

NATIONAL INCOME AND CAPITAL FORMATION IN HUNGARY, 1900-1950

by Alexander Eckstein¹

I. INTRODUCTION

HUNGARY entered upon the stage of industrial and agricultural development about a century or more behind the rest of Europe. Her tardiness was primarily due to the persistence of feudalism well into the nineteenth century, to 150 years of Turkish occupation, to lack of urban and commercial development, and to the commercial policy of the Hapsburg Monarchy. The latter governed the destinies of the country from the time of Turkish liberation in the seventeenth century until the 'Ausgleich' of 1867 and to a lesser extent up to the end of the First World War. Hungary emerged from the war as an independent political entity but reduced to about one-third of its former size.

The marked territorial readjustments resulting from the Treaty of Trianon involved a profound structural change in the country's resources and economy. The new Trianon Hungary with a population of about 7.6 million in 1910, as compared with 18.3 million for the Old Kingdom, comprised the industrially and to some extent agriculturally most developed areas of the pre-war state. In it were located the most important industrial centres with industries geared to the requirements of the old territory. Similarly, its agriculture was based on the large and protected market of the former Dual Monarchy.

The territory of Hungary remained unchanged until the eve of the Second World War when, through the 'First Vienna Award', it recovered parts of formerly held territories from Czechoslovakia. This was followed by a series of other boundary extensions at the expense of Czechoslovakia, Roumania, and Yugoslavia. With the collapse of the Hungarian Nazi régime in 1944 and the armistice signed in January 1945, Hungary reverted to its former inter-war (Trianon) boundaries.

The real beginning of industrial development dates from the

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establishment of full Hungarian autonomy under the 'Ausgleich' of 1867. However, this development did not gather momentum until the last decade of the nineteenth and the first decade of the twentieth century. This was also the period during which there was a great improvement in the scope and quality of economic statistics. The first censuses of agriculture and manufacturing were taken in 1895 and 1898 respectively. Shortly thereafter, in 1900, the first complete and reliable population census was conducted.

Therefore in this paper, 1900 is the vantage point selected for measuring the dimensions and character of Hungary's economic growth from the early stages of its industrialization up to 1950. The transformation in the size and structure of the economy during the first half of the century will be analysed in terms of changes in national product, occupational distribution and capital formation.

II. NATIONAL INCOME, 1900-1949

1. *The scope and character of national income work in Hungary*

For the fifty-year period covered by this study, three different concepts and methods have been used for compiling national income and product estimates in Hungary. The first is associated with the name of Frederic von Fellner, who pioneered in this field of study in Hungary prior to the First World War. The second is based on methods developed by Matolcsy and Varga. The third, an essentially Marxist concept, is the one currently applied by the Planning Office.

The three approaches differ largely in terms of their definition of output. Fellner is still strongly rooted in the classical Ricardian tradition and includes under national output only the production of material goods and the services rendered by trade and transport that add directly to the value of these material goods. Personal and government services, 'perform a useful, even absolutely necessary function, they create the preconditions for production and help to further it, but they do not participate directly in the process of production, and thus do not yield new products and values which would increase the national income.'¹ These services form an element of personal but not of national income; they are of importance in assessing

¹ Friedrich von Fellner, 'Das Volkseinkommen Osterreichs und Ungarns', *Statistische Monatschrift*, Vol. XXI, 1916, p. 489.

the distribution of incomes and the tax burden but not in measuring national product.

Using these concepts, Fellner estimated the national income of the Hungarian Kingdom for 1899–1901,¹ and for 1911–13,² and of Trianon Hungary for 1911–13³ and 1926–28.⁴ His estimates of value added in agriculture, forestry and fishing, in mining, and in large-scale manufacturing are based on price times quantity series with appropriate deductions for material costs, and capital consumption. However, for 1899–1901 and 1911–13, net product in manufacturing was calculated by applying to each industry's total value of sales (PQ) a gross-net ratio based on data compiled in the 1898 Census of Factory Industry.⁵ The margin of error thus introduced is probably rather small in the 1899–1901 estimate, but may loom much larger by 1911–13 since with comparatively rapid expansion during the first decade of the century, industrial structure and cost-price relationships must have changed considerably.

On the other hand, value added in small-scale industry and trade was estimated from business income-tax returns adjusted for understatement. Net output in small-scale private transport was similarly estimated, while the contribution of the national railroad and river transport enterprises was derived on basis of gross and net revenue data as published in annual reports. However, for 1911–13 Fellner simply equates gross transport returns with value added.⁶

Finally, he estimates the net foreign balance on the basis of balance of payment data, omitting the foreign trade account on the ground that it does not constitute an element of national income.

Fellner's approach was generally accepted in Hungary and practically all national income work prior to the late thirties was based on his concepts. In 1938, the Central Statistical Office

¹ 'Die Schätzung des Volkseinkommens', *Bulletin de l'Institut International de Statistique*, Vol. XIV (3), pp. 109–751.

² 'Das Volkseinkommen Oesterreichs und Ungarns', *op. cit.*, pp. 485–625.

³ 'Die Verteilung des Volksvermögens und Volkseinkommens der Länder der Ungarischen heiligen Krone zwischen dem heutigen Ungarn und den Successions Staaten', *Metron*, Vol. III (2), November 1923, pp. 226–307.

⁴ 'Le revenu national de la Hongrie actuelle', *Bulletin de l'Institut International de Statistique*, Vol. XXV (3), pp. 367–455.

⁵ *Die Fabriksindustrie des Königreiches Ungarn*, published by the Royal Hungarian Minister of Commerce, Budapest, 1901.

⁶ 'Das Volkseinkommen Oesterreiche und Ungarns', *op. cit.*

published estimates based on his method.¹ All of these series cover the following elements: agriculture, mining, manufacturing, handicraft, trade, transport, and net foreign balance, expressed in terms of factor cost.

The next major step in Hungarian national income methodology was taken by Matolcsy and Varga with the publication of their study on *The National Income of Hungary*.² Theoretically this work is closely akin to the more modern income and product concepts of Western Europe and the Anglo-Saxon countries, having been strongly influenced by Colin Clark's earlier study (*The National Income 1924-1931*, London, 1932). However, even though paying lip service to these concepts, the Matolcsy-Varga estimates fall short of them in scope. They are more comprehensive and broader than Fellner's but considerably less so than those of Simon Kuznets, Colin Clark, Richard Stone, J. B. D. Derksen, the U.S. Department of Commerce, etc. As a result, the authors get involved in numerous conceptual contradictions and inconsistencies.

In addition to the commodity sectors, and transport and trade, Matolcsy-Varga include in their concept housing services, domestic work – both paid and unpaid – and the net 'output' of theatres and cinemas. Since their approach is in terms of market prices, indirect taxes are also included. On the other hand, all government, professional, educational, religious and other personal services are excluded. This is done on several grounds. Government services 'do not produce values in addition to the flow of consumers' goods' and 'the values these services produce are already included in the value of consumption goods'.³ This is based on the implicit assumption that government services are included via indirect taxes. Thus, on the one hand, they should be excluded on theoretical grounds since they do not produce values, but on the other hand, they are said to be included, so to speak, through the back door.

At the same time the authors go out of their way to point out that all government, professional and personal services are productive, 'but productive only in the sense of ensuring a

¹ Gyula Szigeti, 'National Income, National Wealth and Balance of Payments' (in Hungarian), *Magyar Statisztikai Szemle*, Budapest, 1938, pp. 492-9.

² Mathias Matolcsy and Stephen Varga, *The National Income of Hungary, 1924/25-1936/37*, P. S. King & Son, Ltd., London, 1938. This is a revised edition of the Hungarian original published by the Hungarian Institute for Economic Research in 1936.

³ *Ibid.*, p. 6.

certain standard of production and a certain mental and physical standard of the population'.¹ For this reason these services were considered as overhead costs for the economy as a whole, as costs of replacement and maintenance for the country's population and society. This comes very close to Fellner's reasoning, except that these services are called productive but presumably do not represent 'value added'.

This conceptual confusion leads the authors into a dead end of logical inconsistencies. While the net 'output' of theatres and cinemas is included, sports and other recreational facilities are omitted. However, this is partly due to lack of data. At the same time, domestic work is included on the theory that the 'satisfaction of human wants requires a further sacrifice before the goods acquired by the household are consumed or used up'.² But by this reasoning, other services should have been included as well.

In addition to constructing estimates for total net national product, as defined by them, Matolcsy and Varga estimated the total of personal incomes including incomes from all services. This was done by deducting indirect taxes from their national product estimate, and adding the state and local expenditures for personnel as well as an estimated allowance for professional incomes.

Generally speaking, the net output estimates for agriculture, mining, manufacturing and transport are more reliable than those for other sectors. For these, detailed output, gross receipts and freight and passenger mile data were available. However, in dealing with transport the authors fall into an unwitting conceptual error. First, they compute total net product of the transport sector and use it as one of the elements in arriving at total national product. At the same time, they assume that about 20 per cent of total passenger transport receipts were derived from pleasure trips and the other 80 per cent from business trips. Such business trips were counted as a cost item by the firms in the various sectors from which they originated. According to Matolcsy and Varga,³ these are included in the costs and reflected in the prices of the goods and services produced by these units and, therefore, cannot be considered as a net con-

¹ Matolcsy and Varga, *op. cit.*, p. 9.

² *Ibid.*, p. 33.

³ *Op. cit.*, p. 26.

tribution to national product. However, since the data do not permit a breakdown of the business trip item among the sector users, they deduct it from the total net national product. By this procedure, they double count costs and eliminate a legitimate part of the national product. One may assume that these charges would appear in the cost accounts of the relevant sector and were thus deducted in the first place. Therefore, a second deduction would appear erroneous.

Because of the lack and limitation of data, the authors experienced great difficulty in estimating the net contribution of small-scale industry and trade, and to a somewhat less extent, of dwellings, domestic work and theatres and cinemas. Value added by small-scale industry includes the bulk of construction activity. The estimate for this sector was derived by computing total personal income of those in it, on the basis of family budget studies conducted in Budapest in 1928. It was then assumed that annual earnings fluctuated at the same rate as the earnings of factory workers, for which figures were available. A rather similar procedure was used to obtain a 1928 income estimate for the trading sector, except that personal income estimates were combined with data for net profits of incorporated trading enterprises. Annual estimates were then computed by applying to the 1928 figure a composite index of change in total goods turnover and change in gross-net ratios of the incorporated trading firms. Incomes from urban dwellings were estimated from tax data, while rural rentals were calculated on basis of a wheat standard commonly used in Hungarian villages. Costs of repair, maintenance, depreciation and relevant utility charges were then deducted from these gross rental incomes. Net output of theatres and cinemas was computed by applying to annual gross receipts a 20 per cent deduction for costs of lighting, heating, and materials. The net contribution of paid domestic work was computed on the basis of estimated average incomes of paid domestic servants. The international account as estimated by Matolcsy and Varga excludes the trade balance on the same grounds as was done by Fellner, i.e. that imports and exports do not increase or decrease national income.

The Matolcsy-Varga estimates were brought up to 1943/44 by the Hungarian Institute for Economic Research which at the same time made a tentative estimate for 1920/21 and for

1946/47.¹ The Institute also introduced some changes in the detailed methods, but not in the concepts. These changes were an outgrowth of a price study undertaken jointly by the Institute and the Central Statistical Office in 1938 and 1939, which disclosed certain pricing errors affecting markedly the net output estimates of several sectors. In some respects the Institute estimates represent a retrograde step in relation to the Matolcsy-Varga data. Unlike the latter, the Institute lumps transport, theatres, and cinemas, paid domestic work, indirect taxes and income from abroad under 'other items' and then applies deductions for the above-mentioned business trips and for road maintenance to these alone. As a result, the distribution of annual net product among the economic sectors is distorted. Besides, there is conceptually no justification for considering these deductions – apart from the question of whether the deduction is legitimate in the first place – as a charge only upon the sectors included in 'other items' and not upon the economy as a whole.

Traditionally, the emphasis in Hungarian studies of the national product was on the income side of the account. With the introduction of planning, following the Second World War, increased interest is shown in the expenditures side as evidenced by the Three-Year Plan itself² and the first plan fulfilment report.³ Yet these attempts fall considerably short of a systematic statement of national accounts, something which has thus far not been done in Hungary.

The Three-Year Plan, in its statement of the 1938 product and the post-war targets, still adhered to the Matolcsy-Varga concept. But all the estimates contained in later publications are based on Marxist concepts. They exclude dwellings, theatres and cinemas, domestic and all other services. Essentially the currently applied concept is identical with Fellner's the only difference being that the former is in terms of market prices, while the latter is in terms of factor cost.

The post-World War II estimates for the expenditure side of the national account are of limited usefulness for analytical

¹ *Hungary's National Income* (in Hungarian), Publication No. 4 of the Hungarian Institute for Economic Research, Budapest, 1947.

² *Hungary's Three-Year Plan* (in Hungarian), published by the Planning Office, Budapest, 1947, p. 85.

³ *Report About the First Year of the Three-Year Plan* (in Hungarian), Budapest, 1949, p. 188.

purposes. No attempt is made to construct total net national expenditure from its component elements, but rather net national product is derived first by totalling the net outputs of the different economic sectors. This national product total is then broken down into several elements: (a) balance of trade and international obligations (mostly reparations), (b) government purchases of commodities, (c) capital formation, and (d) personal consumption. A number of serious difficulties arise in this connection. Since government services were not included in the national product, they could not be taken into account, so that there are no data on government consumption as such, i.e. total government expenditure, but only on purchases of commodities. However, it would not be too difficult to make the necessary adjustments by using the 'expenditures on personnel' item of the government budget. But this would still leave out local government salaries. In any case, since government wages and salaries do not appear in net national product, their omission from the expenditures items is entirely consistent. But a much more serious problem is raised by the data on capital formation which are stated in gross terms and yet are related to net national product. This problem is further complicated by the fact that the official estimate of personal consumption is obtained after deducting gross capital formation from net national product.

This confusion of concepts does not appear to be merely accidental. In none of the publications or official estimates is there any clear distinction made between gross and net capital formation. Data are always stated in gross terms, yet the implicit impression is left as if they were net. With the key role played by investment and capital formation in the post-war economic plans, it is not too surprising to find an inclination towards overstatement.

2. National product and its composition, 1900-1949

Table I gives estimates of national product by industrial origin expressed in current prices. The data for the two pre-World War I periods are based on three calendar-year averages. All subsequent figures represent annual fiscal year (July 1st-June 30th) estimates, except for 1949 which is on a calendar-year basis.

Fellner's work provided the basis for the 1899-1901 and

1911-13 estimates. In addition to estimating national income as defined by him, Fellner also developed estimates for dwelling services and for government, professional, business, recreational, and personal services. He found it necessary to estimate incomes from dwelling services for his studies of national wealth;¹ incomes for other services were derived by him as an element in personal income distribution. Both of these components were incorporated in the estimates in Table I. However, in order to render Fellner's data conceptually consistent and territorially comparable, the following adjustments had to be made:

- (1) The foreign trade balance excluded from his international account had to be added.
- (2) It was necessary to correct some errors in computations, such as, for instance, his failure to deduct cost of materials and capital consumption allowances from gross transport revenues in 1911-13.²
- (3) The revised estimates had to be adjusted for post-World War I boundary changes. For 1911-13, Fellner himself made such an adjustment for all sectors except government, professional and personal services.³ His sector ratios were then applied to our revised 1899-1901 and 1911-13 estimates. Implied in this procedure is the assumption that the various branches of the economy developed at the same rate in the Old Kingdom as a whole as in the area which later became Trianon Hungary. This assumption may not be too far from the mark, at least if gauged by the labour force data for the two areas in the two periods. These show a somewhat more rapid increase in industry, trade and transport for the Trianon area as compared to the kingdom as a whole, but the differences seem to be small.⁴

¹ See Frederic Fellner, 'L'évaluation de la richesse nationale', in *Bulletin de l'Institut International de Statistique*, Vol. XIII, Pt. 2, pp. 96-136; also 'Das Volksvermögen Österreichs und Ungarns', by the same author in Vol. XX (2) of the same Bulletin, pp. 503-44.

² See criticisms of Fellner's work in Dr. A. Gürtler, 'Das Volkseinkommen Österreichs und Ungarns', *Weltwirtschaftliches Archiv*, Vol. 13 (3), pp. 378-428.

³ See 'Die Verteilung des Volksvermögens und Volkseinkommens . . .', *op. cit.*, *Metron*.

⁴ Between 1900 and 1910, the labour force increased in the Trianon area as compared to the territory of the Old Kingdom by 31.3 and 29.6 per cent respectively in industry, by 34.3 and 33.2 per cent respectively in commerce, and by 51.2 and 48.7 per cent respectively in transport.

- (4) Fellner's figures for manufacturing, mining and small-scale industry had to be adjusted to make them comparable with the inter-war series for these sectors. These adjustments were based on a comparison of the Fellner estimates for 1926-28¹ with the Matolcsy-Varga and Institute data for the same years, and Fellner's own pre-World War I estimates.

The data presented in Table I for 1920/21 to 1946/47 were derived by revising and adjusting the original national income estimates of Matolcsy and Varga and of the Hungarian Institute for Economic Research with which they were associated. These adjustments involved:

- (1) Inclusion of government and professional services. These could be derived from the Matolcsy-Varga and Institute estimates of personal income which they computed by deducting indirect taxes from the national product and adding the state and local expenditures for personnel as well as an estimated allowance for professional incomes. However, since they did not publish the latter estimates, it was necessary to reconstruct the whole procedure in order to get the estimate for the service sector. This computation of service incomes is confirmed by Neubauer's findings.² In effect Matolcsy's and Varga's estimate of personal incomes was thus adopted in this study as a more correct measure of Hungary's net national product than that given by them. Nevertheless, a certain degree of conceptual error remains, in that transfer payments to the service sector are included, but social security payments are excluded; yet, in terms of actual magnitude, this error should be rather slight.
- (2) Elimination of a deduction for transport costs, applied to national product as a whole. As was pointed out above, in applying such a deduction Matolcsy-Varga were in effect double-counting costs.

