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Turkey's First Five-Year Development Plan: An Assessment

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# TURKEY'S FIRST FIVE-YEAR DEVELOPMENT PLAN: AN ASSESSMENT

## I. INTRODUCTION

THE primary aim of this paper is to analyse the determinants of the rate of growth in G.N.P. over the period of the First Five-Year Plan, 1963–67. The background to this period is provided in the subsequent section which outlines the economic developments in the Turkish economy during the decade immediately preceding the planning era. The objectives of the Plan are then discussed together with some of the problems caused by the method of implementation employed. Section IV sets out the theoretical framework within which the assessment of the Plan is attempted. A brief description of the economic developments which took place during the planning period is sketched in Section V. The analysis of these events is presented in Section VI.

The main finding of this analysis is that the accelerated growth in G.N.P. which occurred after 1962 was associated not so much with an upsurge in the proportion of investment in G.N.P. but rather, in the main, with a sharp fall in the incremental capital–output ratio (I.C.O.R.). This is contrary to the expectations of the planners who stated that the acceleration in the rate of growth would be achieved largely by increasing the proportion of investment in G.N.P. However, this pronouncement was quite inconsistent with their detailed figures for the planned increase in growth and the proportion of investment in G.N.P., as will be shown in Section VI.

In view of the importance of the I.C.O.R. in the subsequent analysis, it should be stressed at the outset that it is measured as a residual and so includes all influences on the growth rate, whether they are connected with new capital or not, other than the proportion of investment in G.N.P.

## II. THE FIRST FIVE-YEAR DEVELOPMENT PLAN IN PERSPECTIVE

Although called the First Five-Year Development Plan, the Plan covering the period 1963–67 was not the first attempt at planned economic development in the history of the Turkish Republic. Two five-year plans had been drawn up in the 1930s, the second being abandoned at the beginning of the Second World War, and another was started in 1946.

The Democratic Party, which had strongly attacked *étatisme*<sup>1</sup> in the

<sup>1</sup> *Étatisme*, followed fairly consistently in Turkey since the 1920s, might be described as “pragmatic socialism.” It denotes “a situation in which the State takes an active and permanent part in economic affairs,” but “is not in any way the same as . . . Collectivism or Communism” as it is not associated with attempts at nationalising existing private enterprise but with stepping in promptly where private enterprise has failed to take the initiative in vital segments of economic activity. See [14].

election campaign, was returned to power in 1950. Planning was rejected and a policy of de-nationalisation proposed. In fact, although no planning took place during the decade of the 1950s neither did any de-nationalisation. Private enterprise was welcomed and more emphasis laid on agricultural development. Nevertheless, as Hershlag points out:

“ . . . étatism, although officially denied, continued to exist under the auspices of the Democratic Government, despite its condemnation at election times and its official replacement by declared support for private enterprise.” [7, p. 142.]

The 1950s were not years of successful economic development. The average annual real rate of economic growth, as measured by the rise in the real level of Gross National Product, was 4.0% between 1951 and 1961 and 3.4% between 1956 and 1961.<sup>1</sup> During the latter period *per capita* income actually declined [34, Table 4-A, pp. 10–11]. Despite this slow rate of growth the level of aggregate demand continuously exceeded supply, resulting in severe inflation. Part of this demand consisted of comparatively heavy investment outlays. It is therefore surprising that growth in the real level of G.N.P. was not greater. The answer appears to lie in the fact that the investment which was undertaken was extremely unproductive, the high level of public investment consisting of much infra-structure investment and projects chosen for political rather than economic merit [18; 19]. The investment in infra-structure was not by any means all wasteful, but did quite predictably tend to be investment with a low output–capital ratio.

This high level of public investment was achieved by reliance on inflationary forms of finance. The heavy deficit spending by the Government during this period was undoubtedly the main cause of the inflation which occurred.<sup>2</sup> The cost of living index in Istanbul rose from 38 in 1950 to 93 in 1960 and by slightly more in Ankara. The general wholesale price index rose from 35 in 1950 to 92 in 1960 and the implicit G.N.P. deflator indicates an average annual rate of inflation of almost 10%.<sup>3</sup>

The worst effect of this high rate of inflation was clearly on the balance of payments. Devaluation was strongly resisted by the Government as a solution to the serious imbalance which appeared in the early 1950s. By 1956, however, the situation had reached a point where action had to be taken. The course pursued by the Government was to enact a law<sup>4</sup> empowering it to fix any prices, commissions, fees, etc. A limit was also fixed for the expansion of credit. As an immediate solution to the balance of payments problem tariffs on imports were raised and subsidies provided for exports. A tourist rate was introduced which lowered the exchange rate for

<sup>1</sup> All growth rates used here are continuously compounded unless otherwise specified.

<sup>2</sup> The money supply increased from 1,145m. TL. in 1950 to 5,574m. TL. in 1960 [31, p. 38].

<sup>3</sup> Cost of living indices are taken from [34, Table 5-B, p. 20]. The implicit G.N.P. deflator was calculated from G.N.P. at constant and current prices also found in [34, Table 4-A, p. 10].

<sup>4</sup> Law number 6731, *Resmî Gazete*, June 11, 1956.

certain categories of visitors from 2·8 TL. to the dollar to 5·25 TL. to the dollar. Black market rates, however, were reported to lie in the region of 10–12 TL. to the dollar [7, p. 147].

