1½ million, and it was not until 1848 that the St. Lawrence system was finally opened. In view of the enormous capital cost of the project the response to it was disappointing; it was not until the turn of the century that the canals began to carry the volume of traffic which it had been hoped they would attract fifty years earlier. But the importance of transportation facilities in Canada has never been simply a function of the amount of revenue they have earned;

The glorious future predicted for the Canadian canals never materialised, and perhaps never could have been expected to materialise. There can be little doubt that their construction was both wise and necessary . . . The St. Lawrence canals provided what was necessary: a trunk line to the west; and if it proved impossible to draw through them the volume of trade which many people hoped would come, the general philosophy underlying this belief was not yet abandoned.<sup>4</sup>

Before this period a very small number of shallow canals had been built. Later the canals of the St. Lawrence system were to undergo extensive modification and replacement. Yet there can be little doubt that the activities of the 1820's and 1830's and again between 1841 and 1848 make this the most important episode in the history of canals in Canada, in terms both of subsequent influence and actual cost.

The first period of railway construction in Canada soon followed the completion of the canal system, sustaining a period of prosperity into the middle 1850's. There was in fact a remarkable parallel in the origins of both these undertakings.

Just as the completion of the Erie Canal in 1825 had hastened the construction of the St. Lawrence canal system, so the expansion of the American railroad net and its encroachments upon the commer-

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<sup>4</sup>G.P. de T. Glazebrook, A History of Transportation in Canada, (Toronto: The Ryerson Press, 1938), p. 97.

cial hinterland of Montreal provided the stimulus for Canadian railway construction. The St. Lawrence and Welland Canals had been built to draw the export and import trade of the midwest to Montreal. Not only had this objective not been achieved by 1850 but, what was even more ominous, the trade of Canada itself was being attracted to New York and Boston by the new American railroads rather than to Montreal by the St. Lawrence canals.<sup>5</sup>

In 1850 there were 66 railway miles in Canada. By 1855 this had increased to 377, and by 1860 to 2,065. The expansion in railway construction was resumed in the 1870's, so that by the end of that decade there were about 7,000 completed railway miles, and in 1896, which marks the end of the preconditions period in Canada, the figure had reached 16,270, or some 37% of the operated railway track mileage in 1960.<sup>6</sup>

This is a remarkable record in view of the difficulties which had been encountered in financing the development of the canals, and as evidence of the urgency which was felt to accompany the construction of a railway network. By contrast with the canals, the railways were financed primarily by private capital; the government however played a role of considerable importance. The flow of capital funds was assisted by the Guarantee Act of 1849 and by the Municipal Loan Fund Act of three years later. In the years before Confederation between one-half and two-thirds of investment in the railways was probably composed of foreign capital funds;<sup>7</sup> it was perhaps the most important of the government's enabling activities to increase Canada's borrowing power in London.

The importance of the role of the government in the creation of social overhead capital, which Rostow leads us to expect,<sup>8</sup> receives its most striking instance in Canada in the construction

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<sup>5</sup> Easterbrook and Aitken (op. cit.), p. 294.

<sup>6</sup> All railway mileage figures, except those for 1960, are from Canada Year Book, 1941, p. 546. The exception is from Canada Year Book, 1962, p. 764.


<sup>7</sup> Easterbrook and Aitken (op. cit.), p. 316.

<sup>8</sup> Rostow (op. cit.), p. 25.



of the first transcontinental railway. This is more properly considered as part of the National Policy, which is discussed later in this chapter, but some comments are in order here. Direct subsidies and grants of land by the Dominion government were indispensable to the Canadian Pacific Railway. Indeed the very existence of the company was the work of the government, anticipated in its pledge to British Columbia in 1871 that a transcontinental railway would be built. In addition the C.P.R. was granted without charge sections of track already constructed by the government in the 1870's, their cost representing about 40% of total Dominion aid to the C.P.R.

The changes which were occurring in the agricultural sector during the period were no less significant for the economy. If it makes sense to speak of a staple product following the cessation of preferential treatment for Canadian timber in Britain then one must presumably look to the growing volume of foodstuffs which were being exported to the United States. For in Rostow's account of the improvements in agriculture which must take place in the preconditions stage, the Canadian case -- in common with probably all other nations "born free" -- is exceptional. The distinctive contribution of agriculture to the second stage in the economic development of this group was not in expanding food supplies to feed a rapidly-growing population, but in earning foreign exchange by producing an exportable surplus.

 Agricultural settlement was largely confined to central Canada, where in the early decades of the nineteenth century the most important cash crop was wheat. The extent of British preferential treatment for wheat from Canada was a constant source of discontent, yet the eventual repeal of the Corn Laws damaged the wheat producers much less than they had anticipated. The fact that the agitation surrounding the Annexation Manifesto was centred in large part on Montreal is a good indication of who really suffered by the cancellation of the imperial preferences. But the attraction of the United States to the wheat producers was not simply as an

alternative trade route to Europe but as an alternative, and more reliable, market.

This new orientation was emphasised by the Reciprocity Treaty of 1854 and not substantially reversed by its abrogation twelve years later. It was accompanied by an increasing diversification; the volume of wheat production declined, and livestock and dairying assumed greater importance. Cheese production expanded very rapidly in Quebec and Ontario.<sup>9</sup> Animals and animal products, which in 1869 were a less valuable export commodity than agricultural food products, were by 1896 worth nearly three times as much, and the two categories combined accounted for 60% of Canada's export revenue.<sup>10</sup>

The role of manufacturing industry in the preconditions period is not discussed by Rostow, presumably because at this stage he does not expect it to be a very important component of the national product, and because unlike the two sectors discussed previously it is not likely to play a distinctive part so early in the process of economic growth. But we may reasonably expect the achievement of an economic setting in which a shift into manufacturing activities is profitable<sup>11</sup> to include some expansion in manufacturing itself, and this was certainly the case in Canada before 1896. Bertram's figures for the two decades 1870-1890 show an average annual growth rate of 4.27% for primary manufacturing activities and 4.81% for

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<sup>9</sup>R.E.Caves and R.H.Holton, The Canadian Economy -- Prospect and Retrospect, (Cambridge, Mass.: Harvard University Press, 1959), p. 185.

<sup>10</sup>K.W.Taylor and H.Michell, Statistical Contributions to Canadian Economic History, Vol. II, (Toronto: Macmillan, 1951), Table VI, pp. 34-40.

<sup>11</sup>Rostow (op. cit.), p. 18.

secondary manufacturing.<sup>12</sup> These growth rates are higher than the annual average for the period 1870-1957, and almost certainly higher than for previous decades. Exploitation of the domestic market can only take part of the credit for the increase in manufacturing, since the proportion of manufactured products which was exported in 1870 and 1890 does not seem to be significantly lower than the proportion for selected years up to 1953.<sup>13</sup> Since Rostow offers no firm guidance on what should be happening to manufacturing in the preconditions stage, the only possible conclusion seems to be a largely negative one -- that Rostow says nothing which would make the case of Canada untypical.

The achievement of the preconditions for take-off in the group of new countries requires, as we have seen, the important changes to occur in the economic, rather than non-economic aspects of society. This should almost certainly not be taken to mean that the success of the stage depends simply on the performance of the economy in two or three of its sectors to the exclusion of institutional change, except perhaps to the extent to which the one presupposes the other. More probably Rostow intended to exclude the kind of change in attitudes which is associated with the spread of the money economy and which has distinctly more relevance to the modern underdeveloped territories than to Canada in the nineteenth century.

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<sup>12</sup>C.W.Bertram, "Historical Statistics on Growth and Structure of Manufacturing in Canada, 1870-1957", Canadian Political Science Association, Conference on Statistics, June 10-11, 1962, Table 2, p. 7. The basis of the distinction is as follows: "Primary manufacturing industries can be regarded as absorbing the outputs of staple industries or simply as the final step in staple production. Secondary manufacturing industries are characterised by a higher degree of processing, greater dependence on domestic markets and reliance on both foreign and domestic inputs." (*Ibid.*), p. 2.

<sup>13</sup>C.J.Firestone, Canada's Economic Development 1867-1955, (London: Bowes & Bowes, 1958), Table 79, p. 214.

An important example of the evolution of economic institutions in the development of Canada is the growth of the banking system. Although central banking was not formally established until 1935, certain of the functions now fulfilled by the Bank of Canada were made necessary by the earlier development of commercial banking and preceded the establishment of the Bank. The structure and practices of the Canadian banking system had certainly been laid down in their essentials by 1896.<sup>14</sup> In 1817 the first private bank was chartered. The succeeding years were a period of slow expansion though with comparatively few bank failures, a fact attributed to the cautious and conservative policies of the ruling interests, and perhaps also to the 'flexibility' of the bank-note issue, a virtue of their monopoly which the bankers repeatedly emphasised.

The Bank Acts of 1870 and 1871 undoubtedly did much to shape the structure of the system, yet they were responsible for few innovations. The decimal coinage, which had been introduced into the province of Canada in the 1850's, was extended throughout the Dominion. The evolution of the branch system was not interfered with, but the minimum paid-up capital for new banks was fixed at \$200,000, an amount increased to \$250,000 in 1890. An important departure however was the limitation of the bank-note issue to denominations no smaller than \$4, such that the Dominion government now had a monopoly of the lowest denominations. Some indication of the very great increase in banking activities which followed Confederation is given by the doubling of paid-up capital to the chartered banks between 1867 and 1874, and a considerably greater

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<sup>14</sup>The "formative period" in Canadian commercial banking is dated approximately as 1817-1867 in R.C. McIvor, Canadian Monetary, Banking and Fiscal Development, (Toronto: Macmillan, 1958), Chap. III. Also, "when western expansion on the prairies produced new and stronger attacks on eastern financial control, the Canadian banking system was too strongly established in the older provinces to be upset . . . the timing of expansion into western Canada, unlike that of the United States, was such that agrarian discontent made little impression on the Canadian banking structure"; Easterbrook and Aitken (op. cit.), p. 452.

increase in the volume of total loans over the same period.<sup>15</sup>

An evaluation of the importance of the banking system in Canadian economic development is not easy. It is clear that Canada's capital requirements have very often exceeded her ability to save. The railway boom of the 1850's depended on foreign capital to no lesser extent than did the wheat boom, and difficulties in obtaining credit account in part for the important role of the government in the preconditions period. Nonetheless domestic funds were never an insignificant part of total investment, and the banking system seems to have been of primary importance in their mobilisation, at least before 1896.<sup>16</sup> Also the 'pledge' provisions regarding collateral for bank advances, which were extended to all banks in 1859, were particularly suited to the financing of staples production.<sup>17</sup>

Yet probably the most important of the preconditions of Canadian economic growth was the achievement of political and economic unity in British North America. In the immediate sense the political pressures for Confederation may be said to date from the collapse of the Empire trading system with the removal of the preferential tariffs in Britain. The reaction to this took the form of a movement for closer association with the United States, culminating in the publication in 1849 of the Annexation Manifesto. The Reciprocity Treaty, signed in 1854, amounted to very much less

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<sup>15</sup> Canada Year Book, 1938, p. 918.

<sup>16</sup> This, and a corollary that the domestic capital market was under-utilised, is suggested by the experience of the war loan of \$50 million in 1915, which actually yielded \$100 million and of which the banks only subscribed \$21 million. "Floating securities domestically on any large scale was an unheard of thing which, when it was eventually carried out, was regarded as almost a miraculous achievement of which its promoters and organisers were justly proud": F.A. Knox, "Canadian War Finance and the Balance of Payments 1914-1918", Canadian Journal of Economics and Political Science, VI, No. 2, (May 1940), 237.

<sup>17</sup> McIvor (op. cit.), p. 17.

than this: but even as a "partial and limited economic union",<sup>18</sup> serious doubts were expressed as to its value even before it was signed, and it was quite obvious before 1866 that the experiment would not be renewed. The failure of continental integration, following closely upon that of the imperial system, might suggest that Confederation was a third choice in the struggle for political and economic survival; but it seems unlikely that either can ever have been regarded as an alternative to Confederation, so that their failure hastened rather than caused the political integration of Canada.

Economic growth was an explicit aim of the government of Canada at Confederation. An economic interdependence between the provinces, based on east-west trade routes, was regarded as indispensable to balance the strong attraction exerted by the United States. The National Policy, which gave substance to this grand design, did not receive a complete formulation until 1878. But its main features -- the railway, land settlement, tariffs and wheat -- had all appeared in some form before then. The principle of government assistance to the railways had been established in the 1850's; and it was the strain which this activity had imposed on the government revenues which was the primary reason for Galt's increased tariff barrier in 1859. But if it was still possible to argue in the 1870's that the tariff was for revenue purposes only, this was no longer true of the system created by Macdonald in 1879.

Protection was desired not simply for its own sake but to provide traffic for the transportation system. It was scarcely likely that the volume of excess capacity would be diminished by the transcontinental railway, especially in view of the insistence of the Dominion government that the track should be laid on Dominion territory throughout. This, and the provision that the railway should be owned and controlled by Canadians, resulted in consider-

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<sup>18</sup> Easterbrook and Aitken (op. cit.), p. 362.

able delay, and it was not until the formation of the Canadian Pacific Railway Company in 1880 that the conditions were satisfied. The implicit element of national survival is unmistakable.

The Dominion government made considerable use of its power of disposal of the territories in the west, partly to encourage and assist the construction of the C.P.R., but with greater effect in encouraging settlement under the Dominion Lands Act of 1872. The settlement of the prairies was of course fundamental to the success of the wheat economy; and the favourable terms which the government could offer homesteaders was an enormous inducement to immigrants.

It is now rather less fashionable than it was to find the progress of the Canadian economy a disappointment between Confederation and 1896.<sup>19</sup> There was, as we have seen, a considerable diversification of production in the agricultural sector, and an important increase in manufacturing activities. It is by contrast with the subsequent period up to 1914 that the growth rates of the economy in the preconditions period seem slight. The manner in which the wheat economy brought to fruition the National Policy will be discussed in the next chapter. It is sufficient for the present to observe that although growth between 1867 and 1896 was generally healthy, especially in the early years of the period, it never assumed the boom proportions which the Fathers of Confederation might have hoped for, and which after 1896 were realised. If it is true that "the later nineteenth century, so far as Canada was concerned, is best summed up as a period of consolidation and waiting until world interest, its capital and its labour, were attracted in volume to the hitherto neglected northern half of North America",<sup>20</sup> it would be quite wrong to leave the impression that these were not also

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<sup>19</sup> See H.H. Watkins, "A Staple Theory of Economic Growth", Canadian Journal of Economics and Political Science, LXIX, No. 2, (May 1963), 155.

<sup>20</sup> Easterbrook and Aitken (op. cit.), p. 396.

years of preparation.

From the discussion in the previous section of this chapter it seems clear that there are at least no glaring inconsistencies between Rostow's analysis of the preconditions period and the experience of the Canadian economy in the period roughly bounded by 1830 and 1896. In each case the important areas of growth are in transportation and agriculture. The evolution of an appropriate framework for economic growth is perhaps more than usually evident in the case of Canada. And whereas it is argued in Chapter III that the device of an intervening stage between the traditional society and the take-off is artificial, for Canada it seems to be quite meaningful to speak of the later nineteenth century -- and especially after 1879 -- as a preparatory stage in the sense of Rostow's preconditions. Thus it is broadly true to say that the characteristics which mark the second of Rostow's stages are also those which distinguish the corresponding stage in Canadian economic history. It is primarily the lack of quantitative information in The Stages of Economic Growth which makes impossible a more precise comparison.