¹ See 'Le revenu national de la Hongrie actuelle', *op. cit.*, and 'Das Volkseinkommen, seine statistische Erfassung und sein heutiger stand in verschiedenen Ländern', by Dr. v. Fellner, in *Der internationale Kapitalismus und die Krise*, Essays in honour of Julius Wolf, Stuttgart, 1932.

² J. Neubauer, *Le montant du revenu national hongrois*, in *Journal de la Société Hongroise de Statistique*, Vol. 17, 1939, pp. 284-314.

- (3) Corrections for changes in methods of pricing. Estimates published by the Institute for 1938/39 and thereafter were computed on the basis of methods of pricing different from those applied in previous years. For 1938/39 two estimates were published, one computed by the old and the other by the new method. While the differences between these two methods are not explained, it seems that the new pricing procedures yielded higher estimates for most sectors. As a result, the Institute series for 1920/21 to 1937/38 is not comparable with data for 1939/40 and later years. In order to obviate this we used a necessarily crude adjustment, i.e. applied to each sector series preceding 1938/39 the ratio of 1938/39 net output as calculated by the old and the new method.
- (4) Inclusion of foreign trade transactions in the international account.
- (5) Conversion of estimates to a factor cost basis. However, in deducting indirect taxes from the Matolcsy-Varga and Institute figures, it was not possible, for lack of data, to take account of subsidies.

Total net product for 1920/21 and for 1939/40 to 1942/43 could not be built up from the sector totals, since there are no data for transport services and income from abroad. For this reason, net product totals for these years were computed by relating the rates of change in personal income to our 1924/25 and 1938/39 estimates respectively.

Somewhat different methods had to be used in making the necessary adjustments for 1947/48 and 1949. The official estimates for these years exclude all services, except trade and transport. Actually, for 1949, there are no published Hungarian estimates at all,¹ but only scattered percentages. For both of these years, dwelling incomes were derived from the original Three-Year Plan targets for this sector. (The national income data in the Three-Year Plan as originally published are still based on the Matolcsy-Varga and Institute definitions.) Such a procedure results in a necessarily crude estimate, but may be justified on the grounds that rents in Hungary were closely controlled and thus varied but slightly from year to year.

¹ However, see the estimates in *Economic Survey of Europe Since the War*, published by the United Nations Economic Commission for Europe, Geneva, 1953, Table 8, p. 26.

Furthermore, the volume of residential construction was strictly regulated so that the most essential elements affecting the volume of dwelling services and incomes are fairly predictable over a short period such as two to three years.

There are no data on which to base an estimate of service incomes. A number of contradictory tendencies affected the position of this sector in post-war Hungary. The whole emphasis of the economic plans, both in their output and investment aspects, was upon rapid expansion in mining, manufacturing and transport. As a result, the relative importance of services would automatically diminish unless it kept pace with the rate of expansion in the three sectors mentioned. However, it is safe to assume that this did not take place for a number of reasons. The known qualitative facts point to an absolute contraction in the service sector during the first post-war years. Government services and employment were curtailed following the currency reform, as a means of balancing the budget; and on the other hand, owing to institutional changes in post-war Hungary, one may suppose that some of the professional services (legal) and personal services (domestic) must have been considerably reduced. Following 1948, but particularly in 1949, some of these trends were reversed with a new expansion of educational, recreational, health, security and military services under government auspices. Some scattered employment data and the salary item of the government budget indicate a gradual rise in this sector, which, however, proceeded at a slower rate than the expansion in manufacturing. For all these reasons it was concluded that the relative importance of the service sector declined as compared to the inter-war period, and it was assumed not to exceed 12 per cent of total net national product.

The international account for the post-World War II years was calculated on the basis of published data for commercial exports and imports, imports on foreign relief account, and exports on reparation account. Both relief from abroad and reparations were treated as unilateral transfers which were offset by drawing down of relief credits in the one case and by reduction of the reparations liability in the other.

For lack of basic data, the 1949 estimates had to be computed on the basis of the following percentages published in the Three-Year Plan Fulfillment Report:

Total net national product

Percentages	Computed Figure (in millions of Jan. 1947 florin)
180 per cent of plan (presumably applicable to the target for the last year of the Three-Year Plan).	26,831
124 per cent of 1938	26,812
197 per cent of 1946/47	26,861

Since the discrepancy between these estimates is comparatively minor, an average of the three was taken as indicative of total net national product as defined by the planning authorities. Then a sector breakdown was computed by using percentages given in the same source as follows:

Agriculture

27.2 per cent of net national product.

Industry

(a) Including mining, smelting and manufacturing as well as the newly nationalized enterprises in construction and other establishments formerly classified under handicrafts – 49.2 per cent.

(b) Excluding these newly nationalized enterprises – 45.6 per cent.

Indirect taxes

According to the Three-Year Plan targets for the last planning year (originally 1949/50), 'price increasing taxes' would constitute 9.56 per cent of total product if defined in Marxist terms. This was the percentage used here. (The actual percentages were 9.9 in 1946/47 and 9.13 in 1947/48.)

Handicraft, trade and transport

This was derived as a residual after deducting the above three items from the previously computed total of 26,835. A further breakdown was not possible.

In order to adapt these estimates to the concepts used in this study the following further adjustments were made: indirect

TABLE I
Net National Product of Trianon Hungary by Industrial Origin, 1900-1948
 (in current prices at factor cost¹)

Year	Agriculture		Mining		Manufacturing		Small-scale Industry and Construction		Trade		Transport		Dwelling Services		Services ²		Domestic National Income	Income from Abroad	Total
	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%			
1899-1901	894	45.3	37	1.9	236	11.9	143	7.2	204		10.3%		156	7.9	305	15.4	1,975	-150	1,825
1911-13	1,896	49.8	45	1.2	526	13.8	312	8.2	153	4.0	194	5.1	232	6.1	450	11.8	3,808	-480	3,328
1920/21 ³	2,074	—	96	—	676	—	538	—	204	—	n.a.	—	294	—	n.a.	n.a.	n.a.	n.a.	4,258
1924/25	2,341.3	46.3	99.4	2.0	847.7	16.7	539.5	10.7	245.4	4.9	190.0	3.8	294.0	5.8	500.3	9.9	5,058	-92	4,966
1925/26	2,525.3	42.9	82.5	1.4	1,031.8	17.5	643.0	10.9	354.2	6.0	353.6	6.0	254.9	4.3	641.6	10.9	5,888	-102	5,786
1926/27	2,428.4	41.2	78.8	1.3	1,078.3	18.3	688.5	11.7	410.9	7.0	372.4	6.3	335.4	5.7	495.3	8.4	5,888	-321	5,567
1927/28	2,460.9	38.8	82.5	1.3	1,086.4	17.1	727.0	11.5	421.3	6.6	397.0	6.3	396.9	6.3	771.2	12.2	6,343	-490	5,853
1928/29	2,615.3	38.5	89.8	1.3	1,137.2	16.7	740.3	10.9	520.9	7.7	414.5	6.1	425.6	6.3	849.6	12.5	6,793	-358	6,435
1929/30	2,347.4	36.2	80.7	1.2	1,089.3	16.8	730.1	11.3	485.0	7.5	418.3	6.5	468.1	7.2	861.5	13.3	6,480	-176	6,304
1930/31	1,883.7	32.5	70.7	1.2	927.6	16.0	696.3	12.0	485.0	8.4	380.9	6.6	466.9	8.1	878.4	15.2	5,789	-140	5,649
1931/32	1,501.1	29.9	67.1	1.3	768.9	15.3	635.0	12.6	432.9	8.6	336.6	6.7	468.3	9.3	815.2	16.2	5,025	-125	4,900
1932/33	1,248.4	27.7	64.4	1.4	704.3	15.7	585.1	13.0	412.1	9.2	274.6	6.1	457.3	10.2	754.3	16.8	4,500	+12	4,512
1933/34	1,151.4	26.1	61.9	1.4	729.6	16.6	558.9	12.7	458.4	10.4	293.1	6.7	399.7	9.1	752.6	17.1	4,406	+28	4,434
1934/35	1,278.0	28.0	67.1	1.5	800.8	17.6	543.1	11.9	422.5	9.3	288.9	6.3	408.4	9.0	751.1	16.5	4,560	+17	4,577
1935/36	1,487.2	29.4	75.0	1.5	879.1	18.0	543.8	11.1	416.7	8.5	320.4	6.6	403.6	8.3	762.9	15.6	4,889	+46	4,935
1936/37	1,710.4	32.3	83.7	1.6	1,005.0	19.0	553.0	10.5	379.7	7.2	357.1	6.8	419.7	7.9	780.0	14.7	5,289	+82	5,371
1937/38	1,767.4	32.2	90.9	1.7	1,086.9	19.8	568.7	10.3	364.6	6.6	380.0	6.9	446.3	8.1	790.0	14.4	5,495	+81	5,576
1938/39	1,745.0	30.1	106.0	1.8	1,242.0	21.4	598.0	10.3	463.0	8.0	395.0	6.8	451.0	7.8	800.0	13.8	5,800	+113	5,913
1939/40	2,029.0	—	124.0	—	1,500.0	—	642.0	—	468.0	—	n.a.	—	461.0	—	n.a.	—	n.a.	n.a.	6,782
1940/41	2,142.0	—	152.0	—	1,842.0	—	721.0	—	529.0	—	n.a.	—	475.0	—	n.a.	—	n.a.	n.a.	7,515
1941/42	2,502.0	—	204.0	—	2,311.0	—	925.0	—	647.0	—	n.a.	—	484.0	—	n.a.	—	n.a.	n.a.	9,165
1942/43	2,808.0	—	284.0	—	3,314.0	—	1,109.0	—	819.0	—	n.a.	—	492.0	—	n.a.	—	n.a.	n.a.	11,490
1946/47 ⁴	3,964.0	27.0	628.0	4.3	3,760.0	25.6	2,062.0	14.0	1,408.0	9.6	463.0	3.1	650.0	4.4	1,764.0	12.0	14,699	-232	14,467
1947/48 ⁴	5,060.0	25.2	732.0	3.6	6,277.0	31.3	2,481.0	12.4	1,836.0	9.1	621.0	3.1	670.0	3.3	2,410.0	12.0	20,084	-229	19,855
1949 ⁴	7,299.0	25.7	12,237.0		43.2%		4,734.0		16.7%				720.0	2.2	3,408.0	12.0	28,398	-93	28,305

¹ For pre-World War I years, millions of crowns; for inter-war years, millions of pengö; for post-World War II years, millions of florin.

² Government, professional, business, recreation, and personal services.

³ In 1924/25 prices.

⁴ In January 1947 prices.

taxes were dropped, an estimate for dwelling services based on the Plan target figure for 1949/50 was added, and services were included by assuming that 12 per cent of the adjusted net national product was derived from this sector.

In examining the data in Table I, the differing degree of their reliability must be borne in mind. Thus, the estimates for the inter-war years may be considered as fairly reliable within the limitations outlined above. The same applies to a somewhat lesser degree to the World War II years; with changing boundaries during this period, territorial adjustments inevitably meant increasing the margin of error. The order of reliability diminishes further with the post-World War II estimates; 1946/47 was a year of marked price fluctuations which greatly complicated the task of income computation; in 1947/48, both dwelling and personal incomes had to be guessed at to a greater degree than in preceding years. Owing to the very nature of the computation as described above, the 1949 figure is among the least reliable. The same applies to the pre-World War I estimates, but for different reasons. The basic production, trade, price and income data were much less complete and reliable than in later years. Moreover, due to differing methods of computation and pricing, these figures are statistically not strictly comparable despite the conceptual adjustments. Finally, a large margin of error was introduced through the process of boundary adjustment, which in part had to be based on various aggregate ratios rather than on detailed estimates for the relevant territorial sub-divisions.

The data in Table I are expressed in three different currencies, crowns for the pre-World War I period, pengö for the inter-war years, and florin for the years since World War II. When the pengö was introduced in 1925 it was officially pegged at the equivalent of 0.8632 gold crowns;¹ when the new florin was stabilized in 1946, it was fixed at the level of 2.29 pengö of 1939 purchasing power. The above series are converted into a uniform monetary standard in Table II.

The national product figures in Table I reflect not only changes in currencies but marked disruptions in output following two wars and accompanying boundary changes, cyclical price fluctuations and war-time inflationary pressures. National out-

¹ League of Nations, 'Special Memorandum on Stabilization of the Currency', *The Financial Reconstruction of Hungary*, Geneva, 1926, pp. 117-18.

put was abnormally low in 1920/21 and again in 1944/45 and 1945/46 when the economy came to an almost complete standstill. On the other hand, rising product during the first decade of the century and during the late twenties, thirties, and forties, partly expresses real growth and partly reflects price increases. Marked contraction between 1929/30 and 1933/34 in turn represents shrinking output as well as deflationary price tendencies. Finally, while the very rapid expansion of 1938/39 to 1942/43 involved some increase in production, it largely reflected the effects of 'over-employment' and the inflationary pressures resulting therefrom.

Structural changes accompanied the discontinuous process of economic growth. These involved a marked decline in the contribution of agriculture, forestry and fishing from about 45 per cent of the total in 1900 to about 25 in 1949; and a rise in the share of manufacturing and mining from less than 20 to over 40 per cent. The continuity of the former trend appears to have been broken twice: in 1911-13 when agriculture's share rose to 50 per cent, and in 1933/34 when it dropped to a very low level as compared to the years immediately preceding or following. Both of these cases reflected abnormal price movements; in the earlier period it was due to a radical shift in the terms of trade in favour of agriculture, while during the depth of the depression in the early thirties, it represented a movement in the opposite direction.

The proportion of domestic national product derived from commodity production seems to follow a changing course, rising from about 66 per cent around 1900 to 73 per cent in 1911-13, declining continuously thereafter to a low of 57 per cent in 1933/34, and then rising to 72 per cent in 1947/48. The increase between 1899-1901 and 1911-13 was probably due to a short run price inflation in agriculture and a general stepping up of commodity production in the wake of war preparation. On the other hand, the subsequent drop seems to represent a secular expansion in the tertiary sector frequently, but not invariably, associated with the process of economic development. The reversal of this trend during the late thirties and the forties reflects a deliberate reallocation of resources in the direction of commodity output, at first for war purposes and later for fostering rapid industrialization.

3. *National product in constant prices, 1900-1949*

Changes in national output in constant prices were first measured by Matolcsy and Varga for the 1924/25 to 1936/37 period.¹ Using the same methods, the Hungarian Institute for Economic Research extended these series to 1946/47.² These estimates were expressed in terms of 1924/25 to 1926/27 prices and for the 1938/39 to 1946/47 period in 1938/39 prices as well.

In estimating national product at constant prices, Matolcsy-Varga and the Institute computed net output for each sector separately. In agriculture, production quantities and physical input data for different years were weighted by average prices for the base year. For mining and manufacturing, an index of production was applied to value added in the base period. At the same time, it was assumed that output in small-scale industry varied at the same rate as the combined net products of agriculture, mining and manufacturing at constant prices. The contribution of commerce was estimated by applying an index of total goods passing through trading channels to the value of income during the base period. This index was constructed by computing a weighted average of production indices for agriculture, mining and smelting, manufacturing, and imports of finished foods. For transport, an index based on total number of ton-kilometres of freight carried was multiplied by value added in the base period. The income from dwellings was obtained by weighting income in the base period with an index measuring rate of change in the number of dwellings. On the assumption that the quantity of domestic work remained constant, the value of this sector's base period income was applied throughout. No attempt was made to convert the international account, so that the original values were included in the constant price totals.

The methods used by Matolcsy and Varga for deflating incomes derived from manufacturing, small-scale industry, and domestic work appear to be based on somewhat questionable assumptions. Applying an index of production to value added by manufacturing in the base period would appear to be a valid procedure only if the structure of industry and the techniques of production were unchanged. However, this was definitely not the case for inter-war Hungary; technical coefficients in the

¹ *Op. cit.*, *The National Income of Hungary*.

² *Op. cit.*, *Hungary's National Income*, Table 2, p. 9.

various branches of manufacturing fluctuated widely in the course of the business cycle and there were marked shifts in the relative importance of different industries.

For these reasons, it may be conceptually sounder to deflate the manufacturing series in Table I by a wholesale price index for industrial goods. However, prior to 1929 only an unweighted index is available, and for the World War II years the index seems to understate price increases. For all of these reasons, it is probable that the Matolcsy-Varga method of deflation – despite its shortcomings – involves a smaller margin of error than one based on the industrial price index. The same cannot be said for the way they converted the small-scale industry series to constant price terms. There is no particular reason to suppose, as did Matolcsy and Varga, that the real product of this sector varies in proportion to the combined outputs of agriculture, mining and manufacturing. Actually, small-scale industry as defined in Hungary is a very mixed bag; it includes the bulk of construction activity, a number of small industrial establishments, as well as genuine handicrafts and some service trades. Very few of these need to be directly and intimately correlated with the volume of industrial or agricultural production. For example, during the twenties, agriculture was actually more or less stagnating while there was a pronounced boom in housing. With these considerations in mind, the industrial price index was used for deflating these series.

Deflation of service incomes presented numerous difficulties. This sector includes paid domestic work, government expenditures on personnel, and professional, business and other miscellaneous service incomes; each of these segments is subject to different economic and institutional influences. For instance, since 1910, the number of domestic servants and the extent of paid domestic work appears to have been continuously declining in Hungary. On the other hand, professional and business services seem to have risen in importance, while government services fluctuated in response to a host of institutional as well as economic influences. Probably the most satisfactory way of obtaining the 'real output' of this sector would have involved the application of an index of employment to the income of the base period.¹ Such employment data, however, were available

¹ See U.S. Department of Commerce, *National Income*, 1951 Edition, 'A Supplement to the Survey of Current Business', p. 145.

only for the census years, and therefore the cost-of-living index (including rent) had to be used – a much less sound procedure.