The measures taken to stem the tide of rising prices were quite inadequate and after a brief respite prices again began to spiral upwards, reaching a rate of inflation of 20% in 1958. It is this year which is usually taken by commentators and historians to mark the end of an era.<sup>1</sup> A stock-taking of the 1950s is made up to this year, as if radical changes took place then making events in the last two years of the decade somehow non-comparable. 1958, however, was not a turning point in the economic history of the Turkish Republic. The reason why 1958 is taken as a date from which to assess the developments of the 1950s is that it was in 1958 that the Government devalued the lira from 2·8 TL. to 9·0 TL. to the dollar and, at the same time, agreed with the O.E.E.C. and the I.M.F. to secure the new rate by running a balanced budget. This the Government failed to do and inflation and more balance of payments crises followed in the subsequent two years [7, p. 147; 34, Table 4-A, p. 10].

The situation in 1958 has been succinctly described by Simpson in the following paragraph:

“By 1958 Turkey’s economy was in an appalling condition. Agricultural productivity had not increased relative to population increases and Turkey was once again an importer of agricultural products. The cost of living had risen 150 per cent between 1953 and 1958 and as a result real national income *per capita* had declined steadily. There was a mounting foreign trade deficit which had increased total foreign indebtedness to nearly \$2 billion—a truly alarming figure when balanced against an annual gross national product estimated between \$6 billion and \$7 billion.” [18, pp. 150–151.]

One might simply add that this would have been an equally apt description of the economy in 1960 as it was in 1958. The continued inflation, further losses of reserves and increased political agitation culminated in the military coup of May 1960.

Political and economic stability were finally restored after the disruptions of the revolution when İnönü formed the second coalition government in June 1962. Before this, however, an indication of a change in general approach to economic policy came with the establishment of the State Planning Organisation on October 5, 1960, less than five months after the coup.<sup>2</sup> The planners began work on preparing both a five-year plan to begin in 1963 and a one-year programme for the transition year, 1962.

Although 1958 has been regarded as a false dawn in this analysis of the developments in the Turkish economy, 1962 can be considered a watershed

<sup>1</sup> Hershlag [7], Simpson [18], and Yenil [36] all treat 1958 as a turning point. Sönmez [20], however, regards 1960 as the more appropriate date from which to view the 1950s.

<sup>2</sup> Law number 91, *Resmî Gazete*, October 5, 1960.

in modern Turkish history. Detailed support for this contention is provided in a later section, but a few indicators can be presented here. The decade 1951–61 had experienced, as already mentioned, a real average annual rate of growth in G.N.P. of 4·0%, which fell in the second half of the decade to 3·4%. In contrast, the seven years 1962–68 produced an average growth rate of 6·4% and the *per capita* growth rate shifted from a negative to a positive rate averaging 3·9% [34, Table 4-A, pp. 10–11].

During 1962 itself G.N.P. grew by 6·1% in real terms. This can be largely attributed to the good harvest, but during the second half of the year the expansionist monetary policy stimulated private investment. However, the proportion of investment in G.N.P. actually fell in 1962 compared to its 1961 level, primarily as a result of cutbacks in public investment expenditure.<sup>1</sup> Towards the end of the year business confidence seemed to have returned as a result both of the political stability and the advent of planned economic development [30]; considerable interest was taken in the preparations of the State Planning Organisation for the First Five-Year Development Plan [22], which had been preceded by the Annual Programme for 1962 [21].

### III. OBJECTIVES AND METHODS OF THE PLAN

The First Five-Year Development Plan aimed at an annual increase in the Gross National Product of 7% compounded annually (equal to 6·8% compounded continuously) to be achieved principally by increasing the share of investment in the G.N.P. to an average of 18·3% over this period [27, p. 12]. The increase in the proportion of investment from an average of less than 14·0% of G.N.P. during the decade 1952–61 was to be accompanied by a reduction in the proportion of private consumption in G.N.P. from 73·2% at the start of the period to 67·9% by the end of it [27, p. 21]. A number of subsidiary objectives were specified, the most noteworthy being the commitment to a programme of regional development.<sup>2</sup>

The plans for this quinquennium were drawn up on a three-stage basis, following the work and recommendations of Tinbergen who was Chief Advisor to the State Planning Organisation at the time [29].

The first or macro-economic stage consists of establishing a macro-economic balance between predicted savings (foreign savings is included in this definition) and the total level of planned investment. Although this exercise was not included in the First Five-Year Development Plan document it was set out in the Second Five-Year Development Plan, in which the savings gap was explained and methods of closing it examined [23, pp. 80–81].

<sup>1</sup> Public investment fell from 4·1b. TL. in 1961 to 3·8b. TL. in 1962 at 1961 prices [34, Table 4-B, p. 12].

<sup>2</sup> Other aims were to increase the number of new employment opportunities, to increase the proportion of domestic investment funds, to reduce the balance of payments deficit, to maintain price stability and to achieve a more equal distribution of income [24, p. 4; 25, p. 20].

The technical basis for this macro-economic planning is an extended Harrod-Domar model in which the economy is split into public and private sectors for the purposes of investment and savings calculations [10, pp. 82–84]. The calculation of the rate of growth is derived from eight accounting identities and ten behavioural equations.

The essence of this approach is quite simple. Given the incremental capital-output ratio and the target rate of growth the required investment over the period is calculated. On the basis of various past trends, the tax structure, marginal propensities to save and the forecast income figures, savings can be predicted. The probable outcome of this work is that planned investment is found to exceed predicted savings; the so-called “savings gap” emerges. The planners then tackle the problem of raising the level of aggregate savings to the required amount. This will often involve careful forecasts of expected additional revenues from given tax changes: the closing of the savings gap will usually be possible only by increasing public savings through additional tax revenues. Planning at this macro-economic level will also include balance of payments estimates and plans for the financing of the inevitable balance of payments deficit on current account.

The next stage is carried out at the sectoral level and is based on an input-output table showing inter-dependencies in the economy. Possibilities for expanding a number of industries are investigated by committees of civil servants and businessmen. From their reports manpower requirements and complementary expansion in dependent industries are estimated.

