Text 1 – Simon Kuznets (1966), *The Modern Economic Growth: rate, structure, and spread. A postscript.* New Haven: Yale University Press, chapter 10. (with slight changes)

(…) We identified as modern economic growth the secular trends in "developed" countries over a sufficiently long period (say five decades) and as far back as possible to the date at which the shift from premodern trends began (the earliest, in England, in the late eighteenth century). (…)"Developed" countries, with some exceptions, were identified as politically independent nations having the highest per capita products and, in fact, accounting for between a seventh and a quarter of world population. (…) Such levels of per capita product could have been attained only through decades of the high growth rates that typify modern economic growth, and that, consequently, the high per capita product countries must have managed to engage in that growth process. (…)

But before turning to these associated characteristics, we should note the three kinds of countries – with high per capita product – that were excluded from the group of "developed" countries as defined above; exceptions that limit the scope of the empirical observations. The first was any nation below a minimum size (usually less than a million population). Such nations were excluded on the ground that although they are politically sovereign, they may be too much within the orbit of larger countries to manifest independent economic growth. The second was any nation, usually small, whose high per capita product was due to some exceptional natural resource endowment, such as oil. Such nations were excluded on the ground that the high per capita product had little to do with antecedent growth rates that transform an economy and society over a long period. Finally, we excluded, except for casual references, the Communist countries, on the ground that the whole cast of their economic and social institutions has been too different and their beginnings too recent to warrant inclusion for the purpose of testing for common and associated characteristics of modern economic growth.

(…)

Characteristics of modern economic growth

1. The high rates of increase in per capita product (ranging from less than 15 to about 30 percent per decade) characteristic of modern economic growth have been accompanied, in most developed countries, by substantial rates of population growth – ranging about 10 per cent per decade and much higher than in the premodern centuries. This has meant rates of increase in aggregate product ranging from over 20 to close to 50 per cent per decade, an enormous rise in total output within the developed countries, and a multiplicity of consequences of substantial population growth, ranging from pressures on natural resources to relative size of successive generations, and to wide differentials in rates of natural increase among various economic and social groups. The findings on the rate, structure, and mechanism of modern economic growth, derived from past records, are primarily for countries with a substantial rate of increase in population; and the relation of the latter to these findings must be recognized and hopefully

distinguished – if the conclusions are to be applied to other countries where the pattern of population growth may be quite different.

2. A rate of 15 per cent per decade (which means quadrupling in a century) produced a rise in per capita product that was too high to be explained, except in small part, by rises in inputs per head. Input of man-hours per head could have increased only slightly, if at all, since the working day and week typical of the presently developed countries before their modernization were long, and the proportion of total labor force to total population was subject to age-sex limitations. Input of capital per head of total population could and did rise much more than man-hours per head, but its contribution to the rise of output was limited by the moderate weight of incomes from capital in total income. The scanty available data suggest that increase in inputs per head of man-hours and material capital combined accounted for less than a fifth of the secular rise in production per capita, and for a decreasing fraction in recent decades. Modern economic growth is distinguished by the fact that the rate of rise in per capita product was due primarily to improvements in quality, not quantity of inputs – essentially to greater efficiency or output per simple unit of input, traceable to increases in useful knowledge and better institutional arrangements for its utilization.

3. The high rate of growth of efficiency, referred to under point 2, has been pervasive, characterizing all major production sectors of the developed economies. If the rise in output per unit of input in agriculture was lower than that in industry, it was still so large compared with premodern levels that one can speak of an agricultural as well as of an industrial revolution. The rise in the capacity and efficiency of transportation and communication has been even more striking. And if our measures suggest that product per unit in the services proper (trade, personal, government) have risen less than that in commodity production and transportation, this may be a reflection in part of the difficulty of measuring output in such services and the possible understatement in these measures. The pervasive effect of technological and organizational changes on efficiency in all sectors is significant because it implies that all components of the economy and society were affected and under pressure to alter their institutional arrangements, and because, in combination with other factors to be noted below, these trends in efficiency serve to explain the rapid shift in the structure not only of product but also of productive factors, particularly labor.

