Socialist Miracle? Hungarian Industrial Development Policy and Economic Growth, 1950-1975*

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Abstract

This article investigates the post-war development policy in Hungary, and the impact of industrial policy on economic growth between 1950 and 1975. In presenting industrial development, it will first of all consider the most important economic policy measures, and then it will be examine in detail investment allocation, development policy priorities. The article provides a new contribution to the Hungarian economic history: the distribution and implementation of the investments all the way down to the level of the sub-branches throughout the whole period are under investigation, corrects and adjusts the general series of data using once strictly classified military and defence industry statistics. In the final section of the article, the connections between industrial policy, investments and economic growth will be examined. The presented new evidence reveals that the performance of the Hungarian socialist economy is much more modest and uneven than estimated to date.

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1. Introduction

The purpose of this article is to present Hungarian industrial policy and economic growth in the period between 1950 and 1975, the "golden age" of the Western European economies. By 1950 the reconstruction and economic recovery following World War II was essentially complete, and growth began at a pace not previously experienced and affecting broad strata of society, which was only halted by the oil crisis of 1973-74.[1] The countries of the Soviet bloc likewise produced significant economic growth, though with extremely large fluctuations. The oscillations were chiefly related to the allocation of investments, growth generally being checked by a plethora of investments in heavy industry[2]. Although the changes introduced by Imre Nagy in 1953-54 and the reform of the economic control in 1968 were much more radical than measures taken in other bloc countries, several similarities can be observed in the economic policies of the satellite states in the 1950s and 1960s[3]. In the 1960s and 1970s

[1] On the "golden age", see N. Crafts and G. Toniolo, "Aggregate Growth, 1950-2005", in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe Volume 2. 1870 to the Present*, Cambridge, 2010, pp. 296-332. On the German economic "miracle", see T. Vonyó, *Modell Deutschland – a nyugatnémet gazdaság hosszú távú fejlödésének növekedéselméleti és gazdaságpolitikai elemzése*, Pécs, 2006.

[2] On the Soviet type growth route, see S. Battilossi, J. Foreman-Peck and G. Kling, "Business Cycles and Economic Policy, 1945-2007", in S. Broadberry and K.H. O'Rourke (eds.), *The Cambridge Economic History of Modern Europe Volume 2. 1870 to the Present*, Cambridge, 2010, pp. 383-385. The relationship between investments in heavy industry and economic cycles in the socialist countries had been demonstrated in 1981 by Tamás Bauer, see T. Bauer, *Tervgazdaság, beruházás, ciklusok*, Budapest, 1981.

[3] For example, on the East-German economic policy see A. Steiner, *The Plans That Failed: An Economic History of the GDR*, Oxford, 2010.

capital investments grew rapidly in socialist Europe and the accumulation of capital was higher than in Western European countries, yet the per capita income diverged[4]. The clear reason for this was that Eastern productivity was lagging behind the Western: although many of the state parties in the region spoke of stepping forward into a period of intense growth, in reality growth was sustained by an increase in the input of production factors (capital, workforce) – for as long as it could be, rather than by an improvement in productivity[5].

In presenting industrial development in Hungary, this article will first of all take into consideration the most important economic policy measures, and secondly will examine investment allocations in details, to assess development policy priorities. It is well known that in the socialist system, investments were centred on industry, and

[4] P. Földvári, P. and B. van Leeuwen, "Capital accumulation and growth in Central Europe, 1920-2006", 17 July 2009 http://www.basvanleeuwen.net/Papers.htm p. 9. On Hungarian capital accumulation, see P. Földvári and B. van Leeuwen, "Capital Accumulation and Growth in Hungary, 1924-2006", in *Acta Oeconomica*, 61.2, 2011, pp. 143-164.

[5] B. Tomka, *Gazdasági növekedés, fogyasztás és életminöség*, Budapest, 2011, p. 219. For instance, on comparison of the productivity of Czechoslovakia and Great Britain between 1921 and 1991, it turned out that whilst in the interwar period Czechoslovak productivity amounted to two thirds of the British, and it had reached the three quarter mark by the 1960s, the rate fell steeply in the 1980s – tumbling to one third of that of the island nation. S. Broadberry and A. Klein, "When and Why Did Eastern European Economies Fail? Lessons from a Czechoslovak/UK Productivity Comparison, 1921-1991", *Explorations in Economic History*, 48.1, 2011, pp. 37-52. The new estimates of Hungarian TFP see: T. Vonyó, "Socialist Industrialisation or Post-War Reconstruction? Understanding Hungarian Economic Growth, 1949-1967", in *Journal of European Economic History*, 39.2, 2010, pp. 253-300.

more narrowly on heavy industry. It is no news either, that the majority of the industrial development schemes got bogged down in the lower segment of the production column (mining and basic materials manufacture). Consequently less resource was available for the processing industries, fewer resources were more qualified work and a higher standard of research and development, and represented greater added value[6]. Attention has also been drawn to the fact that heavy industries requiring greater fixed assets are at the same time the largest energy gluttons: huge energy investments (mining and generation of electrical power) were needed largely to alleviate the energy hunger of smelting works, the chemical industry and heavy machinery manufacture[7]. This article provides a new contribution to the economic history of Socialist Hungary: it analyses the distribution and implementation of the investments all the way down to the level of the sub-branches throughout the whole period under investigation, corrects and adjusts the general series of data using once strictly classified military and defence industry statistics. I compute and re-evaluate the official data of national income, investments and economic growth on constant price base.

In the final section of the article, the connections between industrial policy, investments and economic growth will be examined. For this, GDP data based on the Maddison database purchasing power parity, which allow for making wide-

[6] Á. Ungvárszki, *GazdaságPolitikai ciklusok Magyarországon, 1948-1988*, Budapest, 1989, p. 20.
[7] J. Papp, *Nehézipar és szerkezetváltás. Tények, kétségek, kérdöjelek, Kandidátusi értekezés*, Budapest, 1989.

ranging international comparisons, and measured in the 1990s international dollar is used solely to compare the performance of the Soviet bloc countries[8]. However, the coherence in the data series is ensured, as the investment figures are compared with national income (NMP) data of current and unchanging prices, measured in forints[9]. For practical reasons, 1950, the beginning of the 1st five-year plan, was chosen as the starting point for the constant-price investigation. It is known today that the consumer price level grew by 52% from the introduction of the forint in August 1946 till 1949, and by 1952 it had increased by 165%[10]. The prominent growth index at the beginning of the 1950s is therefore decisively, due to inflation, the use of the real value reveals a serious recession in 1952 and 1954. In later years, the consumer and investment index, as well as the divergent dynamics of the implicit price index, deserve close attention. The prices of consumer and investment goods did "behave" differently: the prices of consumer articles adapted quickly to inflation and to "market" influences, the artificially tailored investment prices broke away from inflation for the most part, and they were rarely valorised[11]. The growth dynamics of na-

[8] For the Maddison database see http://www.ggdc.net/maddison/maddison-project/orihome.htm Tomka communicates the Hungarian GDP data series based on this database Tomka, op. cit., 2011, pp. 267-269.

[9] NMP = net material product, generated national income. The socialist countries used a different economic statistical system, and also calculated national income using different methodology. See J. Kornai, *The Socialist System: the Political Economy of Communism*, Oxford, 1992, 221-223, and Tomka, op. cit., 2011, pp. 52-56.

[10] J. Botos, *A korona, pengö és forint inflációja, 1900-2006*, Budapest, 2006, p. 293.

[11] Péter Kende drew attention to the phenomenon in his 1964 doctor's thesis. P. Kende, *Logique de l'économie centralisée. Un example: la Hongrie*, Paris, 1964.

tional income and investments will also be examined with the help of the indices mentioned above[12].

2. Industrialisation of war – the 1st five-year plan

In the interwar years in Hungary, state industrial policy set the goals of partial replacement of the industrial sectors lost due to the Treaty of Trianon, moderation of the industrial-economic predominance of the capital Budapest, as well as the creation of new, modern branches of industry. The role of heavy industry grew during the WW II and after 1945 this sector became more important – due to the extraordinary devastations of war, the restoration and reconstruction, as well as the reparation obligations. In the summer of 1948, following the full takeover of power by the communist party and the creation of a unified labour party, the Hungarian Workers' Party (MDP – HWP), preparations began for a Stalinist-type programme of industrialisation. The National Planning Office (OT – NPO)[13], in line with direction from the HWP, placed the development and consolidation of heavy industry at the centre of the first five-year plan, intended for launch on 1 January 1950[14]. Although the NPO at-

[12] I should like to thank Mrs. Zsuzsanna Boros Szöke here, manager of the Department of Domestic Sector Accounts and Capital Account of the Központi Statisztikai Hivalal (KSH) Major Department of Sector Accounts, for providing help in determining and calculating the implicit price index.

[13] The NPO was formed in the August of 1947, at the same time the three year plan was launched.