Inevitably a generalisation of the breadth and brevity of the stages-of-growth sequence must ignore certain aspects of particular instances: all examples of economic growth are to some extent unique, and this by no means rules out a theory which might account for them all. Even in the guise of empirical hypothesis which we have adopted for Rostow's theory in this and the following three chapters, its general rules are not of course vitiated by one or a few exceptions. For these two reasons we must be careful, in jumping from a bare comparison of the particular case with the general rule to an attempt to decide what the one does for the other, not to overstate the case in either direction.

It is suggested above that there is no qualitative inconsistency between the preconditions stage and the equivalent period of Canadian economic growth. If this is true then the case of



Canada is important substantiation for the stages thesis. Consistency may in fact be the highest form of support which Rostow can hope for; but the lessons to be learnt from the Canadian case do not end there. In spite of the lack of quantitative precision in the account of the stage, there is evidence that the balance of factors occasioning growth, and of sectors in the process of growth, may not be as blandly even as Rostow would suggest. Whereas Canadian manufacturing was becoming increasingly important in the final decades of the nineteenth century, Rostow does not mention what should be happening to this sector in the preconditions stage. Elsewhere it is argued that it is unlikely Rostow means to imply that there would be no such activity, but rather that it is not analytically important at this stage. This would seem to be a reasonable interpretation, but it need not be the only one; if one wished to discredit Rostow it could be argued that his concept of a preconditions stage is not applicable to Canada since it takes no account of the important increase in manufacturing activities.

A similar argument could be brought to bear on the effect of political factors on the economic development of Canada. It is difficult to conceive of the economic history of Canada in the last century in terms which make no allowance for the influence of the United States. The construction of both canals and railways was made necessary by their previous construction in the United States, and the Reciprocity Treaty indicates the increasing importance of that country as a market for Canadian goods. But the urgency which was felt to accompany the counterbalancing of north-south trade routes by an interdependence of east and west is most clearly marked by the political unification of Canada and the subsequent National Policy. There is no doubt at all that one very important factor at work here was a fear of political and economic absorption by the United States. This was surely the driving force behind the conditions attached to the formation of the Canadian Pacific Railway, and the urgency of settlement in the west. Both of these were vital elements of the National Policy, which in turn

paved the way for the wheat economy.

It is difficult not to regard the results of the influence of the United States on Canada as a form of "reactive nationalism". It is quite clear that the decisions to build the canals and railways were forced on Canada by the diversion of traffic through the United States; however if at this stage Canada envisaged herself as a competitor, she rapidly ceased to do so. But in stressing the importance of the political factor in the Canadian preconditions period, we are in fact departing from Rostow, for whom the second stage in the countries "born free" is "largely" an economic and technical affair.<sup>21</sup> The justification for interpreting Rostow in such a way as to allow Rostow into the fold is to be found partly in the results of those who, not very wisely, expect each of Rostow's statements to be the exact and literal truth.<sup>22</sup> In any case Rostow allows that the division between the two types of society is not always as distinct as one might expect. Yet it is worth emphasising that to some extent we are interpreting, even if it is justified. If an account of the preconditions stage in Canada offers any help to an understanding of the stages system (apart from a comparison of the characteristics of each), then it would seem to indicate the need for a certain latitude in the application of Rostow's analysis. There is nothing to suggest that Rostow is seriously wrong. On the other hand the balance of importance between factors may in any one case be so weighted in a certain direction that by giving equal treatment to them all Rostow may seem to present a distortion.

Two lines of thought have tended to dominate the writing of Canadian economic history. The first of these, and probably

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<sup>21</sup>Rostow (op. cit.), p. 17.

<sup>22</sup>The view has even been expressed to me, in a private communication, that the exclusion by Rostow of one item from a list of examples means that that item could not appear as an example.

the more important, is the staple theory.<sup>23</sup> It is not the purpose of this discussion to enter the controversy over the extent to which the staples approach is a valid interpretation, or of which periods it is most valid. We are concerned instead with the authenticity of the staple theory as an explanation of the events which are discussed in the main part of this chapter, and in particular with the possibility of an alternative suggested by the observation that "much of the country's history can be written in terms of adjustment to United States' moves".<sup>24</sup> This, the second line of thought, has tended also to be secondary in that references to the impact of the United States, which are inevitably frequent, are in general descriptive rather than analytic;<sup>25</sup> the notion therefore lacks the systematic theorising implicit, if not explicit, in the staple theory.

It seems never to have been decided precisely what conditions must be fulfilled in the Canadian economy for the staple theory to be operative. The proliferation of staple products in Canada

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<sup>23</sup>An extensive literature has grown up which both employs and analyses the staple theory, and which it would be neither wise nor possible to duplicate here. The most recent analysis is to be found in Watkins (*op. cit.*), and this article contains a valuable bibliography. See also Caves and Holton (*op. cit.*) especially Chap. II, and K. Buckley, "The Role of Staple Industries in Canada's Economic Development", *Journal of Economic History*, XVIII, No. 4, (December 1958).

<sup>24</sup>W. F. Easterbrook, "State Control and Free Enterprise in Their Impact on Economic Growth", B. F. Hoselitz, ed., *The Progress of Underdeveloped Areas*, (Chicago: The University of Chicago Press, 1952), p. 60.

<sup>25</sup>H. G. J. Aitken's theory of "defensive expansionism" clearly implies the role of external factors, but should probably be regarded primarily as a theory of governmental action. See "Defensive Expansionism: The State and Economic Growth in Canada", H. G. J. Aitken, ed., *The State and Economic Growth*, (New York: Social Science Research Council, 1959), and "The Changing Structure of the Canadian Economy", Aitken, Deutsch, et al., *The American Economic Impact on Canada*, (Durham, N.C.: Duke University Press, 1959).

since the close of the wheat economy has been largely responsible for the view that an alternative explanation must be found for recent history. Certainly the mere existence of staple production in an economy is scant justification for the view that the staple theory is true for that economy. Similarly a multiplicity of staples may invalidate the theory if a complicated and conflicting set of pressures are generated in the economy. If this is correct the staple theory must be simple if it is to be valid.

In this sense the preconditions period in Canada bears a modest resemblance to the period after 1950. With the removal of British preferences for Canadian timber it becomes impossible to speak of a single export staple until the beginning of the wheat boom in 1896. Manufacturing was increasingly important, but there were nonetheless significant advances in other areas of staple production. In central Canada various agricultural items were finding expanding markets abroad, wheat being particularly successful. Even though its rate of growth had been arrested, the timber trade remained, with fishing, the most important activity in the Maritimes. There were in short a number of staple products in the period from the middle 1840's until 1896, but none was as distinctly important as timber had been in the previous period and as wheat was to become.

The impression that this was an intermediate period is borne out by the difficulty experienced in attempting to apply the staple theory. If it is true that "The fundamental assumption of the staple theory is that staple exports are the leading sector of the economy and set the pace for economic growth",<sup>26</sup> then there must be an explanation for the boom in the early 1850's other than the usual one that it was supported by the growth of railway construction. This in turn, like the preceding period of canal-building, resists interpretation in terms of the staple theory since it was

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<sup>26</sup>Watkins (op. cit.), 144.

clearly recognised that the viability of both systems depended on the extent to which they could attract traffic from the mid-west United States.

The period after Confederation, and particularly after the inception of the National Policy, is more amenable to the theory. Among the reasons for the delay in the coming of the wheat economy, at least two -- the continued low price of wheat and the lack of a suitable technology -- must be given prominence, and these relate specifically to characteristics of the staple itself.<sup>27</sup>

Yet it is doubtful that the staple theory gives a more coherent account of this period in Canadian economic history than an interpretation based on the view that Canada in the nineteenth century was continually adjusting herself to the presence of the United States. This is of course precisely the interpretation which follows from Rostow's analysis; and if there is no great novelty to it, there are areas in which it stands at a significant advantage over the staple theory. It is clearly akin to the notion of defensive expansionism: it seems however that the latter should strictly be confined to the analysis of government reaction. Rostow's reactive nationalism on the other hand throws a wider net, in that it takes account of the crucial importance of the private interests in Montreal, both at the beginning of the canal-building era and in the annexationist movement.

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<sup>27</sup> P. Hartland, "Factors in the Economic Growth of Canada", *Journal of Economic History*, IV, No. 1, (1955), especially 16-19.

## THE TAKE-OFF STAGE IN THE CANADIAN ECONOMY

In Chapter II it is argued that the concept of a take-off, implying a crucial and fairly short period after which economic growth is in some sense automatic, is the key-stone of Rostow's system of stages. This is not merely a logical requirement of the system but is clearly part of Rostow's understanding of the process of economic growth, shown by the frequency with which the phrase "self-sustained growth" recurs. It follows that this is not an aspect of the theory which can be shed in this chapter, in which we are concerned to apply Rostow's analysis of the take-off stage to the experience of the Canadian economy in the period 1896-1914. Indeed if we should find that the take-off cannot be appropriately applied to Canada then this will have serious implications for the other stages. In particular it will suggest that the notion of a preconditions stage is not relevant, and that the "dynamic theory of production" may in this case be inoperative.

To some extent the task of this chapter is made easier by the greater precision with which Rostow analyses the third of his stages. Only for the take-off does he lay down necessary and sufficient conditions for its fulfilment. On the other hand there is considerable disagreement on quantitative aspects of the Canadian economy in this period, so that it is again likely to be very difficult to judge the capacity of the theory to account for Canadian experience with any great confidence.

Such conclusions as are forthcoming are set down in a separate section at the end of this chapter, and the theory of stages is again compared with the interpretation of the period given by the staples approach. For this endeavour the way has already been prepared by a recent publication, and we shall have occasion through-

out the chapter to comment on this first assessment.<sup>1</sup> The verdict here was at least unequivocal:

The conclusion of this paper is that in the Canadian case a stage analysis is not illuminating and evidence of a take-off cannot be verified. A model of economic growth more limited in application and the reverse of Rostow's can be advanced with considerable success: that is, that growth in agricultural and primary resource and export industries induced industrialization in Canada over a long period which was not marked by identifiable discontinuities. The extractive sectors of the economy -- forestry, fishing, mining, and particularly agriculture -- in a favourable setting of international markets and declining transport costs, were the main dynamic of growth. This generalisation is, of course, a further statement of the staple model of economic growth familiar to Canadian economists.<sup>2</sup>

The quality of this judgment is open to serious criticism, together with the argument on which it is based.

The selection of 1896 as the opening of the take-off stage is far from arbitrary. By almost unanimous consent it was in that year that the wheat boom began; and in taking the subsequent eighteen years to be the crucial period in Canadian growth, Rostow is basically in agreement with the extensive body of opinion which regards the wheat economy as fundamental to the success of the National Policy and the process of industrialisation in Canada.

The sharp stimulus which Rostow<sup>3</sup> suggests will initiate the stage is clearly evident.<sup>4</sup> In 1896 the persistent decline of prices

<sup>1</sup>G.W.Bertram, "Economic Growth in Canadian Industry, 1870-1914: The Staple Model and the Take-Off Hypothesis", Canadian Journal of Economics and Political Science, XXIX, No. 2, (May 1963).

<sup>2</sup>Ibid., p. 160.

<sup>3</sup>W.W.Rostow, The Stages of Economic Growth, (Cambridge: at the University Press, 1960), p. 36. Page numbers in parenthesis refer to this work.

<sup>4</sup>Bertram (op. cit.) disagrees, p. 116. This is not surprising, since he fails to understand (and, one suspects, to read carefully) what Rostow has to say on this point. Simple comparisons

in world markets was reversed. The price of Canadian wheat in Liverpool, which by then had declined 46% from its average level between 1870 and 1875, increased by 33% between 1896 and the average of 1909 and 1913.<sup>5</sup> In addition the stimulating effect of declining ocean freight rates was emphasised by the Crow's Nest Pass Agreement. Improvement in technology -- involving dry farming techniques and the development of superior brands of wheat -- added to the profitability of prairie agriculture. Perhaps a more fundamental factor, since technology generally responds to demand, was the increasing relative shortage of free land in the United States.<sup>6</sup> This fact was significant for Canada in two ways: it was responsible at least in part for the enormous increase in net immigration; and the closing of the United States frontier and its increasing indust-

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make this clear. Thus Bertram: "Rostow has suggested that a take-off usually can be traced to a particular sharp stimulus" (*ibid.*). Rostow in fact says: "The beginning of take-off can usually be traced to a particular sharp stimulus" (p. 36, my emphasis).

Second, Bertram states: "Among likely events, Rostow has suggested large new capital imports as in Canada from the mid-1890's" (*ibid.*). Bertram shows that this was not in fact responsible for take-off in Canada. But Rostow in fact says: (The stimulus) "may take the form of a newly favorable international environment, such as the opening of British and French markets to Swedish timber in the 1860's or a sharp relative rise in export prices and/or large new capital imports, as in the case of the United States from the late 1840's, Canada and Russia from the mid 1890's" (p. 37, my emphasis).

Third, Bertram states: "The factor of a favourable international environment was undoubtedly the main explanation of the success of wheat which provided the main dynamic of growth" (*ibid.*, my emphasis). Not only is Rostow's point appropriated and its origin concealed, Bertram fails even to change the words in which it was first expressed.

<sup>5</sup>Report of the Royal Commission on Dominion-Provincial Relations. Book I: Canada 1867-1939, (Ottawa: King's Printer, 1940), p. 67.

<sup>6</sup>See, however, P. Hartland, "Factors in the Economic Growth of Canada", Journal of Economic History, XV, No. 1, (1955), 19: "The most important determinant of Canadian expansion after 1900 seems to lie in technological improvements in methods of cultivation."



realisation was lessening the dependence of the United States on supplies of foreign capital. When British foreign lending was resumed after 1900 at an even higher level following the slump of the 1890's, a much greater proportion was directed to Canada. Extensive capital imports served to sustain the wheat boom especially in the second of its decades.

The dimensions of the wheat boom are as impressive as the comparative suddenness with which the boom began. In the period 1901-1910 the population of Canada increased by 34.2%, including a net gain by immigration of 715,000; in the previous decade the increase had been only 11.2%, migration yielding a net loss of 179,000.<sup>7</sup> Acreage under wheat, which had been 2.7 million in 1891 and 4.2 million in 1901, reached 11 million in 1913.<sup>8</sup> In constant (1900) dollars, exports of grain and grain products increased from \$16 million in 1896 to \$132 million in 1914.<sup>9</sup> Some of the economic effects of the wheat boom are summarised in these terms:

Real national product grew at an annual average rate of nearly 8 per cent in the first decade of this century; population at more than 3 per cent; real output per capita at 5½ per cent; real output of manufacturing at 7 per cent (so far as the data permit an estimate); and the labour force at more than 5 per cent. In the five years from 1905 to 1910, the inflow of foreign capital averaged 9 per cent of gross national product, and in the next five years 12 per cent.<sup>10</sup>

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<sup>7</sup> N. Keyfitz, "The Growth of the Canadian Population", Population Studies, (June 1950), Table 11, quoted in R. E. Caves and R. H. Holton, The Canadian Economy -- Prospect and Retrospect, (Cambridge, Mass.: Harvard University Press, 1959), Table 1, p. 48.

<sup>8</sup> Canada Year Book, 1915, p. xiv.

<sup>9</sup> K. W. Taylor and H. Michell, Statistical Contributions to Canadian Economic History, Vol. II, (Toronto: Macmillan, 1931), Table VI, pp. 40-45.

<sup>10</sup> Hartland (op. cit.), 16.