By far the largest task is the third or project stage of the planning process. Here projects are collected and their social returns gauged. This is attempted by forecasting a project's contribution to growth in G.N.P., to demand for labour, and to the improvement in the balance of payments. In this way projects are selected for each sector in an effort to fill up the sector's planned investment target. In the event this exercise proved somewhat rough-and-ready and failed to fill completely the sectoral targets [29, pp. 75–77].

One of the problems faced by anyone trying to assess whether or not the objectives of the Plan were achieved springs from the implementation approach followed. This consisted of a three-phase technique whereby revisions, amendments and elaborations could be introduced through the annual programmes and a mid-term revision of a more fundamental nature might be made as part of the work on the preparation of the next five-year plan. It is, thus, somewhat difficult to decide which set of plans are the most appropriate for assessment purposes.<sup>1</sup> For example, investment plans were revised annually in an attempt to make them consistent with the prime ob-

<sup>1</sup> The O.E.C.D. appears to have overlooked this problem in its survey of the First Five-Year Development Plan, thus reproducing a table in which the target for investment was given as an annual increase of 10.7% and the achieved rate, 13.2%. In the text, however, O.E.C.D. concludes that it was “estimated that about 94 per cent investment targets were achieved” [15, pp. 20–21]

jective of the 7% growth in G.N.P. Another serious problem arises due to the fact that each annual programme was based on a different base year price index. The State Planning Organisation has, however, produced a consistent set of plans for the First Five-Year Plan based on 1965 prices for the years 1963–66 [23, pp. 9 and 14]. Plans for 1967 based on 1966 prices have been deflated by the implicit G.N.P. deflator for this study.

A further problem arises in that the base year figures for 1962 from which the Plan's achievements must be judged diverged considerably from those forecast by the planners when preparing the Plan during that year.<sup>1</sup> Another anomaly springs from the plan to raise G.N.P. by 7% in each of the five years while increasing the proportion of investment in G.N.P. gradually from 17.0% in 1963 to 19.4% in 1967 [22, Table 50, p. 116]. Assuming an incremental capital–output ratio of 2.6:1, which was expected to remain constant over these years, implies an accelerating rather than a constant rate of growth under such circumstances.

The solution adopted here has been to assume that the 7% growth target was of paramount importance and to calculate the implied G.N.P. figures from the actual 1962 G.N.P. The public and private planned investment figures used below have been taken from the Annual Programmes in accordance with the practice followed by the State Planning Organisation itself [23, pp. 9 and 14], although difficulties still exist in connection with the appropriate price deflators to use.<sup>2</sup>

#### IV. TECHNIQUES OF ASSESSMENT

In order to assess the effects of planning on the Turkish economy it is necessary, either implicitly or explicitly, to construct an economic model on which the assessment can be based. The simplest model to use in this case is the Harrod-Domar growth model, modified<sup>3</sup> to remove the problem of over-determinacy by assuming that an elastic supply of labour existed throughout the period. Using either the production function or the multiplier-accelerator version the rate of growth in G.N.P. can be expressed as a function of the incremental capital–output ratio and the proportion of investment in G.N.P.:

$$\frac{1}{Y} \cdot \frac{dY}{dt} = \frac{i}{v}$$

where  $Y$  represents G.N.P. measured at constant prices,  $i$  the proportion of investment in G.N.P., and  $v$  the capital–output ratio. The questions now posed are:

<sup>1</sup> See page 313 below.

<sup>2</sup> 1965 prices were, in fact, used and calculations by the State Planning Organisation mentioned above taken for the period 1963 to 1966. Both planned and realised investment figures for 1967 were deflated using the implicit investment deflator [34, p. 15].

<sup>3</sup> For a simple exposition see [1, pp. 197–206].

1. Has there been a significant change in the rate of growth between the pre-planning and the planning period?
2. If so, was this a result of a change in the proportion of investment in G.N.P. or in the incremental capital-output ratio or in both of these parameters?
3. Were any changes in these parameters attributable to the planning process or were they caused by some factor or factors exogenous to this system in which planning has now been incorporated as another parameter?

Alternative models would require the examination of different structural relationships. The applicability of a Keynesian-type model to an underdeveloped country has been strongly questioned [16] and is anyway quite inappropriate for use as a growth model. However, the quantity theory, on the other hand, does seem more promising at first sight. The difficulty is that the theory hypothesises a relationship between the money supply and the level of G.N.P. measured at current rather than constant prices. It would be reasonable to construct a theoretical relationship between the real level of G.N.P. and the money supply as one of a number of variables but hardly as the sole determinant.

In an economy operating at full capacity changes in the money supply can be expected to be associated with changes in the price level. The extensive literature on the effects of inflation on the rate of growth is contradictory. The Schumpeterian view followed by such economists as Lewis and Baer suggests that capital-creating inflation can be highly conducive to economic growth and, furthermore, tends to kill itself as the investment accelerates the growth in real output [2; 12, p. 405]. An alternative view points out that during a period of inflation, direct as opposed to financial investment is promoted together with short-run, speculative investment, as contrasted with long-run, socially productive investment [17, pp. 243–261]. Empirical studies have also provided conflicting evidence on the relationship between inflation and economic growth. Baer believes that even an inflation averaging 16% *per annum* over a decade in Brazil was no deterrent to growth and even suggests, for a number of reasons, that a positive relationship existed [2]. On the other hand, Wallich finds a negative long-run relationship on a cross-country study between the rate of inflation and the rate of growth [35, p. 299]. For reasons outlined in the next paragraph testing a model of the necessary complexity to incorporate the influence of money on the real level of G.N.P. is not feasible in this analysis.