[14] Minutes of the 1 December 1948 session of the HWP CC Secretariat. Magyar Országos Levéltár (Hungarian National Archives, MOL) M-KS 276. f. 54/19. ö. e.

tempted to reduce the investment rate and moderate the growth target due to expected economic tensions and narrow cross-sections, the party leadership would not abandon the tempo. The HWP Political Committee (PB – PC) raised the targets even further[15], particularly following the expulsion of Yugoslavia at the Budapest session of Cominform on 16 November. Law XXV of the year 1949 on the first five year plan for the national economy of the Hungarian People's Republic was finally accepted by Parliament on 10 December 1949. The law allocated: 50.9 billion forints must be invested over five years, 21.3 billion of which were to industry.

In the initial year of the first five-year plan, the largest investments were launched in smelting, mining, mechanical engineering and electricity generation, with an allocation of some 8 billion forints[16]. Extension of the Várpalota and Komló mines began; as did construction of the Danube (later Stalin) Iron Works; reconstruction of the Ózd and Diósgyőr iron foundries; construction and renovation of the Várpalota and Tatabánya aluminium smelters, respectively; construction of the Barcika nitrogen works and the Szolnok sulphuric acid plant; construction or extension of the Dunapentele, Inota, Tatabánya, Dorog, Tiszalök, Berente and Ózd power stations.

At the same time, planning, designation of sites and construction of a dozen new military plants began, with around 700 million forints being spent on these investments. The

[15] Minutes of the 24 November and 2 December 1949 sessions of the HWP PC. MOL M-KS-276. f. 53/40. and 42. ö. e.

[16] Minutes of the 28 April 1950 session of the HWP CC Secretariat. MOL M-KS 276. f. 54/51. ö. e.

total size of the Hungarian People's Army was approaching 120 thousand by the end of 1950, with equipment and provisions absorbing increasingly significant reserves of raw and basic materials. The position was further aggravated by the outbreak of the Korean War in June 1950, and following the West's tightening embargo restrictions. The world market prices of numerous raw materials of strategic significance (non-ferrous metals, foundry coke, etc.) and semi-finished products (rolled steels) thus increased dramatically, and procurement of these was checked[17].

By the turn of 1950-51, a real danger of an outbreak of a third world war had emerged; with the escalation of the Korean conflict the United States and the Soviet Union were preparing for direct confrontation. In order to ensure unified armament of the Soviet Bloc, J. V. Stalin summoned the party leaders and war ministers of Bulgaria, Czechoslovakia, Poland, Hungary and Romania to Moscow on 9 January. At the four-day conference, the generalissimo practically ordered the leaders of the satellite states to speed up the army and defence industry development schemes already launched, and determined the quotas for the individual countries (the peacetime and mobilisation complements of the armies, etc.)[18].

In order to implement the agreements signed in Moscow, the 1st Hungarian five-year plan also had to be reworked wi-

[17] L. Bencze, A néphadsereg kiépítése és a gazdaságfejlesztés közötti néhány összefüggés. Kézirat. d. n. Hadtörténelmi Levéltár Magyar Néphadsereg Különgyüjtemény. pp. 25-26, 45.

[18] For details, see G. Wettig, *Stalin and the Cold War in Europe: The Emergence and Development of East-West Conflict, 1939-1953*, Landham, Md., 2008, pp. 204-206.

thin a few weeks. The HWP II congress in February 1951 approved unrealistically increased forecasts: they wished to raise manufacturing industry production by 1954 by at least 200% instead of the originally targeted 86%, and more specifically that of heavy industry by 280% instead of the original 104%. Investments should reach at least 80 billion forints instead of the originally targeted 50.9 billion, with 37 billion in heavy industry instead of 18.3 billion[19].

Development of the army and expansion of the defence industry continued at an even more forced tempo, and one of the means by which the economic leadership created resources for this was by augmenting inflation. The consumer price index for labourers and employees increased 28% by 1951 compared with 1949, and 80% by 1952[20]. According to subsequent calculations by the Központi Statisztikai Hivatal (KSH – Central Statistics Office, CSO) reckoned on a broader basis: 20% inflation in 1951 and 40% in 1952[21]. The income of consumers was tapped with peace loans and price increases, and in addition particularly high taxes were inflicted on agricultural workers.

By the turn of 1952-53, the Hungarian economy was close to collapse. Shortfalls of several months also appeared in the special heavy-industry investments[22], production dropped

[19] A Magyar Dolgozók Pártja II. kongresszusának jegyzökönyve. 1951. február 24. – március 2., (Budapest 1951) pp. 521-522.
[20] Botos, *op. cit.*, 2006, p. 217. In the end of 1952 the total headcount of the Hungarian People's Army was over 200.000.
[21] Based on KSH, Magyarország népessége és gazdasága. Múlt és jelen, Budapest, 1996, p. 207.
[22] Minutes of the 26 November 1952 session of the HWP PC. MOL M-KS-276. f. 53/110. ö. e.

off[23], huge losses of 990 million forints accumulated in the mechanical engineering, smelting and defence industry companies[24]. Although the investment activity still broadened, as shown in Table 6, Figure 2 clearly highlights that the real value of national income *fell* by 2.4%. Instead of introducing genuine adjustments, the party leadership replaced the chairman of the planning office and launched an "anti-Zionist" campaign, to discredit the opponents, also arresting Gábor Péter, the leader of the State Security Authority at that time.

The once strictly confidential statements of accounts from the National Planning Office have been used here to adjust the data series from the CSO, and present actual trends of investments. Investments in the armed forces (army, state security, law enforcement) and expenditures on theatre of war preparations (military investments and renovations implemented by the Ministry of Transport and the Post Office in the postal service, public roads and railways) have been deducted from infrastructure-communal investments. As can be computed from Table 1 the share of the armed forces and heavy industry grew by 8 percentage points in 1951, and in 1952 almost 60% was absorbed by this conglomerate. As shown in Table 2, 92-93% of all industrial investments was in heavy industry in 1951-53. A decisive proportion of this was concentrated on the production of basic materials – mostly smelting and coal-mining – in order

[23] See the HWP CC Secretariat resolution of 11 February 1953. MOL M-KS-276. f. 54/230. ö. e.

[24] Minutes of the 481st session of the Executive Council, 17 March 1953. MOL XIX-A-83-a 52.234 film

to satisfy the raw material needs of the defence industry developing at a radical pace, and the hunger for electrical power in the whole of heavy industry.

When dissociating defence industry from the rest of mechanical engineering with the help of data series from the NPO, it becomes clear that proportionally this branch had access to the most resources after basic materials production in 1951-52[25]. In 1950, 57% of the investments in mechanical engineering made in the defence industry amounted to 57% in 1950, 66% in 1951 and 60% in 1952, leaving hardly any resources for other mechanical engineering developments. The detailed data, presented in Table 6 underlines again that the military aspects had the lion's share: the enforced development of military industry required gigantic investments in the supporting industries (metallurgy, rolling mills, chemical industries etc.) and energetics (coalmining, oil-mining). Earlier claims in the literature on the distorted investment structure, resulting from the inherent logic of the classic socialist system, are therefore supported even better by our data. Additionally, Hungarian investment policy was more heavy-industry concentrated, than any other satellite country in this period, as shown in Table 3.

[25] Within the defence industry, the manufacture of gunpowder and explosives do belong to the chemical industry, and so they should be listed with basic materials production, but the NPO investment data series does not distinguish subbranches of the defence industry. So for the sake of simplicity, the whole defence industry has been listed with mechanical engineering.

3. New course in industrial policy

Following the death of Stalin, the Soviet leadership made a partial review of its position and also had the leaders of the satellite states report on the policies of earlier years. In June 1953, the Hungarian party leadership was also summoned to Moscow, and Chief Secretary Mátyás Rákosi was compelled to exercise self-criticism, and to resign from his post as premier. Imre Nagy was appointed in his place, and he began at once to cut back the inflated army and pare down military expenditure with an ambitious programme of reforms[26]. In July 1953, the Nagy government abolished the independent war-industry supreme authority, which had existed for eighteen months, and at the beginning of August it decided to reduce the numbers in the Hungarian People's Army by around 20%. The change-over of the defence industry to civilian production was likewise started, though finding new alternative profiles and reorganising manufacturing dragged on for years[27].

In 1953 an ever increasing total was involved in uneconomical production: the mining and foundry companies suffered financial losses of 1,074 billion forints, and the state farms lost 1,046 billion[28]. In the following year, because of uncompleted major projects the deterioration in the balance

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[26] See J.M. Rainer, *Imre Nagy*, London, 2009. On the military and defence expenditures, see P. Germuska, "Dual Budgetary System in Socialist Hungary in the 1950s", in *Studia Historica Slovenica*, 9.1, 2009, pp. 171-188.

[27] See P. Germuska, "Military Industry versus Military-related Firms in Socialist Hungary Disintegration and Integration of Military Production during the 1950s and Early 1960s", in *Enterprise and Society*, 11.2, 2010, pp. 316-349.