These figures indicate a period of exceptionally rapid expansion. The case for the take-off however rests not on a prima facie resemblance, but on the extent to which the three conditions of the stage are fulfilled. A shortage of adequate estimates makes it difficult to test the first of these, by which the rate of productive investment increases from 5% or less to 10% or more of MNP. Hagen, who was sufficiently critical to conclude after a survey of a number of countries that "It is not possible to interpret these data in a way that offers support for the take-off thesis", also declared that in Canada ". . . the percentages behave as Rostow's schema would suggest".<sup>11</sup>

The percentages which Hagen refers to are those put forward by Kuznets.<sup>12</sup> According to the latter's estimates, the proportion of Net Domestic Capital Formation to Net Domestic Product as an average for the period 1870-1915 was 10.8%; and for the period 1896-1915 the proportion was 13.0%. Since there is evidence that the proportion was increasing as the period progressed, especially after 1900, these figures would suggest that by the end of the take-off period the level of investment was considerably in excess of 10% and that in 1896 it was below 10% though not necessarily as low as or lower than 5%.

Kuznets also interprets Firestone's figures, which in their unrevised form are the basis of Rostow's examination of the Canadian

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<sup>11</sup>E.E.Hagen, On the Theory of Social Change, (Homewood, Ill.: The Dorsey Press, 1962), pp. 520, 519.

<sup>12</sup>S.Kuznets, "Quantitative Aspects of the Economic Growth of Nations. VI: Long-Term Trends in Capital Formation Proportions", Economic Development and Cultural Change, IX, No. 4, Part II, (July 1961), Table 3, 11. NDCP is defined as additions to capital stock within the country net of capital consumption and disregarding capital exports or imports (i.e. capital imports are not subtracted, capital exports not added). NDP is defined as total output originating within the country net of capital consumption and before allowance for flow of factor payments across boundaries.

case (pp. 42-43). As proportions of Net Capital Formation to Net National Product, Firestone originally estimated 7.1% in 1870, 4.0% in 1900, and 10.6% in 1920. This series was subsequently revised and amplified, yielding proportions (again in current dollars) of 5.8% in 1890, 3.2% in 1900, and 8.7% in 1910. The effect of the revision is to scale down the estimates for the early part of the period, and to increase them -- though by a proportionately less amount -- for the later part. The result of this is quite satisfactory to Rostow's case, although the figure for 1900, as Bertram is quick to point out, is something of an embarrassment.<sup>13</sup> One might suppose, however, in view of estimates for the period in general, that the figure for 1900 is not of great significance; partly because of its limited meaning as a single-year estimate, and partly because the capital inflow was still very small relative to its subsequent dimensions.

It is on the basis of these revised estimates that Kuznets interprets Firestone's work in terms of Net Domestic Capital Formation as a proportion of Net Domestic Product. The figures -- 7.3% in 1890, 4.4% in 1900, and 17.2% in 1910<sup>14</sup> -- are higher even than Kuznets' own estimates. A similar treatment of Buckley's figures, however, reveals a very close similarity. Here the average proportions of NDCF to NDP are 7% for 1896-1900; 10.1% for 1896-1905; 13.9% for 1901-1910; and 14.3% for 1906-1915.<sup>15</sup>

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<sup>13</sup>Bertram (*op. cit.*) p. 165. "While the year 1900 (the fourth year following Rostow's initial take-off year) would be one of great interest in this model, the proportion of net capital formation then was lower than at either of the other two points." But why should the fourth year of take-off be of great interest? If there is any conceivable reason for singling out the year 1900 for attention, we are not informed of it.

<sup>14</sup>Kuznets (*op. cit.*) Table C-1, 102.

<sup>15</sup>*Loc. cit.* The 'untreated' figures are from E. Buckley, *Capital Formation in Canada 1896-1930*, (Toronto: University of Toronto Press, 1955), Table V, p. 11.

It is difficult to know how much reliance should be placed on any of these series, or how unambiguous should be the conclusion drawn from them. But one preliminary point should be borne in mind. Firestone's estimates are made only for selected years, with ten years intervening in each case. Since the period we are interested in is a matter of only eighteen years, only two of Firestone's figures fall within the take-off stage: and this is scarcely an adequate basis either to approve or contradict the take-off hypothesis.

The annual averages for long periods are a considerably more reliable basis for evaluation. The figures taken from Buckley, in particular, unmistakably indicate a rise in the rate of investment of the magnitude which Rostow leads us to expect. In fact the only important divergence is in the somewhat higher rate of investment in Canada throughout the take-off period. To some extent Rostow anticipates this problem in his brief discussion of the Canadian case:

the gross investment proportion in the period from Confederation to the mid-1890's was higher than appears to have marked other periods when the preconditions were established, due to investment in the railway network (abnormally large for a nation of Canada's population), and to relatively heavy foreign investment, even before the great capital import boom of the pre-1914 decade. (p. 45).

This may be taken as explaining the high rate of investment at the beginning of the stage, which is strictly all that has to be explained. Yet even this may be unnecessary. The reason for taking 5% or less and 10% or more as the investment rates at each end of the stage depends on a calculation, involving assumed values for the marginal capital-output ratio and the rate of population increase, to determine the appropriate rates of investment for a sustained per capita NNP at the beginning of the stage, and a 2% per annum increase in per capita NNP at the end of the stage. It must be strongly emphasised here that the Canadian economy in the decades immediately before the take-off period was not simply sustaining per capita incomes, but was actually increasing them by about 1.5%

per annum.<sup>16</sup> This probably explains why the percentages in the case of Canada should be appreciably higher than is usual. In any event one may suppose that the magnitude of the increase in investment, occurring within a comparatively short space of time, is at least as important as the range over which the increase occurs.<sup>17</sup>

A second of the three conditions for the take-off stage is the "existence or quick emergence" of an appropriate social political and institutional framework, which "exploits the impulses to expansion". In the case of Canada there is little doubt that such a framework already existed. Indeed so clearly did the viability of the National Policy imply the wheat economy that this would seem to be a more than usually apt instance of Rostow's thesis. The transcontinental railway required wheat to fill its excess capacity. Manufacturers, for whom the protective tariff structure was already in existence, welcomed the rapidly expanding domestic market brought about by the wheat boom. Large-scale immigration, without which wheat production in the prairies would have been impossible, was anticipated and provided for by the Dominion Lands Act of 1872. The wheat economy was partly the product of policy as well as of the numerous factors which came together in or about 1896. If it is objected to this that the National Policy is not the sort of framework which Rostow means, it can be argued with considerable justification that the very formulation of such a policy is sufficient indication that the framework was there.<sup>18</sup>

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<sup>16</sup> O.J. Firestone estimates the average annual increase in GNP for the period 1870-1890 at 7.67% (Canada's Economic Development 1867-1953, (London: Boves & Boves, 1958), Table 11, p. 66). Per capita GNP increased at a slightly lower rate (ibid., p. 75).

<sup>17</sup> This impression is confirmed by Rostow in a more recent publication. See W.W. Rostow, "Leading Sectors and the Take-Off", W.W. Rostow, ed., The Economics of Take-Off Into Sustained Growth, (London: Macmillan, 1963).

<sup>18</sup> Bertram criticises Rostow in this connection, with some

The final condition of the take-off is the development of one or more rapidly growing manufacturing sectors. This may well be regarded as the most important of the conditions, in that it involves the existence of a leading sector and therefore introduces the dynamic theory of production. Rostow himself concedes that a rise in the rate of investment is not conclusive evidence of a take-off; and the development of an appropriate framework is more in the nature of an 'enabling' condition than a positive aspect of the stage. It is the leading sector which is primarily responsible for the success of the take-off, in that it is the centre of developments within the economy.

In Canada the take-off period was dominated by the success of the wheat economy. In common with previous staple products wheat was produced very largely for export markets; the scale of the expansion of wheat exports has already been noted. There can be no doubt that this astonishing increase satisfies Rostow's stipulation of a "high rate of growth" in the leading sector. The importance of wheat, however, was by no means confined either to the agricultural sector or to the prairies. The linkage effects of the wheat boom have been explored at length by Bertram, and his findings are worth quoting at length, not least because of his conclusions on the take-off hypothesis.

The backward linkages of the western wheat industry are determined by the production function of wheat and its rapid growth meant an expanding demand for the inputs of labour, capital, and other supplying organizations and agencies. In respect to labour inputs, western wheat production techniques required and attracted large numbers of both migrant and immigrant settlers. The production

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justification. Rostow originally attributed the failure of the Canadian economy to take-off before 1896 to inadequacies in the institutional, social, and political prerequisites (W.W. Rostow, "The Take-Off Into Self-Sustained Growth", Economic Journal, LXVI, No. 261, (March 1956), 46; Bertram (*op. cit.*), 166-167). However, in The Stages of Economic Growth (p. 40) Rostow changed his ground and attributes the lack of take-off between 1867 and 1896 to an inadequate scale and momentum in the developments in the economy. Bertram ignores this.

function of wheat also determined a form of farm organisation of single proprietors using relatively little wage labour. This type of economic unit had considerable significance for the pattern of income distribution and the consequent secondary effects on other industries.

The very large railway transportation requirements for Canadian wheat are well known. These requirements created external economies for other manufacturing industries, linked together a larger domestic market, and contributed to further localisation of manufacturing. Industries supplying capital goods, such as agricultural implements and rolling stock equipment, expanded very rapidly. Real output in the iron and steel products industry group and the transportation equipment industry group both expanded at the exceedingly high average rate of 12.4 per cent per year compounded in the period 1900-1910, higher even than the rate of 9.4 per cent per year for wheat production. Secondary industry expansion had of course its own linkages with the rest of the economy as its costs fell and its demand increased, but the initial impetus is regarded as coming from the expansion in demand for wheat.<sup>19</sup>

In Bertram's case against the take-off hypothesis, as an explanation of the wheat boom period in the Canadian economy, the view that wheat cannot constitute a manufacturing sector in Rostow's sense of the word has a central place. Indeed we may suppose that it is his only objection to the theory. His examination of the investment rate criterion did not go beyond Firestone's figures from which, as we have seen, it is difficult to make a satisfactory case either way. His discussion of the underlying political, social and institutional framework was both cursory and highly ambivalent. But his assessment of the leading sector requirement is plain: "In the critical take-off period chosen for Canada, 1896-1914, the sector which filled most adequately all the dimensions of a leading sector, i.e., rapid growth, linkages, and income effects, was western wheat, rather than some manufacturing industry."<sup>20</sup> It is not exaggeration to say that only Bertram's interpretation of the word 'manufacturing' prevents his analysis from being a vindic-

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<sup>19</sup>Bertram (*op. cit.*) p. 180.

<sup>20</sup>*Ibid.*, p. 175.

cation of the take-off theory, that this single inconsistency does not justify the condemnatory nature of his discussion of the theory, and that his interpretation of 'manufacturing' is incorrect.

It should be noted first of all that when Rostow speaks of a manufacturing sector he is employing his own terminology.<sup>21</sup> Bertram is aware of this since, as he remarks, Rostow allows timber, meat and dairy products to be counted as leading sectors in take-offs; but he attaches a particular importance to the fact that Rostow does not mention wheat.<sup>22</sup> He also contradicts himself in saying that ". . . leading sectors are confined to manufacturing industries only: a leading role is denied to agricultural or extractive industries".<sup>23</sup> It is presumably a confusion here which results in his misunderstanding Rostow.

There is no satisfactory reason for this, since far from not being aware of Rostow's own definition of manufacturing, Bertram reproduces it in full. The relevant section is this: "the dual requirement of a manufacturing sector is that its processes set in motion a chain of further modern sector requirements and that its expansion provides the potentiality of external economy effects, industrial in character". (p. 39a.). It is precisely the fact that wheat fulfilled these two conditions which emerges from Bertram's own researches. The idea of external economy effects is not very specific, but is clearly suggested by the expansion of the domestic market and by new railway construction, especially in the effect of the latter on mineral development in the Shield region. We have already seen that investment and rapid growth in a range of manufacturing industries was a feature of the wheat boom. Important

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<sup>21</sup>This fact was pointed out by P.T.Dauer and C.Wilson, "The Stages of Growth", *Economica*, XXIX, No. 114, (May 1962), 197.

<sup>22</sup>Bertram (*op. cit.*) p. 180: "Wheat in Canada is conspicuously absent from the list of transitional agricultural and extractive industries". Why conspicuously?

<sup>23</sup>*Ibid.*, p. 173.



developments occurred especially in iron and steel, agricultural equipment and railway locomotives and rolling stock. The stimulus to invest in these industries was directly linked with the performance of the wheat economy.<sup>24</sup> Bertram would not deny the leading role of wheat in these developments -- indeed he emphasises it. His rejection of wheat as the leading sector of the take-off is therefore mistaken and contradictory.

One conclusion of this chapter is that, according to the available evidence, the necessary and sufficient conditions for a take-off stage are fulfilled in the case of Canada. This is more true of the second and third conditions, which rely on quantitative data for verification to a lesser extent than does the first. Evidence on the investment rate in Canada for the period 1896-1914 is not completely consistent, but does suggest that there was a fairly abrupt increase of about the expected magnitude in the level of investment.

There can be no disagreement with Rostow that the period was crucial in the process of Canadian growth. Indeed the wheat boom has always been recognised as unique even by those who would emphasise its similarity with other periods of expansion of staple industries. The way in which wheat production complemented other aspects of the economy, and the extent to which its coming was anticipated in government policy, makes the concept of a preconditions stage startlingly apt. But though the conditions for a take-off stage are fairly adequately fulfilled, there must still be reservations about whether the take-off was into self-sustained growth. In the earlier discussion of this phrase, it was argued that it only has meaning if growth assumes different characteristics during this stage; that is, if the process becomes self-reinforcing. Rostow's theory on this point seems to be quite plausible: but it

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<sup>24</sup> See Buckley (op. cit.).

is also true that the sort of factors which he names as likely to damp down the possibility of economic growth before the take-off and which subsequently disappear are without exception only to be found in those countries which experienced a traditional society.

The possibility that 'self-sustained' should be construed in an alternative sense emerges from a comparison of Rostow's account of the period with the staple theory, and it is to this problem that the rest of this chapter is devoted. Bertram also addressed himself to this comparison, concluding that in spite of a similarity between the concept of staple export industries and the concept of leading sectors, there are three important differences:

First, the influence of these staple industries did not commence with the specific take-off period of 1896-1914. They have been important contributors to economic progress from the beginning of Canadian economic history. Second, staple industries are not confined to the manufacturing sector as are Rostow's leading sectors . . . Third, the export connection of the staple in the staple model of economic growth is fundamental, while in the leading sector concept, although it may be present, it is given less significance.<sup>25</sup>

It is because of these differences that Bertram regards the staple model as "the reverse of Rostow's". This is a view which seems to derive very largely from an earlier hypothesis, again described as "the reverse of Rostow's, namely, that the opening up and development of new areas capable of producing primary goods in demand in existing markets induced the growth of industrialization".<sup>26</sup> It is not of course the whole of Rostow's theory of growth that is reversed, but his statement that in the areas of recent settlement "take-off fails to occur mainly because the comparative advantage of exploiting productive land and other natural resources delays the time when self-reinforcing industrial growth can profit-

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<sup>25</sup> Bertram (*op. cit.*) p. 175.

