7

THE NATIONAL WEALTH OF YUGOSLAVIA AT THE END OF 1953

By Ivo Vinski

THE present paper contains a direct estimate of all physical assets located in the present territory of Yugoslavia, together with an estimate of net foreign assets, the figures relating to 31 December 1953. The main text of the paper contains a general review of the estimates. The estimates themselves are presented, in summary and in detail, in Appendix I. A survey of sources and methods, followed by notes on each item, appears in Appendix II.

I. HISTORICAL REVIEW

The first estimates of national wealth go back to the period prior to World War I. In 1896 Mulhall, in a survey of national-wealth data, estimated the total wealth of the Kingdom of Serbia at £211 million or £92 per head. During World War I a group of Serbian refugee economists prepared a study of the national income and wealth of Serbia (including Macedonia) at the period between the end of the Balkan War and the outbreak of World War I,[1] arriving at a total figure of national wealth of 11·8 billions of gold dinars (£470 million or £97 per head). These estimates were prepared in connection with the ascertainment of Serbia's war damages. In 1910–12 Avramović prepared a sample survey of 835 peasant farms in Serbia, containing also data regarding capital.[2] For the regions of Yugoslavia which until 1918 formed part of Hungary (within the Austro-Hungarian Empire) estimates by Fellner are available. From his study of national wealth of Austria and Hungary in 1910–12, he apportioned wealth between Hungary (Trianon borders) and the Succession states.[3] On the basis of Fellner's estimates the share of the Yugoslav regions (i.e. the provinces Vojvodina, Croatia, and Slavonia and the district of Rijeka) amounted in the years 1910–12 to 8 billion gold crowns (£340 million or £84 per head).

[1] Comité Central Serbe, *La Serbie economique 1914–1918*, Genève, 1918.
[2] Avramović, *Our Peasant Farming* (Naše seljaćko gazdinstvo), Beograd, 1928.
[3] Fellner, 'Die Verteilung des Volksvermögens und Volkseinkommens der Länder der Ungarischen Heiligen Krone zwischen dem heutigen Ungarn und den Successionsstaaten', *Metron*, Vol. III, No. 2, Ferrara, 1923.

For the territory of the newly created state of Yugoslavia, Gini prepared early in the 1920s an estimate of national wealth before World War I, arriving at a total of 30–35 billions of francs (£1,200–£1,400 million or £95–£105 per head).[1] In the late 1920s the Dresdner Bank published estimates of the national wealth of the territory of Yugoslavia in 1913/14 amounting to 27–28 billion marks (£1,325–£1,365 million or £93–£108 per head). As the source of these figures, the Dresdner Bank quotes Gini's estimates. For 1926, the Dresdner Bank figure for Yugoslavia's national wealth is as high as 38 billion marks (£1,860 million or £142 per head), quoting estimates prepared by Gourjou and Parkinson.[2] For the inter-war period, some data concerning fixed capital on farms are published in a sample survey by Dublić [3] and by Predavic [4] based on peasant farm-accounting records. In 1940 a survey of the composition of assets on sixty farms in Croatia was prepared; the results of this sample survey are published by Petrićević.[5] For fixed capital in railroad transport in 1926 an estimate was published by Milenković.[6] For fixed capital in manufacturing and electricity at the end of 1938 the Ministry of Industry and Commerce published an estimate, summarized from questionnaires submitted to nearly all establishments in this branch; but the results obtained are very unreliable, because inadequate attention was given to the concept of money value of capital.[7] New investment in mining is reported annually from 1931 until 1938 by the mining authorities.[8] For the territory of Croatia the present author published an estimate of new investment in the inter-war period.[9]

In the post-war period a comprehensive census of fixed capital was organized by the Central Planning Office in 1953, covering all the socialized sectors of the economy. In 1955 a similar census took place of health and social security institutions and of a

[1] Prepared in a report to the League of Nations (in the press). I am indebted to Professor Gini for his kindness in letting me have a copy of his manuscript.
[2] *Die wirtschaftlichen Kräfte der Welt*, Dresdner Bank, Berlin, 1930.
[3] Dubić, *A Contribution to the Study of Peasant Farming* (Prilog istraživanju seljaćkog gospodarstva), Križevci, 1933.
[4] Predavec, *The Village and the Peasants* (Selo i seljaci), Zagreb, 1934.
[5] Petrićević, *Untersuchungen über die Betriebsformen der Bauernbetriebe Kroatiens*, Aarau, Switzerland, 1942.
[6] Milenković, *The New Rail-Road Net* (Nova željeznićka Mreža), Beograd 1926.
[7] Statistics of manufacturing, prepared by the Ministry of Industry and Commerce, Beograd, 1941.
[8] Published in current yearbooks of the Ministry of Forestry and Mines.
[9] *Investment in Croatia in the Inter-war Period*, Beograd, 1955.

considerable range of public utility institutions and enterprises. These censuses did not cover roads, streets, bridges, quays, schools, residential buildings, timber stands, the private sector of agriculture, etc. However, Dr. Vladimir Stipetić recently prepared a comprehensive estimate for Yugoslav agriculture in 1955 covering all physical assets (except dwellings, stocks on farms, and land) reckoned at undepreciated replacement value (livestock, of course, is evaluated by Dr. Stipetić at market prices received by farmers).[1] In addition, we had the opportunity of using unpublished data on fixed capital in agriculture, originating from a sample survey organized in 1953 for Croatia and in 1954 for Serbia.[2]

II. THE PRICE-LEVEL PROBLEM

The determination of an appropriate price level for the valuation of capital goods is a difficult problem in countries where a significant proportion of the stock of machinery, equipment, and parts is of foreign origin. A similar problem arises in countries whose heavy construction and other industries supplying capital goods do not enjoy the accumulated experience and skill of the older industrialized countries and have high relative production costs. In both cases it seems reasonable to apply foreign prices, with an appropriate conversion rate, to the evaluation of machinery and equipment.