[28] Minutes of the 526th session of the Executive Council, 14 May 1954. MOL XIX-A-83-a 52.997 film. 154-211. f.

sheet amounted to losses of 1.48 billion forints in the construction industry firms and 1 billion in the smelting and mechanical engineering companies. In the course of the year, the state budget had to pay out 4.3 billion forints for the recovery of corporate losses[29]. The foreign trade deficit grew from year to year, and the foreign debt stock also increased[30]. In 1954, execution of the government programme suffered a serious setback, when the real value of national income fell by 4.6%. The situation improved the following year, with the economy growing at a dynamic 7.6% rate (see Figure 2).

Moreover, the Nagy government was successful in restraining the megalomaniac heavy industry projects: the military and heavy industry investments were moderated in several steps, and the resources thus gained were redeployed to light industry and agriculture[31]. As shown in Table 1 the size of investments for military and defence purposes dropped to one sixth between 1953 and 1955: the proportion of heavy- and construction industry investments fell by 10 percentage points, at the same time investment in agriculture leapt by 11 percentage points, and the proportion of investments made in the light- and food industries grew two and a half times.

The effect of the political defeat of Imre Nagy in March 1955 and reinforcement of the old line of the Party appeared at once in the summer 1955 version of the 2nd five-year plan:

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[29] Minutes no. 546 of the 12 April 1955 plenary session of the Executive Council. MOL, XIX-A-83-a 124. d. 71., 88., 91.

[30] J. Honvári, *XX. századi magyar gazdaságtörténet*, Budapest, 2006, pp. 278, 288-289.

[31] For details on the economic policy steps, see Honvári, *op. cit.*, 2006, pp. 254-260.

In order to further the successful building of socialism, socialist industrialisation must be continued consistently, giving priority to the development of heavy industry – as stated in the NPO proposal entitled *Guidelines and proposed totals for the second five year plan for the development of the Hungarian national economy*. At the same time, more balanced allocations were envisaged: heavy industry production was to be raised by only 8-9% per year, and that of the light and food industries by an annual 6-7% in the period between 1956 and 1960[32]. As shown in Table 1, the new government led by András Hegedüs could only achieve a definitive redeployment of resources in the following year: investments in agriculture fell by 8 percentage points, and together with the hundreds of millions diverted from the light and food industries these were once again redirected to heavy industry.

In the midst of the steadily deepening political crisis, however, attempts to have the 2nd five-year plan for 1956-60 accepted were unsuccessful, so the repeatedly modified plan for 1956 tried to set the failing momentum of the national economy into motion using temporary measures. The revolution of October 1956, followed by the Soviet military intervention on 4 November, led to a severe economic set-back: the control system for the planned economy fell apart, production links became disorganised, transportation floundered, a severe energy shortage occurred due to the protracted coal-miners' strike. The government led by János Kádár attempted to stabilise its authority by a large number of concessions and measures: at the turn of 1956-57, 70-75% of

[32] Minutes of the 23 June 1955 session of the HWP PC. MOL M-KS 276. f. 53/238. ö. e.

wage-and salary-earners were given significant pay-rises, and the state allowed greater scope for privately owned trades and crafts, retailing, etc. Fearing runaway inflation and unemployment for hundreds of thousands, during its initial months the government limited itself chiefly to crisis management[33].

4. Selective industrial development

Thanks to significant aid and loans from the other socialist countries, the Hungarian economy recovered from the crisis relatively quickly, production indices improved, and the national income grew vigorously. Elaboration of a temporary mid-term plan (known as the 2nd three-year plan) and the following five-year plan began at almost the same time. An atmosphere of optimism was dominant by the middle of 1958, which could only be moderated with difficulty by the chairman of the planning office when the guidelines of the three-year plan were presented in the Central Committee (KB – CC) of the Hungarian Socialist Workers' Party (MSZMP – HSWP). NPO Chairman Árpád Kiss stressed that investments in industry must be concentrated on providing the raw material and energy basis for the national economy, and in the processing industry, on the branches which could be economically developed using the appropriate domestic facilities. Of the processing industry investments, the plan proposed considerable resources for the development of the electricity-generating industry, telecommunications, Diesel

[33] Honvári, *op. cit.*, 2006, pp. 314-325.

engine and vehicle manufacture, instrument production, and pharmaceuticals[34]. The planning law was soon accepted (law II of year 1958, announced 25 June 1958), though the controversy on the character and goals of industrialisation was by no means at an end.

At the turn of 1957-58, a large-scale reorganisation of agriculture was likewise on the agenda, and the HSWP CC passed resolutions on 7 August and 5-7 December 1958 on the launching of a new collectivisation campaign[35]. Due to increasing unemployment in the countryside, the supreme leaders of the HSWP felt an ever increasing pressure to create jobs in the underdeveloped areas by means of a central scheme. In its 29 October 1958 session, the HSWP Political Committee put the matter on the agenda: the means of industrialisation before 1956 were expressly labelled as faulty, and even the 2nd three-year plan was criticised, because the establishment of a larger number of new provincial industrial plants was not envisaged. In the interest of proportional development of individual regions of Hungary, the PC resolution set the task of the next mid-term plans for the national economy as the reduction of the industrial predominance of Budapest, industrialisation of the industrially undeveloped areas (taking into account the social, economic and natural features of the given area), as well as a heigthned campaign against wasteful practices. In accordance with this, the PC banned the establishment of a new industrial

[34] Minutes of the 6 June 1958 session of the HSWP CC. MOL M-KS 288. f. 4/17. ö. e.

[35] For details on collectivisation, see Zs. Varga, *Hungarian Agriculture and Rural Society: changes, problems and possibilities, 1945-2004*, Budapest, 2009.

plant of national significance in Budapest, and categorised of the industrial plants in operation in the capital in terms of the possibility of their relocation to the provinces and capacity for development[36]. In June 1960, the detailed scheme for the establishment of provincial industry was approved by the HSWP CC[37], and guidelines for the establishment of industry were soon adopted in a governmental resolution[38].

The Hungarian leadership built great hopes on the unfolding international economic cooperation between the socialist countries. The theoretical framework for this, extending to the division of labour in both civilian and the defence industry, was accepted by the communist and workers' parties of the CMEA member countries at their summit meeting in Moscow on 20-23 May 1958[39]. The goal of cooperation was to alleviate the raw material and energy supply problems of each member country, so an increase in production of iron and steel, non-ferrous metals, chemical industry products, fuel and agricultural raw materials was once again urged at the Bucharest session of CMEA in June 1958[40]. Apart from the defence industry, bilateral consignments con-

[36] Minutes of the 29 October 1958 session of the HSWP PC. MOL M-KS 288. f. 5/101. ő. e. On the relocation of industry away from Budapest, see A.Cs. Kondor, Iparpolitika és iparfejlesztés Budapesten az 1960-as években, in I. Feitl (ed), *Budapest az 1960-as években*, Budapest, 2009, pp. 65-80.

[37] Minutes of the 29 June 1960 session of the HSWP CC. MOL M-KS 288. f. 4/34. ö. e.

[38] On resolution no. 3075/1960 of the Hungarian Revolutionary Worker-Peasant Government, see Z. Tatai, *Iparunk területi szerkezetének átalakítása*, Budapest, 1984, pp. 28-30.

[39] For details, see P. Germuska, *Vörös arzenál. Magyarország részvétele a nemzetközi hadiipari együttműködésben a KGST keretei között*, Budapest, 2010.

[40] I.T. Berend, *Gazdasági útkeresés, 1956-1965. A szocialista gazdaság magyarországi modelljének történetéhez*, Budapest, 1983, p. 316.

centrated chiefly on these areas at the turn of the 1950s and 60s.

Proceeding from the supply difficulties experienced during the term of the 1st five year plan, at the end of the 1950s Hungarian planners laid great emphasis on the security of energy supply. Counting on the increasing imports of fuels, in the March of 1961 the HSWP PC decided on a more moderate development of domestic coal mining. Of the industries supplying basic materials, therefore, smelting was provided with more resources: developments begun ten years earlier were to be completed with the construction of the Sztálinváros rolling mill. As to investments in mechanical engineering, the development of special sub-branches was preferred: manufacture of Diesel engines and heavy-electrical machinery, telecommunications and the instruments industry, as well as machinery production for the food and chemical industries. The latter had to be provided to fit out massive new capacity in the fertiliser and petroleum industries[41].

The development of the chemical industry in the whole of CMEA was given a special role, in which the Khrushchev "catch up and overtake" programme played a significant part – outstripping the West would be realised by increasing the production of fertilisers, artificial fibres, and plastics, among other things[42]. The Hungarian economic leadership had assessed the situation of the domestic chemical industry in 1958-59, and the November 1959 Congress of the HSWP

[41] Minutes of the 7 March 1961 session of the HSWP PC. MOL M-KS 288. f. 5/224. ö. e.