<sup>26</sup> D.C. North, "A Note on Professor Rostow's "Take-Off" into Self-sustained Economic Growth", Manchester School of Economic and Social Studies, XXVI, (January 1958), 74.

ably get under way".<sup>27</sup> Watkins also regards this as counter to the staple theory and probably also counter to fact.<sup>28</sup>

This incompatibility of the take-off hypothesis (though not necessarily the whole stages system) and the staple theory seems to be illusory, because Rostow does not regard the development of land and natural resources as necessarily militating against the development of manufacturing. In seeking to explain why take-off is delayed, he is attempting to answer the question why there could be economic growth over an extended period of time, without take-off, in areas of recent settlement. In Canada, such growth is a marked feature of the preconditions period. There need be no single explanation for this; but surely one cannot exclude the fact that the production function of the staple products preceding wheat did not make those emphatic demands on domestic industrial capacity which so distinguish the years 1896-1914. The concentration of economic effort on staples made it possible to depend, if to a diminishing extent, on external sources for manufactured goods. Staples thus permitted some industrial growth; the possibility or necessity of take-off was however delayed until the appearance of an appropriate sector, western wheat. The essence of the disagreement over this point seems to be a confusion, in the minds of the critics, between any industrial growth and a take-off.

In addition to the general compatibility of the staples approach and the take-off, there are points to be made about Bertran's three specific differences, and it is convenient to take the second of these first since it has come under discussion earlier. Certainly it is true that a staple sector need have no implication at all for manufacturing. But Bertran's impression that a leading sector must be in manufacturing is founded on a misunderstanding.

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<sup>27</sup> Rostow, "The Take-Off Into Self-Sustained Growth", (op. cit.), 28.

<sup>28</sup> F.H. Watkins, "A Staple Theory of Economic Growth", Canadian Journal of Economics and Political Science, XLIX, No.2, (May 1953), 150.

On the role of non-manufacturing sectors in the preconditions stage (at a level of development when the leading sector concept is not yet applicable), Rostow himself is very helpful:

In general, it seems to be the case that the conditions required to sustain a progressive increase in agricultural productivity will also lead on to self-reinforcing industrial growth. This result emerges not merely from the fact that many agricultural improvements are labor-saving, and that industrial employment can be stimulated by the availability of surplus labor and is required to draw it off; it also derives from the fact that the production and use of materials and devices which raise agricultural productivity in themselves stimulate the growth of a self-sustaining industrial sector.<sup>29</sup>

It is not true therefore that the staple theory differs from the theory of stages on the grounds that the latter requires some form of industry to generate industrialisation, but it is the case that not all staple products would qualify as leading sectors.

The third of the differences suggested by Bertram emphasises the integral part played by export markets in the staple theory, by contrast with their incidental role in the take-off theory. This is correct: but it is of course quite possible for a leading sector to be based on production for export. In making a comparison between the staple theory and the theory of stages, we are interested in the capacity of each to account for Canadian experience. The fact that one model is at a higher level of generality than the other -- in that one aspect which is invariant in one way or may not be true of the other (but is in application to Canada) -- is not relevant for our purposes.

If it is true that these two differences are more imaginary than real, then in a sense the explanation of the period 1896-1914 given by the staple theory does not diverge in any important respects from that of the stages of growth. In both cases a central place is allotted to the economic effects of wheat production, and there

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<sup>29</sup>Rostow, "The Take-Off Into Self-Sustained Growth", (*op. cit.*), 29n. This observation was unfortunately not reprinted in The Stages of Economic Growth.

is no issue over the nature of these. It is in the first of his differences -- the fact that staple industries were influential in earlier years of Canadian history and that Rostow apparently makes no allowance for this -- that Bertram points out the real distinction to be made. As explanations of the events in this period, both theories come together: in a more fundamental sense the wheat boom is regarded by each as part of a series, very different in kind, and within which the wheat boom is given roles which differ greatly in importance.

To the system of stages the take-off is central, and the take-off in turn is propelled by the leading sector. In the case of Canada the previous existence of a number of staples is not denied, nor that they were contributors to economic progress. A 'staple' interpretation of the wheat economy is given in this quotation:

If we take the longer view of Canada's development as a sequence of shifts in emphasis from one export staple to another, no sharp departure from past policies is revealed in the heavy reliance on wheat as a factor in the nation's growth. This is apparent if we note the parallel that may be drawn between wheat and fur as significant elements in continental expansion. Both were staples produced very largely for export markets and both required elaborate and highly expensive systems of transportation. Like the fur trade, wheat production implied close ties with Europe and a strengthening of Old World connections, cultural as well as economic and political.<sup>30</sup>

There are of course a number of factors which all of Canada's staple products have had in common. They are commodities which have a high natural resource content, require little processing, are primarily for export markets, and in whose production and marketing transportation plays an important part. But it is undeniably true that these factors have sometimes had completely divergent results on the Canadian economy. It is at least conceivable that in grouping these products together and in emphasizing their

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<sup>30</sup> W.T. Easterbrook and H.G.J. Aitken, Canadian Economic History, (Toronto: Macmillan, 1956), p. 476.

similarity one may at the same time underemphasise their differences.

Thus Easterbrook and Aitken compare wheat and fur, especially in that both were for export and both required transportation. Is this as significant as the fact that the fur trade positively militated against settlement, whereas settlement was indispensable to the production of wheat? Linkage effects, so vitally important to the wheat economy, were almost completely absent in the fur trade. Is not this of greater analytic importance than the fact that they both depended on export markets? And is the difference in their respective production functions a complete explanation of this divergence?

The staple theory, then, would regard wheat as one of a long line of products which are united by certain characteristics of production which they have in common, rather than distinguished by other and very different effects that they have had on the Canadian economy. Rostow, on the other hand, would attach paramount importance to wheat as the prime mover of the process of industrialisation, not simply because of the production function of wheat but also because of changes which had occurred in the Canadian economy. The difference between the two theories may amount only to a matter of emphasis (in terms of their capacity to explain Canadian economic development); but the difficulty experienced by some supporters of the staple theory in attempting to explain what has happened since the close of the wheat boom<sup>31</sup> points up a more fundamental distinction. Whereas the stages of economic growth amount at least to a coherent theory of the process of growth and industrialisation, the staple theory may be no more than a way of looking at economic events in a country with a certain class of attributes in its pre-industrial phase of development.

The evidence of the next chapters is of course important in deciding this point, and it is not anticipated here. This is

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<sup>31</sup> See Ibid., Chapter XXI, especially pp. 515-520.

partly true also of whether or not the take-off in Canada was into self-sustained growth. The conclusions of this chapter tend on the whole not to favour the concept. There was in the period 1896-1914 a very great increase in the pace of economic activity, but it is difficult to make out a case that growth rested on a different basis, though possibly self-sustained growth need not appear until the end of the take-off stage. The next two chapters, in dealing with the drive to maturity stage, attempt to assess whether the staple theory and the stages of growth are consistent either with Canadian experience or with each other in dealing with the period since 1914.

## VI

### THE MATURING OF THE CANADIAN ECONOMY I

The criticism that Rostow makes misleading use of terminology borrowed from other disciplines is a common one. Argument by analogy can be no substitute for relevant analysis; and if the technique adds to the impact of his theory, this is more by suggestion than by persuasion. The notion of economic maturity, however, is not an invention by Rostow, and he cannot therefore be held alone responsible for any deficiencies in its significance. But as an example of the dangers of appropriating words normally used in other contexts, maturity is a good one. Does biological maturity represent the end of the process of growth, or is it the achievement of the normal condition of life and health? The answer of course is not ours to give, nor does it matter. The point of importance is that in attempting to make the concept of maturity their own, economists have been more concerned to secure its suggestive power than its precise meaning. Hence while there has been little unanimity in the use of the concept by either side, two distinct groups of users have emerged. The pessimists have regarded economic maturity as the crisis of capitalism, the conclusion of the process of growth leading inevitably to a period of stagnation. The optimists have seen in maturity the bringing of the body economic to adulthood, a state in which it is free from growing pains, and in which it may indulge in activities denied it during the period of its youth. Except that they both apply to levels of economic development, the two approaches have nothing in common apart from the application of the word 'maturity' to these levels. The characteristics of these two levels, especially in terms of their capacity for further growth, are quite different.

Rostow's conception of economic maturity fits securely in the second of the two groups. His account of economic growth, it



has been pointed out, is very much that of a success story.<sup>1</sup> It will not therefore be part of this and the next chapter, in which we apply the drive to maturity stage to the Canadian economy of 1914-1950, to search for signs of strain in the economic structure of Canada. This does not presuppose any judgment as to the validity of the stagnation theory, but indicates rather that it is not relevant to the present study.

The structure of the examination to be made of this stage differs slightly from that adopted for the previous two stages. An analysis of the main trends in the period 1914-1950, and a comparative assessment of the staples approach and the stages theory as interpretations of the period, is deferred until Chapter VII. This chapter is given over to further study of what Rostow means by economic maturity; and since the concept is not his own, it seems appropriate to consider at the same time the similarity of other optimistic understandings of maturity. The fourth stage has already been subjected to critical scrutiny; the reason why further attention is felt to be necessary is that where previously we were concerned to lay bare any analytic shortcomings in a theory of economic growth, the task of this chapter is quite pragmatic. In Chapter III we concentrated on the gaps left by Rostow's system; now we wish to exploit the areas which it may have filled.

Before turning to this task, it should be noted that the drive to maturity in Canada is exceptional to the normal sequence of stages, in that the fifth stage, the age of high mass-consumption, is thought by Rostow to have begun some 25 years before the Canadian economy reached maturity. In the general case an economy must at least have reached the stage of maturity before it may avail itself of the triple choice presented to it when high mass-consumption becomes possible. That this should not have been true in the case of Canada is evidence in favour of the earlier contention that the

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<sup>1</sup>See H. Baudet and J. H. van Stuijvenburg, "Rostow's Theory on Growth", Weltwirtschaftliches Archiv, XC, (1963).

fifth stage is, in contrast with the four others, a fundamentally different type.<sup>2</sup> It was for this reason that it was decided not to offer an extensive analysis of the age of high mass-consumption in Canada. But since much of this stage is concerned with changes in the structure of manufacturing industry, it would be misleading and incomplete not to take notice of any evidence that might suggest that, in terms of the dynamic theory of production, derived-growth sectors have been present during (and perhaps contributed to) the drive to maturity in Canada. This is a question which is considered more fully in the next chapter.

Rostow's handling of the drive to maturity stage is complicated and untidy. This is largely because at different places in The Stages of Economic Growth he offers different definitions and descriptions of what is taking place in the economy at this stage of its growth. To do this would be helpful if the relationship between these definitions were indicated. They would then constitute a more complete analysis, and it would be possible to speak with some confidence of what the drive to maturity stage is about. In fact these relationships are not drawn out, and our task is consequently more difficult.

It is helpful at the outset to be clear that we are concerned with two problems, whose close connection may cause some confusion. We wish to know, first, the characteristics of an economy which become evident as it matures, and second, how we are to know when an economy has reached the state of maturity. To an extent this is the same problem looked at from two different directions. If we know what economic maturity is, and if this definition can be translated into a form which makes it useful for an empirical study, then the first question is to be answered by changes in variables indicated in the answer to the second question. This is on the whole not the procedure which Rostow adopts. He gives two defin-

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<sup>2</sup>See above, p. 49-52.

itions of maturity itself, whose empirical content seems to be decidedly limited. In addition the approach to maturity is marked by three trends, whose connection either with each other or with anything else occurring at this stage is not stated. Finally the fourth stage witnesses changes in the composition and growth rates of different sectors of the economy, in accordance with the dynamic theory of production; but we are not told how far these changes will be worked out by the time maturity is reached. If we wish to offer anything resembling a coherent account of whether, in Rostovian terms, the Canadian economy reached a state of maturity in the middle of this century, we must first try to distill the essence of his disconnected observations. And we must be aware that although the process of maturation is obviously linked with the state of maturity, the precise nature of the relationship may not be what we expect. Implicit in the notion of reaching maturity is the achieving of a certain critical level of economic development. This level may or may not correspond to important structural change in the economy. If it does so correspond, the 'criticality' of the level is real, and there should be consequent changes in other areas of the economy, perhaps in the characteristics of growth (e.g. more or less regularity or rapidity), with the likelihood of discontinuities to be observed. If the critical level is not real in this sense, then the economy reaches maturity by fulfilling the requirements we lay down in defining a mature economy, and there is no reason why physical discontinuity should be one of these requirements. Maturity in this latter case may be just a matter of definition, without very much significance.

To understand what Rostow means by economic maturity it is instructive to refer back to his general vision of the growth process. This is contained in the phrase "take-off into self-sustained growth". The difficulties in drawing specific conclusions

from this central notion were discussed in Chapter III; but it is clear that after the critical effort of the take-off stage, economic growth is regarded as taking place on a stronger and more resilient foundation. The reasons why this should be likely are noted above:<sup>3</sup> in general they relate to the fact that at this period growth is becoming the normal rather than the exceptional condition of the economy. The impact of this novel feature of growth should become apparent as the economy moves into the fourth stage, since it is only when the take-off is successfully completed that growth becomes self-sustained. It is during the drive to maturity, then, that we may expect to find structural change which not only reflects the self-reinforcing nature of growth, but is likely also to be actively contributing to it. If this is so, then Rostow may be placed among those economists who have, broadly speaking, regarded economic maturity as the level of development at which limitations derived from backwardness and from various forms of dependence are lifted. The mature economy may be expected to show a considerable degree of diversification and a complex interdependence between sectors, especially within industry. Growth becomes balanced in the sense that it depends to a diminishing extent on the health of one or a few sectors. If it is dangerous to regard national self-sufficiency, without qualification, as an implicit element of maturity,<sup>4</sup> a measure of insulation from adverse economic effects originating abroad, or the ability of a country to generate its own expansionary forces, seems to be presupposed by the notion of self-sustained growth. It is in this context that we must now consider more closely Rostow's versions of maturity and maturation.

The sense in which maturity might be defined as the period

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<sup>3</sup>P. 45.

<sup>4</sup>R. B. Caves and R. H. Molton, The Canadian Economy -- Prospect and Retrospect, (Cambridge, Mass.: Harvard University Press, 1959), p. 61.

when a society has effectively applied the range of technology to the bulk of its resources suffers from difficulties which make such a definition inappropriate.<sup>5</sup> Nonetheless Rostow's point seems to be of some substance, and there are two aspects which deserve attention. First, among the advanced industrial countries there is what amounts to a common pool of technological knowledge; not all these countries have achieved the same technological level, but the reasons which prevent them doing so do not on the whole relate to lack of access to this pool. At the same time there is a large gap between the technological levels of the advanced countries and of the developing countries, such that it makes sense to describe development partly in terms of 'catching-up' in the application of technology. Rostow would say that a country had caught up when it was applying "the range of (then) modern technology",<sup>6</sup> but this may not be helpful since a country's resource allocation, consumption patterns, and per capita income may rule out the employment of certain technologies. But in assessing whether Canada has 'caught-up' it seems reasonable to take the United States as the model, in that its economy has reached the most advanced state of development from a factor base roughly comparable to that of Canada and the other "new lands". Comparison of the productivity of labour between Canada and the United States would serve as an index of this technological maturity.

The second aspect to be considered relates to the application of this technology to the "bulk" of resources. Inevitably for Canada this will involve a discussion of how far resource development has proceeded. The case is remarkable in that there are obvious difficulties in assessing reserves of mineral resources and, of a different origin, in knowing what may in future count as

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<sup>5</sup>See above, p. 47. The principal problem seems to be to define 'resource' in terms independent of 'technology'.