In our wealth estimates for Yugoslavia all buildings and structures are valued at internal building prices prevailing in 1951/53. On the other hand, all machinery, equipment, and parts have been valued on the basis of Western European prices prevailing in 1952/53, applying a unified conversion rate of 540 dinars for 1 U.S. dollar. It is an awkward problem to reconcile such a major component as machinery and equipment, valued at Western European prices, with other wealth components valued at internal prices. In fact, the question is whether the conversion rate is appropriate or not. In the case of our estimate for Yugoslavia, however, we may verify the adequacy of this procedure as follows: building prices in Yugoslavia in 1953

[1] Stipetić, *Fixed Capital in the Yugoslav Agriculture* (in the press). Dr. Stipetić has very kindly permitted me to use estimates from his manuscript.

[2] I am indebted to the director of the Serbian Statistical Office D. Bjelogrlić and to Ing. Dorćić of the Institute of Agricultural Economics in Zagreb for permission to use these unpublished data. I also wish to thank Professor Bićanić for supplying the relevant information on prices of farm land.

were on average about 22 times 1938 prices for the same type of construction. Western European prices for machinery, vehicles, and other equipment ranged in 1952/53 between 1·8 and 2·4 times the 1938 level. The exchange rate for 1 U.S. dollar for the acquisition of foreign machinery and equipment amounted in 1938 to 55 dinars for 1 U.S. dollar. Taking into account a rise in prices on the Western European markets for machinery and equipment of 2·2 times on average, we arrive at the result that the purchasing power of 55 dinars devoted in 1938 to foreign equipment and machinery equals 1,188 dinars in 1953 ($540 \times 2{\cdot}2 = 1{,}188$). From this purchasing-power ratio there results an increase of 22 times during the period in question for machinery and equipment, i.e. just the same increase as the above-mentioned increase of internal building prices in the same period.

It must be emphasized that the ratio between prices of machinery and equipment actually produced in Yugoslavia and the corresponding Western European prices would yield a considerably higher conversion rate for 1953 than the above-mentioned rate of 540 dinars for 1 U.S. dollar. In subsequent years, however, prices of Yugoslav machinery and equipment decreased steadily, and further decreases in prices may be expected in the future, owing to an increase in productivity in these branches of Yugoslav industry.

In this national wealth estimate Western European prices for all machinery and equipment were applied, regardless of their origin. The valuation of these assets on the basis of the extraordinarily high production costs which prevailed in Yugoslavia in 1953 would not result in meaningful estimates of wealth. In addition, it must be borne in mind that for a certain volume of machinery and equipment included in the 1953 inventory, no corresponding production existed in Yugoslavia, and consequently no prices of home production could be established.

By this evaluation procedure a reasonable relation between machinery and equipment and buildings has been established. It must be emphasized, however, that we have used a market-price valuation for some major wealth components – land, livestock, and growing stock in forests – which distorts this arrangement. In fact, substantial changes have taken place in the relation between prices of major wealth components in 1953 as compared with 1938. As mentioned above, building prices rose by about 22 times in the period under consideration, and about the

same increase was imputed in the evaluation of machinery and equipment. The rise in the price level for agricultural land in the same period amounts on average to only 6·5 times, for urban land as little as 4·5 times, for growing stock (stumpage prices) about 15–16 times, for livestock (market prices for live weight received by farmers) about 15–16 times. Some part of these differences may be attributed to the difference in the valuation basis. For buildings and structures, machinery and equipment a market-price valuation could not be conveniently applied, because factories, mines, and other assets of the socialized sector are not subject to sale.

III. THE CAPITAL–INCOME RATIO

Since comprehensive national wealth studies before 1953 are lacking, we are not in a position to ascertain the capital–income ratio for Yugoslavia in earlier periods.

In 1953 the national income of Yugoslavia at market prices, estimated in accordance with the western income concept, by the present author was 1,096 billion dinars.[1] If our depreciated national wealth estimate of 8,402 billion dinars at the end of 1953 as shown in Appendix I of this paper is applied to the above estimate of national income, we arrive at a ratio of 7·6. For reproducible tangible assets only (i.e. omitting land and net foreign assets) the ratio declines to 5·8.

According to recent researches of Mr. Colin Clark, the capital–income ratio in most countries is in the range of 2·5–4·0.[2] For these international comparisons Mr. Clark conceived capital as reproducible wealth for purposes of production (including business inventories but excluding consumers' stocks) and computed the national income at market prices. In order to compare the Yugoslav ratio with these estimates we excluded consumers' durables and non-durables, standing timber, and some minor items from the Yugoslav capital figure and arrived at a ratio of 4·5 for 1953.

One of the reasons for this relatively high ratio might be the considerable volume of uncompleted projects, amounting to roughly 5 per cent of total capital, in Yugoslavia at the end of

[1] *National Expenditure of Yugoslavia 1953–1954* (Upotreba narodnog dohotka Jugoslavije 1953–1954), Ekonomski pregled, Zagreb, No. 5/1956, English summary, p. 367.