4. Trends in the sectorial origin of aggregate output, which generally accompanied modern economic growth, include the following: a decline in the share of agriculture and related industries; rises in the shares of manufacturing and public utilities; shifts within manufacturing from less to more durable products, and to a limited extent from consumer to producer goods; increases in the shares of some service groups (personal, professional, government) and declines in the shares of others (domestic service). These are all well-known, and their main feature is recognized in the term "industrialization", often used as a synonym for modern economic growth;

but it is the effect of the combination of these shifts in industrial origin of aggregate output with the trends in efficiency within the various sectors, noted under point 3, that must be stressed here. This combination produced marked shifts in the sectorial allocation of the labor force: a somewhat greater decline in the share of agriculture and related industries, a somewhat lesser rise in the share of industry, and a distinct rise in the share of services (whose share in output showed rather mixed trends). These shifts in the industrial attachment of labor (there were also shifts in the allocation of capital among industries, but we know less about them) are important for they mean changes in conditions of life and work of the population, affecting the use of income and other links in the mechanism of economic growth.

5. The trends in the industrial distribution of aggregate output, noted above, reflect changes in the structure of final demand, which in turn may be due either to the rise in per capita product (with different income elasticity of demand) or to technological changes which do not affect all categories of final goods at the same rate. Furthermore, the trends for individual countries also reflect changes in export and import opportunities, in turn due to shifts in transportation costs, inclusion of new countries in the network of world trade, differential impacts of technological change on comparative advantages, and so on. The important point to be noted here is that a high rate of growth in per capita product implies a rapid shift in the structure of final demand – whether due to persistent income elasticity or to technological changes; and that the factors that induce a high rate of growth of per capita product usually make for a greater rate of expansion of foreign trade and of changes in the international division of labor (except, of course, under Communist autarky). Thus modern economic growth is characterized by rapid shifts in the industrial structure of product, and consequently by rapid shifts in shares of labor attached to various sectors in the country – much more rapid shifts than appear to be true of the premodern centuries.

6. A similarly rapid shift occurred in the distribution of aggregate product and allocation of the labor force (and probably capital) among economic units classified by size and type-ranging from the small own-account individual firms to the large impersonal corporations and government. The movement away from agriculture – the sector that dominated pre-modern economies – meant a marked reduction in the share of small own-account enterprises in aggregate output and of individual entrepreneurs and own-account workers in the labor force. And these inter-sectorial shifts were accompanied by growth in the scale of firms and changes in the type of organization within sectors such as manufacturing or trade – from the small unincorporated firm to the large corporate unit. With the rapid shifts in industrial structure and rapid change in technology there were also rapid shifts in allocation of product among types and sizes of producing firms, and consequently in the allocation of the labor force – by the size of the enterprises to which it was attached, by status as between entrepreneur own-account and employee – with a marked rise in the share attached to larger enterprises and in the share of employees in the labor force. In general, such rapid shifts occurred in most allocations directly related to and connected with

industrial structure – e.g. among employees, from blue- to white-collar jobs, or from less to more skilled occupations. Obviously high inter-industry, inter-status, and inter-occupational mobility of the labor force is a characteristic of modern economic growth.

7. The marked and rapid changes in the structure of product and particularly in the industry, status, and occupation structures of the labor force, are important aspects of modern economic growth because they call for and imply a capacity for rapid institutional adjustments and for inter- and intra-generational mobility of the population (and of capital). The differential impacts of technological changes and higher per capita product on structure of final demand and on the international division of labor set up a chain reaction in which the responses of the population as members of the labor force became important links in the changes of institutional patterns of life that in turn affected economic growth. The rates of structural shift involved were too high to be accommodated by differences in rates of natural increase among various groups in the population and labor force – just as the rate of growth of per capita product was too high to be accounted for by increases in inputs per capita.

Furthermore, the demographic growth differentials were not necessarily associated positively with differentials in economic growth opportunities revealed by the shifts referred to above. Non-agricultural population did not have a higher rate of natural increase than agricultural; nor did employees compared with own-account workers, or white-collar workers compared with blue-collar; the association was, if anything, inverse. Consequently considerable migration in space and occupational shift within or between generations were required to adjust the labor supply to the changing demands of shifting industrial and type of firm structure; and this extensive mobility, of which urbanization was one important facet, affected conditions of life and consumption, the mechanism of fitting people into their roles in the economy, and the institutions of transmission of skill from one generation to the next, and even influenced the views that people were likely to have of their roles and obligations in the economy and society. To the extent that rapid shifts in the economic position of various population and labor force groups may have been productive of friction, government played a greater role, and a national consensus that would limit such friction and preserve political unity assumed increasing importance.

