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CHAPTER 2

THE FIVE STAGES-OF-GROWTH--A SUMMARY

It is possible to identify all societies, in their economic dimensions, as lying within one of five categories: the traditional society, the preconditions for take-off, the take-off, the drive to maturity, and the age of high mass-consumption.

THE TRADITIONAL SOCIETY

First, the traditional society. A traditional society is one whose structure is developed within limited production functions, based on pre-Newtonian science and technology, and on pre-Newtonian attitudes towards the physical world. Newton is here used as a symbol for that watershed in history when men came widely to believe that the external world was subject to a few knowable laws, and was systematically capable of productive manipulation.

The conception of the traditional society is, however, in no sense static; and it would not exclude increases in output. Acreage could be expanded; some *ad hoc* technical innovations, often highly productive innovations, could be introduced in trade, industry and agriculture; productivity could rise with, for example, the improvement of irrigation works or the discovery and diffusion of a new crop. But the central fact about the traditional society was that a ceiling existed on the level of attainable output per head. This ceiling resulted from the fact that the potentialities which flow from modern science and technology were either not available or not regularly and systematically applied.

Both in the longer past and in recent times the story of traditional societies was thus a story of endless change. The area and volume of trade within them and between them fluctuated, for example, with the degree of political and social turbulence, the efficiency of central rule, the upkeep of the roads. Population--and, within limits, the level of life--rose and fell not only with the sequence of the harvests, but with the incidence of war and of plague. Varying degrees of manufacture developed; but, as in agriculture, the level of productivity was limited by the inaccessibility of modern science, its applications, and its frame of mind.

Generally speaking, these societies, because of the limitation on productivity, had to devote a very high proportion of their resources to agriculture; and flowing from the agricultural system there was an hierarchical social structure, with relatively narrow scope--but some scope--for vertical mobility. Family and clan connexions played a large role in social organization. The value system of these societies was generally geared to what might be called a long-run fatalism; that is, the assumption that the range of possibilities open to one's grandchildren would be just about what it had been for one's grandparents. But this long-run fatalism by no means excluded the short-run option that, within a considerable range, it was possible and legitimate for the individual to strive to

improve his lot, within his lifetime. In Chinese villages, for example, there was an endless struggle to acquire or to avoid losing land, yielding a situation where land rarely remained within the same family for a century.

Although central political rule--in one form or another--often existed in traditional societies, transcending the relatively self-sufficient regions, the centre of gravity of political power generally lay in the regions, in the hands of those who owned or controlled the land. The landowner maintained fluctuating but usually profound influence over such central political power as existed, backed by its entourage of civil servants and soldiers, imbued with attitudes and controlled by interests transcending the regions.

In terms of history then, with the phrase 'traditional society' we are grouping the whole pre-Newtonian world : the dynasties in China; the civilization of the Middle East and the Mediterranean; the world of medieval Europe. And to them we add the post-Newtonian societies which, for a time, remained untouched or unmoved by man's new capability for regularly manipulating his environment to his economic advantage.

To place these infinitely various, changing societies in a single category, on the ground that they all shared a ceiling on the productivity of their economic techniques, is to say very little indeed. But we are, after all, merely clearing the way in order to get at the subject of this book; that is, the post-traditional societies, in which each of the major characteristics of the traditional society was altered in such ways as to permit regular growth: its politics, social structure, and (to a degree) its values, as well as its economy.

THE PRECONDITIONS FOR TAKE-OFF

The second stage of growth embraces societies in the process of transition; that is, the period when the preconditions for take-off are developed; for it takes time to transform a traditional society in the ways necessary for it to exploit the fruits of modern science, to fend off diminishing returns, and thus to enjoy the blessings and choices opened up by the march of compound interest.

The preconditions for take-off were initially developed, in a clearly marked way, in Western Europe of the late seventeenth and early eighteenth centuries as the insights of modern science began to be translated into new production functions in both agriculture and industry, in a setting given dynamism by the lateral expansion of world markets and the international competition for them. But all that lies behind the break-up of the Middle Ages is relevant to the creation of the preconditions for take-off in Western Europe. Among the Western European states, Britain, favoured by geography, natural resources, trading possibilities, social and political structure, was the first to develop fully the preconditions for take-off.