[2] C. Clark, *The Conditions of Economic Progress*, 3rd edn., London, 1957, pp. 572–580.

1953. Besides, a proportion of these large-scale projects completed in recent years had not yielded a full income in 1953, mainly because of inadequate skill of the labour force and limited experience in management as compared with the older industrialized countries. A similarly high ratio appears to have prevailed in Germany and France in the period prior to World War I, as can be seen from the historical data prepared by Helfferich for Germany [1] and Colson for France.[2]

Available data in this field seem to indicate the following conclusions about the order of magnitude of the capital–income ratio in various stages of economic growth:

(1) In under-developed countries this ratio seems to be low, probably under 2·5, because labour is the main factor of production in these countries. In India, which forms a substantial part of the under-developed world, the ratio amounted to 1·8 in 1950, as is shown by the estimates of Mukherjee and Sastry (Chapter 13 of the present volume).
(2) In countries undergoing the process of accelerated basic industrialization the ratio may rise to over 4·0. This was the case in Germany and France over half a century ago, and was characteristic of Yugoslavia in 1953.
(3) In what are now advanced countries the ratio generally ranges between 2·5 and 3·5, the decline being caused by a more economical utilization of capital, increase of productivity, inventions, etc.

The marked constancy of the capital–income ratio in the United States from 1897 until 1929, as shown in Dr. Goldsmith's study,[3] seems, however, to disprove the above statement. Further research in this field might indicate that this phenomenon is attributable to specific conditions of economic growth in the United States, or it might indicate the need for a re-examination of the above statement.

IV. THE RATE OF GROWTH OF CAPITAL

Yugoslavia is a country with a relatively high investment level in the post-war period; the share of net investment in net

[1] K. Helfferich, *Deutschlands Volkswohlstand, 1888–1913*, Berlin, 1914.
[2] The historical data prepared by Colson for France are compared with contemporary estimates in the study by Divisia, Roy Dupin, *A la Recherche du Franc Perdu*, Vol. 3. *Fortune de la France*, Paris, 1957.
[3] R. Goldsmith, 'The Growth of Reproducible, Wealth of the United States of America from 1805 to 1950', *Income and Wealth Series II*, Cambridge, 1952.

national product in 1953 amounted to nearly 21 per cent. In this connection it may be of interest to ascertain the rate of growth of real capital.

According to the present author's study mentioned above (p. 164, footnote 1), gross investment in Yugoslavia amounted to 412·1 billion dinars in 1953. Depreciation of fixed capital in the various branches of industry amounted to 140·1 billion dinars. This depreciation total does not cover non-productive assets such as dwellings, wells, schools, public buildings, etc., for which we made a special estimate of imputed depreciation totalling 62 billion dinars. We thus arrive at total depreciation of 202 billion dinars. Subtracting this figure from the gross investment total of 412 billion dinars, we derive a net investment figure of 210 billion dinars in 1953.

Applying this net investment figure to the total of reproducible tangible assets (excluding consumers' durables and non-durables), amounting to 5,454 billion dinars at the beginning of 1953, we arrive at a net rate of growth of 3·9 per cent in 1953. In the light of the available information it might reasonably be assumed that the rate of growth of reproducible tangible wealth in 1954 did not differ substantially from the 3·9 per cent rate of growth achieved in 1953.

V. MAJOR COMPONENTS OF NATIONAL WEALTH

In the summary table, presented in Appendix I, national wealth is classified by industrial use of capital goods. The main item is land, comprising nearly one-quarter of total physical assets, notwithstanding the relatively low market prices for land.[1] Dwellings rank as the next item in our summary table, amounting to 15·1 per cent of total physical assets. Transport, agriculture, and manufacturing (including mining and electricity) rank nearly equal (excluding uncompleted projects) each branch comprises about one ninth of total physical assets.

The total of physical assets may be broken down in various ways. On the basis of our detailed breakdown of national wealth, presented in Appendix I, we have attempted to reclassify total physical assets from the point of view of their location in major economic areas.

[1] In relation to building prices, urban land prices are about 5 times lower in 1953 as compared with the 1938 level; prices of farm land are nearly 3 times lower in relation to crop prices.

TABLE I

Physical Assets by Type of Location

Area	Billion dinars		Percentage
TOTAL PHYSICAL ASSETS		8,444	100·0
FARM AREA		3,890	46·1
Agricultural land	1,809		
Means of production	915		
Rural dwellings, wells, and cisterns	708		
Handicrafts and cottage industries	13		
Commerce	47		
Education, health, and administration	26		
Consumers' stocks	372		
FOREST AREA		813	9·6
Forest land	147		
Timber stands	606		
Other	60		
URBAN AND INDUSTRIAL AREA		2,778	32·9
Urban land	87		
Residential buildings	591		
Public utilities	103		
Education, health, and administration	251		
Manufacturing, mining, and construction	1,171		
Commerce	182		
Handicrafts	36		
Consumers' stocks	357		
REMAINDER (Transport and communication) [1]		963	11·4

TABLE II

Physical Assets by Type of Ownership

Branch	Collective People's Ownership	Private Ownership
	Billion dinars	Billion dinars
TOTAL	4,056	4,388
Manufacturing and mining, construction, transport, and commerce	2,366	3 [2]
Handicrafts and cottage industries	28	22
Dwellings and public utilities	352	1,132
Education, health, and government	270	6 [3]
Agriculture, including land	359	2,365
Forestry and logging, including land	681	131
Consumers' stocks	—	729

[1] Transport in cities is excluded.
[2] Refers mainly to transport and commerce.
[3] Refers mainly to privately owned buildings actually used for public education.