<sup>6</sup>W.W.Rostow, The Stages of Economic Growth, (Cambridge: at the University Press, 1960), p. 59. Page numbers in parenthesis in the text refer to this work.

a resource. Changes in demand, deriving especially from changes in the technologies which exploit resources and use resources, have had an almost unique determining impact on the course of Canadian development, and their importance is appropriately stressed by the staple theory. In view of the succession of staple products which Canada has been able to provide, and of the reserves which remain to be exploited, it would be hazardous to make predictions about changes in the absolute size of Canada's primary producing sector; and it is sufficient for the present to be aware that there will be difficulties in applying Rostow's apparently simple criterion.

It is possible, however, that this interpretation has not been at a sufficiently sophisticated level. Development in Canada has taken place in the context of an abundance of land (including other natural resources) relative to supplies of labour and capital. This has given a comparative advantage to Canada in the production of commodities with a high natural resource content, and required the extensive employment of labour and capital. It has been responsible also for the high returns to these factors, which have been the main economic factor regulating the rate of their inflow into Canada. This pattern of development has clearly been consistent with Hoselitz' expansionist development.<sup>7</sup>

It is arguable, however, although Hoselitz does not make the point, that expansionism will eventually take on the characteristics of its opposite, intrinsic growth. Such a view seems to be implied by Watkins.<sup>8</sup> The substance of the distinction between the two

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<sup>7</sup>B.F.Hoselitz, "Patterns of Economic Growth", Canadian Journal of Economics and Political Science, XXI, No. 4, (November 1955). Cf. H.G.J.Aitken, "Defensive Expansionism: The State and Economic Growth in Canada", H.G.J.Aitken, ed., The State and Economic Growth, (New York: Social Science Research Council, 1959).

<sup>8</sup>H.H.Watkins, "A Staple Theory of Economic Growth", Canadian Journal of Economics and Political Science, XXIX, No. 2, (May 1963), 151-152.

patterns of growth is in their respective resource allocations. If the volume of land could be regarded as constant, then the effect of immigration and capital imports is to reduce the abundance of land in expansionist countries. Land as a factor of production does not of course remain constant: it diminishes to the extent that some forms of staple production are once-for-all processes, and increases as new resources are found. But the stock of capital and the size of the labour force do not normally show a tendency to diminish, at least in absolute terms. It seems that a relative abundance of land must be a temporary condition, and that 'eventually' growth becomes intrinsic in character.

This change in the nature of development bears a close resemblance to Rostow's idea of a stage at which land has been brought under technological control. Common to them both is the notion that increasing supplies of labour and capital induce a shift in the pattern of economic activity where land is initially abundant. The suggestion implicit in this is that expansionist development is not consistent with economic maturity; a full evaluation of this proposition is ruled out, since it implies a degree of analysis which expansionism has not received. But if we may accept the proposition as true, then it would also imply that the staple theory cannot be appropriate to a mature economy. This is because the growing relative importance of labour and capital encourage sectors of the economy where land is not an important factor or input. In short, the primary producing sector shrinks relative to the secondary and tertiary sectors, and ceases to provide the leading sectors for the economy's growth. Structural changes of this sort will be examined when we come to look at whether Canada has achieved maturity; but equally important is evidence on the supplies of the factors of production. If the relative abundance of land has ceased, then one would expect a slowing-down in the rate of immigration into Canada, and the greater regularity in demand for immigrants which is implied by the phrase "absorptive capacity".

At the same time a higher proportion of capital should be directed especially to the manufacturing sector, where opportunities for intensive employment are likely to be greater than in primary production.

Such an account of growth and maturity in an expansionist context would also seem to make sense of this point: in the case of the countries "born free", "take-off was delayed not by political, social and cultural obstacles but by the high (and even expanding) levels of welfare that could be achieved by exploiting land and natural resources". (p. 56). The reason why Rostow argues that take-off is unlikely where production is resource-intensive is related closely to the probable linkage effects of such production. Manufacturing, involving the intensive use of labour and capital, is an essential part of a successful take-off but is very unlikely to be a leading sector in the context of expansionist development. The exploitation of staple products, in the early stages of development, is not likely to call into existence a domestic manufacturing sector, since the requirements of the staple sector for manufactured goods are more easily met by imports. Where, as in Canada, take-off was led by a staple sector, this was only possible in that the wheat economy had very important implications for the rate of growth of the manufacturing sector; and even here take-off was delayed, in the sense that economic growth took place for a considerable period before take-off. But long-run deceleration in the rate of growth of wheat production in the post-take-off period is not matched by a similar trend in manufacturing. Rostow's point is, then, that self-sustained growth does not become established where development is wholly expansionist, and will be delayed until the comparative advantage in such lines of production has been modified. Self-sustained growth requires at least some sectors where the employment of factors is consistent with intrinsic growth, though growth may continue to be led by expansionist sectors.

We have argued in the preceding pages that in applying to Canada the definition of maturity as the period when a society has



applied the range of technology to the bulk of its resources, we are mainly concerned with two areas of enquiry. The first is a comparison of the technology employed in Canada with that in the United States, on the basis that the latter represents the most advanced technology and also would be appropriately applied in Canada. The second is more complex. It requires some guess-work on the future of Canada's primary producing sector in relation especially to assessments of unexploited resource reserves. It also requires an examination of changes in factor utilisation within sectors, in the balance of the economy between primary, secondary and tertiary sectors, and in value added in manufacturing relative to natural resource input in the secondary sector; by these means we wish to establish whether in any sense Canadian development has assumed an intrinsic rather than expansionist pattern.

Within this framework the two remaining meanings of maturity which need to be discussed in this section fit more neatly than might be expected. The first of these is concerned not with the critical level of maturity, but with the changing structure of the economy, in terms of the linkage effects between sectors, during the process of maturation. According to Rostow, we may expect the leading sector of the take-off to flag during the drive to maturity. New primary growth sectors emerge however, and it is through their rapid rate of expansion that momentum in the economy is maintained (p. 53). These growth points call into existence and maintain the growth of supplementary sectors through either backward or forward linkages. In the age of high mass-consumption, which for Canada begins in 1925 (some ten years after the end of take-off), derived-growth sectors appear, their rate of expansion geared to changes in domestic real income. This glimpse of the process of economic change, however, stands in need of considerable refinement.

First, growth is sustained in the fourth stage -- and indeed after maturity -- by leading sectors whose definition would allow them to be staple sectors. Their basis is innovation or the exploit-

ation of natural resources. It is reasonable to suppose that as growth proceeds the former will become more important than the latter, but this is not necessarily the case. This vagueness stems from a failure on the part of Rostow to be specific about the nature of leading sectors. It was argued above that implicit in the definition by Rostow of maturity in terms of the exhaustion of new resources is the impossibility of growth being led by a staple sector, at least after maturity. This view has the additional analytic attraction that it links maturity with a change from expansionist to intrinsic development. But it seems that we must allow growth to be led by staple sectors up to the end of the fourth stage.

Second, if it is true that ". . . growth proceeds by repeating endlessly, in different patterns, with different leading sectors, the experience of the take-off", (p. 55), then we are entitled to ask in what sense growth has become self-sustained. The answer cannot simply be in terms of self-sufficiency, though the concepts are related, because the latter refers to maturity itself rather than the post-take-off period. We have accepted the point already that certain resistances weaken as growth becomes the normal condition of the economy, but this scarcely justifies characterising growth as self-sustained if growth still depends on the rapid expansion of a few sectors. We could say that growth was self-sustained if general expansion in one period required further growth in the leading sectors in the next period: but according to Rostow the linkage is the reverse of this, with momentum in the leading sectors determined primarily by changes in the "cost-supply environment". The demands of the domestic market could lead to self-sustained growth in this suggested sense. They are the basis of Watkins's "final demand linkage",<sup>9</sup> and bear a resemblance to the derived-growth sectors of the age of high mass-consumption. But there

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<sup>9</sup>Watkins (op. cit.), 145.

appears to be no reason why they should not achieve some importance during the take-off, and yet it is fortuitous that the derived-growth sectors rise to eminence in Canada so soon after the end of the third stage.

The final sense of maturity is that in which the economy demonstrates the ability to produce not everything, but anything that it chooses to produce. In Chapter III it is argued that this must refer to some sort of economic self-sufficiency, if to anything at all; and as such it seems to be consistent with the conventional understanding of economic maturity. Clearly self-sufficiency cannot be complete, in the sense that many countries which are generally regarded as mature lack certain vital raw materials. Nor can it mean that economies cease to have a comparative advantage in certain types of production. The implication seems rather to be that the mature economy has a sufficiently high level of technology -- and a capacity to conduct its own industrial research --, a skilled labour force, and the appropriate stock of entrepreneurial skills, to enable it to produce those commodities which it is physically possible for it to produce, but which it normally chooses not to produce. Economic self-sufficiency does not therefore amount to autarky. Few countries could afford to withdraw completely from international economic relations, none could do so without very great losses in real income. But there does seem to be a clear distinction to be drawn between the pursuit of international trade for the purpose of increasing economic welfare, and a 'strategic' dependence on foreign markets and foreign sources of capital. It is the latter state which is ruled out by Rostow's definition of maturity. This distinction closely resembles that between dominant and satellitic patterns of growth.<sup>10</sup>

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<sup>10</sup> Except that satellitic growth normally occurs where one economy is dependent on one other, whereas a dominant economy does not seem to imply satellitic growth elsewhere. See Hosselitz, (op. cit.).

It is the nature rather than the extent of a country's economic relationships with the rest of the world which determines whether or not it is economically mature. Indeed it may be possible to regard their growth as part of the process of maturation.<sup>11</sup> Nor need it necessarily be true that in a mature economy growth should be based on domestic rather than foreign demand, though this would seem to be the rule. The exception would arise where leading sectors based on the home market could be substituted for export leading sectors without a significant decrease in the level of income. The chances that an export trade on which depends (ultimately) the whole of an economy's growth could be given up with so little impact are not great. This discussion is relevant to the question whether or not the staple theory can be consistent with economic maturity. If we should find that the staple theory had been valid as an explanation of Canadian economic growth during the period 1914-1950, this would mean that staple sectors had been the leading sectors, and that the pattern of activity dictated by them had not been significantly altered by any other leading sector. If this were true then we could not sensibly say that Canada had not depended on foreign markets, nor that, on this criterion at least, Canada had achieved maturity. It is worth emphasising that a large export sector need not be inconsistent with a mature economy; it becomes so when the linkage effects between the sector and the rest of the economy are so great as to make the growth of the latter depend on continued expansion in the former.

An additional indicator is provided by the use which is made of the foreign exchange earned by the export sector. There are obvious limits to the productive capacity of the domestic manufacturing sector, and in spite of the industrial diversification which generally accompanies economic development there will be commodities for which the main source of supply is abroad. This

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<sup>11</sup> O.J. Firestone, *Canada's Economic Development 1867-1953*, (London: Bowes & Bowes, 1953), p. 71.

need not have implications for maturity unless the commodity is vital to a sector or to the economy in general, and unless domestic production is uneconomic because of a lack of skills or inadequate size of the domestic market. The obvious example of a commodity of decisive importance is capital equipment; and we shall therefore need to examine the composition of imports as well as that of exports in the case of Canada.

It could be argued that a net inflow of foreign capital is inconsistent with economic maturity, on the grounds that an advanced economy should be capable of generating its own investment fund. But there seems to be nothing abnormal in flows of capital between advanced industrial countries, and such an inconsistency would probably be a matter of definition. There is a much more real basis for the view that certain kinds of capital inflow do not occur in a mature economy, on the grounds that they do not indicate economic self-sufficiency. Thus if a substantial proportion of total investment were financed from abroad we might express doubt as to the ability of a country to sustain its own economic growth. These doubts would be increased if the foreign capital were concentrated in certain key areas of the economy -- notably the leading sectors, other sectors showing a high rate of growth, and in heavy industry producing inputs for a wide range of other industries. Such a pattern would illustrate a dependence on foreign supplies of capital which goes beyond supplementation of domestic sources. The situation might be worsened by the nature of the imports of capital. Direct foreign investment involves a substantial degree of foreign control as well as ownership, extending not only to the destination of the capital but also to the operation of physical plant. In addition this may imply a dependence on the products of scientific and technological research performed abroad, especially where the investment is in the form of branch plants, and may lead to a gap in the domestic capacity to undertake such research.

So far we have considered self-sufficiency and dependence in terms of the relations between one country and the rest of the

world economy. The final point to be discussed before we come to apply this analysis to the Canadian economy is whether self-sufficiency is further diminished by economic dependence on one country rather than on the world at large. Dependence of this sort is the typical case of satellitic growth, where ". . . all or the bulk of the capital imports come from one source and . . . all or the bulk of the exports go to one destination."<sup>12</sup> In general there are two important implications of this sort of relationship. First, it suggests a high degree of specialisation between the two countries; and where satellitic growth has been accompanied by a high level of income, such a division of effort will probably have been to some extent responsible. Second, the division of effort is not made on equal terms. The satellite is cast in the role of supplier to the dominant country, and it achieves its level of welfare by adapting and gearing itself to the demands of one country. This situation is more vulnerable than if dependence were on a range of countries, in that a simple change in the requirements of the dominant country could destroy the basis of the satellitic economy. This is less likely to the extent that the export sector is diversified, but would be very much less likely if diversification were extended to markets. Satellitic growth is the product of a variety of factors, of which perhaps the most significant is the size of the two domestic markets. It takes the form of extreme specialisation since the economy is unable to reconcile the demand for a comparable standard of living to that of the dominant country, and the lesser demand for economic independence. Inevitably self-sufficiency is less where dependence is on one country rather than on several; and it will be a part of the following chapter to judge how far the pattern of satellitic growth applies to economic relations between Canada and the United States.

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<sup>12</sup>Hoselitz (op. cit.), 420.

## VII

### THE MATURING OF THE CANADIAN ECONOMY II

The previous chapter attempted to elucidate the concept of economic maturity, as it is used by Rostow, and to develop from the discussion certain tests of maturity which might be used in the case of Canada. This chapter will be concerned exclusively with the relevance of maturity as a description of the level of economic development reached by the Canadian economy in the period 1914-1950. First however some of the conclusions of the last chapter are summarised.

In a recent elaboration of the take-off hypothesis, Rostow re-emphasised his conception of the growth process as essentially a succession of leading sectors.<sup>1</sup> Deceleration following a short period of very rapid growth is the normal condition for such a sector, and as the impetus derived from it fades, so additional leading sectors emerge to maintain the pace of economic growth. These sectors are likely to be primary growth sectors, called into existence by supply conditions, and not therefore the direct result of previous growth. But since each leading sector stimulates growth in a set of supplementary growth sectors (generally, though not necessarily, through backward linkage effects), the economy becomes more diversified as growth proceeds. Not until the final stage of growth do demand factors become responsible for the pace and direction of economic advance.

The leading sectors in the drive to maturity may be based on primary production, but once maturity has been reached this is no longer the case. As the bulk of resources are, by definition, now exploited, subsequent leading sectors cannot be in resource

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<sup>1</sup>W.W.Rostow, "Leading Sectors and the Take-Off", W.W.Rostow, ed., The Economics of Take-Off Into Sustained Growth, (London: Macmillan, 1963).

development. The achievement of economic maturity in the context of expansionist development is apparently the critical stage at which expansionism gives way to leading sectors conforming with an intrinsic pattern of growth. Maturity is not consistent with a satellite form of growth, or with a similar extensive dependence on other national economies, since this infringes the requirement that an economy should have a substantial measure of independence, including the ability to set the pace of its own growth.