The more general case in modern history, however, saw the stage of preconditions arise not endogenously but from some external intrusion by more advanced societies. These invasions--literal or figurative--shocked the traditional society and began or hastened its undoing; but they also set in motion ideas and sentiments which initiated the process by which a modern alternative to the traditional society was constructed out of the old culture.

The idea spreads not merely that economic progress is possible, but that economic progress is a necessary condition for some other purpose, judged to be good: be it national dignity, private profit, the general welfare, or a better life for the children. Education, for some at least, broadens and changes to suit the needs of modern economic activity. New types of enterprising men come forward--in the private economy, in government, or both--willing to mobilize savings and to take risks in pursuit of profit or modernization. Banks and other institutions for mobilizing capital appear. Investment increases, notably in transport, communications, and in raw

materials in which other nations may have an economic interest. The scope of commerce, internal and external, widens. And, here and there, modern manufacturing enterprise appears, using the new methods. But all this activity proceeds at a limited pace within an economy and a society still mainly characterized by traditional low-productivity methods, by the old social structure and values, and by the regionally based political institutions that developed in conjunction with them.

In many recent cases, for example, the traditional society persisted side by side with modern economic activities, conducted for limited economic purposes by a colonial or quasi-colonial power.

Although the period of transition--between the traditional society and the take-off--saw major changes in both the economy itself and in the balance of social values, a decisive feature was often political. Politically, the building of an effective centralized national state--on the basis of coalitions touched with a new nationalism, in opposition to the traditional landed regional interests, the colonial power, or both, was a decisive aspect of the preconditions period; and it was, almost universally, a necessary condition for take-off.

There is a great deal more that needs to be said about the preconditions period, but we shall leave it for chapter 3, where the anatomy of the transition from a traditional to a modern society is examined.

THE TAKE-OFF

We come now to the great watershed in the life of modern societies: the third stage in this sequence, the take-off. The take-off is the interval when the old blocks and resistances to steady growth are finally overcome. The forces making for economic progress, which yielded limited bursts and enclaves of modern activity, expand and come to dominate the society. Growth becomes its normal condition. Compound interest becomes built, as it were, into its habits and institutional structure.

In Britain and the well-endowed parts of the world populated substantially from Britain (the United States, Canada etc.) the proximate stimulus for take-off was mainly (but not wholly) technological. In the more general case, the take-off awaited not only the build-up of social overhead capital and a surge of technological development in industry and agriculture, but also the emergence to political power of a group prepared to regard the modernization of the economy as serious, high-order political business.

During the take-off, the rate of effective investment and savings may rise from, say, 5 % of the national income to 10% or more; although where heavy social overhead capital investment was required to create the technical preconditions for take-off the investment rate in the preconditions period could be higher than 5%, as, for example, in Canada before the 1890's and Argentina before 1914. In such cases capital imports usually formed a high proportion of total investment in the preconditions period and sometimes even during the take-off itself, as in Russia and Canada during their pre-1914 railway booms.

During the take-off new industries expand rapidly, yielding profits a large proportion of which are reinvested in new plant; and these new industries, in turn, stimulate, through their rapidly expanding requirement for factory workers, the services to support them, and for other manufactured goods, a further expansion in urban areas and in other modern industrial plants. The whole process of expansion in the modern sector yields an increase of income in the hands of those who not only save at high rates but place their savings at the disposal of those engaged in modern sector activities. The new class of entrepreneurs expands; and it directs the enlarging flows of investment in the private sector. The economy exploits hitherto unused natural resources and methods of production.

New techniques spread in agriculture as well as industry, as agriculture is commercialized, and increasing numbers of farmers are prepared to accept the new methods and the deep changes they bring to ways of life. The revolutionary changes in agricultural productivity are an essential condition for successful take-off; for modernization of a society increases radically its bill for agricultural products. In a decade or two both the basic structure of the economy and the social and political structure of the society are transformed in such a way that a steady rate of growth can be, thereafter, regularly sustained.