Finally some means had to be found for converting the international account. Deflation of international transactions again presents a number of conceptual problems.¹ Application of an import and export index to the respective foreign trade flows is relatively unambiguous; but deflation of the other items in the 'rest-of-the-world' account is much more problematical. In the absence of a more satisfactory solution, import indices were applied to net debits and export indices to net credits.

Net national product estimates expressed in terms of 1938/39 prices are given in Table II. For the inter-war period, agricultural, mining, manufacturing, trade, transport, and dwelling incomes were deflated on the basis of the Matolcsy-Varga methods, while the approach described above was applied to the other sectors. Somewhat different procedures and indices had to be used for the pre-World War I and the post-World War II data. These are outlined below.

Conceptual and statistical complexities faced in the deflation of the national income series became intensified and index number problems multiplied as the period of estimates was extended to the pre-World War I and post-World War II periods. Between 1924 and 1929, only an unweighted wholesale price index was compiled based both on 1909–13 and on 1925–27. For the years of hyper-inflation, preceding 1924, no meaningful price indices could be computed. In 1929, the Hungarian authorities began to publish a weighted wholesale price index using that year as the base. In addition to an aggregate index, break downs are given for agricultural products total, plant, and animal-processed foods, colonial products, and industrial raw materials and products total, raw materials, fuels, and finished goods. The same index was carried over into the post-World War II years, but converted to an August 1939 base. However, publication of price indices was stopped altogether, in June 1949.

During the first decade of the century only an unweighted wholesale price index based on 1899–1903 was available. It was

¹ See J. B. D. Derksen, 'Intertemporal Comparisons of Real National Income, An International Survey', in *Income and Wealth Series I*, Edited by Erik Lundberg. Published for the International Association for Research in Income and Wealth by Bowes & Bowes Ltd., Cambridge, 1951, pp. 245–66, and *National Income Supplement*, to the Survey of Current Business, *op. cit.*, pp. 144–5.

TABLE II
Real National Product of Trianon Hungary by Industrial Origin, at Factor Cost, 1900-1949
 (in millions of pengő at 1938-39 prices)

Year	Agriculture		Mining and Smelting		Manufacturing		Small-scale Industry and Construction		Trade		Transport		Dwelling Income		Services		Domestic National Income	Income from Abroad	Total
	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%			
1899-1901	1,343	43.3	54	1.7	350	11.3	210	6.8	200	6.4	233	7.5	215	6.9	498	16.0	3,103	-190	2,913
1911-13	1,891	43.7	53	1.2	620	14.4	370	8.6	270	6.3	353	8.2	231	5.3	532	12.3	4,320	-420	3,900
1920/21	1,070	—	66	—	478	—	424	—	257	—	n.a.	—	334	—	—	—	n.a.	n.a.	3,300
1924/25	1,295	33.4	69	1.8	600	15.5	425	10.9	309	8.0	385	10.0	333	8.6	467	12.0	3,883	- 41	3,842
1925/26	1,665	35.8	68	1.5	662	14.2	560	12.1	361	7.8	369	7.9	340	7.3	622	13.5	4,647	- 51	4,596
1926/27	1,528	33.4	77	1.7	726	15.9	625	13.9	369	8.1	432	9.8	349	7.6	474	10.3	4,580	-178	4,402
1927/28	1,469	30.2	82	1.7	828	17.0	620	12.7	385	7.9	435	8.9	361	7.4	690	14.2	4,870	-274	4,596
1928/29	1,646	31.7	87	1.7	862	16.6	649	12.5	396	7.6	438	8.4	375	7.2	744	14.3	5,197	-198	4,999
1929/30	1,676	31.8	84	1.6	825	15.7	663	12.6	417	7.9	425	8.1	384	7.3	792	15.0	5,266	-102	5,164
1930/31	1,658	32.1	74	1.4	769	14.9	659	12.7	379	7.3	365	8.1	395	7.6	870	16.8	5,169	-119	5,050
1931/32	1,613	33.0	67	1.4	705	14.4	621	12.7	327	6.7	316	6.5	404	8.3	840	17.2	4,893	- 86	4,807
1932/33	1,514	32.5	63	1.4	662	14.2	613	13.2	316	6.8	265	5.7	413	8.9	814	17.2	4,660	+ 18	4,678
1933/34	1,666	32.9	66	1.3	789	15.6	603	11.9	365	7.2	311	6.1	416	8.2	853	16.8	5,069	+ 32	5,101
1934/35	1,635	31.9	72	1.4	870	17.0	609	11.9	355	6.9	304	5.9	422	8.2	851	16.6	5,118	+ 18	5,136
1935/36	1,675	31.3	78	1.5	1,043	19.5	571	10.7	382	7.1	335	6.3	427	8.0	832	15.6	5,343	+ 50	5,393
1936/37	1,815	32.0	80	1.4	1,143	20.2	543	9.6	452	8.0	392	6.9	439	7.7	804	14.2	5,668	+ 87	5,755
1937/38	1,712	30.9	91	1.6	1,119	20.2	556	10.0	435	7.8	400	7.2	445	8.0	786	14.2	5,544	+ 82	5,626
1938/39	1,745	30.1	106	1.8	1,242	21.4	598	10.3	463	8.0	395	6.8	451	7.8	800	13.8	5,800	+113	5,913
1939/40	1,798	—	115	—	1,451	—	606	—	490	—	n.a.	—	458	—	n.a.	—	n.a.	n.a.	6,360
1940/41	1,455	—	132	—	1,551	—	561	—	470	—	n.a.	—	466	—	n.a.	—	n.a.	n.a.	5,927
1941/42	1,394	—	153	—	1,487	—	670	—	455	—	n.a.	—	470	—	n.a.	—	n.a.	n.a.	5,961
1942/43	1,345	—	194	—	1,741	—	677	—	485	—	n.a.	—	473	—	n.a.	—	n.a.	n.a.	6,260
1946/47	1,014	—	116	3.2	740	20.4	406	11.2	242	6.7	266	7.3	435	12.0	410	11.3	3,629	- 25	3,604
1947/48	1,295	—	135	2.8	1,243	26.1	491	10.3	315	6.6	357	7.5	448	9.4	478	10.0	4,762	- 33	4,729
1949	1,570	—	(170)	2.9	1,850	31.3			1,086		18.3%		482	8.2	746	12.6	5,904	- 12	5,892

¹ Estimates for 1899-1901, 1911-13, and 1949, are on a calendar year basis; data for 1920/21 to 1947/48 are on a fiscal year basis. For 1946/47 and 1947/48 the fiscal year runs from 1st August to 31st July; for all other years, it is from 1st July to 30th June.

broken down into foodstuffs – plant, animal and colonial products – minerals, raw materials, and semi-manufactures for the textile industry and miscellaneous products.¹ The principal weakness of this index, besides its lack of weighting, is that finished manufactured goods are practically excluded from it. Another shortcoming of the index is that for some commodities, Viennese, Trieste, and Bohemian, rather than domestic price quotations, were used. However, the error thus introduced need not be too serious since all of these were located within the Hapsburg Monarchy, which could be legitimately viewed as constituting a single national market. Another difficulty presented itself due to the fact that this index did not extend beyond 1910. Therefore, for purposes of this study, the 1910–13 gap was filled by extending the index, partly on the basis of Budapest price quotations, and partly on the basis of German indices, on the assumption that price trends in Austria-Hungary and Germany were closely correlated.

In the absence of better data, the 1899–1901 and 1911–13 estimates were converted to a 1938/39 price base by linking this index to the above-mentioned inter-war indices. Various deflators were applied: (a) agriculture was converted by linking the foodstuffs component of the early index to the agricultural element of the more recent one; (b) for mining and metallurgy, for manufacturing and for small-scale industry, the minerals, textile materials and miscellaneous products indices were combined and linked to the inter-war index for industrial raw materials and products; (c) transport and trade were deflated with the aggregate wholesale price index. It was, however, found that the pre-war estimates for these sectors were too low in relation to the inter-war estimates. In order to adjust for this under estimate, 'real output' in trade and transport was re-computed by applying an index of employment based on a comparison of census figures for 1900, 1910, 1920, and 1930, to the income from these sectors in 1920/21 and in 1929/30–1930/31; (d) dwelling incomes in 1911–13 were expressed in 1938/39 values by use of the rent component of the inter-war cost-of-living index based on 1913; since this index does not go back to 1900, the general wholesale price index was applied in deflating the dwelling sector for that year; (e) a similar expe-

¹ Ungarische statistische Mitteilungen, Neue Folge, Vol. 44, *Preisstatistik*, Table 122, Budapest, 1913.

dient was resorted to in converting services, except that for 1911-13, the cost-of-living index as a whole was used; (f) conversion of the net foreign balances presented special difficulties, since no export or import indices were published for the years preceding 1925; therefore, a German export index was computed for this purpose. In the twenties, German foreign trade data were presented both in terms of current and 1913 values;¹ thus, for 1927 exports of finished manufactures, the ratio of these two values was calculated and the index thus obtained was linked to the Hungarian inter-war import index, on the assumption that a large proportion of Hungary's imports was composed of industrial goods and that a substantial share of these was obtained from Germany. However, even though Hungarian trade statistics bear out these assumptions, there is no doubt that this procedure involves a considerable margin of error.

The 1946 to 1949 estimates were converted by the application of similar sector deflators. Since post-World War II and inter-war wholesale price, cost-of-living, and foreign trade indices are comparable and available up to early or mid-1949, no special difficulties presented themselves. The degree of accuracy with which these indicators express 'true' price relationships is open to doubt since during parts of this period there was rationing and administered pricing. It is most probable that in computing the indices, black market prices and transactions were not taken into account. For this reason, the deflated figures for 1949 agricultural and industrial output were adjusted as follows:

- (a) Scattered data on crop and livestock production as well as a series of official Hungarian pronouncements would tend to indicate that 1949 farm output was roughly 90 per cent of pre-war. The net product estimate for this sector was recomputed accordingly.²
- (b) The deflated 1949 figure for net product in manufacturing seemed to be based on an over estimate of industrial production as ascertained from other data. There was sufficient information available to permit the computation of 1949 output in individual industries and in manufacturing as a whole.³ This was really an estimate of 'gross'

¹ *Statistisches Jahrbuch für das Deutsche Reich*, Vol. 47, 1928, pp. 192-3.

² See *Economic Survey of Europe Since the War*, *op. cit.*, Table 8, p. 26, and Appendix Tables XXVI to XXXIII, pp. 271-8.

³ See A. Eckstein *Economic Development of Hungary, 1920-1950*, Doctoral Dissertation, University of California, Berkeley, 1952, Table 9, p. 56.

value added, i.e. it made no allowances for capital consumption and yet it was smaller than the national product estimate for manufacturing. Therefore, the latter figure was rejected, and the former was adopted as a basis for the adjusted estimate. It was found that net product estimates for manufacturing were in 1934/35 about 11 per cent lower than the figures for value added 'gross' of depreciation. This percentage was applied to the above-mentioned computation for 1949 to obtain the estimate given in Table II above.

As is quite apparent from the preceding discussion, the real product estimates are relatively more reliable for the inter-war years, while owing to the weakness inherent in the deflation procedures used, the pre-World War I estimates should be treated with a fair degree of caution. However, I believe that they do reflect fairly accurately the output trends in the Hungarian economy.

4. *Rates of growth, 1900-1949*

The national product of Hungary grew at an average rate of 1.5 per cent per year while per capita output rose at a rate of only 1 per cent. As a result, the aggregate product of Hungary was just about doubled during the first half of this century, but per capita output as shown in Table III increased only by 50 to 60 per cent. This comparatively modest rate of expansion is due to the fact that the process of growth was interrupted and even reversed twice, by *disruption incidental to war*, and *once*, by the force of the Great Depression. The far-reaching boundary changes resulting from World War I confronted the Hungarian economy with an entirely new set of scarcity relationships reflected, for instance, in large unutilized capacities in industry, in acute price and marketing problems for agriculture, and in an oversized government bureaucracy. On the other hand, in the latter stages of World War II, Hungary became a battleground, with large-scale devastation and destruction of productive facilities.

The process of growth was most rapid during three periods: in the first decade of the century when national product was increasing at a rate of $2\frac{1}{2}$ per cent a year, in the late thirties when it was expanding at a 3 per cent rate, and in the late forties

TABLE III

National and Per Capita Product of Trianon Hungary, 1900-1949

Year	Total National Product at Factor Cost (in millions of pengő at 1938/39 prices)	Population (thousands)	Product per Capita (in pengő at 1938/39 prices)
1899-1901	2,913	6,854	425
1911-13	3,900	7,794	500
1920/21	3,300	8,029	411
1924/25	3,824	8,299	463
1925/26	4,596	8,383	548
1926/27	4,402	8,454	521
1927/28	4,596	8,520	539
1928/29	4,999	8,583	582
1929/30	5,164	8,649	597
1930/31	5,050	8,716	579
1931/32	4,807	8,763	548
1932/33	4,678	8,812	531
1933/34	5,101	8,869	575
1934/35	5,136	8,930	575
1935/36	5,393	8,967	601
1936/37	5,755	9,015	638
1937/38	5,626	9,060	621
1938/39	5,913	9,106	649
1939/40	6,360	9,216	690
1940/41	5,927	9,330	635
1941/42	5,961	9,382	635
1942/43	6,260	9,430	664
1946/47	3,604	9,070	397
1947/48	4,729	9,130	518
1949	5,892	9,207	640

when it was recovering at close to a 4½ per cent rate. It is interesting to note that the rate of growth was speediest during the upswing of the late thirties which was exclusively self-financed, in contrast with earlier booms which were partially financed by large-scale capital imports.

The dynamic force in Hungary's economic development was provided by industrialization. However, there were discontinuities in sectoral rates of growth, even more pronounced than in the case of national product as a whole. The economy advanced by spurts and halts as is shown by the data in Table IV. For instance, the first decade of the century was a period which witnessed a fairly balanced pattern of development in the sense

that it involved growth in all sectors of the economy, agriculture, manufacturing, and the other segments as well. Yet this was the only period which was characterized by such a pattern of development. These were years during which Hungary, in a sense, lived in the best of two possible worlds. On the one hand, she enjoyed the benefits of a large protected and guaranteed market for her agricultural exports, while at the same time, she had the means at her disposal to inaugurate various measures of administrative protection for industry. In effect, the confines of the sprawling Dual Monarchy provided a uniquely favourable institutional and economic setting for the development of both agriculture and industry in Hungary.

TABLE IV
Rates of Economic Growth in Trianon Hungary
(in per cent per year)

Period	Net National Product		Agriculture	Mining and Manufacturing	Other
	Total	Per Capita			
1899/1901 to 1949 .	1.5	0.9	0.3	3.3	1.4
1899/1901 to 1940/41-1942/43 .	1.7	1.0	0.0	3.6	2.2
1899-1901 to 1911-13	2.5	1.5	3.0	4.4	1.2
1911-13 to 1928/29-1930/31 .	1.5	0.8	-0.7	1.7	3.6
1925/26 to 1929/30 .	3.0	1.7	0.0	5.7	2.8
1928/29-1930/31 to 1940/41-1942/43 .	1.5	0.8	-1.5	5.7	1.2
1934/35 to 1939/40 .	4.4	4.0	2.0	10.8	3.2

The initial phase of Hungary's industrial development involved primarily the rise of agricultural processing, i.e. flour milling, distilling of alcohol, sugar refining, etc. However, beginning with the last decade of the nineteenth century and up to World War I, state entrepreneurship began to play an increasingly important role, concentrating primarily upon the

promotion of the metal processing and the engineering industries. This development was accelerated on the eve of and during World War I, and as a result, Hungary came out of the war with a larger industrial capacity than she had before it. This is evidenced by the fact that horse-power capacity of large-scale manufacturing was about 400 thousand in 1913, but close to 600 thousand by 1921.¹ After World War I, the food and metal processing, and engineering industries faced a much smaller market with a completely changed structure of demand. Therefore, these industries had to readjust their pattern of production in an attempt to develop both a domestic consumer and an export market for their products. Since this re-orientation was successfully carried out only in certain branches of manufacture, these industries operated at considerably less than full capacity during the twenties. They did not really come into their own again until the late thirties and early forties, when rearmament provided a new stimulus for expansion in metal processing and engineering. The boom of the twenties was largely propelled by the unusually rapid development of the textile industry – behind the walls of a high protective tariff – and a very high level of residential construction activity. Under the impact of these forces, net product in mining and manufacturing was increasing at a rate of close to 6 per cent a year.

In contrast, output in the industrial sector of the economy rose at a rate of close to 11 per cent a year between 1934/35 and 1939/40. By 1949, when the process of post-World War II economic recovery was essentially completed, industrial output had just about attained or slightly exceeded the war-time peak. In effect, despite war-time destruction and disruption, Hungary came out of the last war with an enlarged industrial capacity.

While industry grew at an average rate of over 3 per cent a year during the fifty years as a whole, agriculture practically stagnated since 1910. Actually net agricultural output declined between 1911–13 and 1928/29–1930/31 at a rate of 0.7 per cent a year. It developed somewhat between the late twenties and the late thirties, when it reached its inter-war peak. Yet even at this point, agricultural output was about 7 per cent below the 1911–13 level. Farm production declined drastically thereafter as manpower and other resources were being diverted from agriculture to war industry. By 1949, agriculture had recovered

¹ *Magyar Statisztikai Zsebkönyv*, Vol. XV, 1948, Budapest, p. 148.

somewhat, but was still lagging below the inter-war average and, of course, was appreciably below the pre-World War I peak.

Agricultural stagnation of the inter-war period was largely a function of institutional rigidities in the pattern of farming, of world economic trends and of government policies. As a result, the price parity position of agriculture was highly unfavourable, so that the income position and savings capacity of industry was enhanced while that of agriculture was very adversely affected.¹ In effect, partly through the movements in price relations, the process of capital accumulation was transferred from agriculture to industry.