The residual item of 963 billion dinars represents the transport and communication network, including rolling stock, etc., which could not be conveniently apportioned.

Finally, we present a breakdown of total physical assets by type of ownership (Table II).

Collective people's ownership, embracing roughly one-half of total physical assets, consists of public assets, such as roads, sea and river quays, public buildings, etc., and assets under 'social self-administration', such as factories, mines, etc., controlled by workers' councils. Assets of co-operative ownership are classified under collective people's ownership.

VI. AN INTERNATIONAL COMPARISON

In this section we present an attempt at a comparison of national wealth components among three countries at different levels of economic growth.

TABLE III

Percentage Composition of National Wealth Components

Branch	Netherlands [1] 1949 (%)	Yugoslavia 1953 (%)	India [2] 1950 (%)
Agriculture (including forestry and fishing)	19·9	48·4	63·1
Manufacturing, mining and construction	22·4	17·5	5·7
Handicrafts (including cottage industries)	0·2	0·8	2·2
Commerce	9·0	3·7	5·2
Transportation (including communication)	13·1	8·0	7·2
Dwellings	34·7	20·5	15·8
Other	0·7	1·1	0·8
TOTAL	100·0	100·0	100·0

[1] *National Accounts of the Netherlands* 1948–1949 prepared by the Division of Research and Co-ordination of the Netherlands Central Bureau of Statistics (The Hague, 1952).

[2] M. Mukherjee and N. S. R. Sastry, *An Estimate of the Tangible Wealth of India*. Ch. 13. p. 365 below.

In the table below we show the percentage composition of national wealth components for the economically advanced Netherlands, for under-developed India and for Yugoslavia, the latter ranking near the border-line between economically advanced and under-developed countries.

To make the above estimates comparable we excluded from the Indian and Yugoslav estimates public assets, such as schools, hospitals, roads, canals, etc., since these assets are not included in the Dutch estimate. From the Yugoslav estimate we also excluded consumers' durables and non-durables, because these assets are not covered by the Indian and Dutch estimates. Land is not shown separately, because it was apportioned among the respective branches.

The comparisons given above should be regarded as provisional, in particular because the Central Bureau of Statistics of the Netherlands is engaged in preparing a new wealth estimate using a revised approach for various items; the revised Dutch data were not available when this paper was completed.

APPENDIX I

NATIONAL WEALTH OF YUGOSLAVIA AT THE END OF 1953

TABLE IV

Summary Table

Billions of dinars (1953 prices)

	Fixed Capital Replacement Value		Stocks	Uncompleted Projects	Total	
	Undepreciated	Depreciated			Undepreciated	Depreciated
(1) Manufacturing, mining, and electricity	1,061	652	261	199	1,521	1,112
(2) Agriculture	1,107	714	195	6	1,308	915
(3) Forestry	688	656	8	1	697	665
(4) Transport	1,637	933	14	22	1,673	969
(5) Construction	57	35	24	1	82	60
(6) Commerce	100	62	166	1	267	229
(7) Handicrafts	85	34	16	0	101	50
(8) Dwellings	2,490	1,263	—	10	2,500	1,273
(9) Public utilities	207	113	—	2	209	115
(10) Health	120	74	—	5	125	79
(11) Education	244	128	—	29	273	157
(12) Government	72	38	—	2	74	40
(13) Consumers' stocks	—	—	729	—	729	729
TOTAL CAPITAL	7,868	4,702	1,413	278	9,559	6,393
(14) Land	—	—	—	—	2,051	2,051
TOTAL PHYSICAL ASSETS	—	—	—	—	11,610	8,444
(15) Net foreign assets	—	—	—	—	−42	−42
NATIONAL WEALTH	—	—	—	—	11,568	8,402

TABLE V

National Wealth by Industry and Type of Asset

Billions of dinars (1953 prices)

Branch	National Wealth	
	Undepreciated	Depreciated
(1) *Manufacturing, mining, and electricity*	**1,521**	**1,112**
(1-a) Fixed capital	**1,061**	**652**
Electricity	188	121
Mining and metallurgy	236	157
Manufacturing	637	374
(1-b) Stocks	261	261
(1-c) Uncompleted projects	**199**	**199**
Electricity	59	59
Mining and metallurgy	87	87
Manufacturing	53	53
(2) *Agriculture and fishing*	**1,308**	**915**
(2-a) Livestock	**223**	**223**
Cattle	123	123
Horses	41	41
Sheep and goats	24	24
Pigs	22	22
Other	13	13
(2-b) Non-residential structures	**425**	**231**
Stables	334	190
Other	91	41
(2-c) Home processing of farm products	86	44
(2-d) Transportation equipment, machinery, and tools	**122**	**60**
Farm cars and harness	63	30
Tractors	15	8
Ploughs	8	4
Threshers, grain drills and other machinery for crops	18	9
Cutters and others implements for animal husbandry	4	2
Sprayers and other implements for vineyards and fruit trees	2	1
Tools	12	6
(2-e) Perennial plants	**147**	**66**
Orchards	51	33
Vineyards	95	33
Hopfields	1	0
(2-f) Land improvements	**144**	**137**
Flood control and improvement of river beds	87	87
Drainage	37	33
Irrigation	20	17
(2-g) Veterinary stations	4	2
(2-h) Stocks on farms	**138**	**138**
Cereals (stored)	48	48
Wine and brandy (stored)	25	25
Other farm products (stored)	52	52
Sown seeds	13	13
(2-i) Uncompleted projects	6	6
(2-j) Fishing	**13**	**8**
Vessels and nets for sea fishery	8	4
Fish ponds and inland-water fishery	5	4