As indicated in chapter 4, one can approximately allocate the take-off of Britain to the two decades after 1783; France and the United States to the several decades preceding 1860; Germany, the third quarter of the nineteenth century; Japan, the fourth quarter of the nineteenth century; Russia and Canada the quarter-century or so preceding 1914; while during the 1950's India and China have, in quite different ways, launched their respective take-offs.

THE DRIVE TO MATURITY

After take-off there follows a long interval of sustained if fluctuating progress, as the now regularly growing economy drives to extend modern technology over the whole front of its economic activity. Some 10-20% of the national income is steadily invested, permitting output regularly to outstrip the increase in population. The make-up of the economy changes unceasingly as technique improves, new industries accelerate, older industries level off. The economy finds its place in the international economy: goods formerly imported are produced at home; new import requirements develop, and new export commodities to match them. The society makes such terms as it will with the requirements of modern efficient production, balancing off the new against the older values and institutions, or revising the latter in such ways as to support rather than to retard the growth process.

Some sixty years after take-off begins (say, forty years after the end of take-off) what may be called maturity is generally attained. The economy, focused during the take-off around a relatively narrow complex of industry and technology, has extended its range into more refined and technologically often more complex processes; for example, there may be a shift in focus from the coal, iron, and heavy engineering industries of the railway phase to machine-tools, chemicals, and electrical equipment. This, for example, was the transition through which Germany, Britain, France, and the United States had passed by the end of the nineteenth century or shortly thereafter. But there are other sectoral patterns which have been followed in the sequence from take-off to maturity, which are considered in chapter 5.

Formally, we can define maturity as the stage in which an economy demonstrates the capacity to move beyond the original industries which powered its take-off and to absorb and to apply efficiently over a very wide range of its resources--if not the whole range--the most advanced fruits of (then) modern technology. This is 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 (like contemporary Sweden and Switzerland, for example) 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.

Historically, it would appear that something like sixty years was required to move a society from the beginning of take-off to maturity. Analytically the explanation for some such interval may lie in the powerful arithmetic of compound interest applied to the capital stock, combined with the broader consequences for a society's ability to absorb modern technology of three successive generations living under a regime where growth is the normal condition. But, clearly, no dogmatism is justified about the exact length of the interval from take-off to maturity.

THE AGE OF HIGH MASS-CONSUMPTION

We come now to the age of high mass-consumption, where, in time, the leading sectors shift towards durable consumers' goods and services: a phase from which Americans are beginning to emerge; whose not unequivocal joys Western Europe and Japan are beginning energetically to probe; and with which Soviet society is engaged in an uneasy flirtation.

As societies achieved maturity in the twentieth century two things happened: real income per head rose to a point where a large number of persons gained a command over consumption which transcended basic food, shelter, and clothing; and the structure of the working force changed in ways which increased not only the proportion of urban to total population, but also the proportion of the population working in offices or in skilled factory jobs--aware of and anxious to acquire the consumption fruits of a mature economy.

In addition to these economic changes, the society ceased to accept the further extension of modern technology as an overriding objective. It is in this post-maturity stage, for example, that, through the political process, Western societies have chosen to allocate increased resources to social welfare and security. The emergence of the welfare state is one manifestation of a society's moving beyond technical maturity; but it is also at this stage that resources tend increasingly to be directed to the production of consumers' durables and to the diffusion of services on a mass basis, if consumers' sovereignty reigns. The sewing-machine, the bicycle, and then the various electric-powered household gadgets were gradually diffused. Historically, however, the decisive element has been the cheap mass automobile with its quite revolutionary effects--social as well as economic--on the life and expectations of society.

For the United States, the turning point was, perhaps, Henry Ford's moving assembly line of 1913-14; but it was in the 1920's, and again in the post-war decade, 1946-56, that this stage of growth was pressed to, virtually, its logical conclusion. In the 1950's Western Europe and Japan appear to have fully entered this phase, accounting substantially for a momentum in their economies quite unexpected in the immediate post-war years. The Soviet Union is technically ready for this stage, and, by every sign, its citizens hunger for it; but Communist leaders face difficult political and social problems of adjustment if this stage is launched.