As explanations of the years 1896-1914 in the Canadian economy, Rostow's system of stages and the staple theory were found to be not inconsistent. This co-existence cannot be true, however, once the economy reaches maturity. Since staple industries are defined in the staple theory in terms which make them consistent with, though more specific than, Rostow's leading sectors, the analytic function they have is to a remarkable extent the same.<sup>2</sup> But since a staple is a product with a high natural resource content and since the basis of its growth is foreign demand, the staple theory, like other forms of expansionist development, cannot be applicable to Rostow's mature economy.

Among the most marked changes in the Canadian economy since 1914, and certainly those with the greatest significance for us, have been the relative decline in importance of wheat production, the growth of new resource industries, and the expansion of secondary manufacturing activities. Deceleration in the leading sector of the take-off was clearly marked. Indeed Rostow's suggestion

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<sup>2</sup>Even G.W.Bertram found them somewhat similar. But of the three differences which he discovered, one relates to the pre-take-off period, and another is mistaken (see above, p. 37): "Economic Growth in Canadian Industry 1870-1915: The Staple Model and the Take-off Hypothesis", Canadian Journal of Economics and Political Science, XXIX, No. 2, (May 1963).



that deceleration is likely to set in quickly,<sup>3</sup> perhaps before the take-off stage is complete, appears to be borne out. It is far less easy to identify the point of time at which wheat ceased to be the leading sector. The evidence examined below suggests that it does not necessarily correspond with the end of the take-off stage, though wheat had certainly been displaced by 1950.

Evidence is also offered that at least until very recent times growth in Canada has been led by the group of resource industries. This group is somewhat mixed, and comprises principally precious, other non-ferrous, and ferrous metals; pulp and paper; oil and natural gas; and hydroelectricity potential. No doubt it is the heterogeneity of the industries, and the increasing importance of value added by manufacturing in the final (exported) product, which causes some observers to set the twentieth century staples apart from the familiar list of fish, fur, timber, and wheat. For some purposes it would not be legitimate to group together the resource industries. There is, for example, no simple change in world demand conditions which explains the growth in importance of them all.<sup>4</sup> But in other respects the resemblances are closer. In terms of their factor employments the industries are broadly similar, in that their labour requirements are comparatively small. This, in conjunction with the type of natural resource being exploited, has much reduced the importance of new settlement, and changed its character to the establishment of isolated towns. Second, among the mining industries, new technologies for discovery, removal

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<sup>3</sup>Rostow (op. cit.), p. 7.

<sup>4</sup>Unless it is to be found in the characteristics of a world-wide "New Industrialism". The detection of a shift in the basis of industry from coal and iron complexes to industries based on oil, electricity, and new structural and fabricating materials is intriguing, but it is difficult to see how far the components of the new industrialism are related to each other. The matter is discussed in W.P. Easterbrook and H.G.J. Aitken, Canadian Economic History, (Toronto: Macmillan, 1958), Chapter XII. Or perhaps one could simply point to the impending exhaustion of domestic supplies of raw materials in the United States.

and concentration of ores have to some extent been shared. Third, forward demand linkage for the products of staple industries has been more important than backward demand -- a novel feature in staple production<sup>5</sup> -- but perhaps less important than final demand linkage. Finally the resource industries and wheat production dominate not only Canada's primary and primary manufacturing sectors, but also Canada's export trade.

The merits of the year 1914 as the terminal date of the take-off are mainly those of convenience: the beginning of the war did not mark a significant break in the growth of the wheat economy. Rather, it provided conditions in which eventually the growth of prosperity in the Western provinces might be resumed following the check of 1912-13. If the lessening rate of capital imports and slight fall in export prices indicated that the pre-war boom had reached its peak, the downswing was prevented from developing by the peculiar conditions of war. The remarkable nature of the expansion of wheat production is revealed by the growth of acreage under wheat. From little more than 4 million acres in 1900, wheat acreage was 11 million in 1915. The growth thereafter was extremely rapid: in 1916, 15.4 million; in 1918, 17.3 million; and in 1921, 23.3 million.<sup>6</sup> The latter year saw the end of the war and post-war boom. The rate of growth of wheat acreage during it was closely linked to the upward movement of prices, and these conditions also made for rapid growth in other forms of agricultural production. The growth of manufacturing during the war is largely accounted for by the production of munitions, exports of which were

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<sup>5</sup>R.E.Caves and R.H.Holton, The Canadian Economy -- Prospect and Retrospect, (Cambridge, Mass.: Harvard University Press, 1961), p. 44.

<sup>6</sup>The figures are quoted in: K.Buckley, Capital Formation in Canada 1896-1930, (University of Toronto Press, 1955), p. 17; and A.S.Safarian, The Canadian Economy in the Great Depression, (University of Toronto Press, 1959), p. 19.

negligible in 1914 but 25% of total exports in 1918. The advance made by the pulp and paper industry was no less spectacular. The abnormality of the world economy under war-time stresses must be at least part of the explanation of the substantial achievements in Canada during this period; but it would be misleading to suggest that it altered the fundamental nature and direction of the Canadian economy. "Industry and manufacturing might respond to the stimulus of war orders, but basically and with few exceptions they remained largely dependent on the prosperity of the prairie region . . ."<sup>7</sup>

The close of the Dominion lands policy in 1930 conveniently marks the end of the extensive phase of the wheat economy. But the terminal point could well be found almost a decade earlier. The record wheat acreage of 1921, which was 5 million acres larger than the previous year, coincided with a slump in the price of wheat. No further expansion took place until 1926, and the pace was then much reduced, reaching a peak of 25.7 million acres in 1930. This figure has only been exceeded (by at most 2 million acres) during a brief period in the late 1940's and early 1950's.

The relative importance of investment in the wheat economy was much less after 1920.<sup>8</sup> Intensive investment in wheat in the 1920's was concerned primarily with the adoption of the internal combustion engine for trucks, harvestors, and tractors, though farm mechanization had of course been taking place in the extensive phase. In the early 1920's investment in machinery was depressed, but by proportionately much less than in land and buildings. The result was that even in the late 1920's, the closing of the extensive phase was reducing investment possibilities, even though very high yields were increasing farm incomes. At 7.3% of gross capital

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<sup>8</sup>Buckley (op. cit.), Chapter II, especially p. 19.

<sup>7</sup>Easterbrook and Aitken (op. cit.), p. 488.

formation, prairie farm investment was little more than half its relative pre-war importance.<sup>9</sup>

Wheat production in the 1920's, as it is now, was one of Canada's most important activities, making a very significant contribution to the prosperity of the country. But almost certainly it had ceased to be the leading sector in the economy. The upswing after 1925, clearly present in wheat production but exaggerated by high yields, was much more strongly marked by heavy investment and rapid growth in the resource industries; indeed industrial and manufacturing in general did not share agriculture's difficulties after 1921 to anything like the same extent, a fact which suggests the lessening impact of changes in wheat production on the rest of the economy.

The growth industries of the 1920's were in general those which had begun to develop at the turn of the century and had been further stimulated by the war. In common with earlier staples, the conditions of their growth were suitable technologies and an active export demand. The pulp and paper and newsprint industry grew in response to the demand in the United States for large newspapers, and was able to meet this demand through the development of low-cost hydroelectricity sources and the sulphite process. The mining of the precious metals and (especially) copper, nickel, zinc and lead, and the production of aluminum, were assisted on the one hand by the selective flotation process and electrolytic smelting, and on the other by the growth, especially in the United States, of such as the electrical industries, automobile and aircraft production, and on both by the development of metallurgical knowledge. It was in these industries, and in secondary manufacturing (especially of automobiles), that Canada's recovery from the post-war slump took place most strongly. Whether it can be said that these activities led the recovery is a difficult question, but the

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<sup>9</sup>Safarian (op. cit.), p. 23.

suggestion is implicit here:

In discussing the pre-war period, emphasis was laid on wheat and railways as the most important factors in the investment boom. In the twenties the emphasis shifted, at least in relative terms, to newsprint, metals, electric power, and developments related to the spread of the automobile. Rapid growth in these industries, as well as in the service industries, gave a tremendous impetus to investment and also determined to an important degree the nature of developments after 1929.<sup>10</sup>

The boom in the later 1920's was a period of heavy investment; total capital formation in the second half of the decade was 60% greater (in current dollars) than in the first.<sup>11</sup> In some industries, notably the railways and newsprint production, excess capacity was added to. More generally there was a reduction in new investment possibilities, and this helped to increase the severity of the downswing. The vulnerability of an economy so dependent on the success of its exports, and the emergence of primary product surpluses in the world economy, were fundamental factors in the depression. Both the incidence of economic dislocation within the country, and the recovery up to the outbreak of the Second World War, illustrate the changing structural balance of the economy. From 1928-29 to 1933 the average decrease in per capita incomes in Canada was 48%, but only the three Prairie provinces suffered in excess of this figure.<sup>12</sup> Saskatchewan, with its extreme dependence on wheat, fared worst (72%); the economy of Manitoba (49%) was more diversified, in particular because of Shield resource development.

Recovery took place unevenly. In general it was strongest in those industries for whose products foreign demand soon revived, while domestic investment lagged and depression in agriculture

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Report of the Royal Commission on Dominion-Provincial Relations Book I: Canada 1867-1939, (Ottawa: King's Printer, 1940), p. 150.

continued. Metallic minerals showed the best revival, led by gold, nickel and copper. The factors responsible were various, but included an expanding market in Britain, where electrical equipment and durable goods industries grew rapidly in the 1930's, and the high price of gold, which also allowed other metals produced in association to enjoy low costs. New investment in hydroelectricity installations and the pulp and paper industry, on the other hand, was resumed much later in the 1950's, and at a much lower level than in the late 1920's. Production of automobiles, benefitting from protection, improved after 1954, but in common with other manufacturing industries this was possible without important new investment programmes. Metallic minerals seem therefore to have led the recovery, but the impact of their growth on the rest of the economy was lessened by some characteristics of the industry. The isolated and dispersed nature of mining settlements contributed to a pattern of 'local' recoveries; the capital intensity of the industry implied a small direct employment effect and a low multiplier on the assumption of a high marginal propensity to save on a return on capital; and the high proportion of foreign capital involved a substantial leakage of income. These factors may well help to explain the rather poor recovery in Canada in the 1930's.

Perhaps the principal effect of the Second World War on the structure of the Canadian economy was to increase the importance of manufacturing. As in 1914-1918, productive capacity was greatly expanded and much of it was suitable for conversion to peace-time occupations -- perhaps two-thirds of it by 1947.<sup>15</sup> At least as important as new capacity was the extension of managerial and technological skills, which has assisted the development and diversification of Canada's industries to meet its growing requirements for manufactured goods. This trend has undoubtedly been a feature of

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<sup>15</sup>Caves and Holton (op. cit.), p. 71.

the economy in the period since 1914; the average annual rate of growth in the production of the manufacturing industry sector was 3% in the period 1910-1930, and rather more than 4% from 1930 to 1950.<sup>14</sup> To some extent this may reflect rising consumer expenditure, especially in the latter two decades when per capita expenditure rose at an annual average rate of 1.77%.<sup>15</sup> If, as seems likely, Canadian producers have supplied a growing share of an expanding domestic market, this may be explained partly by the tariff and partly by the natural shelter protecting domestic producers, who have better knowledge of the market and can introduce more effective product differentiation.

Value added in manufacturing increased from approximately 22% of GNP in 1910 to 30% in 1950.<sup>16</sup> This was a very important increase, but its significance needs qualification. First, there was a very large increase in primary manufacturing activities in this period, associated with the growing use of the output of staple industries as inputs in other industries. A large smelting and refining industry became established in the inter-war period. A diminishing proportion of pulpwood and wood-pulp production was exported unmanufactured.<sup>17</sup> Of the ten leading industries (in terms of gross output) in 1948, only electrical apparatus, automobiles and primary iron and steel were not concerned with processing the products of resource industries.

Second, in spite of the growth of manufacturing and the demands of the domestic market, the striking developments in the Canadian economy since 1945 have not been in this sector but in a

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<sup>14</sup>O.J.Firestone, Canada's Economic Development 1867-1955, (London: Bowes & Bowes, 1958), p. 203.

<sup>15</sup>Ibid., p. 77.

<sup>16</sup>Ibid., p. 221.

<sup>17</sup>In the late 1950's and early 1960's however, exports of wood-pulp showed a good rate of growth.

new phase of resource development. Growth in the older resource industries based on the Canadian Shield -- non-ferrous metals, pulp and paper, and hydroelectricity -- has been maintained, but the importance of the primary and primary manufacturing sectors has been enormously increased by the post-war production of oil and natural gas, iron ore, uranium and aluminum. In each case the Second World War assisted development, principally in speeding up exploration. The significant event in the petroleum industry was the discovery of the Leduc oilfield in Alberta in 1947, which served to focus the attention of United States companies on the area. Exports of petroleum (crude and refined) were insignificant in 1950 but in 1962 were worth \$232 million. Production of iron ore in Canada (excluding Newfoundland) was unimportant until the ore deposits on the border of Quebec and Labrador were opened up after 1950. In that year the value of iron ore exports was \$15 million, but by 1962 had increased to \$220 million. The growth of military requirements for fissionable materials during and after the war inspired a long period of exploration for uranium deposits and culminated in the late 1950's in a short-lived export boom. In four years exports of uranium grew from \$26 million to \$311 million, but a moderately rapid absolute decline seems inevitable.<sup>18</sup> The growth of aluminum production, on the other hand, in which cheap supplies of hydroelectricity are the resource, has been much steadier and more assured. About three-quarters of primary aluminum production (which has trebled since 1945) is re-exported. The industry attracted considerable attention to itself in the early 1950's by the construction of the huge Kitimat smelter in British Columbia, and the associated hydroelectricity installations. Since the plant came into production in 1954, its capacity has been more than doubled.

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<sup>18</sup>W.D.G.Hunter, "The Development of the Canadian Uranium Industry: An Experiment in Public Enterprise", Canadian Journal of Economics and Political Science, XXVIII, No. 3, (August 1962), especially 347-349.



The spectacular nature of resource development should not divert attention from the more regular growth of both secondary and tertiary activities. The former trend is discernible in the proportion of the national income for which the secondary sector is responsible, and in the proportion of the labour force which it employs.<sup>19</sup> The increasing importance of services and utilities is apparent from its growing labour force, but its contribution to the national income seems to have diminished over the period 1929 to 1950. The contraction of the labour force employed in primary industries can be accounted for almost entirely by the reduced labour requirements of agriculture; and Rostow's suggestion that at maturity only about 20% of the labour force will be thus employed is almost precisely fulfilled.

Important as these trends have been, it is impossible to disregard the vital role played by staple products in the post-war economy. Even in the early 1960's Canada's ten leading exports were all based on resource development. The year 1950 does not seem to have marked the end of expansionist growth in Canada. On the contrary, it stands at the beginning of a period in which resource development receives new emphasis. In 1962 it was observed that the development of new resources "has provided the foundation for Canada's current prosperity and rate of economic expansion."<sup>20</sup> Substantially the same conclusion is reached by Caves and Holton, that newsprint and mine products in particular have "spurred Canadian economic growth in recent years".<sup>21</sup> The analysis from which this conclusion is reached is very damaging to the hypothesis that the Canadian economy reached maturity (in Rostow's sense) in or about

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<sup>19</sup> Firestone (op. cit.), pp. 185, 189.

<sup>20</sup> H.G.J. Aitken, American Capital and Canadian Resources, (Cambridge, Mass.: Harvard University Press, 1962), p. 115.

<sup>21</sup> Op. cit., p. 44.