[42] Berend, *op. cit.*, 1983, pp. 343-345.

described rapid development of the sector as a key issue of socialist industrialisation[43]. The severe underdevelopment of the Hungarian chemical industry should be rectified by the 2nd five-year plan under preparation with a huge, comprehensive development scheme costing around 11 billion forints. A doubling of production in the heavy chemical industry (fertilisers, chlorine, etc.), the organic chemicals industry (artificial fibres, plastics) and pharmaceuticals should be achieved over a period of five years. For this, sweeping changes would also have to be made in the utilisation of raw materials: introducing petrochemical processes into the chemical industry previously based on coal, and for this providing appropriate quantities of petroleum and natural gas – either from domestic production or from CMEA imports. The HSWP PC approved elaboration of the chemical industry scheme on 44 May 1960[44].

Just 9.4 billion forints were earmarked for investment in the chemical industry branch by the 2nd five year plan, though this was soon raised to 11 billion by the Economics Committee of the Executive Council – in order to speed up the scheme. 60% of the investments were used to boost artificial fibre, fertiliser and plastics production, the Borsod Chemical Combine (BVK – BCC) was switched to natural gas; thus the laying of foundations for the petrochemical industry. In spite of these developments, even in 1964 a huge sum had to be spent on western imports of the three main pro-

[43] *A Magyar Szocialista Munkáspárt VII. kongresszusának jegyzökönyve. 1959. november 30. – december 5*. pp. 599-616.

[44] Minutes of the 25 May 1960 session of the HSWP PC. MOL M-KS 288. f. 5/184. ö. e.

ducts mentioned above, and so investments of a further 20 billion forints for the period 1966-1970 were deemed necessary by the party and state leadership[45].

As has been seen from the targets set by the 2nd three year and the 2nd five year plan, the other preferred branch besides the chemical industry was mechanical engineering. However, resources were diverted from the development of mechanical engineering not only by the grandiose chemical industry project, but also by a renewed expansion of the defence industry. In January 1960, the preparation of a new, large-scale armaments programme began in the Soviet bloc. In its session of March 1961, the Political Consultative Committee of the Warsaw Treaty accepted a 2.8 billion rouble programme for the modernisation of organisation and weaponry in the allied armies. Due to the Berlin crisis of August 1961, Moscow then radically speeded up implementation of the March programme, so defence industry production rose steeply[46]. Defence industry investments in 1962 were double those of 1961, though, as can be seen in Table 1, even then their proportion scarcely reached 2% of the total investment in the national economy. With a modest amount of new input, the resources invested at the beginning of the 1950s were capable of rapidly raising war production. Concurrently, military expenditures also grew significantly: in 1962-64 they leapt by 5.1-5.6% of the national income, from 2-3% in earlier years[47]. Because of this, several important chemical industry and mechanical engineering projects fell behind,

[45] Minutes of the 22 September 1964 session of the HSWP PC. MOL M-KS 288. f. 5/344. ö. e.

[46] For more information, see Germuska, *op. cit.*, Vörös arzenál.

and the state budget went into the red[48]. As a result of these hazards by 1965 economic growth had plummeted to 0.1% from the stable 4-5% upswing of earlier years (calculated in constant prices for the year 1950), as Figure 2 shows.

Mechanical engineering, therefore, did not have sufficient resources for development, with significant capacity differences between manufacturers of semi-finished products (castings, wrought-metal products) and component parts, as well as the assembly plants, remaining unchanged. The branch could not keep up with either domestic, or export demands. Alongside the sub-branches mentioned above (telecommunications, the instruments industry and machine-tool manufacture), in March 1965 the HSWP PC regarded further three as promising, as a heightened demand had arisen for their products: the manufacture of road and rail vehicles, and the production of agricultural as well as chemical industry machinery. Not only extra resources they were effectively modernised by the acceleration of domestic technical development (research and development), and by the purchase of licences[49]. In addition, the 3rd five-year plan finalised in the spring of 1966 targeted an increase in the export capacity of industry, and in this, alongside the chemical industry, light industry, the food industry and the aluminium industry, the greatest role was destined for mechanical

[47] See details P. Germuska, "A katonai és védelmi kiadások alakulása és hatása a nemzetgazdaságra 1949 és 1979 között", *Társadalom és Honvédelem*, 11.3-4., 2007, pp. 29-68.
[48] Honvári, *op. cit.*, 2006, p. 383.
[49] Minutes of the 16 March 1965 session of the HSWP PC. MOL M-KS 288. f. 5/361. ö. e.

engineering[50]. The CMEA specialisation agreements likewise guaranteed orders for these branches of Hungarian industry: the Soviet-Hungarian alumina-aluminium accord, the Hungarian-Soviet and Hungarian-Polish automotive industry cooperation, as well as specialisation in vehicle production and bus manufacture[51].

On reviewing Table 2 it can be seen that in the second half of the 1960s a realignment amounting to 5-6 percentage points occurred within industrial investments: due to the cut-backs in coal mining and the slowing down of the chemical industry project, investments in basic materials manufacture dropped off, and chiefly mechanical engineering was augmented using these resources. Calculated in constant prices of the year 1950, investments in basic materials manufacture had hardly increased at all, but money invested in the food and light industries and mechanical engineering had grown by one and a half times. If the investments in mechanical engineering are broken down to sub-branches, however, it likewise stands out that traditional machine construction and machine tool production are pushed into the background and the manufacture of transport vehicles comes to the fore. Even so, it is clear that the industrial investments of the greatest magnitude in the decade of the 1960s were linked with the basic materials industry[52].

In spite of all this, the most rapid expansion of production did not result from these major-investments, but from

[50] Proposal on the third five year plan of the Hungarian People's Republic. May 1966. MOL, XIX-A-16-b, 1975. d.
[51] Honvári, *op. cit.*, 2006, p. 444.
[52] KSH, *Beruházási adattár, 1950-1971*, Budapest, 1972, Based on pp. 142-154.

the more modestly assisted pharmaceuticals manufacture, telecommunications and instrument production, which were front-rank companies even before 1945. Between 1961 and 1970, the domestic pharmaceuticals industry raised its output value by 5.6 times relative to 1960, the telecommunications and vacuum technology industry, as well as the instruments industry, by three times[53].

5. Industrial policy following the reform

Two elements of the reform of economic control[54], inaugurated in Hungary on 1 January 1968, had a considerable influence on industrial policy: changes to the decision making authorities and an emphasis on economical practices.

The HSWP PC and the Executive Council continued to make decisions on major investments of national significance, but for amounts under a certain limit, the companies could decide independently on the launching of projects. Central funds were established which could be applied for by means of tenders: a fund for industrial development and relocation of industry in 1968, and in 1969 a fund for the support of retraining and redeployment of the workforce released from coal mining. The system of financing was also reorganised, the companies covered an increasing number

[53] KSH, *Ipari adattár. I. kötet*, Budapest, 1972, p. 234.

[54] For details on the reform, see J. Kornai, "The Hungarian Reform Process: Visions, Hopes and Reality", *Journal of Economic Literature*, 24.4, 1986, pp. 1687-1737; G. Révész, *Perestroika in Eastern Europe: Hungary's Economic Transformation, 1945-1988*, Boulder, Colo., 1990; Honvári, *op. cit.*, 2006, pp. 413-426.

of investments from their own resources, or from bank loans, and a portion of the state support for developments had to be repaid under certain conditions after projects had been put into operation[55].

Expectations concerning economical running chiefly affected mining and the electrical energy industry, thus significantly influencing the whole of Hungarian energy policy. Due to unfavourable geological features, the deep coal mines of Hungary were rather expensive to work, and in a number of coalfields costs could not be reduced significantly even by introducing modern technology and a high level of mechanisation. Ideas on the long-term energy structure of the people's economy, approved by the HSWP PC in October 1968, targeted a powerful rationalisation of domestic coal mining, with closure of the uneconomical mines. In energy production the utilisation of natural gas and petroleum were to be increased – partly by further development of output in Hungary, and partly by increasing Soviet imports[56].

Driven by the impetus of the reform, the Hungarian economy was performing well at the end of the decade: in 1968-69, calculated in current prices, the growth of national income increased first by 7% and then to 11%. The planning office deemed an annual growth rate of 5-6% to be sustainable, so a five year investment target was presented to the HSWP PC in May 1970 which budgeted for 30% (approx. 120 billion forints) more investment (around 420-450 billion

[55] For details on industry location practices between 1968 and 1980, see Tatai, *op. cit.*, 1984, pp. 120-124.
[56] Minutes of the 29 October 1968 session of the HSWP PC. MOL M-KS 288. f. 5/475. ö. e.

forints in total) compared with the 3rd five year plan. A significant change relative to earlier decades was an increase in the proportion of "non-productive" investments: the ratio of communal investments was pushed up from 15% to 19% by a huge state apartment construction scheme. Another important conceptual change was that alongside new investments for increasing capacity, technological developments and reconstructions for improving efficiency and competitiveness were increasingly emphasised. More than 40% of all investments in the national economy were invariably earmarked for industry, chiefly within the scope of targeted development schemes: petroleum and natural gas pipelines, aluminium industry, bauxite mines, aluminium rolling, petrochemicals, and the road vehicle development programme. Two priorities for light industry were likewise approved by the HSWP PC in May 1970: reconstruction of the clothing industry, as well as expansion and development of the paper and printing industry[57].