The rate of growth in the other sectors was considerably less rapid than in mining and manufacturing but much more pronounced than in agriculture. The marked rise between 1911-13 and 1930 was probably more statistical than real, and may be partly accounted for by the paucity of data in these sectors, and possible under-estimation resulting therefrom. The evaluation of the growth pattern in small-scale industry is rendered particularly difficult by the fact that according to Hungarian statistical practice, construction is included in this sector. However, the demand for all types of construction is more income elastic and, therefore, cyclically more sensitive than for the products of such enterprises as tailor shops, shoemakers, rural blacksmiths, all sorts of repair shops, etc. Available evidence, mostly of a qualitative nature, suggests that the output of the *non-construction* segments of small-scale industry remained fairly stable, which in turn would tend to imply that the growth pattern of this sector reflects primarily the trends in building activity.

There are no data for total construction, but estimates for residential building indicate a comparatively high level of activity during the boom of the twenties, a sharp drop in the course of the following decade, and an even greater one during the forties. However, there was a very marked expansion in non-residential construction from 1934/35 on, primarily in response to rising investment demand. For 1949, the rather tenuous estimates suggest that this branch of economic activity lagged behind the levels attained in some inter-war years, even though industrial construction was very brisk.

¹ For further details see *Economic Development of Hungary, op. cit.*, Ch. 7. ⁸

III. LONG-TERM TRENDS IN OCCUPATIONAL DISTRIBUTION AND LABOUR PRODUCTIVITY

1. *Methodological problems in the measurement of Hungary's occupational distribution*

One of the most difficult problems in an analysis of Hungarian occupational statistics is to determine the exact size of the active population, i.e. the population engaged in some form of economic activity.¹ In Hungary, as in many other European countries, there is a definite tendency towards under-enumeration of this active population, because farm wives and other members of the farm family, who devote only part of their time to the farm enterprise, are usually not counted.

The census breaks down the active farm population into owner and tenant operators, unpaid farm family personnel, and farm servants and workers. It is in the unpaid farm family personnel category that most of the under-enumeration is concentrated. The census questionnaires provide no objectively measurable criterion that would definitely establish whether a farm family member should be assigned to the ranks of the passive or active population, and the decision rests upon the judgment of the individual question or of the census taker. This accounts for unduly wide inter-censal fluctuations in the numbers of active population; at least this variation cannot be explained either on demographic or economic grounds.

Another difficulty encountered in Hungarian occupational statistics is that unemployed workers, pensioners, rentiers, indigents, inmates of jails, etc., are counted among the active population, and only members of their families are counted among the passive. This may be accepted as a valid procedure as far as the unemployed, the pensioners and rentiers are concerned. However, in studying economic development and the change in occupational distribution, it is useful to distinguish between active and 'working active'.² In Table V, the above-mentioned categories are excluded from the 'working active' population, with the exception of the unemployed for which group there are no complete statistics.

¹ 'Economic activity' is defined to mean any form of gainful employment either on a person's own account or for some remuneration, in cash or kind, and therefore excludes the domestic work of housewives.

² I am indebted for this distinction to Dr. P. N. Rosenstein-Rodan, who introduced it in an unpublished study on 'Economic Development in the Danube Basin'.

In general, the Hungarian census statistics relating to labour force distribution follow an industrial rather than an occupational classification. However, for some categories of workers, an occupational classification is used. This inter-mixture creates special difficulties, particularly in assessing changes in the number of those engaged in one industry as compared with another. For example, the iron and steel industry is broken down into a number of component branches, but interspersed with these branches are some occupations or crafts such as 'blacksmiths' and 'machinists'. While some of these craftsmen work in the iron and steel industry, many of them are engaged in other branches of manufacture.

Even in those cases where a consistent industrial classification is followed, certain types of economic activity are assigned to manufacturing when they more properly belong under services. For instance, chimney sweeps and window cleaners are classified under construction; hotels and restaurants are classified with other branches of manufacture; tanners are counted in the chemical industry, and barbers and beauticians in the clothing industry. This confusion between industry and services, the lack of clarity of concept in the definition of manufacturing, and the failure to draw as clear a dividing line as possible between manufacturing and services, is one of the fundamental weaknesses in all Hungarian economic standards.

A statistical problem of a different kind is encountered in an analysis of data relating to casual labour. The numbers enumerated in this category have declined consistently, since increasing care has been taken to classify casual labourers under that industry or occupational branch to which most of their man-hours are devoted. However, even with the most careful statistical methods, it is rather difficult to classify this group. A large portion of them are agricultural labourers and small holders who come into the towns during off-season periods and work in construction, road building, etc. It is therefore most difficult to determine to which economic branch they most properly belong.

An additional problem, encountered in an analysis of Hungarian manpower data, relates to the marked discrepancies between the results obtained from the census of occupations and from the census of establishments. In the occupational census, the labour force in all non-agricultural industries is

much larger than in the census of establishments. While partly a reflection of the fact that the first includes the unemployed while the latter does not, the discrepancies are greater than even the most pessimistic estimates of the number of unemployed workers. Another factor that partly explains the difference is that the census of establishments takes no account of unlicensed craftsmen and home workers.

2. Trends in occupational distribution

Table V gives the number and proportion of workers engaged in each branch of economic activity from 1900 to 1941. Unfortunately, only a few fragments of the 1949 census have been published, so that it was not possible to include data for that year in the table. However, the scattered evidence available shows that there have been no major structural shifts in the labour force between 1941 and 1949.

(a) Manpower trends in primary industry

The evolution of Hungary's occupational distribution is characterized by a slow but continuous movement away from the land. The proportion of the active population engaged in agriculture, forestry and fishing has been declining since 1900, even though the total number of agricultural workers has been increasing.

While the statistical series presented here do not go back further than 1900, the available evidence reveals that this process actually started about 1880. The trend was reversed temporarily after both World Wars when boundary changes and internal conflicts brought about a marked stagnation in non-agricultural industries; while, concurrently, post-war food shortages produced a temporary boom in agriculture which attracted many of the urban unemployed, who in any case had strong rural roots and who looked upon agriculture as a temporary refuge from starvation.¹

The decline in the agricultural proportion of the labour force has been accompanied by a rise in the number and percentage

¹ According to the June 1949 issue of the *Gazdasagstatisztikai Tajekoztato*, the total population as reported in the census taken in January of that year was 9,207,033. Vas Zoltan, in a speech before the Second Congress of the Hungarian Workers Party, stated that 44.5 per cent of the population was in the labour force, and 52.7 per cent of the latter was engaged in agriculture. See *Szabad Nep*, March 2nd, 1951, p. 2.

TABLE V

Working Active Population by Economic Branches in Trianon Hungary, 1900-1941¹

Economic Branch	1900		1910		1920		1930		1941	
	Number	%	Number	%	Number	%	Number	%	Number	%
Agriculture, Forestry and Fishing	1,735,450	59.4	1,868,750 ²	55.8	2,128,701	58.2	2,125,450 ²	54.2	2,154,606	50.0
Mining and Metallurgy	20,506	0.7	29,196	0.9	40,182	1.1	35,182	0.9	55,281	1.3
Manufacturing	472,290 ³	16.1	620,147	18.5	623,541	17.0	815,449	20.8	942,580	21.9
Commerce	113,052	3.9	151,888	4.5	183,873	5.0	226,083	5.8	260,480	6.1
Transport and Communications	66,773	2.3	100,938	3.0	117,761	3.2	113,289	2.9	140,322	3.3
Government, Community, Business and Recreational Services	136,100 ³	4.6	191,550	5.7	224,970	6.1	267,040	7.7	345,040	8.0
National Defence	51,027	1.7	53,485	1.6	88,241	2.4	41,022	1.0	127,965	3.2
Casual Labour	109,468	3.7	81,336	2.4	50,246	1.4	61,046	1.6	42,937	1.0
Domestic Service	181,209	6.2	192,407	5.7	156,057	4.3	176,987	4.5	158,581	3.7
Other Occupations	37,000 ⁴	1.3	61,237	1.8	44,157	1.2	62,204	1.6	77,052	1.8
Total	2,992,926	100.0	3,350,934	100.0	3,657,729	100.0	3,923,752	100.0	4,304,844	100.0

¹ All data adjusted to the present boundaries, which are identical with the Trianon boundaries.

² The figures for agriculture are adjusted for under-enumeration in 1910 and 1930.

³ The figure for 'manufacturing' in the census is 513,361, but it included some service industries, particularly hotels and restaurants. Estimating that the latter constituted 8 per cent of the total, the total for 'Manufacturing' was reduced by that amount and the total for 'Recreational Services' increased accordingly.

⁴ In the 1900 census, these were enumerated together with pensioners and rentiers. The figure used is an estimate based on the assumption that those reported in 'Other Occupations' constituted the same proportion of the total of pensioners, rentiers, and other occupations in 1900 as they did in 1910 when the census reported each of these groups separately.

SOURCES: Office Central Royal Hongrois de Statistique: *Recensement general de la population, 1900, 1910, 1920, 1930.*

of those engaged in mining, manufacturing, commerce, transport and communications, and all types of services other than domestic and national defence. However, these structural changes worked themselves out rather slowly and gradually. Thus, in 1941, about 50 per cent of the labour force was still engaged in agriculture, forestry, and fishing, and only 23 per cent in mining and manufacturing, as compared to 60 and 17 per cent respectively in 1900.

(b) *Manpower trends in secondary industries*

Trianon Hungary is an area comparatively poor in mining resources as is apparent from the numbers of those engaged in it.¹ Nevertheless, the intensity of mineral exploitation has been stepped up considerably, as evidenced by an expansion in the labour force from about 20,000 in 1900, to 55,000 in 1941 and to 60,000 in 1948.²

Unlike mining, manufacturing played a key role in the economic development of Hungary. It grew more rapidly than any other economic branch, both in terms of rising national product and labour force engaged. Actually, manufacturing—both large and small scale—absorbed the major portion of those leaving agriculture.

Hungarian statistical practice recognizes three categories of industries: industry proper, home and folk crafts, and migrant industry. The latter two categories are relatively unimportant since they did not engage more than about 6,000 to 12,000 workers at any time in the period under study. Much of the home and folk craft is located in the countryside and represents in many cases a supplementary occupation for farmers and their families. The term 'migrant industry' may be considered a misnomer since most of the work in this category is done by small handicraftsmen who have no fixed establishment, but who move around itinerantly, performing various special services as grinders, glaziers, locksmiths, tool makers, mechanics, repairmen, etc. In view of the negligible importance of home and folk craft and migrant industry, industry proper may be considered as being synonymous with total manufacturing.

¹ In Hungarian industrial classification, metallurgy is included with mining, while stone quarrying is excluded and assigned to industry. However, this does not alter the trends of the figures very substantially.

² *Report about the First Year of the Three-Year Plan* (in Hungarian), National Planning Office, Budapest, p. 187.

The dividing line between small-scale and large-scale industry in Hungary is usually drawn according to the number of employees per industrial establishment; establishments employing more than twenty workers are considered as large-scale, while those engaging less than twenty are included in small-scale industry. In this context, the use of the term 'handicraft' as opposed to 'manufacturing industry' is deliberately avoided since it is very difficult to define it precisely. In some Hungarian statistical series, 'handicraft' is used interchangeably with small-scale industry, but in others, it is applied only to those workers who are members of handicraft associations or who possess a handicraft licence.

Data for large-scale manufacturing are much more readily available than for small-scale establishments. An annual census of manufacturing, covering large-scale industry only, was taken throughout the inter-war period and up to 1944. It provided information on number of establishments, levels of employment, manufacturing capacity, production, raw material consumption, etc.

The data in Table VI indicate that except for 1920, a year of industrial stagnation, the relative importance of large-scale manufacture in total industry has been increasing. However, in terms of the total manpower engaged, small-scale industry was more important in 1910 and continued to be so until 1941. This trend appears to have been reversed during World War II when urban handicraftsmen were pressed into the factory labour force at an accelerated rate. The pressure in this direction was even more forcefully applied in recent years for purposes of rapid industrial expansion under planning.

While expansion in the large-scale manufacturing sector provided the principal motive force in Hungary's industrialization during the period from 1910 to 1940, there were a number of factors operating which tended to prevent the actual displacement of small-scale industry. Government policy was designed to protect small establishments through various tax measures, favourable credit arrangements, various types of legal protection from bankruptcy proceedings, etc. Furthermore, since Hungary still is a predominantly agricultural country, a large number of rural craftsmen are required to service farms and satisfy the small-scale industrial needs of the countryside. Finally, certain types of industry, such as custom tailoring and alterations, shoe

TABLE VI

Manpower in Large-and Small-Scale Industry in Trianon Hungary, 1910-1948, by Number of Establishments, Number of Employers, Number of Employees per Establishment and Total Number Active in Manufacturing

Year	Number of Manufacturing Establishments		Number of Manufacturing Employees		Number of Employees per Establishment			Total Active in Manufacturing				
	Small Scale (1)	Large Scale (2)	Small Scale (3)	Large Scale (4)	Small Scale (5)	Large Scale (6)	Total (7)	Small Scale (8)	Large Scale (9)	Home and Folk-craft (10)	Itinerant Industry (11)	Total for all Manufacturing (12)
1910	215,000	2,180	186,000	226,700	0.865	103.99	1,903	401,000	229,000	5,314 ^a	-1,076 ^a	636,390
1920	217,151	1,551	188,366	173,000	0.867	111.54	1,653	405,520	174,550	9,095	1,334	590,500
1930	202,600	1,959	206,233	249,000	1.018	127.10	2,230	409,000	250,000	11,322	1,349	671,670
1941	185,000	4,059	310,033	408,600	1.676	100.66	3,802	495,000	412,000	11,693	1,456	920,150
1948	178,398 ¹	3,004 ⁴	209,886 ¹	437,000 ²	1.176	139.00	3,566	388,000	440,000	—	—	830,000

¹ On 1st October 1948, as reported in *Gazdasagstatisztikai Tajekoztato*, June 1949, p. 274.

² Estimated figure - according to *Jelentes a Haromeves Terv első Everöl*, p. 8, there were 383,460 employees in large-scale industry in April 1948; according to *Gazdasagstatisztikai Tajekoztato*, June 1949, p. 259, the index of employment in large-scale industry was 116.0 (1948=100) as compared to 101.7 in April 1948. Proceeding on this basis the October 1948 figure was calculated.

³ Applies only to the twenty counties which were transferred intact from Old to Trianon Hungary.

⁴ *Jelentes a Haromeves Terv első Everöl*, p. 11.

SOURCES: *Recensement General de la Population*, 1920: Vol. II - Table 10, Vol. III - Table 1, Vol. VI - Appendix, Table 23.

1930: Vol. II - Table 10, Vol. III - Tables 1 and 9, Vol. VI - Tables 63 and 64.

Dr. Sandor Farkasfalvy, 'A gyaripar helyzete 1939 - ben', *Magyar Statisztikai Szemle*, Vol. XVIII : 11, November 1940. 'A gyaripar 1942 ben', *ibid.*, Vol. XXI: 10-11, October-November 1943.

Zoltan Szalay, 'A 1941 evi nepszamlalással kapcsolatban vegrehajtott altalanos iparistatisztika első eredményei', *ibid.*, Vol. XXI: 5-6, May-June 1943.

A Magyar Gazdasagkutató Intézet 25 Sz. Különkiadványa: *A Magyarországi kezművesipar gazdasági helyzete 1943 - ban*, Budapest, 1943.

repairing, carpentry, locksmithing, etc., have traditionally been and remain in the domain of small-scale establishments. In fact, the development of large-scale manufacturing may in some cases even stimulate continued expansion of small-scale industry, which has shifted from handicraft methods of production to servicing the products of large plants. To the extent that small-scale industry succeeds in this and is capable of adapting itself to new circumstances, it is likely to survive and develop.

It is interesting to note that within small-scale industry itself, there has been a shift in the direction of larger establishments. The total work force, including owners, has been increasing in establishments employing more than five workers at the expense of the smaller shops. This tendency is reflected in the number of employees per establishment, which have been increasing in every successive census period since 1910. While in 1910 there was an average of a little less than one worker per establishment, the number rose to nearly two by 1941.

A similar trend can also be observed in large-scale industry up to 1930. However, thereafter the number of large-scale manufacturing establishments has more than doubled without a correspondingly large increase in the number of workers, so that the number of employees per establishment was reduced in 1941. Nevertheless, for industry as a whole, there seems to be a pronounced trend towards an increase in scale. This is partly a reflection of the increasing relative importance of large-scale industry on the one hand, and the shifts within small-scale industry from smaller to larger establishments on the other.

(c) *Manpower trends in tertiary industries*

The figures in Table V indicate that commodity production,¹ i.e. primary and secondary industry together, absorbs about three-fourths of the total active labour force, with commerce, transportation and services accounting for the remaining one-fourth. The proportion in commodity production was about 76 per cent in 1900, fluctuated between 77 and 78 per cent during the succeeding three decades, and then dropped to 74 per cent in 1941. This latter proportion corresponds approximately to the share of the active population engaged in commodity

¹ Casual labour is included in commodity production on the assumption that the overwhelming proportion of the workers in that category were engaged in primary or secondary industry.

production in Czechoslovakia, Finland and Italy, and to a lesser extent, in Austria. The corresponding percentages in most of the West European countries fluctuated between 60 and 70 per cent in the thirties, while in Eastern Europe and Turkey, they ranged from 80 to 90 per cent. These percentages were lowest in North America and Oceania where they ranged from 50 to 60 per cent.¹ Thus, in this respect, Hungary occupies more or less of an intermediary position between the countries of Eastern and Western Europe. However, in world terms, it seems to be closer to the bottom of the scale.

The trading sector of the Hungarian economy engaged an increasing number and proportion of the working active population between 1900 and 1941. In commerce, the proportion rose by stages from about 4 per cent in 1900 to 6 per cent in 1941.

In transport and communications the number and proportion has also been growing, except between 1920 and 1930, when a small decline occurred. This decrease represented a readjustment to the reduced transport needs of the new post-war area.