1950. Briefly, it is argued that a model of short-run income determination is given by the behaviour (or expected performance) of exports, to which investment reacts after a lag of about a year. The increase in investment following on improved exports is not confined to the staple sector, but is experienced generally in the economy in response to increases in consumer income deriving from the performance of exports. This model is found to be perfectly consistent with the long-run staple theory, and broadly consistent with the behaviour of the Canadian economy in this century up to the middle 1950's.<sup>22</sup> Indeed whereas the frontier "no longer calls forth massive capital formation" (presumably of utilities, especially transport facilities), in projecting investment expenditures to 1970 it is noted that "exploitation of natural wealth will continue to furnish an open frontier of investment opportunities akin to the frontier of old."<sup>23</sup>

The results of the Caves and Holton investigation constitute an emphatic reaffirmation of faith in the relevance of the staple theory to the post-war Canadian economy. This view is shared by Aitken.<sup>24</sup> But their vindication of the theory does not necessarily mean that every generalisation framed under the heading of the staple theory is also still valid, nor are we strictly concerned in the present study with the fate of the staple approach. To determine that staple export sectors have been the leading sectors in the drive to maturity and beyond does not mean that changes in the economy at large have inevitably been in response to changes in one or other of the leading sectors. If this has ever been true, it can scarcely be applied to the post-1914 economy, in which a growing domestic market has increasingly been responsible for shaping the

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<sup>22</sup>Ibid., Chapter III.

<sup>23</sup>Ibid., pp. 351-352

<sup>24</sup>"It is still true that the pace of development in Canada is determined fundamentally by the exports that enable Canada to pay its way in the world": op. cit., p. 74.

pattern of the manufacturing sector, has accounted for a large proportion of capital formation, and has at certain times (for example the later 1920's and the post-war decades) undoubtedly helped to sustain periods of rapid growth and prosperity. Industries producing consumer goods, notably of course automobiles, became important for the first time in the boom of the 1920's, and in indicating that the age of high mass-consumption began in Canada in 1925 Rostow has plausibility on his side, but only at the expense of the analytic importance of the stage. Undoubtedly derived-growth sectors do emerge in this period, but the evidence we have considered indicates that they have still to supplant resource industries as the leaders of growth. And, of course, there is the problem of explaining how there could be mass-consumption before maturity is reached. However we earlier elected to ignore the final stage on the grounds that it does not belong to the schema formed by the other stages, and it is sufficient to note the emergence of consumer goods industries and that they have modified the structure of an economy whose rate of growth is determined by resource export industries.

The result of the preceding analysis indicates that the Canadian economy did not reach maturity in 1950 since an expansionist pattern of development, the bringing of new resources under technological control, was still sufficiently important to lead growth; and this conflicts with the condition of maturity that the bulk of resources should at least be in the process of exploitation. Other factors bearing on this 'technological' definition of maturity are rather less conclusive but appear to be much less significant. The first of these stems immediately from the previous point: if the bulk of resources should have been under technological control in 1950, what proportion of resources now remains to be exploited? The only tenable position here seems to be one of optimistic agnosticism. Changes in technologies and in substitutes are two of the factors which rule out definite assessments. On the assumption that these remain constant, the usual conclusion is that recoverable supplies of those minerals at present produced in Canada are suffic-

ient for production to be maintained in the foreseeable future; but that in any case so little is known of the full extent of Canada's mineral wealth that figures of proven reserves are bound to understate the case. Thus in projecting mineral production to 1970, Caves and Holton found good reasons for discounting the possibilities of exhaustion or displacement from world markets by lower-cost discoveries elsewhere.<sup>25</sup> In 1956, the Royal Commission on Canada's Economic Prospects endorsed the first of these beliefs.<sup>26</sup> Mining has been the resource industry to show the highest rate of growth (and diversity) since 1945 and it seems likely to increase its share of the country's primary production. How long it will continue to provide the economy's leading sectors is an extremely difficult question. Ultimately it must give way as the relative abundance of land and natural resources is overcome.<sup>27</sup> The strong growth of manufacturing suggests that the demands of the domestic market might be sufficient to sustain growth, at a slower pace, if Canada's staples should suddenly fail,<sup>28</sup> and this view is a reasonable objection to our criticism of Rostow. The fact that resource development still leads growth in Canada might be due less to the immaturity of the economy than to the extraordinary richness of the

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<sup>25</sup> Op. cit., pp. 468-469.

<sup>26</sup> Preliminary Report, (Ottawa: Queen's Printer, 1956), p. 46: "Canada possesses the mineral resources to sustain much higher levels of output. It is not usually necessary for mining companies to prove reserves for more than their estimated requirements for the next 20 or 30 years. Most of the important mines have done this . . . Less than one-third of the nation's land area has so far been covered by geological reconnaissance mapping and very much less than that on a scale adequate for mineral exploration".

<sup>27</sup> See H.H. Watkins, "A Staple Theory of Economic Growth", Canadian Journal of Economics and Political Science, XXIX, No. 2, (May 1963), 151-152.

<sup>28</sup> But for a sceptical view see ibid., 157-158.

resources.

If 'land' is still relatively abundant, one would expect Canada's requirements for the other factors of production to be very great, demonstrating the high rate of return to be achieved through their extensive use. There is a clear distinction to be made however between the production of wheat and that of subsequent staples, in that rapid population growth and settlement have ceased to be indispensable to staple production. This does not mean that immigration in Canada is now smaller than it was, nor that Canada had the capacity before 1914 for as many immigrants as cared to come; in fact of course neither of these is true. But though Canada is still able to take in a large number of immigrants, frontier opportunities no longer exist. A result of this (and of other pressures, notably high unemployment in the depression) has been the introduction of an immigration policy, based perhaps on two premises. First, there is an upper limit on the number of immigrants which can be absorbed in any period of time. This resembles one of Tinlin's "absorptive capacity" concepts,<sup>29</sup> but owes more no doubt to the Displacement Theory. Second, great emphasis has been laid in recent years on the degree of education and quality of labour skills possessed by would-be entrants. The range of factors which affects the level of immigrants is enormous; but the development of a policy which aims to limit and make more regular the numbers of immigrants, and chooses those best suited to industrial society, supports the impression of declining and changing requirements.

A marked feature of resource development, then, is its capital intensity.<sup>30</sup> Heavy capital requirements have been a feature of

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<sup>29</sup> N.F. Tinlin, Does Canada Need More People?, (Toronto: Oxford University Press, 1951).

<sup>30</sup> Some estimates of capital employed per employee in certain sectors are given for 1937 in Safarian (op. cit.), Table 55, p. 106, and for a range of industries in 1938 and 1945 in G. Rosenbluth, Concentration in Canadian Manufacturing Industries, (Princeton: Princeton University Press, 1957), Table A-8, pp. 154-155.

Canadian development for at least a century, though much of this capital has been employed in transportation facilities. Equally, an important part of Canada's investment expenditures has for a similar period been financed by capital imports. In recent resource development however there have been significant shifts of emphasis. The Canadian economy as a whole has relied in periods of heavy investment to a progressively diminishing extent on imports of capital since 1914, and especially since 1945.<sup>31</sup> But in the newsprint, petroleum, primary mining, and refining and smelting industries non-resident capital has in general formed an increasing proportion of capital investment. This trend appears to be strongly associated with the influence of the United States on the Canadian economy, which is considered in more detail below. The relevant points here are that the products of these industries are mainly sold in the United States, and they have consequently held a large and growing attraction for that country's capital. The capital-intensive technology has also been substantially imported. The steps by which it has been possible for Canada to induce the immigration of industries which process and partially (even in a few cases completely) manufacture the raw materials have been traced in the case of four such industries by Aitken.<sup>32</sup> Generalisations about the reasons for international capital movements are extremely hazardous to make, but two features of the preponderance of foreign capital

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<sup>31</sup>H.G.J. Aitken, "The Changing Structure of the Canadian Economy", Aitken, Deutsch, et al., The American Economic Impact on Canada, (Durham, N.C.: Duke University Press, 1959), pp. 8-9; Canada Year Book 1963-64, pp. 1034-1037.

<sup>32</sup>"The Changing Structure of the Canadian Economy", op. cit. The four are pulp and paper, nickel, petroleum, and natural gas. Also, in accounting for the well-marked recovery in non-precious metals in the 1930's, it is observed that in addition to the influence of the British recovery, "of some importance, too, were the Canadian and American tariffs, which caused a drop in exports of Canadian minerals, but brought an influx of American capital to set up mineral-processing industries": E. Marcus, Canada and the International Business Cycle 1927-1939, (New York: Doubleday Associates, 1954), p. 135.

in Canada's most recent staples need to be stressed. First, Canada is still far from self-sufficient for capital investment funds, and in particular lacks the ability (or technology) to sustain a long period of exploration and initial development of resources. Second, the risk involved in financing resource development is much greater for a Canadian than for an American, for whom the investment may represent vertical integration and thus implies a (reasonably) assured market.<sup>33</sup>

The final test of 'technological' maturity is the attempt to see if Canada has 'caught up' on technological possibilities by comparing her use of technology with that of the United States. An adequate treatment of this question would absorb far more time and space than it is possible to devote to it here. The best that can be attempted is a brief comparison of factors which give some indication of the utilisation of technology: notably productivity, and also plant size. The inadequacies of the undertaking should be noted at the outset. Both countries have very high incomes but Canada's per capita GNP was in 1955 less than three-quarters that of the United States. In absolute terms the GNP was less than 7% of its equivalent, and the effect of this on the domestic market is emphasised by the dispersal of population. Finally, whereas Canada still has a relative abundance of natural resources this is no longer true of the United States.

In general it seems to be the case that Canada employs substantially the same technology as the United States.<sup>34</sup> The point is made below that Canada's contribution to this pool of technological knowledge is very small; in fact she is able to draw extensively

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<sup>33</sup>The suggestion of differing elements of risk in resource development is made by C.D.Blyth and E.B.Carty, "Non-resident Ownership of Canadian Industry", Canadian Journal of Economics and Political Science, XXII, No. 4, (November 1956), 456.

<sup>34</sup>For a general discussion of this point, see Caves and Holton (op. cit.), pp. 60-78. See also Rosenbluth (op. cit.), especially Chapter IV.

on the fruits of industrial research which is made possible by the size of the United States market. In some case new technologies are imported with new direct investment. Branch plants normally have access to research performed by the parent organisation. Purchase (and maintenance) of American capital equipment is comparatively easy for a close neighbour. The significant limitation on Canada's ability to employ the most advanced technology appears to be the smaller size of the market. With the exclusion of agriculture (in which productivity has grown more rapidly than elsewhere in the economy but is still much lower than the average), productivity per employed person in Canada has been found for the period 1946-50 to be 86.1% of that of the United States.<sup>35</sup> The lower level in Canada is ascribed primarily to the much smaller market size and consequently heavy transport costs. If agriculture is included, the proportion drops to 78.4%. In view of the growth of the market in Canada, presumably allowing an increasing number of industries to achieve an efficient scale, it is reasonable to expect Canadian productivity to have grown more rapidly, and this expectation is borne out. Sutton's figures for the period 1929-33 to 1946-50 for all employed persons show an increase from 73.9% to 78.4%. Brecher and Reisman however found that GNP per man-hour (in the private sector) had a much higher growth rate in Canada than in the United States; as a percentage of the latter, the Canadian figure was 59.3% in 1926, 63.4% (1945), 68% (1950) and 73.3% (1955).<sup>36</sup>

The evidence on productivity indicates that Canada is not

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<sup>35</sup>G.D.Sutton, "Productivity in Canada", Canadian Journal of Economics and Political Science, XIX, No. 2, (May 1953), Table IX, 197.

<sup>36</sup>I.Brecher and S.S.Reisman, Canada-United States Economic Relations, (Study Prepared for the Royal Commission on Canada's Economic Prospects. Ottawa: Queen's Printer, 1957), Appendix F, p. 354.



markedly backward in the application of modern technology, but rather that within the limitation set by the size of the market Canada has successfully adopted American technology. It is probably true to say that further relative productivity gains in Canada will be due more to the gradual extension of the market than to any catching-up by backward sectors. These conclusions are confirmed by a comparison of plant and firm sizes in which the differences between the two countries are found to be small.<sup>37</sup> It is fair to say, then, that Canada is applying the range of technology, if it is allowed that small market size is a condition to which technology must adapt itself (i.e. if we do not make achievement of full economies of scale a condition of economic maturity). Probably one should distinguish between the effects of market dispersal and of low income (relative to the technological leader, the United States), in that the former is a probably irremediable geographical fact and therefore cannot be much improved through economic growth. The complexity of this rules out its treatment here. Similarly we have not suggested when Canada finished catching-up in technology, but it is safe to say that Canada was sufficiently advanced by 1950 to fulfil Rostow's requirement.

In spite of this good technological record, we have argued above that Canada fails the first test of maturity mainly on the grounds that the economy is still led by resource exploitation (and there are still abundant reserves untouched by technology) in such a way that growth is still expansionist. Against this must be set the possibility that the demands of the domestic market have generated a momentum of their own which is concealed by the continued growth of the staple sector, and the fact of the healthy productivity record. The suspicion that Canada does not meet the

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<sup>37</sup>Rosenbluth (op. cit.), pp. 82-85; Caves and Holton (op. cit.) pp. 75-76.

requirements of Rostovian maturity is largely confirmed by the second test. Had Canada demonstrated, by the mid-twentieth century, her ability to produce not everything but anything she chose to produce? To answer the question we have to assess the nature of Canada's dependence on other economies, by looking at trade patterns, capital movements, and the origins of Canada's technological skills. The dependence is further increased if Canada is closely linked to one other economy -- the pattern of growth described by Hoselitz as "satellitic".<sup>38</sup>

We have already touched on some of these questions, and it is convenient to start with the origins of the technology used in Canada. Here the influence of the United States is very strong indeed, and Canada's own contribution is small. The following observation related to the electronics industry, but almost identical points are made in separate studies of, for example, the automotive, industrial machinery, and chemical industries:

Most of the larger companies in the Canadian electronics industry have United States or European affiliates. The results of foreign research are available to the greater part of the electronics industry in Canada: hence little research has been done in this country. Moreover the market in Canada is too small as compared to the United States for individual companies to bear the high cost of a large research programme.<sup>39</sup>

Expenditure by industry on research and development in 1959 amounted to \$96.7 million. In addition a further \$21.7 million was spent on research performed outside Canada, but this vastly understates the value to Canada of research elsewhere because of the ease with which the fruits of this research may be purchased or obtained. The outstanding characteristic of the research done within Canada is the important role of the government. Of the \$96.7 million

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<sup>38</sup> D.F. Hoselitz, "Patterns of Economic Growth", Canadian Journal of Economics and Political Science, XXI, No. 4, (November 1955).

<sup>39</sup> Canadian Business Service Ltd., The Electronics Industry in Canada, (Study Prepared for the Royal Commission on Canada's Economic Prospects. Ottawa: Queen's Printer, 1956), p. 18.

spent on private research, \$21.1 million was provided by the Dominion government. In 1957 50% of private research was financed in this way. Total Dominion government expenditures on scientific activities reached \$250 million in the fiscal year 1961-62, of which only one-quarter was spent on non-civilian research. The National Research Council, established in 1916, devotes about 90% of its effort to applied research for industrial use. "Though many Canadian industries now possess research facilities -- some of them quite extensive -- the major part of industrial research to date has been done under government auspices."<sup>40</sup> In terms of economic maturity, the distribution of research and development between the private and public sectors is less important than the fact that active government participation helps to modify the extreme dependence on the United States. But this dependence is clear and substantial. It has enabled Canada to reach a very high income level which would have been impossible without the assistance of the United States. To say that the relative lack of research facilities in Canada makes the economy vulnerable does not mean that relations with the United States are likely to turn sour. It does indicate that the industrial structure is immature.