TABLE V—*continued.*

National Wealth by Industry and Type of Asset

Billions of dinars (1953 prices)

Branch	National Wealth	
	Undepreciated	Depreciated
(3) *Forestry and logging*	**697**	**665**
(3-a) Timber stands	**606**	**606**
Coniferous trees	228	228
Oak-trees	101	101
Beech-trees	222	222
Other hardwood broad-leaved trees	49	49
Softwood broad-leaved trees	6	6
(3-b) Timber stocks at forest depots	8	8
(3-c) Communication lines	52	32
(3-d) Transportation equipment	10	5
(3-e) Foresters' and rangers' houses and other buildings	7	4
(3-f) Flood-control equipment	9	7
(3-g) Hunting guns and other equipment	4	2
(3-h) Uncompleted projects	1	1
(4) *Transportation and communication*	**1,673**	**969**
(4-a) Railroad transportation	**762**	**374**
Rolling stock	226	97
Railway lines, bridges, tunnels, stations, etc.	536	277
(4-b) Maritime transport	**106**	**77**
Merchant marine	53	29
Quays and lighthouses	45	44
Warehouses, cranes, tractors, etc.	8	4
(4-c) Inland-water transport	28	17
(4-d) Road transport	**702**	**442**
Roads	625	389
Bridges	46	39
Rolling stock of public transport, including tram lines	26	12
Trucks and carts of private forwarding agents	5	2
(4-e) Air transport	2	1
(4-f) Postal, telephone and telegraph communication	37	22
(4-g) Stocks	14	14
(4-h) Uncompleted projects	**22**	**22**
Railway lines	11	11
Roads	4	4
Vessels for merchant marine	5	5
Other	2	2
(5) *Construction*	**82**	**60**
(5-a) Fixed capital	57	35
(5-b) Stocks	24	24
(5-c) Uncompleted projects	1	1
(6) *Commerce and Hotels*	**267**	**229**
(6-a) Fixed Capital	**100**	**62**
Wholesale and retail trade	63	41
Hotels, restaurants, etc.	37	21
(6-b) Stocks	**166**	**166**
Wholesale trade	90	90
Retail trade	73	73
Hotels, restaurants, etc.	3	3
(6-c) Uncompleted projects	1	1

TABLE V—*continued.*

National Wealth by Industry and Type of Asset

Billions of dinars at 1953 prices

Branch	National Wealth	
	Undepreciated	Depreciated
(7) *Handicrafts and Cottage Industries*	**101**	**50**
(7-a) Handicrafts	**47**	**24**
Establishments in the socialised sector	24	13
Small-scale handicrafts (private sector)	23	11
(7-b) Cottage industries other than home food processing	**38**	**10**
Looms, spindles, and distaffs	16	4
Water mills	18	4
Various small-scale industries of farm co-operatives	4	2
(7-c) Stocks	**16**	**16**
Handicraft establishments (socialized sector)	11	11
Handicrafts of the private sector	5	5
(8) *Residential Buildings*	**2,500**	**1,273**
(8-a) Rural dwellings	**1,218**	**682**
Brick-walled houses	392	306
Stone-walled houses	272	158
Wooden-walled houses	168	75
Adobe, wicker and daub walled, etc., houses	386	143
(8-b) Urban residential buildings	**1,238**	**557**
Luxurious construction	97	43
Good-quality construction	666	295
Poor-quality construction	341	150
Suburban dwellings of very poor quality	134	69
(8-c) Dwellings at factories and mines outside urban areas	34	24
(8-d) Uncompleted projects	10	10
(9) *Public utilities*	**209**	**115**
(9-a) Waterworks, sewage, market-halls, slaughter-houses, gas-pipes (excluding electricity)	66	40
(9-b) Streets and squares in urban areas	82	46
(9-c) Green areas in towns and outskirts	5	4
(9-d) Wells in urban and rural areas	34	14
(9-e) Cisterns private and public in rural and urban areas	20	9
(9-f) Uncompleted projects	2	2
(10) *Health and Social Security*	**125**	**79**
(10-a) Public Health institutions	**95**	**60**
Hospitals and clinics	65	41
Out-patient polyclinics	14	8
Natural health resorts	6	3
Institutes for medicine and hygiene	6	5
Pharmacies	1	1
Other	3	2
(10-b) Physicians' private surgeries	2	1
(10-c) Public Social security institutions	23	13
(10-d) Uncompleted projects	5	5
(11) *Education, research, and art*	**273**	**157**
(11-a) Elementary and eight-year schools	103	35
(11-b) Secondary and vocational schools	59	33
(11-c) Universities and colleges (excluding clinics and institutes of the Faculties of Medicine)	17	12