Government, community, business and recreational services experienced a continuous absolute and relative expansion during this whole period. A growth in these services is closely related to the development of industry and commerce and also involves augmentation in the country's intelligentsia, both technical and professional. The demand for new legal and other business services tends to rise with advancing economic specialization accompanying economic progress. Also, to the extent that national incomes per head rise in real terms, the economy is better able to afford expanded medical, educational, recreational, and general cultural services. In so far as some of these functions are performed by public or semi-public authorities, an extension in government services may result. However, the growth trends of government services are controlled to a large extent by political, military and other non-economic considerations.

By the nature of the case, the trends noted in the casual labour category reflect improved census practices as well as economic changes. As has been mentioned earlier, the decline in casual labour is partly due to the fact that increasing efforts have been

¹ Based on data in the International Labor Office's *Yearbook of Labor Statistics, 1947-1948*, Geneva, 1949, Table II.

made to assign these workers to those industrial categories to which they devote the major portion of their annual man-hours. On the other hand, the decline in some cases, such as between 1930 and 1941, reflects high levels of employment or practically full employment at the time of the war boom of 1941.

The long-run decline in domestic service is an expression of gradual but profound social changes. Domestic servants enjoyed a minimum of legal and social protection and their working conditions were among the worst of all categories of workers in Hungary. With the gradual long-term improvements in the overall economic situation, increasing resistance to domestic service developed. Concurrently, decreasing numbers of the urban middle class, particularly the lower middle class and the old aristocracy, were in a position to afford the cost of such service.

3. Changes in sectoral labour products

Owing to the previously discussed shortcomings in the estimates of Hungary's national product and occupational distribution, the task of measuring product per worker is particularly hazardous. This is further complicated by the fact that two of the census years – 1920 and 1930 – were years of economic crisis. However, as the data in Table VII show, the distortion in long-term trends introduced thereby seems to be serious only for 1920, when aggregate labour product dropped to its lowest level for the period as a whole.

The estimates in Table VII must be viewed as imperfect measures of labour productivity for numerous other reasons as well. They are not based on the number of workers actually employed but on the number of people 'affiliated with' or 'actively engaged in' a particular economic branch. Therefore they include some who are not really in the labour force, and others who are unemployed or employed only during part of the year.

In effect, all these factors understate the output per worker. On the other hand, labour product in 1911–13 is subject to the opposite bias since it combined average output for those years with the 1910 rather than the 1912 labour force.

An analysis of trends in Hungary's labour products reveals that in 1900 output per worker in non-agricultural pursuits was twice as high as in farming. This relationship corresponds rather

closely to that found in many under-developed areas today. However, it is interesting to note that while differences in these sectoral labour products tend to be narrowed as economic development progresses, in Hungary, the pattern was exactly reversed so that by 1940 labour productivity off the farm was roughly three times as high as in agriculture.¹ This growing disparity was primarily a reflection of agricultural stagnation.

TABLE VII

Product Per Person Actively Engaged in Trianon Hungary

(in pengö of 1938/39 purchasing power)

Economic Branch	1900	1911-13	1920/21	1930	1941
Agriculture, Forestry and Fishing	774	1,012	507	785	820 ²
Mining and Smelting	2,633	1,815	1,642	2,245	2,578
Large-scale Industry	1,186	2,707	2,738	3,188	3,687
Small-scale Industry		923	1,046	1,616	1,243
Commerce	1,770	1,778	1,398	1,738	1,776
Transport	3,489	3,497	n.a.	3,487	—
Services ³	1,352	1,577	—	1,714	—
Total	973	1,164	902	1,301	1,381

Throughout the period, product per worker appears to have been highest in transport and large-scale industry, but while it rose continuously in the latter, it remained stationary in the former, at least until 1930. The comparatively high labour product in transport is an expression of a scarcity element on the one hand and a monopoly element on the other hand. Its lack of growth is due to obsolescence and inadequate replacement of railway stock. In contrast, while product per worker was at first lower in large-scale industry, it rose significantly during the inter-war period with the rapid development of new industrial branches.

Labour product in mining ranks next to transport and manufacturing, with trade, services and small-scale industry

¹ This observation does not apply to the first decade of the century, when agriculture developed rapidly so that the gap was actually narrowed between 1900 and 1910.

² 1941 Labour Force combined with average 1936/37-1939/40 output, so as to avoid distortion due to poor 1941 harvest.

³ Includes domestic, government, community, business, professional, recreational and other similar services.

ranged in that order. The 1900 estimate for mining is undoubtedly an overstatement, probably owing to inadequacies in either deflation and/or boundary adjustment. The comparatively low product per worker in trade and services is partly a reflection of considerable under employment in both of them. Moreover, the trading sector includes a large number of small urban and rural shopkeepers whose individual contribution to national product is small. Services, on the other hand, encompass domestic servants, whose 'output' was quite low and business and professional services in which it was rather high. As a matter of fact, the rising labour product in this economic branch is due to the declining importance of domestic service as compared to the other segments of the sector.

IV. CAPITAL FORMATION

1. *Approach and concepts*

The investigation of capital formation in this study is focused upon the annual new investments in fixed capital (including dwellings) in the various branches of the Hungarian economy during the period under consideration. In effect it attempts to measure annual gross investment, excluding expenditure on maintenance and repair, but not on replacement. Because of lack of data on depreciation or sufficient bases for original estimates of depreciation allowances, it was not possible to extend this analysis to net investment.

Some of the estimates in this study, such as those for agriculture and housing, have been arrived at on the basis of the 'change in stock' method rather than Kuznet's 'commodity flow' approach.¹ If detailed output data based on an elaborate industrial classification are available, the 'flow' method is undoubtedly preferable, since valuation problems are minimized. In the case of Hungary, such data were lacking for most of the economic sectors, while some stock data based on various censuses were available.

Investments were classified in terms of economic location rather than financial origin. Thus, government financed investments in railroads, communications, roads, etc., were placed in the relevant economic sector, while only investments in public governmental services and activities, i.e. health, welfare, educa-

¹ Simon Kuznets, *Commodity Flow and Capital Formation*, New York, 1938.

tion, etc., were assigned to government. The concept used relates to domestic capital formation, both private and governmental, exclusive of defense and armaments expenditures.

Unlike the series for national income, our estimates of capital formation cover only a twenty-five year period, from 1924 to 1949. The character of the pre-World War I data were such that it was not possible to build up investment estimates for 1900 and 1912.

All of the capital formation estimates given in this study are expressed in terms of current and constant (1937) reproduction costs. 1937 was selected as a base year, both for practical and conceptual reasons. On the one hand, that was the only year for which detailed cost estimates could be obtained from the Judik-Nötel study discussed below. On the other hand, with technological changes affecting both the type and quality of equipment used in the production process, it was felt that choosing a year midway in the period as a whole would tend to minimize the error arising from this factor. Some additional considerations pointed to the selection of 1937, i.e. it was a year of comparatively brisk investment activity, yet one in which prices of capital goods were neither at the abnormally low depression levels nor at the highly inflated ranges of the war years.

2. *Studies of capital formation in Hungary*

Hungarian economists have paid much less attention to systematic analyses of capital formation than to studies of national income and wealth. Fellner, however, did make a conscious effort to investigate 'whether all of the country's national income was consumed during the past ten years, and if not, the extent to which it contributed to the accumulation of the national wealth'.¹ Therefore, in his national income studies for 1899-1901 and 1911-13, he estimates changes in capital inventory components between approximately 1890 and 1900, and again between 1900 and 1911-13. For some elements, Fellner used his estimates of capital stock for the two periods to obtain average annual investment; in other cases he based his estimates on the total stream of expenditures during the period as a whole. However, practically every one of the elements covered a somewhat different time span.

¹ *Statistische Monatschrift*, 1916, *op. cit.*, p. 598.

As a result of the methods used, the averages which were derived reflect price changes as well as real average annual increases in capital stock. Therefore, the figures cannot be considered as representative of annual investment for the years for which Fellner estimated national income.

Fellner's pioneering efforts stimulated some further interest in studies of capital formation. Thus, in 1929, Eber published an article in which an attempt is made to measure gross capital formation in Hungary between 1924 and 1928.¹ However, his study suffers from certain conceptual inconsistencies and statistical shortcomings. There is confusion between the financial and the real aspects of capital formation; for instance, changes in monetary reserves held by the bank of issue are lumped together with investments in fixed capital. Moreover, the estimates are frequently based on qualitative guesses, resorted to because of lack of data. In addition, the estimates are rather incomplete since some types of capital were left out of account, such as farm buildings, forests, fruit trees, vineyards, privately owned mines, factory buildings and privately owned railroads.

Another attempt to study capital formation was made by Matolcsy and Varga in the course of their national income study. In it they estimated what they call the 'capitalized part' of the national income for the economy as a whole and for its principal branches. However, these data are given only in passing, without any discussion of concepts and methods used. It is not clear whether they relate to gross investment or change in the capital inventory, though it would appear that the authors had the latter in mind. It is also uncertain as to what concept of costs they used and just what capital items were covered, but it seems that they confined themselves to measuring the changes in the stock of machinery and equipment, thus excluding structures.

The most useful study is a fairly recent one done by Judik and Nötel under the auspices of the Hungarian National Bank and available only in unpublished form.² This work yields the first

¹ Antal Eber, 'Formation of Hungary's National Capital from 1924 to 1928' (in Hungarian), *Kozgazdasági Szemle*, 1929, pp. 177-223.

² A summary of this study was published in the *Schweizerische Zeitschrift für Volkswirtschaft und Statistik*, Vol. 85, No. 2, 1949, under the title 'Statistical Investigation of Capital Formation'. However, while working on this study in the offices of the United Nations Economic Commission for Europe in Geneva, Switzerland, the complete manuscript was placed most generously at my disposal by Dr. Rudolf Nötel, with whom I spent many long hours in discussing various problems arising in the course of this study, problems on which he was always able to throw some light.

conceptually consistent estimates of capital formation in Hungary based on a detailed, thorough and painstaking statistical analysis. It investigates the trends both in gross and net capital formation in terms of current and constant (1937) reproduction costs for each major capital component in every economic branch. Unfortunately the study covers only four years – 1937 to 1940 – so that for purposes of this investigation, the series had to be extended to the whole inter-war and post-war period. This involved the compilation of original estimates for most years and an adjustment of the Judik-Nötel data to make them comparable with the rest of the series. Since the data for the whole 1920–50 period were not available in the same detail as those at Judik and Nötel's disposal, it was frequently necessary to use different, and at times more indirect, statistical methods.

3. *Gross investment in Hungary, 1924/25 to 1949*

I. STATISTICAL METHODS

Annual estimates for gross capital formation in 1924/25 to 1939/40 and in 1946/47 to 1949 are given in Tables VIII and IX. Like the national product series, these figures relate to fiscal years (July 1st–June 30th), except for 1949. Investment estimates were available directly for 1937–40 from the Judik-Nötel study, and for the post-war years from officially published sources. For these years then, the task was essentially one of adjusting the data for conceptual and statistical comparability and consistency. However, estimates for the other years had to be constructed by the author on the basis of whatever data were available. For the sake of clarity, the statistical methods used in building up the estimates are outlined in two separate sections, the first relating to the inter-war, and the second to the post-war data.

A. THE INTER-WAR ESTIMATES

Agriculture

(a) *Farm equipment*

Data on annual additions to farm equipment stock, or on output and net trade of farm equipment, were not available except for 1937–40. However, there were annual statistics on the numbers of tractors and threshing machines. Complete data

on all types of agricultural machinery and equipment found on farms were collected in the agricultural census of 1935, the only census of this type undertaken during the inter-war period. Less inclusive data on farm machinery numbers were also available for 1942 and 1945.¹ These data were converted into value terms by using 1937 farm machinery prices. In this way total capital invested in farm equipment in terms of 1937 reproduction cost was obtained for 1935, 1942, and 1945. These figures provided a partial check and guide for the investment estimates made for the years subsequent to 1935.

Estimates of annual investment in farm machinery and equipment were based, for the most part, on the farm equipment tonnage carried by Hungarian railroads.² It was assumed that this tonnage was closely correlated with the gross annual additions to stock. The validity of this assumption is limited by the fact that Hungary was a small net exporter of farm equipment, so that the railroad tonnage figures would tend to overstate the volume of gross domestic investment. However, the margin of error introduced thereby should not be too wide.

Proceeding on this bases, we constructed an index of farm equipment tonnage carried by the Hungarian railroads, with 1937=100. This index was then applied to the 1937 investment as obtained from the Judik-Nötel study. The investment series thus expressed in constant 1937 prices were then converted, for purposes of comparison, with the national income series into current and 1938/39 prices by application of an investment cost index.³

(b) *Farm buildings*

These are supposed to include barns, store houses, silos, various types of structures used for storing manure, wells built by farmers and miscellaneous other buildings which form an integral part of the farm enterprise.

This phase of the study proved to be one of the most difficult since there are no data whatsoever on the stock or new con-

¹ Miklos Szentkiralyi, *Farm Machinery Requirements of Hungary* (in Hungarian), Hungarian Institute for Economic Research, Special Study No. 29, Budapest, 1946.

² *Annual Reports of the Royal Hungarian State Railroads for 1920/1921 to 1938/1939* (in Hungarian).

³ Such an index was adopted from *Data for the Appraisal of the State of Manufacturing Industry* (in Hungarian), published by the Hungarian Institute of Economic Research, Pamphlet No. 6, November 25th, 1947, p. 15.

struction of non-residential farm buildings. As a result, the estimates arrived at had to be based on the following rather roundabout methods:

The Hungarian Association of Insurance Companies conducted a country-wide survey in 1939 to determine the value of rural structures in connection with its intention to revise the prevailing fire insurance rates and system. The survey covered 6,480 farm enterprises in 144 villages distributed over 34 counties. It found that the ratio of farm residential housing value to that of farm building was 65.1 : 34.9 per cent. Censuses of population indicate that about 66 per cent of all residential village housing in 1920 and 69 per cent in 1930 was owned by the land-owning and land-renting population. Investment in village housing was estimated by methods outlined under 'Housing' below. The above percentages of 66 and 69 were applied to these estimates in order to obtain annual new construction by the land-owning population only. Finally, by applying the fire insurance survey ratio of 65.1 : 34.9 to the resulting figures we derived the annual estimates for farm building investment.

It would have been possible to use another method for estimating stock and investment in farm building, that used by Judik and Nötel, based on farm accounts data. Farm accounts statistics were published for some years of the inter-war period giving figures on capital invested in farm buildings per hectare of agricultural area. However, these farm accounts were based on a very limited and not particularly representative sample of farms. Even more serious than that, from the standpoint of this study, was the fact that the figures on capital invested in farm buildings per hectare were not comparable from year to year, since the concept of costs used was not consistent.

(c) *Irrigation, drainage, reclamation and water regulation*

These represent the relatively most reliable component in the estimates of agricultural capital formation. They were obtained on the basis of a careful study of the *Annual State Accounts*¹ and include government expenditures for these purposes from all sources, i.e. budgetary surpluses, special funds and appropriations. As far as possible, pure maintenance expenditures were

¹ A Magyar Kiralyi Legfobb Allami Szamvevoszek Jelentese, a *Magyar Allamnak Zarszamasasarol* (Report of the Supreme State Comptroller's Office Concerning the Annual Audit of State Accounts), for 1920/21-1939/40.

excluded. However, because of lack of data, it was not possible to include investments of local governments and as a result, the estimates must be considered as incomplete.

Some of these investments cut across the boundaries of several sectors. This applies particularly to river regulation which might perhaps be more legitimately ranked under transport investments. Since it was not possible to distinguish statistically between agricultural and non-agricultural investments in this category and since they applied preponderantly to farming, it seemed most appropriate to include them in the agricultural sector. In view of the fact that these data were obtained from annual accounts, stated in terms of current prices, they were converted to 1937 and 1938/39 prices by use of a construction cost index.¹

(d) *Vineyards*

The *Hungarian Statistical Yearbook* gives annual data on the total vineyard area broken down by 'European stock', 'grafted on American stock' and 'American stock'. Data are also given on the acreage cut out and the acreage newly planted, the latter corresponding to new investment. Unfortunately, however, these statistics were mutually inconsistent for most years. By definition, the change in vineyard area would have to equal the new acreage planted minus the acreage cut out; but the data did not check and, therefore, certain adjustments had to be made. This was done by assuming that the data relating to total area – and therefore those concerning net change in area – were more reliable than those concerning area cut out or newly planted.²

These changes in area and new plantings were translated into value terms on the basis of the 1937 planting costs per hectare given by Judik and Nötel, as follows:

European stock	2,295 pengő
Vines grafted on American stock	3,102 pengő
American stock	1,785 pengő

¹ Adopted from *Data for the Appraisal of the State of Manufacturing Industry*, *op. cit.*, p. 15.

² In making these adjustments the following sources were used: *Magyar Statisztikai Szemle* for 1925 to 1927. Hungarian Institute for Economic Research: *Report About the Economic Situation in 1945-47*, Part II, Agriculture, Table 3, p. 36. Central Statistical Office of Hungary: *Statistical Handbook of Hungary*, Vol. XV, 1948, (in Hungarian), pp. 123-4.

(e) *Forests*

Annual data on total forest area and on areas newly afforested are fairly readily available for most years of the period covered, in the *Statistical Yearbook* and in other sources. Good forestry statistics are usually a by-product of efficient and comprehensive forest management practices, something which was very much lacking in Hungary during the inter-war period. It is more than likely that the data are fairly complete as far as the large compact forest areas are concerned. However, it is doubtful that the statistics take sufficient account of smaller patches of trees scattered over numerous farms and the countryside.

In attempting to measure capital formation in forests, the relevant quantities are the rate of afforestation – both artificial and natural. However, since the figures on afforestation are stated only in area terms, this less satisfactory method had to be used for measuring annual capital formation. It was based on the 1937 costs of artificial afforestation per hectare, i.e. 104 pengöes, as obtained from Judik and Nötel.

(f) *Orchards*

Investments in orchards had to be omitted owing to lack of data concerning new plantings per year.