8. While a rapid shift characterized the industrial and type of firm structure of national product and the closely related allocations of labor force and population, in some aspects of economic structure the trends associated with modern economic growth were far less pronounced. This seems particularly true of what might be called the distributional aspects. If we could establish an unequivocal distribution of income by factor shares between capital and labor (which calls for allocation of such a "mixed" category as entrepreneurial income) it would probably indicate trends that were fairly limited – which, given the higher rate of growth of material capital than of labor, would mean a marked decline in the rate of return on capital compared with the return on labor (without allowance for greater investment in the latter). The trends in the size distribution of income were not marked either, at least relative to the order of change observed in

industrial distributions of product and inputs. To be sure, in the more recent decades, the size distributions of income in the developed countries have tended toward a narrowing of inequality toward smaller shares of upper income groups and larger shares of the lower groups. But these shifts have been relatively moderate; and it is rather significant that despite the impressive and sustained increase in per capita product that has characterized modern economic growth, the "poor" are still with us – although the standard by which this category is measured has also been rising in absolute terms.

Yet in one respect this impression of limited long-term changes in the size distribution of income may be misleading – at least in comparing modern economic growth with pre-modern times. The rate of intergroup mobility, of shifts in identity of the population units in the upper and lower groups of the size distribution of income, may have been far higher in the modern economic growth epoch than in the earlier centuries. With the rapid inter-industry and inter-occupational shifts, and with the new industries and occupations representing the major sources of higher incomes, the entrepreneurial innovators connected with these industries and occupations were not likely to be those attached to the older established ones.

9. Another aspect of economic structure in which the trend has been moderate is the allocation of product by use, particularly between capital formation and consumption. To be sure, the gross capital formation proportions (to national domestic product) rose from about 10 to about 20 per cent and the net probably from 5 per cent or less to between 10 and 15 per cent. But despite the enormous rise in reproducible capital stock per capita or per worker, consumption still accounted for the overwhelming proportion of gross and net national product. And while there were marked trends within capital formation (from inventories and construction to producers' equipment) and within consumption (with an increase in the share of government consumption and shifts within household consumption from foods and clothing to consumers' durables and personal, recreation, health, and education services), the needs of modern economic growth for material capital were moderate, accounting for a relatively modest fraction of total output, which rose only a few percentage points over the long period. This slight change is consistent and connected with other trends characterizing modern economic growth, specifically the high rate of growth in efficiency and the rapid shifts in industrial and occupational structure. Because of these shifts in structure, the proportion of consumption to total output remained high – an effect partly of urbanization, partly of technological changes creating demand for new consumer goods, and partly of greater need for quasi-capital types of consumer expenditures (education, health, etc.). And because of the modest capital formation proportions, combined with a high rate of technological change, the proportion of growth in capital input per capita to growth in product per capita remained low.

10. The international aspects of economic growth are characterized by three, prominent trends. First, the technological revolution in transportation and communication facilitated contact among various parts of the world, particularly between the developed countries and others – in

terms of effective ease, for the first time in the history of human societies; beginning in the late nineteenth century conditions were thus radically different from those in the pre-modern centuries. Second, modern economic growth spread sequentially from its pioneer beginnings in eighteenth century England to various follower countries, with the timing of entry continuing into the recent decades of the twentieth century and presumably into the future. Third, until the entry of Japan in the late nineteenth century, followed by the U.S.S.R. in the 1930s, modern economic growth was concentrated in European countries and their offshoots overseas, whose per capita incomes were well above average, even before industrialization, and certainly much higher than the incomes of the countries in Asia and Africa. These three features of economic modernization, added to the high rates of aggregate growth and the shifts in the internal economic structure already referred to above, led to a variety of associated trends in the international aspects of the modern growth process observed among the developed countries and in their relation to the underdeveloped parts of the world.

11. The international flows of men, goods, and capital were at high rates from the second quarter of the nineteenth century to World War I. The migration streams were particularly important for the overseas offshoots of Europe – in North America, Oceania, and several Latin American countries (such as Argentina and Uruguay) – however useful they may have been to the countries of origin as a safety valve in the periods of population pressure on land and early transition to industrialization. These differences between countries of origin and destination of international migration – in relatively free response to economic push and pull – resulted in much higher rates of aggregate growth in the young and "empty" countries overseas as well as other differences in characteristics of economic growth between the old and young countries.