TABLE V—*continued.*

National Wealth by Industry and Type of Asset

Billions of dinars (1953 prices)

Branch	National Wealth	
	Undepreciated	Depreciated
(11) *Education, research, and art—continued*		
(11-d) Institutes, museums, and libraries	13	9
(11-e) Theatres, cinemas, cultural centres, etc.	11	7
(11-f) Social and political organizations	4	2
(11-g) Stadiums, athletic and other fields, mountain hostels, gymnasia, paddling, and other sports	19	13
(11-h) Rural co-operative cultural centres	18	17
(11-i) Uncompleted projects	29	29
(12) *Public Administration*	**74**	**40**
(12-a) Central and local government buildings	50	25
(12-b) Equipment of central and local government	13	7
(12-c) Building and equipment of banks and insurance institutions	9	6
(12-d) Uncompleted projects	2	2

Branch	National Wealth
(13) *Consumer durables and non-durables*	**729**
(13-a) Household furniture and appliances	**417**
Agricultural households	218
Non-agricultural households	199
(13-b) Clothing and footwear	**285**
Agricultural population	142
Non-agricultural population	143
(13-c) Fuel	**10**
Agricultural households	7
Non-agricultural households	3
(13-d) Food in non-agricultural households	5
(13-e) Passenger vehicles	**12**
Passenger cars	1
Motor cycles and bicycles	11
(14) *Land*	**2,051**
(14-a) Agricultural land	**1,809**
Arable land and gardens	1,212
Land under orchards	67
Land under vineyards	41
Meadows	299
Pastures	189
Land under fish-ponds	1
(14-b) Forest land	**147**
Land under forests	120
Agricultural enclaves in forest areas	27
(14-c) Urban and other land	**95**
Land under residential buildings	60
Other	35
(15) *Net foreign Assets*	−42
(15-a) Liabilities for foreign credits, loans, and for nationalized assets	−154
(15-b) Monetary gold and claims against foreign countries for reparations and other indemnities	+112

APPENDIX II

METHODS AND SOURCES

(1) *General approach*

In the tables of Appendix I the results of our national wealth estimates are presented, based on an inventory concept. We attempted to estimate national wealth by direct measurement of physical assets on the basis of census data, sampling surveys, or expert estimates. For wealth measurement in Yugoslavia this method is more appropriate than any indirect methods based on income-tax statistics or on death-duty statistics, as roughly one-half of the total wealth of Yugoslavia is owned privately, the other half representing public or socialized assets.

In our wealth estimate, inventory data are for 31 December 1953, though some minor differences in date have been unavoidable. For the major part of the socialized sector of the economy – manufacturing and mining, transportation and communication, commerce and hotels, etc. – fixed capital census data refer to 31 December 1952 (all data of the post-war fixed-capital censuses are unpublished). On the other hand, fixed-capital census data for health, social security, and the major part of public-utility institutions or enterprises refer to 31 December 1954. In order to adjust all these fixed-capital estimates to the end-of-1953 basis we added or subtracted from depreciated fixed-capital census figures, net investments in the prior or subsequent year. For undepreciated fixed capital we added or subtracted from census figures new investments in tangible fixed capital in the prior or subsequent year. New investment in fixed capital is conceived in this context as gross investment in tangible reproducible assets (excluding repairs and maintenance) in a given period minus the total of undepreciated fixed capital actually dismantled or scrapped during the period in question. In both specified procedures there might be an appreciable margin of error if carried on for longer periods. For the purpose of our estimates, however, the period involved in the census adjustment does not exceed two years and the margin of error might be within reasonable limits.

The estimate of national wealth covers, in principle at least, all tangible assets situated on the present-day territory of Yugoslavia at the end of 1953. We included the two districts Kopar and Buje which in fact in 1953 still formed part of the Free State of Trieste under the administration of the Yugoslav Army, but were incorporated in Yugoslavia after the conclusion of an agreement in October 1954

between the United Kingdom, the United States, Yugoslavia, and Italy.

Of non-reproducible assets, we included only land. Other non-reproducible assets, such as subsoil stocks of minerals, are omitted owing to the difficulties of estimating them satisfactorily (underground installations, however, are included in our fixed capital estimates for mining). All kinds of intangibles, such as patents, goodwill, etc., are omitted from our wealth estimates. Historical monuments, churches, and works of art are not included owing to the difficulties of valuation.

Fixed capital is computed at both undepreciated and depreciated replacement value, on the basis of 1953 prices. Depreciation is conceived as an economic concept rather than an accounting concept. In practice, the following procedure was adopted for the socialized sector of the economy: the replacement value of the assets in question was estimated by experts on the basis of unified price lists, based in the case of buildings and structures on internal building costs prevailing in 1952/53; for machinery and equipment, Western European prices were applied on the basis of an unified conversion rate of 540 dinars for 1 U.S. dollar. The information on prices for machinery and equipment was based mainly on invoices and price lists from Western European manufacturers. At the same time, experts estimated the effective life still to be expected from the assets in question and applied it to the total effective life of this type of asset, as listed in a special manual. In this way depreciation for fixed capital was derived.

The above-mentioned price lists and tables of the effective life period for nearly all types of capital goods were prepared by special expert groups at the Yugoslav Central Planning Office for purposes of the 1953 and subsequent fixed-capital censuses.