It was already perceptible during the preparation of the plan that the companies, councils and state institutions had presented applications for 10-15% higher investment allocations. Due to feverish investment demands, the investment price index leapt in 1971 (to over 4.5% instead of the planned 1.8%), thus raising questions of the ability to finance the whole five year investment programme. At current prices, the cost of completing the planned projects rose above 500 billion forints. For this reason, the planning office and the party headquarters revised the section of the plan on inve-

[57] Minutes of the 5 May 1970 session of the HSWP PC. MOL M-KS 288. f. 5/517. ö. e.

stments at the turn of 1971-72, and attempted to cool down demands with various types of revision: they deprived the companies of a portion of the resources available for development by raising taxes, they rescheduled or postponed various planned developments, tightened the conditions for company credit, etc. The June 1972 report produced for the HSWP PC predicted that the investment ratio from utilisation of the national income could be as much as 26-27% by 1975 instead of the planned 23-25%. A constant rise in the standard of living of the population could therefore only be guaranteed by reducing the external economic balance. And in order to check the rising state budget deficit, severe austerity measures were deemed necessary[58].

At the beginning, the Hungarian economic management attempted to cushion the effects of the price explosion in the world economy in 1973-74 by subsidising prices: the increasingly expensive raw materials and products imported from capitalist markets were made available to economic operators at unchanged prices, the difference being covered from the state budget. Price subsidies amounted to at least 5 billion forints in 1973, and the resulting budget deficit even exceeded this (6-7 billion)[59]. Instead of making savings, therefore, the State was compelled to renew enormous spending. In 1974 import prices grew by 31%, export prices in contrast by only 15%, i.e. the terms of trade deteriorated and both the commercial foreign trade debt and the state budget

[58] Minutes of the 27 June 1972 session of the HSWP PC. MOL M-KS 288. f. 5/584. ö. e.

[59] Minutes of the 23 October 1973 session of the HSWP PC. MOL M-KS 288. f. 5/622. ö. e.

deficit increased. The NPO estimated the total losses of the national economy at 17-18 billion forints in November 1974. Hungary was able to finance the serious deficits with growing indebtedness: at the time the net capital debt stock amounted to 1.4-1.5 billion USD[60].

During the course of 1974, the party leadership had no desire to moderate the pace of investment or the expansion of consumption by the population, and because of this the foreign trade deficit continued to grow (exceeding 30% of the value of exports in dollar-based foreign trade), as did the budget deficit. Due to unfavourable trends, the net capital debt stock grew by half a billion USD in the first four months of 1975. In June 1975, the HSWP PC came to the decision that company investments had to be moderated by economies and restrictions, and consumption must be kept down by restraining residents' earnings[61].

The unfavourable foreign trade trends, and the fact that these were badly interpreted and handled, brought about increasingly severe indebtedness in Hungary: relatively converted, the gross debt had reached 12 billion USD by 1978. A turnaround in economic policy only occurred in 1978-79, when economic growth was subordinated to the recovery of the external and internal balance of payments. The November 1978 session of the HSWP PC took a stand on discontinuing and reducing the support for loss-creating and low-efficiency sectors. From 1979, however, the economic

[60] Minutes of the 19 November 1974 session of the HSWP PC. MOL M-KS 288. f. 5/651. ö. e.

[61] Minutes of the 3 June 1975 session of the HSWP PC. MOL M-KS 288. f. 5/665. ö. e.

management once again allowed greater scope for company decisions, individual and small enterprises, etc.[62].

At the beginning of the 1970s, particularly following the explosion of oil prices, the Hungarian economic and political leadership came to realise that radical changes were occurring in the world economy, and to identify the promising, modern branches of industry. By modification of the investment preferences, significantly more resources became available for the acquisition of modern technologies and the development of electronics than in the 1960s. Nonetheless, however, the position of mining and the basic materials industries could not be threatened by the secondary industries. Tables 1 and 2 clearly highlight that the share of the former industrial investments never fell below 56% and heavy industry generally still took too great a proportion of state investments – with a share of around one third.

Data in Table 2 once again give us a picture of how the state industrial policy plans were implemented. The winners in terms of investment in the first half of the 1970s were the light and food industries, where thanks to a sector-growth of 3-4 percentage points, development and reconstruction of a magnitude never experienced before could be realised. The position of mechanical engineering was hardly weakened, that of the basic materials industry much more so with a reduction in the share of investments in the sector, in spite of huge developments in the chemical industry.

In the consolidation of telecommunications and electronics in Hungary, a significant role was also played by orders

[62] Honvári, *op. cit.*, 2006, pp. 463-468.

from the military. In the CMEA defence industry cooperation, besides military vehicle manufacture (lorries and armoured vehicles), Hungary had taken on the production of mainly telecommunications devices, and the largest number of export orders were received for these two product groups[63]. The defence industry product structure was therefore realigned during the years 1971-75: armaments and ammunition production of heavy industry character fell back by 9 percentage points (from 25% to 16%), the share of vehicle manufacture grew somewhat (from 34% to 35%), but the production of telecommunications and electronics leapt by 10 percentage points (from 32% to 42%)[64].

6. Industrial policy and economic growth

In the following section, the development of economic growth in Hungary in the period between 1950 and 1975 will be examined, as well as the influence on growth of the industrial policy steps analysed above.

Table 5, which is based on the Maddison-database, compares the economic growth performance of several Central Eastern European countries and the Soviet Union. The underdeveloped "latecomers", Bulgaria and Romania performed at the highest rates (both were 5.5% on the average), but Czechoslovakia had the more consistent development in the 25 years. In the early 1950s, the era of the stalinist indu-

[63] See Germuska, *op. cit.*, Vörös arzenál. pp. 132-162.

[64] For the detailed data series, see P. Germuska, "L'industrie de la défense hongroise. De la soviétisation à l'occidentalisation", in *Vingtième Siècle*, 109.1, 2011, pp. 89-100, p. 97.

strialization, the relevant indicators draw an oscillating line in all mentioned states; however, the fastest growth can be seen in these years, as well. Recession can be observed in some countries in the first half of the 1960s – not independently from the huge military development program. The summarized results illustrate that Hungarian economic growth was mostly below the average of these bloc countries, and only in 1951, 1955, 1957, 1962-63 and 1969 had a better outcome.

If the Hungarian growth is compared when measured in prevailing current prices, at constant prices of the 1950s in forints, similar trends are obtained, but with differing dynamics and fluctuations. The largest deviations are experienced at the beginning of the 1950s, when the consumer and investment price indices developed in totally different ways, as did the implicit price index (see Figure 1). Overall, prices rose to around double over the 25 years under discussion. The rise in the consumer price index was particularly dramatic in 1951-52, and then following temporary deflation it only passed the 1952 level again in 1970. Investment prices, on the other hand, were only moved by the governmental realignment of 1959, when they were subsequently corrected in line with the rate of inflation of recent years. In the mid-1960s the economic control cut back on investments, which caused prices to fall, and then the dynamic industrialisation period beginning in 1967-68 once again drove prices up, particularly in the industrial sector.

The implicit price index examines aggregate price movements of the whole economy, so this has been used to calculate the national income at constant prices. It can easily be

seen that what is perceived as a rise at current prices is to a significant extent only the effect of inflation. Figure 2 demonstrates that there was not only a severe recession in 1956, but also in 1952 and 1954, and furthermore, the economy produced zero growth in 1965. The prominent growth of 1957, on the other hand, was an isolated correction following the revolution. The growth curve fits well with the Soviet type trend mentioned in the introduction. Indeed, when calculated at constant prices the fluctuations are even greater: the Hungarian data measured in international dollars show even less growth than those calculated at 1950s prices, and they likewise devalue the performance of the early 1970s.

Growth data calculated in prices for the year 1950 reveals the threefold breakdown of the period: the period between 1950 and 1956 is characterised by a variable economic performance, prominent leaps and serious reverses; in 1957-1964, following a dynamic start, growth gradually slowed down (reasons for this including a renewed jump in military expenditures); between 1966 and 1975 a relatively balanced, stable growth path ensued[65].