Only one simple model has been discussed in connection with techniques for assessing the results of the First Five-Year Development Plan. More complex models must be excluded for two reasons: the number of observations for the planning period are small,<sup>1</sup> hence leaving too few degrees

<sup>1</sup> Only annual data for G.N.P. and investment are available, although monthly financial statistics exist.



of freedom for more elaborate model testing; the quality of the data, a major constraint on much empirical work on underdeveloped countries, is questionable, thus precluding reliance on anything but rather basic and simple relationships.

The causal relationships to be tested can be subjected to the Chow test [5] which involves splitting the observations into pre-planning and planning period, and testing, by means of the "F" test, whether or not a structural change can reasonably be expected to have taken place in these relationships between these two periods. Any structural changes which are detected in this way must then be classified as planned or exogenous before the effects of planning can finally be assessed.

The results of the Chow tests are described together with data from other statistical tests in Section VI. Before turning to them, however, the actual course of economic development during the planning period is outlined.

#### V. ECONOMIC DEVELOPMENTS DURING THE FIRST FIVE-YEAR PLAN

The programme set out in the First Five-Year Plan document was to increase G.N.P. by an average annual rate of 7% and total investment by 10.7%. These plans were based on an expected G.N.P. for 1962 in 1961 prices of 52.7b.TL. and investment of 8.6b.TL., *i.e.*, a level of investment constituting 16.3% of G.N.P. The G.N.P. in 1962 was in fact 52.1b.TL. in 1961 prices, but total investment reached only 7.1b.TL., *i.e.*, 13.6% of G.N.P. [22, Table 50, p. 116; 34, Table 4-B, p. 12]. Thus, to achieve the required investment proportion in G.N.P. over the planning period the rate of growth in investment had to be considerably higher than the 10.7% originally specified. On the basis of the actual 1962 figures the planned rate of growth of investment came to 14.0%.

Using the realised G.N.P. and investment figures for 1962, G.N.P. over the planning period rose by an annual average of 6.5% against a planned rate continuously compounded of 6.8%. The annual figures are given in Table I below.

From Table I it can be seen that divergence from target was greatest in 1965. This is attributable to the fact that harvests in 1964 and 1965 were bad; agricultural output remained constant between 1963 and 1964 and declined in 1965. The annual figures are given in Table II on page 314. There was a considerable shortfall in agricultural investment below the planned level, but the weather was a major contributing factor resulting in poor harvests in two of the five years of the Plan period. In fact, agricultural output rose by an annual average of only 2.2% over this period. For this reason Tinbergen has suggested taking a 4.2% growth in agriculture for the purpose of calculating an adjusted G.N.P. series which allows for this factor [7, p. 196]. This would appear to be far too optimistic a figure: it equals the planned increase in agricultural output [22, Table 53/I, p. 136] and, as

TABLE I  
Gross National Product  
1962-67

(Billions TL., 1965 prices)

Year.	(1) S.P.O. Plan targets.	(2) Plan targets based on 1962 G.N.P.	(3) Realised G.N.P.	(4) Adjusted G.N.P. (1)	(5) Adjusted G.N.P. (2)
1962	62.5		61.9		
1963	66.9	66.2	66.7	65.9	65.8
1964	71.6	70.9	70.0	70.2	70.0
1965	76.6	75.8	73.2	75.2	74.8
1966	81.9	81.1	80.7	81.1	80.6
1967	87.7	86.8	85.6	86.8	86.2
1963-67	384.7	380.9	376.2	379.2	377.3
Average annual growth	6.8%	6.8%	6.5%	6.8%	6.6%

Sources: Column 1—1962-66 from State Planning Organisation, *Second Five-Year Development Plan, 1968-1972* (Ankara: State Planning Organisation, 1967), Table 1, p. 9; 1967 calculated as a 7% increase in the planned figure for 1966. Column 2—Realised 1962 G.N.P. compounded annually at 7%. Column 3—United States Agency for International Development, *Economic and Social Indicators—Turkey, 1968 and 1969* (Ankara: United States Agency for International Development, 1968 and 1969), Table 4-B, p. 12. Columns 4 and 5—G.N.P. adjusted for agricultural fluctuations; agricultural output data from United States Agency for International Development, *Economic and Social Indicators—Turkey, 1969, op. cit.*, Table 4-E, p. 18. The method of adjustment is explained on page 315 below.

TABLE II  
Agricultural Output at Factor Cost  
1962-67

(Billions TL., 1965 prices)

Year.	Agricultural output.
1962	22.1
1963	23.8
1964	23.8
1965	23.0
1966	25.7
1967	25.9

Source: United States Agency for International Development, *Economic and Social Indicators—Turkey, 1969* (Ankara: United States Agency for International Development, 1969), Table 4-E, p. 18.

already indicated, investment fell short of planned investment in agriculture by a considerable margin.<sup>1</sup> However, the adjusted G.N.P. on the basis of

<sup>1</sup> At 1965 prices plans for 1963-66 were for agricultural investment of 8,781m. TL. and realisation was 7,455m. TL. [23, Table 6, p. 15]. 1967 planned investment was 2,464m. TL. at 1966 prices or 2,646m. TL. at 1967 prices [26, Table 23, p. 57]. Planned investment for 1967 in 1965 prices was 2,473m. TL. and realised investment 2,420m. TL. The implicit deflator for 1967 of 107.0 (base year 1965) was taken from [34, p. 15]. In 1965 prices total planned investment equalled 11,254m. TL. and realised investment reached 9,875m. TL.

Tinbergen's suggestion has been calculated and the figures are given under the heading "Adjusted G.N.P. (1)" in column 4 of Table I on page 314.