12. Because of the rapid growth of the volume of goods in foreign trade between the 1820s and World War I, the proportions of foreign trade to aggregate product rose significantly during this scant century – both in the older developed countries and in the steadily increasing number of underdeveloped countries drawn into the network of world trade. The only group that did not show marked rises in foreign trade proportions was the young countries overseas – Canada, Australia, the United States (and possibly others) – although even in these the declines date from the time when they were probably small trading outposts of their European mother country, with relatively high proportions. Thus, up to 1913 a law of an "increasing" rather than a "declining" share of foreign trade in aggregate product seemed to operate.

13. Paralleling the expansion of foreign trade and reflecting the spreading ties of the older developed countries with their offshoots and colonial areas overseas and the use of capital loans for political purposes, foreign capital investment flows also grew rapidly from the second quarter of the nineteenth century to World War I. Quantitatively the volumes were limited, and as proportions of total domestic capital formation they were substantial only in the smaller developed countries that were closely related to some one major developed world creditor country (e.g.

Canada and Argentina in relation to Great Britain). But granted the limited volumes and the political element in their channeling, the international flows of capital funds grew proportionately and were at their peak on the eve of World War I.

14. (… historical interruptions of growth: WWI, Great Depression)

15. (…) The sequential spread, rather than simultaneous emergence, meant inequalities in the rate of aggregate growth even among the countries that eventually became developed, let alone between all of these and the underdeveloped areas of the world. The high rates of aggregate growth meant that the absolute differences in growth rates even among developed countries were wide, and therefore cumulated rapidly into marked shifts in relative economic and political power among nations – a situation usually provocative of international strain and conflict. The rapid shift within developed countries among population groups in their roles and shares in the economy may have been productive of internal strains; and in combination with the weakening of family, religious, and local ties, may have led to increasingly vigorous nationalism as the basis for the necessary consensus, and may thus have produced a climate favorable to international conflict. (…)

The summary statements above stress the characteristics of modern economic growth that were common to the developed countries as defined here for purposes of measurement and analysis; the relations, largely among these countries but also between them and others, in the spread of modern economic growth; and the connections among the common characteristics and between them and the international aspects of spread.

That we found several common characteristics is not surprising, since the permissive source of modern economic growth was the major additions to the world stock of useful knowledge – a source potentially available to all countries – and its usefulness is with reference to material means to satisfy human wants that are common to much of mankind. The material achievements of modern technology underlying economic growth in the current epoch are, after all, relevant to human wants that, broadly conceived, date back for centuries. The dreams of our forebears, whether of the effortless abundance in a long lost Eden or of greater power suggested by the Icarus legend, are akin to ours; and the specific ways of realizing such dreams are revealed to us by modern technology, whose products – whether an abundance of food, motor cars, or television sets – appeal to most people who come into contact with them.

Nor are the associations among these common characteristics of modern economic growth unexpected. For if some of them relate to production and others to consumption, it is man who is both the producer and the consumer; and the conditions under which he functions in one capacity will determine in large part his function in the other. Furthermore, greater basic knowledge and technological capacity will not only produce more goods at lower cost but also reduce mortality – so that until the birth rates decline, a rise in product per capita and a higher rate of population growth will go hand in hand. And there may be an obvious connection between increased productive power and greater diversification of demand. Thus, the common characteristics are interrelated because they stem from a common cause, because they reflect different aspects of activity and response of the same group of people, or because, given some persistent structure of human wants, aggregate levels and structures of components are causally connected.

The association between the aggregative and internal structure characteristics of modern economic growth, on the one hand, and the character of its spread and the effects on international relations on the other, again stems from a common source. The increased power of technology applies to international transport and communication; it carries across national boundaries the consequences of the rapid shifts in internal structure of developed nations; it contributes to the sequential spread because the institutional changes required to provide the proper auspices for economic modernization are so radical that simultaneous emergence in many countries is difficult. Even if one rejects the validity of a fixed set of economic development prerequisites, one may still argue that conditions for the shift from preindustrial to modern economic growth were not so minor as to be common to many nations at any given time – especially if one considers the historical distance of most of the world from the small European subcontinent in which economic modernization emerged and from its overseas offshoots to which this process spread first.

One can thus find a good deal of "order," of community and association among the aggregative, structural, and international characteristics of modern economic growth. However, since the statements above may seem to claim too much, it is only appropriate, in concluding this summary postscript, to discuss the qualifications and the questions that they raise.

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