The economic policy disputes and changes of direction lasting until 1968 brought powerful convulsions to the Hungarian socialist economy, resulting in an extremely uneven performance. The cycles of industrial development and investment have been presented in detail above; what is interesting here, is how much these coincide (or not) with the growth cycles. In Figure 3, the ratio of investment (for the whole national economy, or just in industry) relative to the

[65] The breakdown I have proposed agrees essentially with Béla Tomka's periodisation. Tomka, *op. cit.*, 2011, pp. 96-97.

national income is shown at constant prices for the year 1950. Investments rose one and a half times between 1950 and 53, but they halved between 1953 and 1957! Since 1958-59, the expansion of investment was particularly powerful in non-industrial sectors (communal, housing construction boom), which was then followed by a trough once more in the early 1960s. From 1962-63 onwards, the share of investment in the national income rose once more, once again passing the 1952 level of 30% in 1967, and again in 1969. The investment fever, which emerged in the sectors of housing construction, infrastructure and agriculture, as well as the light and food industries, gathered force in the early 1970s, when the investment rate rose above 35%.

If the annual growth rates at constant prices for total investment, investments in heavy industry, and the national income are projected against each other, then curves are obtained which move more or less together (see Figure 4). The retarding effect of heavy industry investments on economic growth can only really be considered since the beginning of the 1960s. At the same time it is clearly seen that although investment activities may have increased dynamically at certain periods, these could not raise growth to the rate that would be expected on the basis of the literature.

The recent literature clearly indicated that one of the main reasons for the shortfall was low productivity. Attention should also be drawn to two important additional factors, which point to the poor efficiency of the socialist economy in Hungary: the foreign-trade balance and price equalisation in international trade. At current prices, the foreign-trade balance of Hungary showed a deficit every year from 1950 to 1967, amounting on average to 4.7% of the na-

tional income[66]. It is not clear from the CSO data series, however, how much it cost the state budget to maintain exports at this level. The export subsidy was provided by the budget using a foreign-trade price equalisation system: any (possible) profits made on imports were diverted and used to support exports. Imports, however, hardly ever made sufficient profit to subsidy exports, and so the difference was supplied by the budget – under the pretext of price equalisation. The requirement for subsidies increased significantly in 1953-54, and in 1954-56 it amounted to 20% of state budget expenditures. By the end of the 1950s this item of expenditure had fallen to 6-9%, though from 1962-63 it once again exceeded 10%. Between 1950 and 1967, on average 11% of the budget expenditures had to be assigned to price equalisation, which exceeded the 10% average calculated for military expenditures during this period[67]! At current prices the extent of price equalisation reached 12-13% of national income during the critical years. According to CSO data, a modest surplus occured in foreign trade turnover between 1968 and 1975[68], though from the report produced for the HSWP PC it can be seen that the budget devoted billions to price subsidies.

[66] My own calculations based on KSH, *Népgazdasági mérlegek, 1949-1987*, (Budapest 1989), pp. 18 and 28.

[67] P. Germuska, "… nem tudunk egyensúlyba kerülni". Külkereskedelmi árkiegyenlítés – költségvetésen kívül és belül, in M. Baráth, G. Bánkúti, and J.M. Rainer (eds.), *Megértő történelem. Tanulmányok a hatvanéves Gyarmati György tiszteletére*, Budapest, 2011, pp. 392-393.

[68] KSH, *Népgazdasági mérlegek*, 1949-1987, p. 28.

7. Conclusions

On the basis of the new evidence here presented, it is possible to argue that the apparently robust growth periods were accomplished at heavy cost, either by drastically reducing the standard of living of the population and increasing inflation, as in the early 1950s, or by foreign indebtedness – chiefly dollar-based – as in the early 1960s and early 1970s. The final conclusion may appear obvious, but I would affirm that the Kádár growth model did not differ significantly from the Rákosi type: it is a matter of the same kind of forced growth programme, but financed with a different aim and from other resources. In terms of general conditions of both individuals and society, supplies and consumption, the Kádár age was certainly incomparably better and more bearable than the Rákosi era. Yet, although an average annual growth rate of 5.3% was achieved between 1950 and 1975, the socialist economic miracle failed to materialise in Hungary: the debts resulting from growth attained through a forced, uneven and distorted economic structure had to be paid for over the next quarter century.

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APPENDIX

TABLE 1

The distribution of investment in various sectors and branches of the national economy, between 1950 and 1970 (%)

Year	Armed forces and preparations	Heavy industry and construction	Light, miscellaneous and food industry	Agriculture	Transport, trade, communal (armed forces and preparations for a theatre of war not included)	Total
1950	13.2	38.5	3.6	9.8	34.9	100.0
1951	14.2	45.5	3.3	10.6	26.4	100.0
1952	13.1	45.8	2.9	12.9	25.3	100.0
1953	8.3	46.6	3.3	13.3	28.5	100.0
1954	2.6	38.5	5.1	23.0	30.8	100.0
1955	1.4	36.3	7.9	24.5	29.9	100.0
1956	3.1	43.1	6.7	16.0	31.1	100.0
1957	1.3	39.4	7.0	11.7	40.6	100.0
1958	1.0	29.2	5.1	15.0	49.7	100.0
1959	2.0	37.3	6.7	18.1	35.9	100.0
1960	2.1	35.8	6.6	20.8	34.7	100.0
1961	2.0	39.9	7.3	17.5	33.3	100.0
1962	3.2	38.4	7.0	18.6	32.8	100.0
1963	2.1	35.1	7.4	20.3	35.1	100.0
1964	1.7	34.2	8.6	20.9	34.6	100.0
1965	1.6	35.5	8.9	17.5	36.5	100.0
1966	2.3	36.5	8.6	16.8	35.8	100.0
1967	2.2	36.9	8.9	16.6	35.4	100.0
1968	2.6	35.1	6.5	21.3	34.5	100.0
1969	2.3	32.1	8.1	21.6	35.9	100.0
1970	2.5	30.6	8.2	23.0	35.7	100.0

Source: Own calculation based on Table 6.

Table 2
The distribution of investment in various branches of industry, between 1950 and 1975 (%)

Year	Basic material production	Mechanical engineering net of defence industry	Defence industry	Light and miscellaneous industry	Food industry	Total
1950	59.0	13.5	18.1	3.9	5.5	100.0
1951	66.4	8.8	17.4	3.9	3.5	100.0
1952	75.1	7.5	11.2	4.0	2.2	100.0
1953	74.2	11.2	7.8	3.0	3.8	100.0
1954	74.4	10.2	3.4	5.4	6.6	100.0
1955	69.2	11.3	1.4	7.9	10.2	100.0
1956	69.8	13.5	2.6	5.8	8.3	100.0
1957	70.8	11.1	2.3	8.1	7.7	100.0
1958	68.4	13.7	2.2	8.6	7.1	100.0
1959	63.6	19.4	1.1	8.6	7.3	100.0
1960	64.2	18.5	1.0	9.5	6.8	100.0
1961	69.1	13.9	1.0	9.3	6.7	100.0
1962	69.2	12.7	2.0	8.1	8.0	100.0
1963	67.1	12.6	1.9	10.1	8.3	100.0
1964	65.3	12.0	1.6	11.6	9.5	100.0
1965	64.2	13.1	1.4	12.3	9.0	100.0
1966	63.0	16.0	1.1	11.1	8.8	100.0
1967	61.4	17.1	0.7	11.6	9.2	100.0
1968	65.2	17.6	0.6	8.3	8.3	100.0
1969	59.7	18.4	0.6	10.9	10.4	100.0
1970	57.8	18.0	1.2	12.1	10.9	100.0
1971	55.9	16.6	1.3	15.4	10.8	100.0
1972	60.3	14.8	1.5	14.3	9.1	100.0
1973	60.5	14.2	1.3	13.6	10.4	100.0
1974	56.9	14.2	1.1	15.5	12.3	100.0
1975	56.7	15.8	0.6	14.0	12.9	100.0

Source: Own calculation based on Table 6.

TABLE 3
Comparison of middle term plans of some Soviet bloc countries concerning the investments

Plan	Investment as a share of the national income (%)	Industrial investment as a share of total investment (%)	Heavy-industrial and constructional investment as a share of industrial investment (%)
1st five year plan of Bulgaria	19.6	no data	83.5
1st five year plan of Czechoslovakia	22.3	40.6	78.1
1st six year plan of Poland	21.6	45.4	75.0
1st five year plan of Hungary	*25.2*	*51.7*	*92.1*
1st five year plan of the GDR	no data	53.9	75.2
1st five year plan of Romania	no data	53.4	82.6
1st five year plan of the USSR	no data	49.1	85.7
2nd five year plan of the USSR	no data	47.8	83.1
Fulfilment of the plan for 1946-1950. Years in the USSR	21.0	no data	no data

Source: Petö I., Szakács S., A hazai gazdaság négy évtizedének története. 1945-1985. I. Az újjáépítés és a tervutasításos irányítás idöszaka, Budapest, 1985, p. 168.