(g) *Manufacturing*

For lack of data, it was not possible to construct a detailed and reliable set of estimates for capital formation in manufacturing. The *Statistical Yearbook* for the years 1935 to 1939 did publish data on the value of the capital stock invested in manufacturing.¹ In addition Judik and Nötel constructed estimates for 1937 to 1940 for gross and net investment which are more complete and conceptually more reliable. While the yearbook data are largely based on book values, with varying concepts of costs, depreciation and age distribution of capital as among reporting firms, the Judik-Nötel data are uniformly based on reproduction costs.

For all years of the inter-war period, the *Statistical Yearbook* published data on the value of capital stock invested by corporate enterprises in manufacturing. These data represent book values (depreciated) derived from corporate balance sheets.

¹ See *Annuaire Statistique Hongrois*, 1938, p. 130.

From these an index of annual net change in stock was computed (1937=100) which then was applied to the Judik-Nötel estimate of gross investment for 1937, so as to obtain the manufacturing investment series in Table IX.

Implicit in this method are two sets of assumptions: first, that investment in corporate enterprise was representative of manufacturing as a whole, and second, that the direction and *relative* amplitude of year-to-year variations in gross and net investment would be the same. The first assumption may be considered a sound one; during 1936-38, an average of 89 per cent of total manufacturing output was produced in corporate enterprises, and about 75 per cent of total industrial capital was invested in them. The second assumption, however, undoubtedly involves a considerable margin of error. Gross and net investments are likely to move in the same direction under most sets of conditions, i.e. an increase or decrease in one accompanies a similar change in the other. However, given a straight line depreciation function, a constant amount of gross investment will involve a decrease in net investment while a low level of gross investment may result in negative net investment. But these are rather exceptional circumstances in reality. The most serious source of error arises out of the assumption that the relative amplitude of movement is the same, i.e. that a certain rate of increase in gross is followed by a corresponding rate of increase in net or vice versa. This would occur by coincidence only.

Therefore, the investment estimates in manufacturing represent no more than a rough order of the magnitudes involved. For this reason, growth and capital formation in manufacturing was measured by other means as well, e.g. change in horsepower capacity in the different branches of manufacturing.

(h) *Mining*

The investment estimates for mining were constructed by computing an index (1937=100) based on the change in the stock value of mining equipment as estimated by Matolcsy and Varga.¹ This is a change in gross stock (undepreciated) and differs from gross investment in that it takes account of capital retirement (gross investment minus capital retirement=change in stock).

¹ *National Income of Hungary, op. cit.*, Tables 116 and 117, p. 116.

The investment estimates were actually obtained by applying this index to the 1937 gross investment figure for mining as a whole, given by Judik and Nötel. Implicit in this procedure are again two sets of assumptions; that change in stock of machinery and equipment alone was representative of changes in total capital including structures, and that movements in gross investments corresponded to movements in stock.

The estimates thus obtained were in terms of 1937 prices, which were converted into current prices by means of the aforementioned investment cost index.

(i) *Communications*

Investment estimates for this sector may be considered as reliable. They include investments in railroads, post, telephone and telegraph, civil aviation, river shipping and port construction, and road and bridge construction. All parts of this sector were under public control; specifically, all of these were state enterprises except for county and municipal road construction. It was possible to obtain data on annual government expenditures for these purposes from the *Annual State Accounts*. The *Statistical Yearbook of the City of Budapest* gives investment expenditures for the city's road construction, and the *Annuaire Statistique* published data on road construction and maintenance expenditures in smaller cities and towns. On this basis, and excluding as far as possible maintenance expenditures, and making other minor adjustments, we compiled the investment series in Table VIII. These were then converted into constant prices by use of an investment cost index.

(j) *Housing*

In the *Annuaire Statistique* data are published on the net change in the number of houses, apartments and rooms, the number of houses torn down and the number of apartments newly built. From these, it was relatively easy to calculate the total number of new rooms built during a given year. The yearbook gives the data separately for the following categories: Budapest, the other cities, the smaller towns, and the villages. In addition, the *Statistical Yearbook of the City of Budapest* gives further details on housing construction in that city.

The latter and the Judik-Nötel study give the following as the average area per room and cost of construction per cubic metre:

	Area/Room in cubic metres	1937 Construction Cost in pengö per cubic metre
Budapest	214	30.2
Other cities	187	26.0
Towns	174	21.0
Villages	162	16.0

Applying the unit cost factors to the number of new rooms built as computed from the data given in the *Annuaire Statistique*, we obtained a gross housing investment series in terms of constant (1937) prices. These were then converted into current prices by use of a building cost index.

(k) *Government*

These data were computed on the basis of a detailed study of the annual *Audit of State Accounts*. In order to avoid duplication, government expenditures for communications, transport and road construction for drainage and irrigation, for state industrial and mining enterprises, etc., were excluded. All items of maintenance were also excluded whenever they could be distinguished as such. However, government investment expenditures from all sources were included, i.e. government budget, budget surpluses, special funds and appropriations.

On the other hand, for lack of data, we could not include investments by local governments.

The government series were originally compiled in terms of current prices and then converted into constant prices by using an investment cost index.

B. The Post-war Estimates

(a) *1947/48*

Official investment figures were published by the Hungarian authorities for 1947/48. These are based on a much broader concept of investment than the one adopted in this study, i.e. they include expenditures on seed, fertilizer, and livestock distribution. Moreover, the official investment figures are based on a conceptually inconsistent sector distribution. Fortunately, it was possible to make the necessary adjustments since a rather detailed break down of investment expenditures was published in the *Report About the First Year of the Three-Year Plan* (in Hungarian), pp. 161-9.

On this basis then, the sectors were regrouped as follows:

Agriculture includes investments in irrigation, farm machinery, warehouse and silo construction, state farms, construction of veterinary health stations, plant and animal breeding farms, and afforestation. Expenditures on seed, fertilizer, and livestock distribution were excluded as non-investment items.

Mining and Smelting is listed as originally published.

Manufacturing includes investments in handicraft, and the following transferred from agriculture: home-craft, rural electrification, food processing, farm equipment industry and fertilizer production.

Communications includes all national and local railways, river shipping, aviation, road transport, postal service and telephone and telegraph. It also includes rural roads and railways which were transferred from agriculture.

Housing covers investments in all dwelling construction, including rural dwelling which was originally listed under agricultural investments.

Health, welfare and education also includes transfers from agriculture, i.e. agricultural education, rural school instruction, and rural health facilities.

Public construction includes public building and drainage, river regulation and flood control with corresponding items transferred from agriculture.

All these data were published in terms of current prices. The adjusted estimates were converted to January 1947 prices on the basis of an investment cost index.

(b) *August to December 1948*

The Monthly Bulletin of the National Bank of Hungary for January 1949 gives the total investment for the five-month period in current prices. A sector break down for state investment only is given in the same source with further detail in the *Bulletin of Economic Statistics* (in Hungarian) for February 1949. According to the official estimates, 5 per cent of state investment was channelled into fertilizer, seed and livestock distribution, items which are not included in the investment concept used here. On the assumption that the same proportion of total investment was allotted to these items, this percentage was applied to total investment and deducted from it.

The distribution of the total investment was estimated by

taking account of the 1947/48 break down, the changes in the distribution of state expenditures between 1947/48 and August to December 1948, and the ratio of state to total investment in each sector in 1947/48.

Finally, the estimates for each sector were converted into January 1947 prices on the basis of monthly wholesale price indices for building materials and engineering products.

(c) 1949

No official investment data for this year were released. However, a number of statements concerning investment may be found in the Vas report on the Three-Year Plan, and in the 1949 Annual Plan Report.¹

According to the latter source, total investment during the whole Three-Year Plan period, i.e. 1st August 1947 to 31st December 1949, was 10.3 billion florins (presumably in current prices though this is not explicitly stated). By deducting from the Plan total, the 2,494 million invested in 1947/48 and the 1,530 million florins invested from August to December 1948, we derived an estimate of 6,276 million florins (in current prices) for 1949.

Vas in his report states that investment in 1949 was 17.8 per cent of national income as defined by Hungarian concepts. This would be, in millions of florins: $33,544 \times 17.8 = 5,971$ in current prices and $26,835 \times 17.8 = 4,777$ in January 1947 prices.

The discrepancies between the two sets of estimates, when stated in comparable prices, are not very marked. Of these, the second set was adopted. There is no certainty whatsoever that the global total for the Plan is comparable with the data for 1947/48 and for August to December 1948.

It is much more difficult to estimate the sector break down for 1949 investment, particularly since Vas' statements concerning investment in individual economic branches are contradictory. The task is further complicated by the absence of any data on the performance of the sub-groups. For this reason, it was not possible to regroup the sector break down according to a conceptually more consistent classification. Therefore, the sector estimates for 1949 must be considered as

¹ Zoltan Vas, *The Three-Year Plan - Victory of Our People* (in Hungarian), Budapest, 1950. *Report of the National Planning Office about the Execution of the 1949 Annual Plan*, published in the Hungarian Statistical Review, January-February 1950, p. 75.

highly tenuous and crude. They were obtained by assuming that the percentage distribution was the same as estimated for August to December 1948.

The investment total which appears in Tables VIII and IX was arrived at by deducting 5 per cent from the previously indicated estimate of 4.8 billion florins. This 5 per cent, based on the relevant proportion for August to December 1948, represents an allowance for non-investment items, such as seed and fertilizer, which should be excluded from the investment total.

Even with these conceptual adjustments, the inter-war and post-war estimates are not completely comparable, particularly as far as the government sector is concerned. As was indicated earlier, in the inter-war estimates, investments by local governments had to be left out – except for expenditures on road construction – due to lack of data. However, all of these are included in the post-war estimates, in addition to various public services (health services for example) which were partly in the hands of private welfare agencies during the inter-war period and which could not be included for lack of data. All of this accounts for the marked swelling of the government sector as compared to the earlier years.

C. Inventories

For most inter-war years, the *Annuaire Statistique* published data only on inventories in mining and manufacturing. Thus the 'change in inventory' estimates in this study relate only to these two sectors and to livestock numbers. The latter was computed by applying 1937 prices to the changes in various species. Afterward the series were converted into current prices by means of the relevant price index.

II. ANALYSIS OF INVESTMENT TRENDS

A. Capital Formation Between the Two Wars

1. The investment in housing

The estimates in Tables VIII and IX indicate that with the exception of the early twenties and late thirties, around 40 per cent of total annual investment was channelled into housing. This comparatively large investment share absorbed by residential construction was due to the interplay of numerous factors, demographic, economic and institutional.

TABLE VIII
Gross Capital Formation in Trianon Hungary, 1924-49¹
(in millions of 1937 pengö)

Year	Agriculture ²		Manufacturing		Mining		Communications		Housing		Government		Total Amt.
	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	
1924/25	94.1	30.3	101.7	32.7	1.3	0.4	35.6	11.5	65.3	21.0	12.6	4.0	310.6
1925/26	109.7	25.9	99.9	23.6	1.4	0.3	56.6	13.4	130.5	30.8	25.5	6.0	423.6
1926/27	125.3	22.1	121.8	21.5	3.0	0.5	78.7	13.9	188.0	33.2	48.9	8.6	565.7
1927/28	130.3	18.5	130.8	18.6	0.7	0.1	111.8	15.9	270.2	38.4	59.2	8.4	703.0
1928/19	125.7	16.9	167.4	22.6	7.3	1.0	78.9	10.6	289.8	39.1	71.7	9.6	740.2
1929/30	96.4	17.2	131.6	23.5	5.2	0.9	62.7	11.2	226.6	40.4	37.6	6.7	560.1
1930/31	56.6	12.9	114.4	26.1	6.8	1.5	74.7	17.1	161.6	36.9	23.4	5.3	437.5
1931/32	45.2	11.2	106.4	26.4	6.7	1.7	69.2	17.2	153.5	38.1	22.3	5.5	403.3
1932/33	37.4	11.5	67.5	20.8	3.4	1.1	71.5	22.1	134.5	41.5	9.5	2.9	323.8
1933/34	34.7	13.4	31.9	12.4	2.0	0.8	55.6	21.5	129.3	50.1	4.7	1.8	258.2
1934/35	39.3	15.4	20.3	7.9	5.2	2.0	61.2	23.9	122.6	48.0	6.5	2.5	255.1
1935/36	42.5	13.8	49.3	16.0	5.7	1.8	64.8	21.0	137.8	44.6	8.6	2.8	308.7
1936/37	45.8	11.4	112.7	28.0	11.9	2.9	62.1	15.4	158.0	39.3	11.2	2.8	401.7
1937/38	48.1	10.7	126.2	28.1	12.6	2.8	92.7	20.6	150.2	33.4	19.6	4.4	449.4
1938/39	45.8	9.2	150.0	30.3	16.3	3.3	127.7	25.8	130.3	26.3	25.4	5.1	495.5
1939/40	50.0	9.1	173.3	31.7	24.9	4.6	149.0	27.3	119.3	21.8	29.4	5.4	545.9
1947/48													
Total	28.0	8.0	107.0	30.5	33.0	9.4	88.0	25.0	31.0	8.8	64.0	18.2	351.0
Monthly Av.	2.3	8.0	8.9	30.5	1.9	9.4	7.3	25.0	2.5	8.8	5.3	18.2	29.2
1948 (Aug.-Dec.)													
Total	18.0	8.3	69.0	32.5	15.0	7.2	54.0	25.5	18.0	8.6	38.0	17.8	212.0
Monthly Av.	3.6	8.3	13.8	32.5	3.0	7.2	10.8	25.5	3.6	8.6	7.6	17.8	42.5
1949													
Total	70.0	8.3	275.0	32.5	61.0	7.2	215.0	25.5	73.0	8.6	150.0	17.8	846.0
Monthly Av.	5.8	8.3	22.9	32.5	5.1	7.2	17.9	25.5	6.1	8.6	12.5	17.8	70.5

¹ Agriculture and housing were originally estimated in 1937 prices; the other sectors were converted by application of an investment

² Excluding livestock.

TABLE 1A
Gross Capital Formation in Trianon Hungary, 1924-49
(in millions of pengö at current prices)

Year	Agriculture		Manufacturing		Mining		Communications		Housing		Government		Total Amt.
	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	Amt.	Per Cent of Total	
1924/25	79.4	22.2	130.9	37.6	1.7	0.5	45.8	12.8	84.0	23.5	16.2	4.5	358.0
1925/26	113.0	23.6	116.5	24.3	1.7	0.3	66.0	13.8	152.2	31.8	29.8	6.2	479.2
1926/27	132.2	21.2	136.1	21.8	3.4	0.5	87.9	14.1	210.0	33.6	54.6	8.7	624.2
1927/28	132.8	16.4	153.1	18.9	0.8	0.1	130.8	16.2	321.6	39.8	69.3	8.6	808.4
1928/29	130.9	15.2	195.7	24.3	8.5	1.0	92.3	10.7	351.6	40.8	83.1	9.6	862.1
1929/30	101.1	15.7	148.8	23.1	5.9	0.9	70.9	11.0	273.6	42.6	42.5	6.6	642.8
1930/31	59.4	12.3	124.4	25.7	7.4	1.5	81.2	16.8	186.4	38.5	25.4	5.2	484.2
1931/32	47.1	11.3	108.8	26.0	7.1	1.7	70.7	16.9	161.5	38.6	22.8	5.4	418.0
1932/33	37.1	32.1	63.9	20.8	2.7	0.9	67.7	22.0	127.1	41.3	9.0	2.9	307.5
1933/34	33.9	14.2	29.3	12.3	1.1	0.5	51.1	21.5	118.2	49.7	4.3	1.8	237.9
1934/35	38.8	16.5	18.4	7.8	4.7	2.0	55.5	23.6	111.8	47.5	5.9	2.5	235.1
1935/36	42.3	14.8	45.2	15.8	5.2	1.8	59.4	20.7	126.3	44.1	7.9	2.7	286.3
1936/37	45.7	11.7	108.8	28.0	11.5	2.9	59.9	15.4	152.1	39.1	10.8	2.8	388.8
1937/38	48.6	10.7	127.3	27.9	12.7	2.8	93.5	20.5	153.5	33.7	19.8	4.3	455.4
1938/39	47.2	9.3	152.9	30.0	16.6	3.2	130.1	25.5	137.0	26.9	25.9	5.1	509.7
1939/40	51.3	8.8	182.0	31.4	26.2	4.5	156.5	27.0	132.5	22.9	30.9	5.3	579.4
1947/48 ¹													
Total	152.0	8.15	588.0	31.5	129.0	6.9	479.0	25.7	169.0	9.1	348.0	18.7	1,865.0
Monthly Av.	12.7	8.15	49.0	31.5	10.2	6.9	39.9	25.7	14.1	9.1	29.0	18.7	155.4
1948 (Aug.-Dec.) ¹													
Total	97.0	8.3	379.0	32.5	84.0	7.2	297.0	25.5	101.0	8.6	208.0	17.8	1,166.0
Monthly Av.	19.4	8.3	55.8	32.5	16.8	7.2	59.4	25.5	20.2	8.6	41.6	17.8	233.2
1949 ¹													
Total	377.0	8.3	1,475.0	32.5	327.0	7.2	1,158.0	25.5	390.0	8.6	808.0	17.8	4,535.0
Monthly Av.	31.4	8.3	122.9	32.5	27.25	7.2	96.5	25.5	32.5	8.6	67.3	17.8	377.1

¹ In millions of January 1947 florin.