BEYOND CONSUMPTION

Beyond, it is impossible to predict, except perhaps to observe that Americans, at least, have behaved in the past decade as if diminishing relative marginal utility sets in, after a point, for durable consumers' goods; and they have chosen, at the margin, larger families- behaviour in the pattern of Buddenbrooks dynamics.*

* In Thomas Mann's novel of three generations, the first sought money; the second, born to money, sought social and civic position; the third, born to comfort and family prestige, looked to the life of music. The phrase is designed to suggest, then, the changing aspirations of generations, as they place a low value on what they take for granted and seek new forms of satisfaction.

Americans have behaved as if, having been born into a system that provided economic security and high mass-consumption, they placed a lower valuation on acquiring additional increments of real income in the conventional form as opposed to the advantages and values of an enlarged family. But even in this adventure in generalization it is a shade too soon to create--on the basis of one case--a new stage-of-growth, based on babies, in

succession to the age of consumers' durables: as economists might say, the income-elasticity of demand for babies may well vary from society to society. But it is true that the implications of the baby boom along with the not wholly unrelated deficit in social overhead capital are likely to dominate the American economy over the next decade rather than the further diffusion of consumers' durables.

Here then, in an impressionistic rather than an analytic way, are the stages-of-growth which can be distinguished once a traditional society begins its modernization: the transitional period when the preconditions for take-off are created generally in response to the intrusion of a foreign power, converging with certain domestic forces making for modernization; the take-off itself; the sweep into maturity generally taking up the life of about two further generations; and then, finally, if the rise of income has matched the spread of technological virtuosity (which, as we shall see, it need not immediately do) the diversion of the fully mature economy to the provision of durable consumers' goods and services (as well as the welfare state) for its increasingly urban-and then suburban-population. Beyond lies the question of whether or not secular spiritual stagnation will arise, and, if it does, how man might fend it off: a matter considered in chapter 6.

In the four chapters that follow we shall take a harder, and more rigorous look at the preconditions, the take-off the drive to maturity, and the processes which have led to the age of high mass-consumption. But even in this introductory chapter one characteristic of this system should be made clear.

A DYNAMIC THEORY OF PRODUCTION

These stages are not merely descriptive. They are not merely a way of generalizing certain factual observations about the sequence of development of modern societies. They have an inner logic and continuity. They have an analytic bone-structure, rooted in a dynamic theory of production.

The classical theory of production is formulated under essentially static assumptions which freeze-or permit only once-over change- in the variables most relevant to the process of economic growth. As modern economists have sought to merge classical production theory with Keynesian income analysis they have introduced the dynamic variables: population, technology, entrepreneurship etc. But they have tended to do so in forms so rigid and general that their models cannot grip the essential phenomena of growth, as they appear to an economic historian. 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. The argument that follows is based on such a flexible, disaggregated theory of production.

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.*

* W.W. Rostow, *The Process of Economic Growth* (Oxford, 1953), especially chapter iv. Also "Trends in the Allocation of Resources in Secular Growth", chapter 15 of *Economic Progress*, ed. Leon H. Dupriez, with the assistance of Douglas C. Hague (Louvain, 1955).

Within the framework set by forces determining the total level of output, sectoral optimum positions are

determined on the side of demand, by the levels of income and of population, and by the character of tastes; on the side of supply, by the state of technology and the quality of entrepreneurship, as the latter determines the proportion of technically available and potentially profitable innovations actually incorporated in the capital stock.*

* In a closed model, a dynamic theory of production must account for changing stocks of basic and applied science, as sectoral aspects of investment, which is done in *The Process of Economic Growth*, especially pp. 22-5.

In addition, one must introduce an extremely significant empirical hypothesis: namely, that deceleration is the normal optimum path of a sector, due to a variety of factors operating on it, from the side of both supply and demand.*

* *Process of Economic Growth*, pp. 96-103.

The equilibria which emerge from the application of these criteria are a set of sectoral paths, from which flows, as first derivatives, a sequence of optimum patterns of investment.