This procedure of valuation was applied to the 1953/54 fixed-capital censuses, covering the socialised sector of the economy. Of public assets, only health and social-security institutions were covered by these censuses; all others – such as roads, quays, schools, public buildings, etc. – were excluded. The 1953/54 censuses covered about 31 per cent of the total of Yugoslavia's physical assets (or nearly two-thirds of total physical assets in collective people's ownership).

For the private sector of the economy, public assets other than health and social security institutions, consumers' stocks, and other assets not covered by the official censuses, various methods of estimation were used, as indicated in the comments on the corresponding items of this Appendix. These methods generally follow the methods of the official censuses, though in many cases a more simplified pro-

cedure was necessarily applied, based mainly on statistics of physical units. The valuation of these physical units was based in most cases on the above-mentioned unified price lists and tables of effective life period, as applied to the official 1953/54 fixed-capital censuses, in order to achieve consistency between the wealth estimates of the socialized sector of the economy and the estimates of the private sector, public assets, etc.

All items of fixed capital in our national-wealth estimate are valued at both undepreciated and depreciated replacement value, with the exception of livestock (horses, cattle, asses, and mules) and timber stands, which are estimated at average market prices prevailing in 1953.

All items of business stocks, except stocks on farms, are valued at cost prices, which are not likely to differ substantially from replacement value. Stocks on farms are valued at average ex-farm prices in 1953. Smaller species of livestock (sheep and goats, pigs, poultry, and beehives) are treated as farm business stocks and are included in column 'Stocks' in the summary table in Appendix I. Consumers' stocks of durables and semi-durables are valued at market prices for second-hand goods.

Uncompleted projects consist of uncompleted structures and machinery equipment and parts not yet installed but physically located at the place of their instalment. Machinery and equipment located at the inventory date at producers' factories are included in business inventories, with the exception of ships under construction, which have been treated as uncompleted projects in the branch of transport, although they were physically located in shipbuilding yards at the inventory date. Uncompleted projects are valued at 1953 replacement value, not taking into account any depreciation.

Land was valued at average market prices prevailing in 1953 for the various categories of agricultural land, urban land and land under forests.

(2) *Manufacturing, mining, and electricity*

(1-a) *Fixed capital.* This item is based, in general, on census data, though it was necessary to carry out a number of adjustments. Census data refer to 31 December 1952 and embrace a considerable part of the logging industries as well as dwellings, restaurants, out-patient and social security institutions, etc. for the accommodation of employees. In the field of electricity, the census of fixed capital did not cover a substantial part of the network, especially in rural areas. We present a summary of these adjustments below:

	Replacement value in billions of dinars at 1953 prices	
	Undepreciated	Depreciated
Fixed Capital at 31 December 1952 (not adjusted).	1,032	631
Adjustments:		
Less fixed capital engaged in logging . .	−14	− 6
Less land	− 7	− 7
Less dwellings, restaurants, etc. . . .	−89	−66
Plus additions to electricity network not covered by census	+42	+28
Fixed capital at 31 December 1952 (adjusted) .	964	580
Increment of fixed capital in 1953 . . .	97	72
Fixed capital at 31 December 1953 . . .	1,061	652

The distribution of the above totals of fixed capital at 31 December 1953 by major industrial groups is as follows:

TABLE VI

Distribution of Fixed Capital by Certain Industry Groups

Fixed Capital – Replacement Value in Billions of Dinars at 1953 Prices

Major Industrial Group	Undepreciated			Depreciated		
	Productive Assets	Dwellings, Restaurants, etc.	Total	Productive Assets	Dwellings, Restaurants, etc.	Total
TOTAL . .	1,061	89	1,150	652	66	718
Electricity .	188	2	190	121	2	123
Mining and metallurgy .	236	40	276	157	25	182
Manufacturing	637	47	684	374	39	413

Electricity comprises power plants and network. Mining and metallurgy comprises coal-mining and gas production, petroleum industry, quarrying, metal-mining and non-metallic-mining, ferrous and non-ferrous basic-metal industries. Manufacturing covers all other branches enumerated in the Yugoslav statistical classification for industrial production.

(1-b) Stocks include raw materials, work in progress, and finished goods held by industrial enterprises and mines at 31 December 1953. These data were derived from the balance sheet of enterprises summarized by the National Bank. Work in progress in heavy construc-

tion industries is included, provided this machinery and equipment was physically located at inventory date at the producers' factory. The only exception is uncompleted ships, which are allocated to the item 'Uncompleted projects' in the transportation branch rather than to inventories of the shipbuilding industry.

(1-c) *Uncompleted projects.* This item includes all fixed capital in new industrial enterprises. In addition, it includes uncompleted buildings and structures (including building material) as well as machinery, equipment, and parts in existing factories, mines, etc., not installed at 31 December 1953. The figure of 198·5 billion dinars represents productive assets only; uncompleted dwellings, restaurants, etc., for accommodation of employees, amounting to 16·5 billion dinars, are not included. These items result partly from the fixed-capital census and partly from our estimates made in collaboration with experts.

(3) *Agriculture and fishing*

The main source for fixed capital in agriculture is a comprehensive study of Dr. Vladimir Stipetić, *Fixed Capital in Yugoslav Agriculture* (in the press). In addition, there are two important unpublished sources: A sample survey prepared in July 1954 by the Serbian Statistical Office covering 453 agricultural households in Serbia and a comprehensive inquiry of the Institute of Agricultural Economics in Zagreb on physical assets, production costs, etc., in 253 agricultural households in Croatia, prepared early in 1953. For the socialized sector of agriculture, embracing nearly one-eighth of total fixed capital in agriculture (excluding amelioration projects and dwellings) census data on fixed capital are available.