During the period under consideration, there was not only a continuing growth in population (even though at a decreasing rate) but also a marked trend towards urbanization. As the data below indicate, the population of Hungary's capital city increased by almost a quarter during the twenties, while smaller cities and towns grew in size by almost a fifth. This same trend continued during the thirties, but at a much slower rate.¹

TABLE X
Rate of Population Increase in Hungary, 1920-40

Period	Rate of Increase in Total Population	Rate of Increase in Rural Communities ²	Rate of Increase in Budapest	Rate of Increase in Other Cities and Towns
	Per cent	Per cent	Per cent	Per cent
1920-30 . . .	8.7	4.5	24.0	18.0
1930-40 . . .	7.3	0.3	7.3	13.6

Housing needs were particularly acute in Budapest during the twenties, providing a powerful impetus to the boom in residential construction. However, in spite of this, housing space increased by only about 10 per cent during the entire inter-war period. Similarly, in the smaller cities and towns, the rate of expansion in housing space lagged behind the rate of urban growth. Consequently, in comparison with pre-World War I conditions, housing standards in the cities deteriorated. On the other hand, the increase in the stock of rural housing outpaced the very low rate of rural population increase, so that housing standards in the countryside improved.³ Rural construction activity was also stimulated by the post-World War I land subdivision and reform, which led to the establishment of 390 thousand new farm holdings and rural house lots.⁴

Other factors tended to stimulate an expansion of housing. Relatively scarce long-term money could be more easily secured

¹ Part of the increase in urban population between 1920 and 1930 was due to the return of urban residents who in 1920 sought in the countryside temporary refuge from urban food shortages and hyperinflation.

² Communities of less than 10,000 souls.

³ Deterioration and improvement refer here only to the housing space available per person and not the other factors which may affect quality of housing.

⁴ See A. Eckstein *Land Reform and the Transformation of Agriculture in Hungary*, *Journal of Farm Economics*, August 1949, p. 457.

for housing construction than for other types of investment. Interest rates on long-term funds fluctuated between 7 and 9 per cent, as compared with 12 per cent and more for medium and short-term loans. At the same time, amortization rates on housing mortgages were comparatively liberal, with long terms of repayment. For this reason, some of the foreign capital lent to Hungarian banks in the twenties was re-invested in housing mortgages. A comparatively high rate of return on housing investment was also facilitated by a thirty-year real estate tax exemption on newly built houses, representing in effect a housing subsidy. In addition, for certain types of construction, particularly workers' and rural housing, government and municipal loans on especially favourable terms were made available.

Certain psychological and social considerations also encouraged the growth in residential construction. The post-World War I inflation, combined with a marked feeling of political and economic insecurity, cast its shadow upon the country's economic life during the whole inter-war period, and tended to undermine public confidence in the domestic currency. This tended to drive liquid funds into 'Sachwerte', of which real estate was considered one of the most desirable forms. These trends were further reinforced by considerations of prestige and 'keeping up with the Joneses', i.e. by psychic incomes. The growing industrial and commercial upper class as well as the gentry and absentee landed aristocracy living in Budapest channelled much of their accumulated wealth into luxury housing. Moreover, the expanding intelligentsia and upper government bureaucracy was willing, for prestige considerations, to devote a large proportion of its income, frequently about 40 to 60 per cent, to housing.¹

2. *Capital formation in manufacturing*

Roughly, about one-fifth to one-third of total capital formation was in manufacturing, with the levels of investment fluctuating widely in response to cyclical variations. In appraising these figures, it is important to keep in mind the limitations inherent in the methods on which they had to be based. For this reason and in order to obtain a more detailed

¹ Josef Somlyo, *Wohnungsbauten und Wohnungsbedarf in der Hauptstadt Budapest*, Ungarisches Wirtschafts-Jahrbuch, 1929, p. 329.

TABLE XI
Horse-Power Capacity of Hungarian Manufacturing Industry, 1925-47¹

Year	Iron and Steel	Engineering	Stone and Glass	Wood and Bone	Leather and Leather Products	Textiles	Clothing	Paper and Paper Products	Food and Beverage	Chemical	Printing and Publishing	Total Manufacturing excluding Power Products	Power Production	Total Manufacturing
1925	188,400	65,700	52,100	17,490	11,600	40,900	1,900	2,600	153,500	28,500	5,000	567,690	368,900	936,190
1926	168,800	68,100	55,800	17,120	10,900	44,700	1,700	3,300	156,200	28,400	5,000	560,020	396,200	956,220
1927	155,200	67,800	60,200	18,500	12,100	52,100	2,100	3,100	158,800	29,100	5,900	564,900	462,000	1,026,900
1928	148,200	64,400	63,000	18,600	13,600	58,600	2,200	4,500	162,000	30,000	6,100	571,200	503,500	1,074,700
1929	148,512	68,040	66,839	19,434	14,042	59,970	2,402	8,087	164,046	30,744	6,266	588,382	558,191	1,146,573
1930	164,294	75,194	67,249	18,327	15,461	64,531	1,863	9,074	167,871	35,125	6,606	625,595	664,659	1,290,254
1931	164,882	75,834	64,559	16,943	15,400	68,482	2,161	9,821	173,112	37,906	6,866	635,966	665,241	1,301,207
1932	167,885	82,508	62,306	15,477	15,249	65,009	2,081	9,893	175,530	42,447	7,129	645,514	651,687	1,297,201
1933	165,753	89,003	62,247	14,109	16,012	69,528	2,006	16,309	179,282	42,932	6,933	664,114	699,832	1,363,946
1934	169,614	89,046	60,502	14,686	15,899	72,702	1,844	16,520	183,932	43,910	6,802	675,457	693,166	1,368,623
1935	181,917	84,946	71,886	18,928	17,214	78,329	2,124	17,089	206,419	49,289	6,996	735,137	701,954	1,437,091
1936	175,057	83,168	69,682	20,550	18,948	86,432	1,988	20,314	216,427	53,065	6,881	752,512	706,143	1,458,655
1937	194,860	88,641	67,402	21,765	20,407	92,234	2,501	25,311	220,797	54,801	7,116	795,835	724,861	1,520,696
1938	198,771	94,677	70,043	22,954	20,978	95,082	2,517	27,336	222,814	62,406	7,154	824,732	727,477	1,552,209
1939	229,545	95,868	70,623	22,495	116,189	2,863	2,863	28,359	223,202	67,549	7,207	863,900	723,515	1,587,415
1940	242,983	106,293	69,647	23,185	22,410	98,171	4,589	29,391	228,414	70,074	7,486	902,743	761,126	1,663,869
1941	—	—	—	—	—	—	—	—	—	—	—	—	—	1,786,000
1942	—	—	—	—	—	—	—	—	—	—	—	—	—	1,866,700
1943	—	—	—	—	—	—	—	—	—	—	—	—	—	2,021,200
1944	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1945	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1946	346,800	—	69,800	21,000	28,450	110,530	3,870	33,080	239,500	96,880	6,520	956,430	865,300	1,821,730
1947	355,500	—	77,100	22,400	28,900	121,120	4,180	32,500	241,800	114,300	7,225	1,005,025	873,200	1,878,225

¹ Measures the capacity of prime movers installed in an establishment, plus the capacity of electric motors driven by electricity brought in from the outside.

SOURCES: For 1925-28 Dr. Stephen Varga, *Data on the Business Situation of Hungarian Manufacturing Industry* (in Hungarian), Hungarian Institute for Economic Research, Special Supplement, No. 8, p. 31.

For 1929-1938 inclusive: *Annuaire Statistique de la Hongrie*.

For 1939: Dr. Sandor Farkasfalvy, *The Position of Hungary's Manufacturing Industry in 1939* (in Hungarian), M.S. Sz., Vol. XVIII : 11, November 1940.

For 1940: Dr. Sandor Farkasfalvy, *Die Lage der Ungarischen Fabrikindustrie im Jahre 1940*, U.W.J. 1941, p. 163.

For 1941-43: *Data for the Evaluation of the Business Position of the Hungarian Manufacturing Industry* (in Hungarian), Hungarian Institute for Economic Research, Pamphlet No. 6, 25th November 1947.

For 1947: *Monthly Bulletin of the Hungarian National Bank*, Vol. XXI : 11-12, p. 562, and *Bulletin des Statistiques Economiques*, Vol. II, No. 8, June 1948.

view of the trends in the capital equipment of the individual branches of manufacturing, it may be useful to trace changes in horse-power capacity, for which data are available on an annual basis. These data represent changes in equipment alone, instead of total new equipment and buildings added. Also they cannot be compared or translated directly into value terms since the cost per horse-power varies immensely between industries and between technical processes within industry. On the other hand, this approach has the advantage that it avoids the difficult investment valuation problem and does provide a clear indication of physical growth and structural changes.

The total capacity of Hungarian manufacturing grew from 570 thousand in 1925 to more than 900 thousand horse-power in 1940 – excluding electric power production, or from 940 thousand to 1,660 thousand, if it is included. This represented an increase of almost 60 per cent in the first instance, and almost 80 per cent in the second. Most of the expansion in manufacturing (excluding power) took place during the thirties, with but a small rise of less than 4 per cent in the preceding decade.

This comparative stagnation in industrial growth of the twenties was more apparent than real. It was primarily caused by the fact that the older industries – those established prior to the First World War – were geared to the much larger internal market of the Old Kingdom and were over-extended in relation to the Trianon market. The three largest industries of the country – metals, engineering and food processing – belong into this category. Consequently, some plants were actually dismantled, as illustrated by the fact that the horse-power capacity in the metal trades declined by more than 20 per cent. In the engineering and food processing industries, this was accompanied by structural changes involving a decline in certain branches and growth in others, resulting in a net increase of about $3\frac{1}{2}$ and 7 per cent respectively.

In some respects the most interesting development is that of textile manufacture. This is a branch of industry which is usually developed in the early stages of a country's industrialization. However, the textile industry of pre-war Hungary could not outgrow its infancy owing to the fact that it had to face the competition of the highly efficient textile mills of Austria and Bohemia. Actually, because of the historical circumstances of Hungary's development, the character of its industrial growth

differed from the patterns of industrialization in other countries. Here was an under-developed agrarian economy evolving, in addition to food processing, an iron and steel and an engineering industry at an early stage. This is a pattern which is less like that previously established in other countries, but more like that currently sought by many of the under-developed areas.

Even the small textile industry established prior to World War I was lost to Hungary as a result of the peace treaty. This loss was more than made up by the rapid rates of inter-war growth facilitated by the introduction of a whole gamut of protective devices. This may best be illustrated by the following data:¹

	1921	1925	1929	1935	1938
	(in thousands)				
No. of Cotton Spindles	33	93	196	301	324
No. of Wool Spindles	5.8	30	50	70	80

From the standpoint of the country's industrial development as a whole, the continuous and rapid growth in the capacity of electric power production was most significant. This capacity was more than doubled during the inter-war period, thus providing one of the essential concomitants, as well as pre-conditions, for industrial development.

3. *Gross capital formation in agriculture and forestry*

One of the striking features of capital formation in inter-war Hungary is the continuously decreasing relative importance of agricultural investment, from about 26 per cent in 1925/26 to approximately 9 per cent in the late thirties. This was accompanied by a marked decline in the level of agricultural investments from a peak of 130 million pengö (in terms of 1937 investment costs), to a low of 35 million in 1933/34.

The higher levels of investment in the twenties were largely financed by mortgage loans obtained from banks, which, in effect, performed the role of intermediary between the foreign capital market and Hungarian agriculture. The general credit position of agriculture was potentially rather favourable, since all of its debt was wiped out by the inflation following World

¹ Budapest Chamber of Commerce and Industry, *Ungarn's Handel and Industrie im Jahre 1929 and 1939*.

War I. At the same time, the financial needs were considerable, both for operating and for fixed capital.

The World War, the Civil War following it, and the inflation created a tremendous accumulated lag in the replacement of farm buildings and equipment. This was further accentuated by the land reform which resulted in the subdivision of about 600 thousand hectares among 390 thousand peasants and landless farm labourers. These newly created farm holdings required capital for housing, farm buildings, equipment and livestock. However, the mortgage loans referred to above were as a rule not available to small peasants. They were generally considered poor credit risks, since they marketed a relatively small proportion of their farm produce, their cash income was small and their loan repayment abilities, after taxes, extremely limited. As a result, peasant holdings had to resort to much less favourable short-term loans at interest rates of 12 to 15 per cent and over, instead of the 8 per cent loans available on a long-term basis to the large estates. Therefore, while the total volume of credit at the disposal of the peasantry was comparatively small, its burden was considerable. This became a particularly acute problem with the collapse of agricultural prices and incomes during the depression. Various public debt relief measures were initiated to protect the peasants from losing their holdings, but these measures shut the peasant off from the money market completely, so that his credit difficulties during the thirties were more aggravated, even though state credit was made available on a more liberal basis.

For this reason, it is not surprising that growth in fixed capital was primarily confined to buildings and farm equipment on larger holdings. However, there were other, even more deep-seated, reasons for this. The large holdings, unlike the small peasant farms, were completely commercialized and oriented towards the market. As a result, the cash proceeds of sales could be utilized for purchases of farm investment goods.

In 1935, about 46 per cent of Hungary's agricultural area was in holdings of over 600 hectares.¹ Less than 1 per cent of the farm proprietors owned this land, while the other 99 per cent held only 54 per cent of the country's farming area. The smaller peasant farms were broken down into a number of scattered

¹ See *Les Conditions de la propriété foncière en Hongrie dans l'année 1935*, published by the Royal Hungarian Central Bureau of Statistics, Budapest, 1936.

land parcels as a result of a historical process of fragmentation via land inheritance. There were, on the average, 5.6 plots to a peasant farm, with about 1.2 hectares as the average size of a parcel.¹ Therefore, even if a small peasant could muster the cash and purchase a tractor, he would be unable to utilize it economically, except on some pooling or co-operative basis. However, the interplay of other forces would have made such an operation uneconomical, even under co-operative arrangements.

The dominant characteristic of Hungarian agriculture was a marked concentration upon grain production, with over 70 per cent of the country's cultivated area in cereals. The average annual labour requirements of grain are low, but there is a very high peak load at harvest and secondary loads at cultivating and planting time. This type of farm organization demands a labour force adequate to meet peak seasonal requirements even though it is unemployed or very inefficiently utilized during the rest of the year. This under-employment and over-supply of farm labour tended to depress the wages of hired workers and the real earnings of the self-employed peasantry. Even though small farms were somewhat more labour intensive, since they had a higher livestock density per hectare, the labour of the self-employed peasantry was far from fully utilized on an annual basis.

The results of a number of rather careful studies indicate that 20 to 30 per cent of the agricultural labour force was employed for less than 200 days a year, and that about 24 per cent of the available annual farm labour time-supply remained unutilized.² Given these conditions, the limits within which it might be economical to employ tractors would tend to be strictly circumscribed, both from the standpoint of the large farm operator and from the point of view of society as a whole. However, this need not preclude the utilization of farm equipment which is not primarily labour saving. Under Hungarian conditions, for instance, one of the factors in keeping crop yields low was the type of plough and cultivator used, which did not permit the working of the land to required depths.

In spite of these considerations, tractor numbers increased

¹ *Ibid.*

² M. Matolcsy, *Agricultural Unemployment in Hungary* (in Hungarian), Hungarian Institute for Economic Research, Special Study No. 6, Budapest, 1933.

considerably during the inter-war period. There were approximately 1.2 thousand in operation in 1925, 6 thousand by 1928, over 7 thousand in 1935 and over 10 thousand by 1942.¹ Even with this rapid increase, there was still only one tractor for 841 hectares as compared to 695 hectares in France, 210 in the Netherlands, and 62 in the United Kingdom.²

As was noted previously, this increase in tractors was mostly confined to large holdings. Changes in the farm capital of peasant farms principally involved shifts in the character of the livestock population. Horses tended to displace oxen as the principal means of draft power, not only because of their superior efficiency, but also because ownership of a horse represented a definite advance in social stature for the farm family. However, owing to the small size of many of the peasant farms and their fragmentation into even smaller scattered parcels, draft power was rather inefficiently utilized, and like labour, it was under-employed. To the extent that draft animal numbers were greater than would have been warranted in terms of maximum efficiency, they represented an unnecessary drain upon the scant resources of the small farms; land had to be diverted into the growing of feedstuffs which could otherwise have been used for raising meat animals or for growing a cash crop.

The principal positive development in the pattern of small peasant farm production was the marked increase in pig and poultry numbers.³ This made for improved efficiency and for greater real return in a number of ways. It tended to raise the level of land and labour intensity on the farm, provided for the possibility of an improved peasant diet (the traditional diet was sadly lacking in animal proteins) and/or a source of additional cash income. As one may suspect, pig numbers fluctuated considerably with the cyclical swings in business activity. This was a reflection of the fact that the demand for meat was highly income elastic. Thus, pig numbers increased from 3.6 million in 1922 to 3.9 million in 1928, then declined to 2.8 million by

¹ Miklos Szentkiralyi, *Farm Machinery Requirements of Hungary* (in Hungarian), *op. cit.* Gabor Durko, *Important Data Concerning Agricultural Mechanization* (in Hungarian) in Magyar Statisztikai Szemle, Vol. XXVI (1-6), January-June 1948, pp. 38-46.

² *Economic Survey of Europe in 1949*, Geneva, 1950, Appendix C, Table XX, p. 293, published by the United Nations Economic Commission for Europe.

³ Exact statistical data for poultry numbers are lacking; however, all of the available estimates indicate a rising trend.

1933, rose again to 5.5 million by 1939, only to drop once more during the war.

Apart from this trend towards increasing pig and poultry numbers, the basic pattern of farm organization and production remained unchanged throughout the whole inter-war period. The comparatively low level and share of agricultural investment represented a symptom as well as a cause of stagnation in this sector.

4. *Investment in transport and communications*

This sector includes capital formation in rail transport, river shipping and port construction, civil aviation, post, telephone and telegraph, and road and bridge construction enterprises which, for the most part, are under public ownership and control. Since road and bridge construction constituted a regular and integral activity of state and local governments, it was financed out of public funds. The Hungarian railroads and the postal system, including telephone and telegraph, were outright state enterprises, with the annual surpluses and deficits entering into the state budget. Civil aviation was of very minor importance in Hungary and was state-subsidized. The Danubian River Shipping Company was a commercial corporation with the controlling stock held by the state. Except for the post, telephone and telegraph, all of these enterprises were operating at a deficit during most of the inter-war period. Therefore, investments had to be financed, as a rule, out of the regular or special government budget.