Table 4

The development of Hungary's net material product (NMP) in current prices and in constant 1950 price base, and GDP in 1990 US$ (converted at Geary Khamis PPPs), between 1950 and 1975

Year	NMP in current prices, million HUF	NMP in constant 1950 price base, million HUF	GDP, in millions of 1990 US$ Geary Khamis PPPs
1950	46 487.0	46 487.0	23 158
1951	65 315.0	54 158.4	25 395
1952	73 852.0	52 864.7	26 250
1953	82 975.0	59 395.1	26 727
1954	85 605.0	56 767.2	27 664
1955	94 292.0	61 468.1	30 164
1956	82 539.0	54 517.2	28 799
1957	107 310.0	66 901.5	31 184
1958	109 980.0	70 545.2	33 273
1959	128 233.0	75 077.9	34 622
1960	141 608.0	82 330.2	36 431
1961	155 263.0	86 113.7	38 273
1962	163 158.0	91 251.7	39 868
1963	171 132.0	96 195.6	42 056
1964	179 553.0	100 365.0	44 424
1965	176 124.0	100 470.1	44 770
1966	196 075.0	108 689.0	47 319
1967	213 803.0	117 538.8	50 033
1968	229 846.0	123 374.1	50 641
1969	259 183.0	133 256.0	52 155
1970	277 302.0	139 769.2	51 974
1971	299 900.0	148 833.7	54 293
1972	325 309.0	156 398.6	55 460
1973	360 335.0	167 988.3	58 339
1974	376 375.0	179 653.9	59 852
1975	402 002.0	189 444.9	61 135

Source: NMP: Népgazdasági mérlegek, 1949-1987, NMP on constant prices: own calculation based on Népgazdasági mérlegek, 1949-1987 and Table 5. GDP: Tomka, 2011, pp. 267-268.

TABLE 5
Economic growth in socialist countries between 1951 and 1975 (%)

Year	Bulgaria	Czechoslovakia	Hungary	Poland	Romania	USSR
1951	17.1	1.8	8.8	4.2	6.7	0.5
1952	**-4.8**	3.2	3.3	2.2	6.7	6.1
1953	10.1	**-0.4**	1.8	5.5	6.7	4.1
1954	**-1.9**	3.9	3.4	5.4	6.7	4.6
1955	6.7	7.9	8.3	4.6	6.7	7.9
1956	0.1	5.6	**-4.7**	4.3	4.2	8.7
1957	9.6	5.8	7.6	5.0	4.2	2.0
1958	8.0	7.1	6.3	4.6	4.2	7.0
1959	7.4	4.2	3.9	2.8	4.2	**-1.1**
1960	8.7	7.0	5.0	5.1	4.2	8.7
1961	6.1	3.8	4.8	7.4	6.3	5.4
1962	7.6	1.3	4.0	**-1.4**	3.4	2.6
1963	4.4	**-1.9**	5.2	5.7	6.7	**-2.3**
1964	7.3	4.5	5.3	4.3	6.0	11.4
1965	5.7	3.5	0.8	5.2	5.9	5.4
1966	7.3	4.1	5.4	5.9	10.3	4.6
1967	5.1	4.1	5.4	3.5	4.4	4.2
1968	1.8	4.5	1.2	5.7	2.1	5.5
1969	4.6	1.8	2.9	**-1.0**	4.4	1.4
1970	5.4	2.0	**-0.3**	4.9	2.2	7.1
1971	3.2	3.3	4.3	6.7	12.4	2.6
1972	4.5	3.4	2.1	6.8	6.0	0.6
1973	3.8	3.2	4.9	7.0	3.1	7.8
1974	3.0	3.5	2.5	5.5	5.3	2.8
1975	7.6	2.9	2.1	4.5	4.3	0.3

Source: http://www.ggdc.net/maddison/maddison-project/orihome.htm

Table 6

Distribution of investments in different sectors and branches of the national economy, between 1950 and 1975, at current prices, million HUF

Year	1. Industry (1.1+1.2+1.3)								
	1. Industry total	1.1 Heavy industry (1.1.1+1.1.2)							
		1.1 Heavy industry total	1.1.1 Production of basic materials (1.1.1.1+1.1.1.2+1.1.1.3+1.1.1.4+1.1.1.5)						1.1.2 Mechanical engineering
			1.1.1.1 Mining	1.1.1.2 Electricity industry	1.1.1.3 Metallurgy	1.1.1.4 Building materials industry	1.1.1.5 Chemicals and rubber industry	1.1.1 Production of basic materials total	
1950	3 692	3 349	578	524	371	233	474	2 180	1 169
1951	5 939	5 500	911	767	943	383	941	3 945	1 555
1952	7 364	6 911	1 333	1 064	1 677	560	897	5 531	1 380
1953	7 907	7 371	1 633	1 061	1 890	542	744	5 870	1 501
1954	4 923	4 331	1 275	896	726	217	548	3 662	669
1955	4 724	3 863	1 159	805	507	183	613	3 267	596
1956	5 425	4 660	1 569	932	540	232	512	3 785	875
1957	4 811	4 051	1 489	859	293	195	571	3 407	644
1958	10 032	5 075	1 494	1 247	453	287	638	4 119	956
1959	13 378	11 264	2 832	2 290	1 283	786	1 324	8 515	2 749
1960	14 857	12 442	2 753	2 382	1 681	1 021	1 708	9 545	2 897
1961	14 983	12 588	2 941	2 350	1 742	1 203	2 111	10 347	2 241
1962	16 607	13 933	3 069	2 261	1 622	1 667	2 873	11 492	2 441
1963	17 472	14 266	3 374	2 500	1 916	1 120	2 822	11 732	2 534
1964	18 461	14 559	3 743	2 291	1 820	813	3 389	12 056	2 503
1965	17 685	13 911	3 543	2 390	1 670	697	3 054	11 354	2 557
1966	20 473	16 377	3 550	2 478	2 146	973	3 745	12 892	3 485
1967	25 054	19 845	3 374	2 947	3 114	1 493	4 460	15 388	4 457
1968	22 201	18 532	3 312	3 115	2 840	1 530	3 683	14 480	4 052
1969	28 589	22 496	4 012	3 600	2 964	2 132	4 362	17 070	5 426
1970	32 027	24 677	4 416	3 858	3 329	2 387	4 535	18 525	6 152
1971	35 954	26 528	3 907	3 861	3 435	3 287	5 600	20 090	6 438
1972	38 664	29 644	3 455	4 885	3 410	3 099	8 465	23 314	6 330
1973	39 468	30 019	3 565	5 464	2 780	4 198	7 868	23 875	6 144
1974	43 716	31 526	3 980	6 331	3 217	4 049	7 292	24 869	6 657
1975	49 945	36 494	5 229	6 795	3 241	3 205	9 826	28 296	8 198

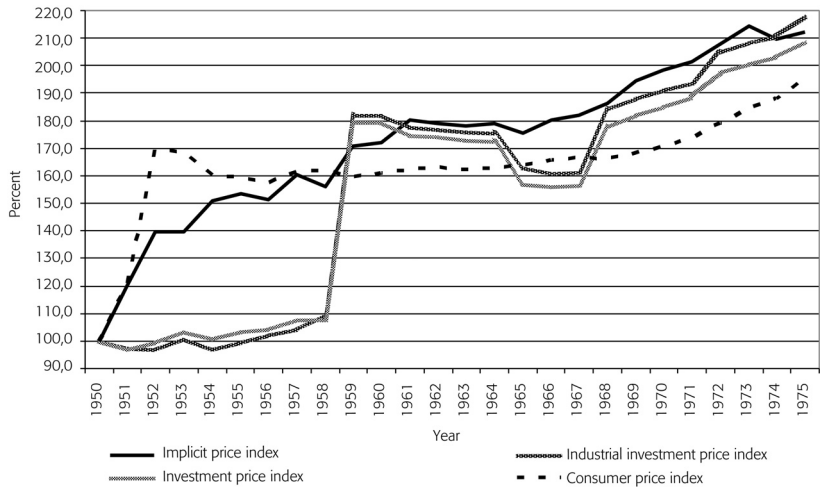
(continue)

TABLE 6
(continued)