If the assumption that the incremental capital-output ratio in agriculture was predicted correctly by the planning authorities holds, then the rate of growth in agricultural output can be adjusted to reflect the extent to which realised investment fell short of planned investment in this sector. In fact, realised investment fell short of planned investment by 12.3%.<sup>1</sup> This implies that the annual average growth in agricultural output would have been 3.7% rather than 4.2% had there been no fluctuations caused by weather conditions. On this assumption the real level of G.N.P. in 1967 would have been 86.2b.TL. and the adjusted annual average increase in G.N.P., 6.6%. The annual figures are given in column 5 of Table 1 under the heading "Adjusted G.N.P. (2)."

The First Five-Year Plan was based on the assumption that foreign aid over the period would average 3.5% of G.N.P. [27, p. 33] and the Aid Consortium for Turkey was established in 1962 under the aegis of O.E.C.D. to provide this foreign assistance. Realisation averaged only 1.8% of G.N.P. [15, p. 23] with the proportion of grants in the total falling drastically below that of the previous decade [34, Table 12-A, p. 59].

If allowances are made for the unfavourable weather conditions and, to some extent, the over-optimistic expectations of the planners concerning foreign aid receipts the conclusion must be reached that, from the macro-economic point of view, the implementation of the Plan was successful. Even without taking these factors into account the rate of growth during this period was almost equal to the planned rate and was nearly twice the rate achieved during the preceding quinquennium. The question now examined is whether or not this upsurge in economic activity occurred as a result of or in spite of the Plan.

## VI. ASSESSMENT

Before presenting the results of the analysis attempted by the author, a brief summary of the assessments of others should be made. These include analyses by Snyder [19], the O.E.C.D. Consortium [28], an assessment of the first four years of the Plan made by the State Planning Organisation [23], the short analysis conducted by the O.E.C.D. [15] and a few comments found in the annual statements of the Industrial Development Bank of Turkey [9], and the Türkiye İş Bankası [32].

Snyder divides his analysis into two parts. On the one hand he describes the successes and failures of the domestic policies designed to achieve the 7% growth target and, on the other hand, assesses the attempt to achieve the external goal of self-sufficiency by 1972. Briefly, the failure to achieve the 7% growth rate is analysed as follows:

<sup>1</sup> Calculated from figures set out in footnote 1, page 314.

“ In addition to failing to raise public revenue as much as planned [primarily due to the Government’s refusal to implement the planned agricultural tax reforms], the principal shortcomings in policy formulation and execution were an over-valued currency which necessitated exchange controls and distorted the allocation of resources, the continued reliance on price regulation, and the failure to reform adequately the State Economic Enterprises.” [19, p. 58.]

He also agrees with Tinbergen [29, pp. 75–77] that

“ . . . the lack of well-organized investment opportunity surveys remained a major bottleneck and was one of the reasons why planned investment in the public sector failed to reach the planned level and why the allocation of private investment diverged from the intended pattern.” [19, p. 60.]

Snyder considers the most important reason for the shortfall in agricultural production was the lack of an effective extension service [19, p. 64]. The State Planning Organisation and the O.E.C.D. also made pronouncements on this problem which are presented below.

Snyder and the Consortium Report differ from the State Planning Organisation and O.E.C.D. in that their assessments contain material on foreign aid and the balance of payments. On foreign aid, Snyder takes a somewhat harsh line:

“ The pledging of financial assistance in 1963 foreshadowed what was to come: the amounts offered were smaller than requested and the terms harder. . . . By 1964 a pattern was set which continued throughout the First Plan period, during which gross financial aid amounted to less than three-quarters of that requested; and nearly one-half of this was necessary to make repayments on already outstanding debt . . . the majority of the Consortium members did not provide Turkey with any net financial aid—and, in fact, principal and interest payments which some countries received *from* Turkey exceeded their new loans *to* Turkey. This has led some persons to question whether the Consortium has fulfilled any useful role in helping Turkey achieve its development objectives.” [19, pp. 68–69.]

He does, however, conclude that the Consortium probably was instrumental in getting projects formulated over this period and, in general, feels that the Plan was successful despite the shortfall in foreign aid and Turkey’s own policy shortcomings.

The Consortium Report reaches the same conclusion as Snyder with respect to the shortfall in public investment:

“ . . . this was due in part to the poor project preparation in the early years and, in part, to a shortfall in public revenue.” [28, p. 12.]

The only other significant comments made in the Consortium Report concern the balance of payments and foreign aid. Given that one would expect

the Consortium to take a somewhat different approach to that followed by Snyder, who presumably used Turkish source material, the section is reproduced below in full:

“ 15. Balance of Payments

“ The balance of payments deficit over the First Plan period was less than had been forecast. Exports were better than had been expected due not to an increase in sales abroad of industrial goods but to an expansion of agricultural products such as cotton. Invisibles too were rather better than had been forecast despite higher interest payments and the failure of tourist revenues to improve. The main item on the invisible side which made the difference was the unforeseen fast growth of workers' remittances. Foreign aid was less than had been hoped for in two respects. Project aid was less and was slower in being dispersed; also programme aid was not given on the volume and the terms hoped for; the result was that short-term borrowing had to be renegotiated during the Plan (particularly I.M.F. and E.M.A. credits) and so the gross aid needed was more.” [28, p. 12.]

The State Planning Organisation presented its analysis at the beginning of the document setting out the plans for the Second Five-Year Development Plan [23, pp. 9-45]. It starts by stating that the recent upsurge in the growth rate has been caused primarily by the substantial increase in the level of investment. It then proceeds to explain that the failure to attain the 7% rate of growth in G.N.P. was largely due to delays which occurred in the implementation of investment projects [23, p. 9]. Here, the chief culprit is found to be the agricultural sector and this is used to emphasise the serious dangers of too heavy a reliance on agriculture in the process of economic development. This section of the report ends with the following conclusions:

“ In conclusion, it may be said that although the structure of the economy retained its agricultural characteristic during the first four years of the First Five-Year Plan period, increases took place in the relative share of the industrial and services sectors. During the period 1962-1966, a structural change in the direction foreseen in the Plan was realised, although at a lower rate. Economic development in every phase was influenced by agricultural output due to the current weight of the agricultural sector in the economy. A change in the structure of economic development can only be realised by decreasing the relative importance of the agricultural sector in the economy of Turkey, and by increasing the share of the non-agricultural sectors, particularly that of the industrial sector, within a well balanced development period. As a long-term target, the economy is faced with the necessity of realising a rapid industrialisation and of increasing the general level of agricultural production through a higher rate of productivity by the use of modern methods in the agricultural sector.” [23, p. 13.]