Consequently, budget policy to a large extent governed investment activity in this economic sector. In as much as the Hungarians did not pursue a counter-cyclical, compensatory budget policy, investments in transport and communications followed the same cyclical swings as the general level of economic activity. These investments rose in the twenties and reached a peak in 1927/28; subsequently they contracted by more than half but began to recover again in 1934/35, so that by the end of the period they had exceeded the earlier peak.

High replacement needs, construction of a free port on the Danube in Budapest, and the laying of new international and internal cable lines accounted for the comparatively high level of investment in transport and communication in the twenties.

The late thirties, on the other hand, were characterized by an expansion in equipment to handle the increased traffic of goods and the rising transport needs generated by rearmament.

Generally speaking, there was no marked development of transport or communications in inter-war Hungary, since the rail and communications network was fairly fully developed prior to World War I, and the principal needs were in the field of replacement, modernization and re-equipment. In as much as inferior roads tended to hamper efficiency in marketing farm products, there was some further extension of the highway and rural road network.

5. *Government investment*

In analysing government investment, it is important to distinguish between the contribution of government to the other sectors and its investment in governmental activities as such. For purposes of this study, only government expenditures on construction and equipment of public buildings, schools, health and welfare institutions, etc., were considered government investments.

It is interesting to note in Table XII that while investment in government, in this narrow sense, played a comparatively minor role – varying between 2 and 10 per cent of total investment – government financing was one of the most important factors affecting the level and rate of capital formation as a whole. Government made its largest contributions to the financing of capital formation during the boom of the twenties when foreign capital was available, and after 1938, when a five-year government investment programme was inaugurated.¹

This public and publicly financed investment accounted for 25 to 27 per cent of total capital formation between 1925 and 1928, and for 22 to 27 per cent in 1937 to 1939 (excluding defence expenditures). On the other hand, during the depression, at a time when privately financed capital formation was rapidly shrinking, the government contribution was contracted even more sharply, so that the public share in total capital formation dropped to approximately 17 per cent. The level of expenditure for public works was raised somewhat in 1930/31 only to be reduced again the following year.

¹ *Ungarn's Handel und Industrie im Jahre 1938, op. cit.*

TABLE XII
*Government Investment in Hungary during the Interwar Period*¹
 (in millions of current pengő)

Year	Total Government-financed Investment		Investment in Governmental Activities Only	
	Amount	Proportion of Total Investment	Amount	Proportion of Total Investment
1924/25 . . .	65.5	18.3	16.2	4.5
1925/26 . . .	128.3	26.8	29.8	6.2
1926/27 . . .	159.2	25.5	54.6	8.7
1927/28 . . .	198.2	24.5	69.3	8.6
1928/29 . . .	175.1	20.3	83.1	9.6
1929/30 . . .	115.7	18.0	42.5	6.6
1930/31 . . .	96.6	20.0	25.4	5.2
1931/32 . . .	75.6	17.7	22.8	5.3
1932/33 . . .	53.5	16.8	9.0	2.8
1933/34 . . .	44.5	18.0	4.3	1.7
1934/35 . . .	48.7	20.7	5.9	2.5
1935/36 . . .	52.7	18.4	7.9	2.7
1936/37 . . .	56.9	14.6	10.8	2.8
1937/38 . . .	100.0	21.9	19.8	4.3
1938/39 . . .	137.6 ²	27.0	25.9	5.1

SOURCE: Computed by the author on the basis of the data in *A Magyar Allam Zárszámadása*.

B. The Allocation of Investment During the Post-War Years

The pattern of investment allocation emerging during the post-war period, and particularly with the inauguration of the Three-Year Plan in 1947, represents a logical extension of tendencies which were clearly evident in the late thirties. As a matter of fact the distribution of investment among the different economic sectors seems to have been almost identical in 1938/39, 1939/40 and 1947/48. There are however two significant exceptions: there was a drastic drop in the level and proportion of capital resources channelled into housing, paralleled by a corresponding increase in government overheads.

As in the late thirties, and more particularly during World War II, the overwhelming emphasis in investment policy was upon communications and manufacturing, with a marked

¹ Confined to investment in fixed capital.

² Excluding armament and defence expenditures. If these are included, the amount is 449.9.

accent upon the heavy industries. In 1947/48, the only year for which detailed data are available, at least 77 per cent of the total investment in manufacturing went into the metals, engineering, power-producing and chemical industries, while only about 15 per cent was directed to the consumer goods industries. The latter was probably barely enough to effect the necessary repairs of war damage and to satisfy replacement needs. However, the capital resources going into metals, engineering and power were of such proportions as to permit not only repair of war damage and replacement of obsolete equipment, but also new development and the creation of new capacity. Naturally, no clear line can be drawn between replacement and new development, since replacement usually involves modernization and the incorporation of technical advances and may, in and of itself, also result in expansion of productive capacity even without new plant construction.

The relatively large investment slice devoted to communications may be explained by the sizeable investment requirements of the railroads, the engineering and rolling stock of which were greatly depleted. The comparatively high level of post-war capital formation in mining results from increased investments in inferior coal-mines in an attempt to improve productivity, and to further expansion of mineral oil and bauxite extraction.

In contrast, investment in housing seems to have been sharply curtailed, with residential construction still lagging considerably below the lowest inter-war levels, even in 1949. This inevitably resulted in a sharp deterioration in the amount of space available per person, particularly in view of the considerable war damage in Budapest and a number of villages which were in the path of battle. Moreover, the far-reaching land reform of 1945 greatly raised the requirements for rural housing. This comparative neglect of housing investment reflects the marked emphasis upon expansion of the capital goods industries, with much lower priorities assigned to investments in those branches which serve direct consumer needs.

Contrary to the emphasis upon industrial investment, the share of capital resources allocated to agriculture fell even below the low point of the late thirties. It is important to bear in mind in this connection that the agricultural investment estimates given in Tables VIII and IX differ considerably from those officially published. According to the latter, close to

30 per cent of total investment went into agriculture,¹ as compared to the author's estimate of about 8 per cent. This discrepancy arises out of the fact that the official data are based on an unusually broad concept of agricultural investment according to which all expenditures on rural electrification, housing, road construction, building of schools, welfare and cultural institutions in the rural areas and the development of the farm equipment and fertilizer industries are considered as agricultural.

It is possible that as long as agriculture is dominated by a small holding peasant type of tenure, the agricultural investment proportion will be kept low, not only because capital formation is necessarily slow in this type of holding, but also because government policy may be designed to keep agriculture on a short investment ration. On the other hand, the state organs might be much more sympathetic to the investment needs of agriculture at a later date, when the land tenure system is completely revolutionized and the need for investment becomes more critical.

4. *National income and capital formation*

Large capital imports prior to World War I and in the late twenties, a military build-up in the late thirties and early forties, and high rates of forced saving attained within a framework of post-World War II controls and planning, have been the principal factors contributing to capital formation in Hungary.

Rates of investment, given in Tables XIII and XIV, increased particularly rapidly between 1924/25 and 1928/29 – in terms of both current and constant costs. The rate of gross capital formation in relation to net national product was doubled, rising from 7 to 13 per cent (7 to 15 per cent in terms of 1938/39 prices).

Between 1924/25 and 1930/31, a total of about 4.26 billion pengő were invested in fixed capital, while total capital imports were approximately 1.85 billion. Had all of this foreign capital gone into investment, over 40 per cent of fixed capital formation would have been financed in this way. As a matter of fact while only a part was channelled into investment, it undoubtedly was the most important single factor stimulating capital formation during these years. This was all the more so since the rate and

¹ *Report about the First Year of the Three-Year Plan, op. cit., p. 161.*

volume of domestic saving was rather low, as illustrated by the fact that in 1929, savings deposits in the country's largest financial institutions were still 40 per cent below the level attained in 1913, while total deposits (including foreign currency deposits) were at 76 per cent of the old peace-time level.¹

TABLE XIII

*Net National Product and Gross Capital Formation in Hungary,
1924-49, in Current Prices*

(in millions of pengöes)

Year	Gross Formation of Fixed Capital	Inventory ² Change	Total Gross Capital Formation	Net National Product	Gross Formation of Fixed Capital as Percentage of N.N.P.	Gross Total Capital Formation as Percentage of N.N.P.
1911-13 ³	200.0	+235.0	435.0	3,328.0	6.0	13.0
1924/25	358.0	—	—	4,966.0	7.2	—
1925/26	479.2	+38.5	517.7	5,786.0	8.3	8.9
1926/27	624.2	-4.3	619.9	5,567.0	11.2	11.1
1927/28	808.4	+76.6	885.0	5,853.0	13.8	15.1
1928/29	862.1	+46.3	908.4	6,435.0	13.4	14.1
1929/30	642.8	-42.6	600.2	6,304.0	10.2	9.6
1930/31	484.2	-29.1	455.1	5,649.0	8.6	8.1
1931/32	428.0	-65.7	362.3	4,900.0	8.7	7.4
1932/33	317.5	-134.0	183.5	4,512.0	7.0	4.1
1933/34	247.8	-7.8	240.0	4,434.0	5.6	5.4
1934/35	235.1	+155.5	390.6	4,577.0	5.1	8.5
1935/36	286.3	+37.1	323.4	4,935.0	5.8	6.5
1936/37	388.8	-20.4	368.4	5,371.0	7.2	6.8
1937/38	455.4	+152.7	608.1	5,576.0	8.2	10.9
1938/39	509.7	+208.2	717.9	5,913.0	8.6	12.1
1939/40	579.4	-25.7	553.7	6,782.0	8.5	8.2
1946/47 ⁴	530.0	—	—	14,467.0	3.7	—
1947/48 ⁴	1,865.0	+2,000.0 ⁵	3,865.0	19,855.0	9.4	19.5
1949 ⁴	4,535.0	+2,500.0 ⁵	7,035.0	28,305.0	16.0	24.8

¹ K. V. Kress, *Capital Formation in the Postwar Years* (in German) in *Ungarisches Wirtschafts-Jahrbuch*, 1930, pp. 316-23. Part of this decline is probably due to boundary changes, since the large financial institutions in Budapest served as a banking centre for the Old Kingdom as a whole.

² Includes only inventory changes in mining and manufacturing and change in livestock numbers.

³ In millions of crown; based on Fellner's estimate, but adjusted for price changes.

⁴ In millions of January 1947 florin.

⁵ These are much more inclusive than the pre-war figures and are therefore not comparable with them.

TABLE XIV

*Net National Product and Gross Capital Formation in Hungary,
1924-49, in 1938/39 Prices*

(in millions of pengő)

Year	Gross Formation of Fixed Capital	Inventory ¹ Change	Total Gross Capital Formation	Net National Product	Gross Formation of Fixed Capital as Percentage of N.N.P.	Gross Total Capital Formation as Percentage of N.N.P.
1911-13	235.0	+275.0	510.0	3,900.0	6.0	13.0
1924/25	283.4	—	—	3,847.0	7.4	—
1925/26	418.9	+27.6	446.5	4,596.0	9.1	9.7
1926/27	569.5	-3.2	566.3	4,302.0	13.2	13.2
1927/28	704.2	+54.2	758.4	4,596.0	15.3	16.5
1928/29	751.6	+34.1	785.7	4,999.0	15.0	15.7
1929/30	579.1	-37.1	542.0	5,164.0	11.2	10.5
1930/31	453.8	-29.4	524.4	5,050.0	9.0	10.4
1931/32	426.7	-69.2	357.5	4,807.0	8.9	7.4
1932/33	341.8	-150.9	190.9	4,678.0	7.3	4.1
1933/34	274.7	-9.5	265.2	5,101.0	5.4	5.2
1934/35	264.1	+180.4	444.5	5,136.0	5.1	8.6
1935/36	318.1	+40.7	358.8	5,393.0	5.9	6.6
1936/37	410.1	-21.2	388.9	5,755.0	7.1	6.7
1937/38	460.0	+151.9	611.9	5,626.0	8.2	10.9
1938/39	509.7	+208.2	717.9	5,913.0	8.6	12.1
1939/40	562.5	-23.9	538.6	6,360.0	8.8	8.5
1946/47	100.0	—	—	3,604.0	2.8	—
1947/48	350.0	+355.0 ²	705.0	4,729.0	7.4	14.9
1949	870.0	+444.0 ²	1,314.0	5,892.0	14.7	22.3

Following 1928/29, when the peak investment level was attained, capital formation began to drop very rapidly, falling in 1934/35 to the lowest value and rate for the whole inter-war period. Initially the upswing was stimulated mainly by endogenous economic forces upon which were later superimposed a large-scale government-financed investment programme. The recovery in investment was generated by (a) the accumulation of postponed replacement demand in all sectors, but primarily in manufacturing; (b) a gradual improvement in the situation and export outlook of agriculture; (c) slowly rising public investment. A noteworthy feature of this upswing was that in

¹ Deflated by index of wholesale prices.

² These are not comparable with the pre-war figures, since they include much more than increases in livestock and inventory changes in mining and manufacturing.

the industrial sectors it was largely self-financed, with enterprises using their own financial resources without resort to banking, government or foreign credit.

Under the impact of these developments, investment rose from a rate of about 5 per cent to over 7 per cent of net national product. By the end of 1937, it seemed as if the force of this more or less self-generated upswing had spent itself. However, in early 1938, the government announced a five-year one billion pengöes investment programme which tended to more than counteract the slackening in the pace of private capital formation. This programme was designed to finance a rearmament and defence effort. Despite the stimulus provided by these large expenditures, non-defence capital formation in 1939/40 was only about 9 per cent of net national product, as compared to 13 per cent in 1928/29.¹

These rates of capital formation compared rather unfavourably with those attained in other European countries during the same years. In 1930, gross investments were above 20 per cent of net national product in all Scandinavian countries and in Czechoslovakia (1937 estimate), between 16 and 19 per cent in the United Kingdom, France and Italy, 13 per cent in Belgium and Austria, and 9 per cent in Poland.² With defence expenditures excluded from these data, Hungary appears with Poland at the bottom of the ladder.

While the investment estimates of this study do not extend into the war years, indications are that capital formation in real terms may have decreased amidst very marked inflationary pressures, with an increasing proportion of national product going into defence.

Right after the military collapse in 1944 and during the period of hyper-inflation, capital formation was very low, being almost exclusively confined to repair of war damaged plant. However, after currency stabilization (August 1946) and the inauguration of the Three-Year Plan, the picture changed rapidly.

The economic policy of the post-war period places a great emphasis upon the key role of investment as the principal

¹ If military investments are included, the rate of investment rises to 14 per cent of net national product in 1938/39 and to 16 per cent in 1939/40. On this basis, the earlier peak was surpassed, but the rates were about the same. See J. Judik and R. Nötel, *op. cit.*

² United Nations Economic Commission for Europe, *Economic Survey of Europe for 1948*, Ch. III, Table 32, p. 45, and *for 1949*, Ch. II, Table 18, p. 23.

motive force in the country's recovery and further development. Accordingly, one of the basic aims of the Three-Year Plan, and even more so of the Five-Year Plan following it, is to raise the rate of investment in terms of the national income and to increase investment levels from year to year and in relation to pre-war.

The principal objectives of Hungarian post-war investment policy were: (1) repair of war-damaged plant, (2) replacement of obsolete plant and modernization, (3) creation of new plant and the extension of productive capacity, particularly in the producer-goods industries.

The actual course of investment recovery was closely related to the trend in net national product, as shown by the following data:

Year	Net National Product (1938/39=100)	Investment (1938/39=100)	Investment as Percentage of Net National Product
1946/47 . . .	60	20	4
1947/48 . . .	80	98	15
1949 . . .	100	183	22

A 40 per cent decline in national product led to an even sharper contraction in the level of investment. However, as national product was rising, the rate of investment increased more rapidly; as a result, when output attained the pre-war level investment exceeded it by much more.

Yet even in 1949 per capita gross investment in fixed capital was still considerably behind the levels achieved in other European countries. In fact, in terms of 1938 purchasing power, it was about \$16 as compared to \$120 to \$130 in Sweden, \$113 in Norway, and anywhere from \$23 to \$82 in the other West European countries.¹ In evaluating these comparisons, it is important to note that they do provide a fairly reliable order of magnitudes despite the limitations inherent in the data. It should also be borne in mind that the high levels achieved in some of the Western European countries were affected by Marshall

¹ Calculated on the basis of data in the *Economic Survey for Europe for 1949* Table 29, p. 38, and Appendix C, Table I, p. 272.

Plan assistance. Yet, in 1938, when there was no Marshall Plan, the difference between gross investment per head in Hungary and the other countries cited above was about the same. In Hungary, it was about \$9 per head, while in Sweden it was \$104, in Norway \$100, in Denmark \$67, and in the Netherlands \$61. However, the investment gap per head between Hungary and the West European countries has narrowed somewhat in the post-war period since investment is increasing at a more rapid rate in the former than in the latter. While in 1938 the Hungarian per capita gross investment in fixed capital was barely 9 per cent of the Swedish level (the highest in Europe), by 1949 the ratio had risen to 13 per cent.

In appraising Hungary's investment capacity during these post-war years, it is very important to bear in mind reparations obligations. The real weight of this burden was felt in the form of unrequited exports, drawing away resources both from domestic consumption and from capital formation. It should be noted that as the reparations burden decreased, the investment rate rose.

Year	Reparations Burden	Gross Investment	Total
	As a Percentage of Net National Product		
1946/47 . .	7.2	3.6	11.0
1947/48 . .	5.2	15.0	20.0
1949 . .	3.4	22.0	25.0

In 1946/47, reparations exceeded investment and weighed particularly heavily upon the country, while by 1949 they represented a much lighter burden. Thus, the full enforcement of the reparations obligations in the immediate post-war years (they were reduced later in absolute as well as relative terms) imposed a burden upon the Hungarian economy at a time when it was least able to support it. On the other hand, it helped provide fuller employment to some of the industries and in this sense, assisted in the country's post-war recovery. Actually, the enforcement of the reparations obligation assisted the recovery in industrial and mining output, but retarded a rise in domestic investment and consumption.