1. Industry		2. Construction	3. Agriculture and forestry	4. Transport	5. Trade	6. Communal sectors	7. Total investment in the national economy (1+2+3+4+5+6)	8. Defence industry	9. Armed forces	10. Preparations for war	Year
1.2 Light and miscellaneous industry	1.3 Food industry										
143	200	374	951	1 863	272	2 512	9 664	669	864	407	1950
233	206	480	1 386	1 786	337	3 199	13 127	1 034	1 433	426	1951
291	162	343	2 039	2 351	300	3 427	15 824	825	1 546	527	1952
236	300	436	2 226	1 779	322	4 071	16 741	613	1 065	328	1953
267	325	142	2 677	808	315	2 755	11 620	169	227	71	1954
373	488	94	2 668	951	315	2 140	10 892	64	106	42	1955
313	452	200	1 800	1 011	339	2 509	11 284	141	269	77	1956
388	372	211	1 267	875	419	3 238	10 821	109	69	74	1957
517	429	322	2 769	2 587	825	5 969	22 504	131	154	39	1958
1 152	962	578	5 754	3 881	1 135	6 982	31 708	149	485	137	1959
1 417	998	887	7 752	4 461	1 246	7 984	37 187	145	631	153	1960
1 390	1 005	626	5 800	3 097	1 041	7 531	33 078	154	635	27	1961
1 345	1 329	742	7 113	4 184	1 179	8 378	38 203	324	899	328	1962
1 771	1 435	1 051	8 842	5 424	1 542	9 267	43 598	333	735	197	1963
2 143	1 759	1 058	9 577	5 412	1 589	9 622	45 719	287	626	156	1964
2 176	1 598	1 077	7 348	5 192	1 514	9 363	42 179	243	532	154	1965
2 274	1 822	1 134	8 029	6 905	1 637	9 739	47 917	218	541	567	1966
2 897	2 312	1 695	9 698	8 487	2 038	11 472	58 444	175	546	751	1967
1 832	1 837	1 119	11 925	8 536	1 598	10 630	56 009	138	458	984	1968
3 113	2 980	1 730	16 378	9 806	2 962	16 079	75 544	160	846	900	1969
3 875	3 475	2 699	20 552	12 156	3 104	19 003	89 541	395	1 280	940	1970
5 536	3 890	3 345	21 969	12 946	4 245	22 271	100 730	468	no data	no data	1971
5 514	3 506	2 947	20 447	12 992	4 049	24 003	103 102	599	no data	no data	1972
5 364	4 085	2 626	20 370	13 882	4 975	26 866	108 187	528	no data	no data	1973
6 793	5 397	2 638	22 043	15 957	5 753	30 195	120 302	460	no data	no data	1974
6 986	6 465	3 304	25 294	21 481	7 482	34 608	142 114	305	no data	no data	1975

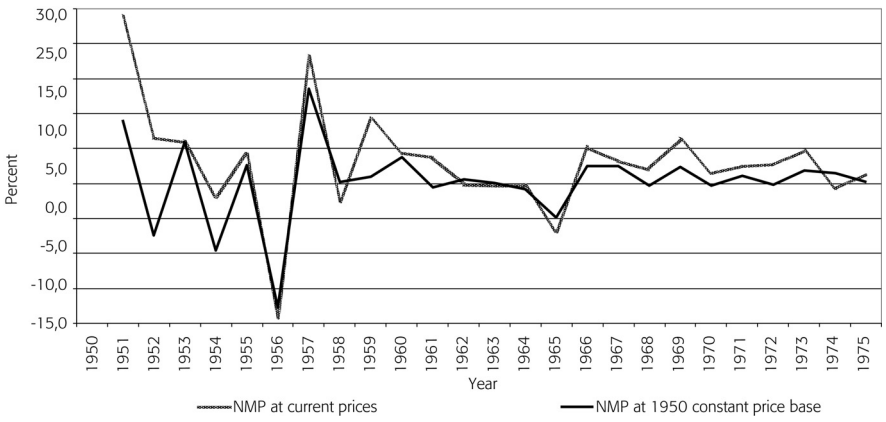
Source: Beruházási adattár 1950-1966. 77., 88. p., Statisztikai évkönyv 1975. 74-75. p. Defence industrial investment 1950-70: Az ország honvédelmét és belsö biztonságát szolgáló gazdasági tevékenység alakulásának elemzése az 1950-1970-ig terjedö idöszakra. 1971. szeptember 1. MOL, XIX-L-1-qqq 9. d. 1971: A Nehézipari Minisztérium 1971. évi haditechnikai tervének teljesítéséröl, A Könnyüipari Minisztérium 1971. évi haditechnikai tervének teljesítéséröl, A Kohó- és Gépipari Minisztérium 1971. évi haditechnikai tevékenységéröl. MOL, XIX-A-16-aa 119. d.; 1972: A Könnyüipari Minisztérium 1972. évi haditechnikai tervének teljesítéséröl, A Kohó- és Gépipari Minisztérium 1972. évi haditechnikai feladatainak teljesítéséröl, A Nehézipari Minisztérium 1972. évi haditechnikai tervének teljesítéséröl MOL, XIX-A-16-aa 121. d.; 1973: A Nehézipari Minisztérium 1973. évi haditechnikai tervének teljesítéséröl, A haditechnikai tevékenység 1973. évi tervének teljesítéséröl (MN Gödöllöi Gépgyár), A Könnyüipari Minisztérium 1973. évi haditechnikai terve teljesítéséröl, A Kohó- és Gépipari Minisztérium 1973. évi haditechnikai tevékenységéröl MOL, XIX-A-16-aa 123. d.; 1974: A hadiipari tevékenység 1974. évi tervének teljesítéséröl MOL, XIX-A-16-aa 125. d.; 1975: A hadiipari tevékenység 1975. évi tervének teljesítéséröl MOL, XIX-A-16-aa 127. d.; Armed forces and preparations for a theatre of war 1950-1970: Az ország honvédelmét és belsö biztonságát szolgáló gazdasági tevékenység alakulásának elemzése az 1950-1970-ig terjedö idöszakra. 1971. szeptember 1.

Figure 1
Indices of different price indexes between 1950 and 1975, on 1950 constant price base. 1950 = 100



Source: Implicit price index based on: Népgazdasági mérlegek, 1949-1987. Consumer price index based on: Magyarország népessége és gazdasága. 207. p. Investment and industrial investment price index: Beruházási adattár 1950-1966.; Beruházási adattár 1950-1977. 55., 93. p.; Statisztikai évkönyv, 1971. 88. p., Statisztikai évkönyv, 1975. 81. p.

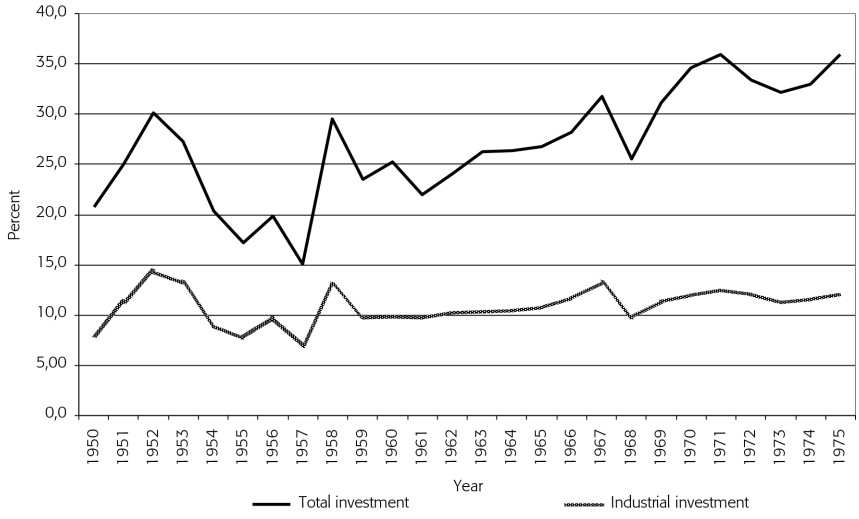
Figure 2
The economic growth of Hungary's NMP in current and constant prices, between 1951 and 1975 (%)



Source: Own calculation based on Table 4.

FIGURE 3

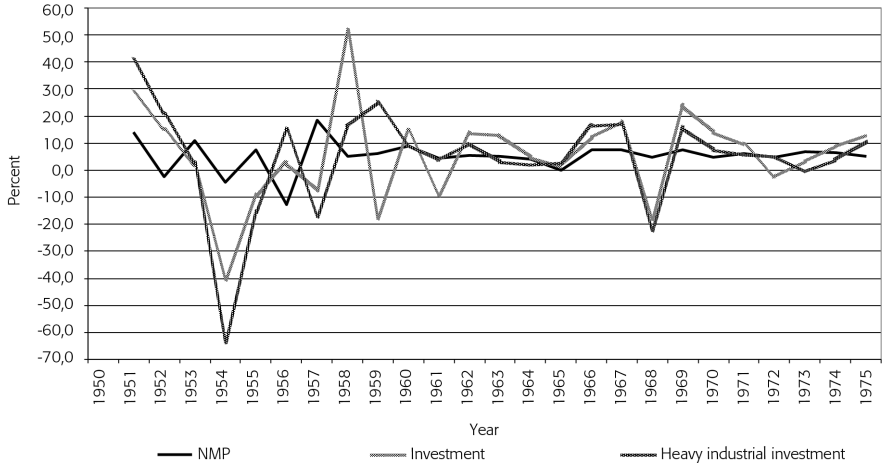
The share of investment and industrial investment in percent of total NMP, in constant 1950 prices, between 1950 and 1975



Source: Own calculation based on Table 4 and 6.

FIGURE 4

The annual growth of NMP, total investment and heavy industrial investment percent, in constant 1950 prices, between 1950 and 1975



Source: Own calculation based on Table 4 and 6, with price index of Figure 1.