It is interesting to note that the significant structural changes which did take place, commented upon by both the Industrial Development Bank and

the Türkiye İş Bankası, were the reduction in the proportion of agricultural output as a proportion of G.N.P. from 41% in 1962 to 35% in 1967 and the increase in the proportion of industrial production in G.N.P. from 16% in 1962 to over 19% in 1967 [9, Table 2, p. 26; 32, p. 11]. In fact, these are the only observations, apart from one on the average rate of growth in G.N.P., made on the period as a whole by either of these two bodies.

The O.E.C.D. begins its assessment with the warning that a five-year period is not long enough to make firm judgments about the impact of development planning on the economy [15, p. 19]. It then goes on to note the acceleration in the rate of growth, the greater price stability achieved over the period and the significant increase in investment as a proportion of G.N.P. [15, p. 19]. The analysis continues:

“As important for future prospects as the actual growth rate in recent years are the changes that are taking place in the structure of growth. In agriculture, productivity increases and crop diversification are the main lines of policy whereas, earlier, much of the increases in output were due to unwise cropping of new land. For some years, Turkish agriculture has been expanding output more rapidly than the growth of population and, for the last two years, the country has been able to dispense with imports from the United States of surplus agricultural commodities.” [15, p. 19.]

It is evident from the above that O.E.C.D. views the 2.2% rate of growth in agriculture over this period <sup>1</sup> in a rather different light to the State Planning Organisation, stressing the advantages of an expanding agricultural sector rather than the disadvantages as elaborated by the latter body.

The O.E.C.D. assessment continues by detailing the sectoral achievements in terms of outputs and investments before concluding with a commendation of the country's export performance which was rather better than planned [15, p. 23].

Having outlined the assessments which have already been made of the First Five-Year Development Plan, the study now turns to a more detailed analysis of this period.

The primary factors contributing to the level of income in any economy can be divided into those which influence the capacity to produce, *i.e.*, the factors of production, and those which influence the proportion of that capacity which is actually used. In the Turkish economy over the period being considered, there appear to have been only minor fluctuations in the level of capacity utilisation. It is difficult, if not impossible, to give any precise indication of this level, as unemployment figures are non-existent. However, there have been suggestions that the first half of 1964 and the early part of 1967 were periods during which the economy was operating at a capacity level below that at which it was running during the remainder of

<sup>1</sup> See page 317 above.

this period.<sup>1</sup> If the rate of inflation is taken as a proxy for the level of capacity utilisation it would appear that 1964 and 1965 were years of lower utilisation levels than the others, as can be seen by the figures in Table III below. The price record over the period is, incidentally, comparable to the average for all O.E.C.D. countries at that time [15, p. 19]. The difference in capacity utilisation between 1962, when the rate of inflation was 6.1%, and 1967, when it was 4.6%, cannot be judged large on the basis of this criterion.

TABLE III  
*Rates of Inflation*  
1962-67

1962	6.1
1963	6.4
1964	2.3
1965	3.0
1966	6.2
1967	4.6

*Source:* Calculated from the implicit G.N.P. price deflators given in United States Agency for International Development, *Economic and Social Indicators—Turkey, 1969* (Ankara: United States Agency for International Development, 1969), p. 15.

If the conclusion above is valid, the growth in the level of economic activity must have been the result of increased capacity rather than the increased use of existing capacity. To anticipate the detailed analysis which follows it might be pointed out that in order to double the rate of growth the proportion of investment in G.N.P. would have to double if no change takes place in the incremental capital-output ratio. As the proportion of investment in G.N.P. by no means doubled between 1956-61 and 1962-67 (see Table V) when the rate of growth nearly doubled, a substantial change in the I.C.O.R. must have occurred.

Total investment over the Plan period constituted 17.0% of the total G.N.P. As the rate of growth in G.N.P. averaged 6.5%, this proportion implies a capital-output ratio of exactly 2.6:1,<sup>2</sup> the ratio which was estimated for the period in 1962, thus producing the requirement that investment should average 18.3% of G.N.P. for the realisation of the 7% growth rate. Some commentators have felt that this result was quite fortuitous, particularly when viewed in the light of the fact that the planners omitted to allow for any increase whatsoever in circulating capital during the Plan period [6, p. 6].<sup>3</sup> Whether or not this coincidence was a matter of luck rather than good judgment is here beside the point. The facts which are

<sup>1</sup> For details of the 1964 recession, see [4, p. 17; 8, p. 17; 25, pp. 309-330]. The signs of recession during the first few months of 1967 were counteracted much faster than had been the case in 1964. For the 1967 experience, see [15, p. 15].

<sup>2</sup> A minimum incremental capital-output ratio for underdeveloped countries of about 3:1 was suggested in [33].

<sup>3</sup> This information was supported in an interview with Professor O. Okyar.

relevant are that investment, as a proportion of G.N.P., rose above the levels reached in the previous decade and that the I.C.O.R. fell, as witnessed by the figures in Table VI.

One question now to be answered is: Was the 6.5% growth rate produced, as expected by the planners [27, p. 12], largely by the rise in the proportion of investment in G.N.P. to an average of 17% or by the decline in the I.C.O.R.?