In turning next to movements of capital between Canada and the rest of the world, it would be misleading to give the impression that this, or the question of trade patterns, is a distinct problem from that of the import of technology. The essential inter-relatedness of these factors is well brought out in the following:

No less important than the availability of adequate pools of venture capital is the extensive industrial experience and market connections which must be associated with that capital before a large investment undertaking can go ahead. This embraces such diverse requirements as an advanced technology, specialised entrepreneurial and managerial skills and, in many cases, an assured export market for a large part of the output. In recent years Canada has made significant strides in meeting these requirements out of her own resources. The fact

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<sup>40</sup> Canada Year Book 1963-64, p. 376. Data on research expenditures in Canada are to be found in ibid., pp. 361-384, and Canada Year Book 1962, pp. 346-350.

is, however, that they have not been available to the extent required to keep up with the very rapid pace of recent industrial expansion.

In effect, then, what Canada has required, especially in the course of her recent economic development, is a "package" of substantial capital, technology, skills and markets. It is this kind of capital package which non-residents have helped to provide.<sup>41</sup>

The point has been made already that Canada now depends rather less than in former periods on imports of capital. In the investment boom of the late 1950's about 45% of net capital formation was directly financed by non-residents, compared with about 50% in the late 1920's, and an even higher percentage before 1914.<sup>42</sup> For fifteen years after 1934 however Canada was a net exporter of capital; and throughout the 1950's investment abroad continued. Even so, between 1949 and 1960 Canada's net liabilities grew from \$5,800 million to \$16,800.<sup>43</sup> It is clear that in conditions of rapid growth Canada's need for investment funds continues to outstrip her ability to save, though to a smaller extent than previously.

Doubt that this situation is consistent with economic maturity is confirmed by an examination of the direction, type and source of foreign investment in Canada. Foreign capital has been mainly attracted by two industrial sectors, and a heavy concentration has resulted. The first sector is resource development and processing, in which production takes place primarily for export. Some reasons for the domination of this sector by non-resident capital are given above. In mining, smelting and petroleum development 66% of total investment was controlled at the beginning of 1956 by non-residents.<sup>44</sup>

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<sup>41</sup>Royal Commission on Canada's Economic Prospects. Preliminary Report, (Ottawa: Queen's Printer, 1956), pp. 86-87.

<sup>42</sup>Canada Year Book 1963-64, p. 1035.

<sup>43</sup>Ibid., p. 1037.

<sup>44</sup>This and the following estimates are from I. Brecher, "The Flow of United States Investment Funds Into Canada Since World War II", Aitken, Deutsch, et al., (op. cit.), especially pp. 102-103.

All but 2% was controlled by residents of the United States. These industries, of course, we have identified as Canada's leading sectors, and it is primarily to them that the concept of a capital "package" is relevant. The second area of concentration is in secondary manufacturing -- especially in chemicals, rubber products, electrical equipment and automobile production and assembly -- where much of the investment is in branch plants of parent companies mainly in the United States. Non-resident control in manufacturing amounted to 57% of total investment in the mid-1950's; 47% was controlled from the United States. "Conversations with many American businessmen have revealed that they regard Canada as a slightly peculiar northward extension of the domestic market."<sup>45</sup> It is the fact of an expanding Canadian domestic market, then, which has drawn foreign investment into the manufacturing sector. This sector should prove in the future, as resource development is at present, the growth point in the economy.

The status of the United States as the most important source of investment funds has already been indicated. Not until the early 1920's did the proportion of capital held by the United States exceed that of Britain. It continued to increase until 1950, when about 75% of foreign investment in Canada was held by residents of the United States. This proportion has been approximately maintained in the 1950's. Britain now contributes less than 20% of the total. This fundamental shift in the origin of Canada's foreign capital has been accompanied, especially since 1945, by a change in its form. Whereas before 1914 most foreign capital was British, directed to public utilities, and in the form of portfolio investment, since the 1920's the most rapidly expanding investment has been by the United States, in manufacturing, and in the form of direct investment. By 1955 70% of the foreign capital in Canada

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<sup>45</sup>H. Marshall, F.A. Southard, and K.W. Taylor, Canadian-American Industry, (Yale University Press, 1936), p. 293, quoted in Rosenbluth (op. cit.), p. 75.

had been directly invested.<sup>46</sup> The United States has been responsible for almost all the inflow of direct investment, and in the 1950's almost one-half of all kinds of foreign investment in Canada from all sources was composed of direct investment by the United States. This capital, concentrated in the most rapidly-growing industries, confers alien (and continuing) ownership and control over a vital part of the Canadian economy. Much is made of the political significance of the situation, in terms of Canada's freedom to act as she chooses. This is not directly our concern, except to point out that it appears to be the price of very rapid, but satellitic, economic growth. It might be said that to allow extensive foreign control (as opposed to substantial foreign debt) in return for a high and growing income represents a decision of political maturity. For Canada the 'choice' seems to have been quite inevitable. In terms of Rostow's maturity the significant point is that the power to induce changes in that high income has to a considerable extent been alienated.

The third element in Canada's relations with the world economy is the structure of her foreign trade. The central problem in deciding whether a given economy can produce what it chooses to produce, granted the principle of comparative advantage, is to separate legitimate (mature) economic integration from what we have termed "strategic dependence". This needs to be done mainly on the basis of the composition and direction of trade, and its role in the economy, rather than by measurements of its size. The latter does give some idea of the importance of trade to the economy; thus in the 1950's Canada ranked fourth or fifth in the world according to her foreign trade's total value. In rankings of trade per capita Canada varied between second and eighth (1960). As a percentage of the national income, the average of exports and imports exceeded

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<sup>46</sup>Brecher and Reisman (op. cit.), Table 19, p. 92.

20%.<sup>47</sup> These proportions certainly indicate that Canada is an important trading nation, and suggest that a reduction in world trade levels would tend to hurt Canada rather more than most countries. Thus Canada is highly integrated with the world economy.

Unfortunately a good case can be made for the view that Canada's dependence on trade exceeds that of mature integration. First, it has been shown already that the leading sectors of growth are still based on export demand, thus emphasising the vulnerability of an extremely open economy. Moreover, although there has been a very large increase in the relative importance of partly manufactured exports, reflecting the growth of mining and smelting, the raw material content of Canada's exports remains very large. The price instability of primary products, and their vulnerability to changes in technology, are matters of record. Canada's openness to unwelcome trade fluctuations is reduced to the extent that her staples and markets are diversified. It is true, on the one hand, that there is now a greater variety of staple exports than at any previous period. But, on the other, the proportion of exports going to the United States has risen in this century, to about 60% in the 1950's, while Britain's share fell to rather less than 20%. The commodities which figure most prominently in exports to the United States -- newsprint, iron ore, petroleum -- are of course the products of the leading resource industries.

The dependence on the United States as a source of imports is even greater, though much less a novel feature. By the beginning of this century most of Canada's imports came from this source, and in the 1950's the proportion was about 70%. Britain contributed approximately 10%. The composition of Canada's import trade bears

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<sup>47</sup>P. Lamartine Yates, Forty Years of Foreign Trade, (London: Allen & Unwin, 1959), Table 10<sup>4</sup>, p. 165. The questionable significance of these figures is illustrated by this table and its predecessor, p. 161. See also Canada Year Book 1962, pp. 943-944.

out the view that the economy has yet to show its ability to produce what it chooses to produce. Of the ten leading commodities imported in 1962, all but one were manufactures, with machinery, electrical apparatus and automobiles predominating. In 1950 it is estimated that one-third of all machinery and capital equipment purchases were made abroad, about 90% of which were in the United States.<sup>48</sup> This probably indicates the lack of an adequate domestic market for such equipment, and the ease of importing from the United States, rather than a technical backwardness. It is not difficult to understand how such a dependence should come about, nor to see that there have been substantial benefits from it for Canada. It remains the case however that Canadian manufacturing industry has yet to show itself efficient in the production of specialised machinery, and the economy therefore tends to look to the United States for its supplies of new and improved equipment.

On the balance of the evidence we have to conclude that the Canadian economy did not reach maturity in 1950, nor indeed (since we are not bound by Rostow's dating of the stage) has it yet demonstrated its maturity. The economy in the post-war period has shown itself still to be under the leadership of resource industries, which are based on export demand. This demand issues very largely from one country, the United States, which is also the source of a substantial part of Canada's investment funds, and of most of her technology. The elements of this situation at variance with maturity are first, the dependence on resources which suggests an inadequate development of manufacturing industry and the domestic market; and second, the dependence on foreign markets, capital and research, all of which place the springs of economic growth beyond Canada's control. Canada has become a highly integrated part of the North American economy, but not on the basis of equal partnership with the United States. The economic strength of the latter inevitably

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<sup>48</sup> Caves and Holton (op. cit.), p. 69.



means that the Canadian economy will be shaped and propelled by forces having their origin in the United States. Thus far, it needs to be stressed, the benefits of being a satellite of the United States economy, in the form of a rapid rate of growth, have far outweighed the costs.

The evidence that the economy is still immature is not unanimous, and it is possible to construct a case that maturity was achieved sometime after 1945. It would depend on accepting two lines of argument. First, although staple industries are the leading sectors, this might only reflect the geographical accident of the country's resource wealth; and that if the resource developments of the early 1950's had not taken place, the production of consumer goods for the expanding domestic market would have taken over the leadership of growth. This view must be largely conjectural; for although we noted the role of such investment in sustaining booms, the evidence is that the investment was a result of and response to growth elsewhere. Second, on the question of Canada's dependence on the United States, an appeal might again be made to the hardness of geographical fact. Granted the relative strengths of the economies, and the distribution of Canada's population, the maturity of the Canadian economy might depend less on the extent to which it is insulated from its neighbour than on the success with which it has grasped opportunities of markets, capital, and equipment. On this basis it must be conceded that Canada has done very well; in particular it is mainly the size of the market which limits the size of the manufacturing sector. The reason why we reject this approach, which has much to commend it in itself, is that it involves too much of a distortion of Rostow's meaning. Rostow deals with national economies, not with regional integration. There is certainly ambiguity in his definitions of economic maturity: one could argue for instance that dependence on foreign sources for technological advance might be consistent with maturity if it occurred in isolation. But in conjunction with the other forms of economic domination, the scale of this dependence on resources other than

those within the economy must seem to place Canada outside the group of economies described as mature.

## VIII

### CONCLUSIONS

The characteristics of Rostow's writings, in particular The Stages of Economic Growth, do not incline his critics to treat him kindly. But the informal, challenging way in which his ideas are presented has excited extensive discussion of them. Understanding of his conception of the growth process would be greater if Rostow had avoided use of metaphors and the practice of defining causes in terms of their effects. It is not clear what aspects of Marxism Rostow provides an alternative to; if it is the economic interpretation of history, then Rostow fails in that he offers nothing more than a denial of its validity, and not an alternative. Of stages systems in general there are two kinds. Those which are historical generalisations may be tested by their conformity with evidence. Models which have an analytic rather than empirical basis are difficult to treat since they invoke the necessity of logical truth to support what can only, as a hypothesis, be entitled to empirical substantiation.

No final judgment on the truth or falsity of the stages system is indicated. The lasting contribution which it makes to the study of economic history and economic growth may well be certain concepts which it employs -- leading sector, the deceleration hypothesis, take-off, primary growth sector -- rather than any of the stages as a whole, or the complete system. The traditional society, as a residual stage, need not be criticised. The preconditions stage suffers from a tension between the logical and chronological requirements of the system: some preconditions resemble characteristics of the take-off, and the two stages, even granted their status as cause and effect respectively, might well take place simultaneously. The take-off concept is stimulating, and useful if reservations are made about the limitations of our knowledge of the nature

of economic growth. The notion of self-sustained growth can be justified, but it remains to be shown whether there really is, and why there should be, a critical stage before it can be achieved. The two definitions of economic maturity express ideas which resemble the conventional understanding of maturity, but as they stand they are in fact neither definitions nor workable descriptions. The age of high mass-consumption does not fit in the stages system since it is not inevitable that the economy should proceed to it, and since once maturity is reached economic growth ceases to be a problem confronting society.

In applying the stages system to Canada its status is reduced to that of empirical hypothesis. As an explanation of the period from about 1820 to 1896, the preconditions stage fits quite satisfactorily. Indeed the National Policy so far anticipated economic growth and provided for it that the idea of a preparatory stage preceding a short, critical period appears remarkably apt. The example of Canada departs somewhat from Rostow's model in that the existence of the state was threatened by the policies and aspirations of other nations; and whereas reactive nationalism is most likely to be important in societies emerging from "traditional" status, it also provides a continuous theme in the evolution of the Canadian economy in the nineteenth century.

The notion of a critical period in the process of economic growth finds a parallel in many accounts of the wheat economy of 1896-1914. The specific conditions of take-off are fulfilled quite well in Canada. In particular the rate of investment shows an increase of the appropriate dimension, and wheat, in spite of some controversy as to its status as a "manufacturing" sector, displays all the characteristics of a leading sector. Both the staples approach and the stages system give a closely similar account of this period in Canadian economic history, and this is due mainly to the similarity of the concepts of staples and leading sectors. But the two approaches are dissimilar overall, in that for the staple theory no phase of development is critical, and there is no progress-

ive movement from one level of development to the next.

Ambiguities in the definitions of economic maturity leave ample room for discussion, and ultimately a lack of complete confidence that what Rostow appears to mean is necessarily what he does mean. For the purposes of this study the mature economy is held to be primarily industrial, rather than a producer of raw or semi-processed materials; relations with the world economy, while they may be extensive, should not imply any considerable dependence; and these relations, otherwise consistent with maturity, may not be thus consistent if they are concentrated on a single other economy. On these criteria the Canadian economy has yet to reach maturity. Resource industries still provide the leading sectors; and though the structure of the economy can no longer be explained largely in terms of the requirements of the staple sector, the staple theory appears to retain its validity as an explanation of the basis of recent economic growth. Staple exports are mainly directed to the United States. Growth is thus led by exports which are concentrated on one market. Canada depends on the United States also for supplies of capital and technology.

If the chain is as strong as its weakest link, then one is obliged to say that the stages of economic growth do not fit the example of Canadian development. It would be a pity if this conclusion should appear to cast doubt on the capacity of the stages system to interpret the process of economic growth. Without doubt it has many defects, but in this instance it is surely the exceptional characteristics of Canada -- the richness of her resources and her proximity to the United States -- which places the economy outside the usual pattern of development. Moreover to describe the Canadian economy as immature would in many respects be misleading. On balance the stages system gains much more than it loses from an application to Canadian history. In particular the central hypothesis of a take-off stands up well, and there is no doubt that the view of the course of development as a succession of leading sectors gains plausibility (and ease of application) from the staples

tradition of Canadian economic historians. There is no reason to suppose that the stages system will become an accepted interpretation of economic growth in Canada or anywhere else. Some parts may be accepted, others will fairly certainly be rejected. "What more can be expected of any historical hypothesis than to have stimulated research to the point of becoming the stepping stone to a new hypothesis and to new research?"<sup>1</sup>

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<sup>1</sup>A. Gerschenkron, Economic Backwardness in Historical Perspective, (Cambridge, Mass.: The Belknap Press, 1962), p. 364.

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