Historical patterns of investment did not, of course, exactly follow these optimum patterns. They were distorted by imperfections in the private investment process, by the policies of governments, and by the impact of wars. Wars temporarily altered the profitable directions of investment by setting up arbitrary demands and by changing the conditions of supply; they destroyed capital; and, occasionally, they accelerated the development of new technology relevant to the peacetime economy and shifted the political and social framework in ways conducive to peacetime growth.* The historical sequence of business-cycles and trend-periods results from

* *Process of Economic Growth*, chapter VII, especially pp. 164-7.

these deviations of actual from optimal patterns; and such fluctuations, along with the impact of wars, yield historical paths of growth which differ from those which the optima, calculated before the event, would have yielded.

Nevertheless, the economic history of growing societies takes a part of its rude shape from the effort of societies to approximate the optimum sectoral paths.

At any period of time, the rate of growth in the sectors will vary greatly; and it is possible to isolate empirically certain leading sectors, at early stages of their evolution, whose rapid rate of expansion plays an essential direct and indirect role in maintaining the overall momentum of the economy. * For some purposes it is

* For a discussion of the leading sectors, their direct and indirect consequences; and the diverse routes of their impact, see 'Trends in the Allocation of Resources in Secular Growth', *loc. cit.*

useful to characterize an economy in terms of its leading sectors; and a part of the technical basis for the stages of growth lies in the changing sequence of leading sectors. 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, within which nature never makes a jump.

The stages-of-growth also require, however, that elasticities of demand be taken into account, and that this familiar concept be widened; for these rapid growth phases in the sectors derive not merely from the discontinuity of production functions but also from high price- or income-elasticities of demand. Leading sectors are determined not merely by the changing flow of technology and the changing willingness of entrepreneurs to accept available innovations: they are also partially determined by those types of demand which have exhibited high elasticity with respect to price, income, or both.

The demand for resources has resulted, however, not merely from demands set up by private taste and choice, but also from social decisions and from the policies of governments--whether democratically responsive or not. It is necessary, therefore, to look at the choices made by societies in the disposition of their resources in terms which transcend conventional market processes. It is necessary to look at their welfare functions, in the widest sense, including the non-economic processes which determined them.

The course of birth-rates, for example, represents one form of welfare choice made by societies, as income has changed; and population curves reflect (in addition to changing death-rates) how the calculus about family size was made in the various stages; from the usual (but not universal) decline in birth-rates, during or soon after the take-off, as urbanization took hold and progress became a palpable possibility, to the recent rise, as Americans (and others in societies marked by high mass-consumption) have appeared to seek in larger families values beyond those afforded by economic security and by an ample supply of durable consumers' goods and services.

And there are other decisions as well that societies have made as the choices open to them have been altered by the unfolding process of economic growth; and these broad collective decisions, determined by many factors--deep in history, culture, and the active political process--outside the market-place, have interplayed with the dynamics of market demand, risk-taking, technology and entrepreneurship, to determine the specific content of the stages of growth for each society.

How, for example, should the traditional society react to the intrusion of a more advanced power: with cohesion, promptness, and vigour, like the Japanese; by making a virtue of fecklessness, like the oppressed Irish of the eighteenth century; by slowly and reluctantly altering the traditional society, like the Chinese?

When independent modern nationhood is achieved, how should the national energies be disposed: in external aggression, to right old wrongs or to exploit newly created or perceived possibilities for enlarged national power; in completing and refining the political victory of the new national government over old regional interests; or in modernizing the economy?

Once growth is under way, with the take-off, to what extent should the requirements of diffusing modern technology and maximizing the rate of growth be moderated by the desire to increase consumption per capita and to increase welfare?

When technological maturity is reached, and the nation has at its command a modernized and differentiated industrial machine, to what ends should it be put, and in what proportions: to increase social security, through the welfare state; to expand mass-consumption into the range of durable consumers' goods and services; to increase

the nation's stature and power on the world scene; or to increase leisure?

And then the question beyond, where history offers us only fragments: what to do when the increase in real income itself loses its charm? Babies, boredom, three-day week-ends, the moon, or the creation of new inner, human frontiers in substitution for the imperatives of scarcity?

In surveying now the broad contours of each stage-of-growth, we are examining, then, not merely the sectoral structure of economies, as they transformed themselves for growth, and grew; we are also examining a succession of strategic choices made by various societies concerning the disposition of their resources, which include but transcend the income- and price-elasticities of demand.

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