To this the answer is simple. If the I.C.O.R. had remained at its average level for the six years preceding the planning period (4.35), the realised

TABLE IV  
*Private and Public Gross Investment*  
1962-67

(Billions of TL., 1965 prices)

Year.	Total investment.		Private sector.		Public sector.	
	(1) Plan.	(2) Realised.	(3) Plan.	(4) Realised.	(5) Plan.	(6) Realised.
1962		8.2		3.8		4.4
1963	10.9	10.8	4.3	5.3	6.6	5.5
1964	12.4	10.8	4.8	5.0	7.6	5.8
1965	13.8	12.0	5.4	5.5	8.4	6.5
1966	14.9	14.5	6.0	6.6	8.9	7.9
1967	16.5	15.7	7.0	7.3	9.5	8.4

Sources: Columns 1, 3 and 5—1963-66 from State Planning Organisation, *Second Five-Year Development Plan, 1968-1972* (Ankara: State Planning Organisation, 1969), Tables 4 and 5, p. 14; 1967 from State Planning Organisation, *1967 Yılı Programı* (Ankara: State Planning Organisation, 1966), Table 16, p. 26. Columns 2, 4 and 6—1962-67 from United States Agency for International Development, *Economic and Social Indicators—Turkey, 1968 and 1969* (Ankara: United States Agency for International Development, 1968 and 1969), Table 4-B, p. 12.

investment ratio of 17.0% would have implied a rise in the growth rate only from 3.4% to 3.9%. On the other hand if the investment ratio had remained unchanged at 14.8%, the fall in the I.C.O.R. from 4.35 to 2.6 would have given a growth rate of 5.7%. The fall in the I.C.O.R. was thus much the more important factor.

One might usefully add that even with the planners' own figures this is the conclusion which they should have stated; an increase in the investment ratio to the planned level of 18.3% would, by itself, have raised the growth rate only to 4.2%. The planners were implicitly assuming a big fall in the I.C.O.R.

The next question is: Was the rise in the growth rate caused by planning or some other factor? To provide some tentative answers the model outlined above has been tested for the period 1950-68. All the data used in the statistical analysis now to be presented are given in Tables V and VI.

The first set of tests consisted in simply ascertaining whether or not any



significant changes took place in the trends which occurred in these variables over the period 1950–68 between the pre-planning period and the planning period. Applying the Chow test provides some interesting results. First, no significant changes occurred in the trends in total, public and private investment as proportions of G.N.P. *A priori*, it might have been expected that change did occur in the trend in public investment between the pre-planning period and the planning period as there was undoubtedly a con-

TABLE V  
*Gross Investment*  
*1950–68*

(As proportions of G.N.P.)

Date.	(1) Total investment.	(2) Public investment.	(3) Private investment.
1950	9.6	2.9	6.7
1951	10.3	3.0	7.3
1952	12.8	3.7	9.1
1953	12.4	3.9	8.5
1954	14.7	3.9	10.8
1955	14.3	4.1	10.2
1956	13.4	4.4	9.4
1957	13.2	4.5	8.7
1958	14.0	4.3	9.7
1959	15.6	4.6	11.0
1960	15.9	4.8	11.1
1961	15.1	8.4	6.7
1962	13.6	7.3	6.3
1963	16.0	8.1	7.9
1964	15.4	8.4	7.0
1965	16.4	8.9	7.5
1966	17.6	9.6	8.0
1967	17.7	9.5	8.2
1968	19.3	10.3	9.0

Sources: Column 1, 1950–60 from State Planning Organisation, *First Five-Year Development Plan, 1963–1967* (Ankara: State Planning Organisation, 1962), Table 9, p. 15; 1961–68 from United States Agency for International Development, *Economic and Social Indicators—Turkey, 1967 and 1969* (Ankara: United States Agency for International Development, 1967 and 1969), Table 4-B, p. 12. Column 2, 1950–60 from State Planning Organisation, *First Five-Year Development Plan, 1963–1967, op. cit.*, Table 13, p. 17; 1961–68 from United States Agency for International Development, *Economic and Social Indicators—Turkey, 1967 and 1969, op. cit.*, Table 4-B, p. 12. Column 3 = (1) – (2).

siderable increase in the proportion of public investment in G.N.P. during the planning period. However, closer inspection of the data reveals the fact that public investment did increase sharply over the period 1950–61. By 1963 a level of public investment in G.N.P. of around 8% had already been established. It exceeded 10% only by 1968.<sup>1</sup>

Although no significant change in the trend in total investment as a proportion of G.N.P. occurred between the pre-planning and the planning

<sup>1</sup> Although no change took place between 1962 and 1963 there was a significant change (at the 99% confidence level) in the trend between 1960 and 1961.

TABLE VI  
*Five-Year Average Annual Incremental  
 Capital-Output Ratios  
 1951-68*

(Billions of TL., 1961 prices)

Date.	(1) 5-year average annual growth in G.N.P.	(2) 5-year average annual investment as % of G.N.P.	(3) 5-year average annual % growth in investment.	(4) Average annual I.C.O.R. <sub>t</sub> .	(5) Average annual I.C.O.R. <sub>t-1</sub> .
1951-55	6.1	13.0	14.2	2.13	1.98
1952-56	4.7	13.5	9.6	2.87	2.77
1953-57	4.2	13.5	4.6	3.21	3.21
1954-58	3.1	13.8	5.7	4.45	4.35
1955-59	5.7	14.1	6.9	2.47	2.42
1956-60	5.1	14.4	7.3	2.82	2.76
1957-61	3.4	14.8	5.9	4.35	4.24
1958-62	3.4	14.8	4.0	4.35	4.35
1959-63	3.8	15.2	6.5	4.00	3.89
1960-64	4.1	15.2	3.9	3.71	3.71
1961-65	4.2	15.4	5.1	3.67	3.62
1962-66	6.5	16.0	9.7	2.46	2.37
1963-67	6.5	16.8	11.8	2.58	2.46
1964-68	6.3	17.5	9.9	2.78	2.67

Sources: Column 1 calculated from figures in United States Agency for International Development, *Economic and Social Indicators—Turkey, 1969* (Ankara: United States Agency for International Development, 1969), Table 4-A, p. 10. Columns 2 and 3 1950-60 calculated from State Planning Organisation, *First Five-Year Development Plan, 1963-1967* (Ankara: State Planning Organisation, 1962), Table 9, p. 15; 1961-68 calculated from United States Agency for International Development, *Economic and Social Indicators—Turkey, 1967 and 1969, op. cit.*, Table 4-B, p. 12. Column 4 =  $(2)_t / (1)_t$ . Column 5 =  $(2)_{t-1} / (1)_t$ .

period there was a highly significant change in the trend in G.N.P. itself measured at 1961 prices [34, Table 4-A, p. 10].<sup>1</sup>

Given the fact that no significant change in the trend in the proportion of investment in G.N.P. took place one might well expect to discover that the change in the trend in G.N.P. was accompanied by a significant change in the trend in the annual average incremental capital-output ratio, both lagged and unlagged.<sup>2</sup> The hypothesis might, therefore, be put forward on the basis of these findings that the acceleration in the rate of growth indicated by the structural change in the trend in G.N.P. was caused by a significant change in the trend in the capital-output ratio at the outset of the planning period. To test such a theory the model in Section IV above has been applied to the data for the period 1950-68.

Tentative answers to some of the questions posed on page 312 can now be given. First, there does appear to have been a significant change in the rate of growth in G.N.P. between the pre-planning and the planning

<sup>1</sup> The "F" value of 27.0 is significant at the 99% confidence level.

<sup>2</sup> The "F" values for the Chow tests on the unlagged and lagged five-year average annual incremental capital-output ratios both of 4.2 are significant at the 95% confidence level.

period. Second, this would seem to have been a result of a change in the trend in the incremental capital-output ratio (and not in the trend in the proportion of investment in G.N.P.).

As additional support for these conclusions there appears to have been both a strong relationship between the rate of growth and the incremental capital-output ratios throughout the entire period<sup>1</sup> and a highly significant structural change in the relationship between the pre-planning and the planning period.<sup>2</sup>

The results of the statistical tests outlined above suggest that the Harrod-Domar model is appropriate for the purpose of analysing the determinants of the rate of growth in the level of G.N.P. over the period 1950-68. A strong relationship was found between the incremental capital-output ratio and the rate of growth, with a structural change in this relationship occurring between the pre-planning and the planning periods. As this was accompanied by an increasing proportion of public investment in the total, it might be suggested that it was a result of a significant increase in productivity of public investment. This, in turn, might be attributed to the project appraisals conducted by the State Planning Organisation and implemented by the public sector over the planning period. However, considerably greater evidence is required to support this hypothesis. A detailed study at the micro level would be necessary for this. Such an hypothesis appears somewhat dubious simply on the basis of the time perspective implied by it. Nevertheless, it would be unlikely that the increased stability within the Turkish economy during the 1960s, which it would be difficult to attribute to anything other than the introduction of economic planning, did not have a fundamental effect on the I.C.O.R. in one way or another.

## VII. CONCLUSION

The assessment of the First Five-Year Development Plan can be concluded with a brief summary of the findings. The rate of growth accelerated significantly between the pre-planning and the planning period. This was accompanied by a significant reduction in the I.C.O.R. Furthermore, the I.C.O.R. has shown a strong negative relationship with the rate of growth in G.N.P. These results are consistent with results from two recent cross-country studies [3; 11]. As Leibenstein points out, the causal relationship could well be the opposite to the one normally postulated [11]. However, if it is clearly stated that I.C.O.R. is measured as a residual and simply incorporates all influences on the growth rate other than the proportion of investment in G.N.P. the normal causal imputation can stand. This leads to the problem of identifying the elements of this residual.

<sup>1</sup>  $\bar{R}^2 = 0.85$  for the unlagged version and  $\bar{R}^2 = 0.86$  for the lagged version, both significant at the 99.9% confidence level.

<sup>2</sup> The Chow test produced an "F" value of 26.3 and 25.7 for the unlagged and lagged versions, respectively, both of which are well over the 99% confidence level.

The I.C.O.R. in Turkey has become increasingly influenced by the public sector as the proportion of public investment in the total has increased. *A priori*, one might expect this proportional change within the total investment to have resulted in an increase in the I.C.O.R. on the assumption that public investment usually has a higher capital-output ratio than does private investment. That this assumption is proved false in this instance has led to the tentative hypothesis that a conscious effort was made to reduce the I.C.O.R. of public investment. This has been attributed to the project evaluations conducted by the public sector over this period. However, one must not overlook the fact that much of this evaluation work could not have resulted in additional output within the five-year period under consideration. Investment carried out in the 1950s was undoubtedly bearing fruit during the 1960s. Nevertheless, one can be reasonably confident that the accelerated rate of growth after 1962 was primarily a result of the introduction of planned economic development.

Although the reduction in the I.C.O.R., whatever its cause, seems to have paid off during the relatively short period of the Plan, the question as to whether or not this reduction will have adverse long-term effects cannot be answered here.<sup>1</sup> It clearly hinges on the precise way in which it was achieved. In the belief that increased efficiency has played an important part, the author disagrees with the pessimistic view taken by Hershlag and others who appear to believe that the concentration on a 7% growth target is both short-sighted and unrealistic [7, p. 274].

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