(2-a) *Livestock.* Horses, cattle, asses, and mules are treated as fixed capital; all other species are, for practical purposes, regarded as farm stocks. The estimate for livestock is derived from the study of Dr. Stipetić, where livestock numbers at 15 January 1955 are valued at average market prices received by farmers in 1955 (price data are weighted on the basis of marketed quantities). To arrive at an estimate for 1953 we adjusted the estimates of Dr. Stipetić for changes in livestock numbers, ascertained by census data, for changes in weight, derived from slaughtering statistics, and for changes in market prices received by farmers for live weight according to price statistics prepared by the Statistical Offices.

(2-b) *Non-residential structures.* Stables refer to buildings for horses, cattle, asses, and mules. Floor space of all stables in Yugoslavia, registered at the 1951 livestock census, amounts to 44·8 million square metres. Applying a conversion coefficient of 0·82 (that is the average coefficient for all types of rural residential buildings),

we arrive at 54·7 million square metres of building area. Assuming that the value of stables per square metre is 40 per cent lower than for rural dwellings, we arrive at an average price of 5·754 dinars per square metre of building area (for price of rural dwellings see item 8-a) or to a total undepreciated replacement value of 314·7 billions of dinars. This total is increased by 19 billions of dinars, due to relatively better quality stables in the socialized sector of agriculture. Depreciation of stables of the private sector is estimated at 44 per cent on the basis of the above-mentioned sample surveys for Croatia and Serbia. For the socialized sector depreciation was calculated at 37 per cent in the light of the 1953 fixed-capital census. In this way we arrived at a total remaining value of 189·9 billion of dinars. The average age of stables, weighted on the basis of floor space, amounts for 1953 to twenty-six years (derived from the sample surveys of Croatia and Serbia, raised to full coverage).

Maize baskets, barns, and other structures are computed from the sample surveys of Croatia and Serbia.

(2-c) *Home processing of farm products.* This item comprises home processing of food products only (home processing of other agricultural products is included in cottage industries; see item 7-b). Undepreciated replacement value of wine cellars, casks, drying sheds, distilling installations, etc., are derived from estimates of Dr. Stipetić. Depreciation has been calculated on the basis of the sample survey for Croatia and Serbia.

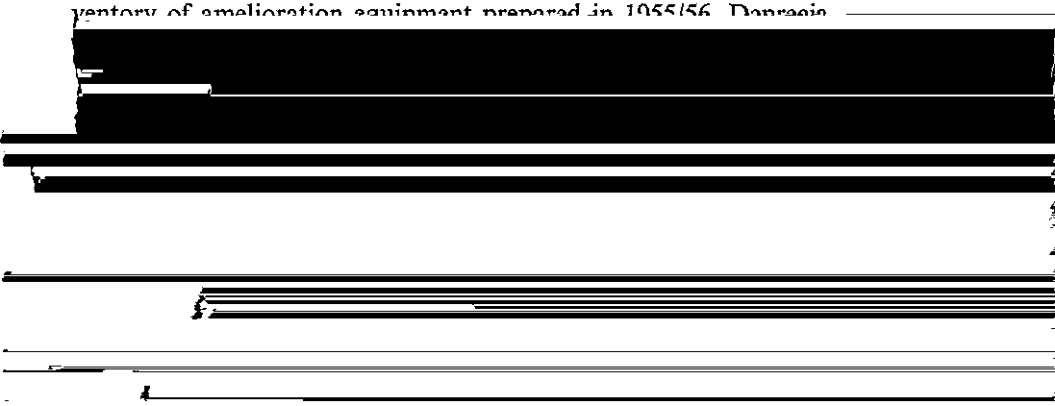
(2-d) *Transport equipment, machinery, and tools.* These items have been derived from detailed estimates provided by Dr. Stipetić. His computations refer to subsidized home prices for agricultural machinery. By comparison with import prices of the same type of machinery, we arrive at an exchange rate of about 540 dinars for 1 U.S. dollar, i.e. roughly at the same price level as the basis on which machinery and equipment in manufacturing and other industrial branches has been computed in our national wealth estimates. Depreciation for the private sector is derived from the above-mentioned sample surveys. For the socialized sector data from the 1953 fixed-capital census were applied.

(2-e) *Perennial plants* exclude land, which is computed separately. Sown seeds of lucerne and clover are included in farm stocks rather than in this item. The value of orchards is conceived as the value of timber stands of fruit-trees, valued at 1953 stumpage prices, plus investment costs as seedlings, etc. Timber stands of fruit-trees, valued in the same way as timber stands in forests, amount to 23·3 billion dinars. To the market value of timber stands we added 28·1 billions of dinars for estimated investment costs and arrived at the undepreciated total of 51·4 billions of dinars. Depreciation of orchards was

calculated on the basis of the estimated age composition of fruit-trees, applying the ascertained depreciation of the above-mentioned investment costs.

The value of vineyards was derived from estimates of Dr. Stipetić. Depreciation was estimated in collaboration with experts.

(2-f) *Improvements to land* were ascertained from the data of an inventory of amelioration equipment prepared in 1955/56. Depreci-



tion was reckoned on the assumption that a 20 per cent share of fixed capital in irrigation projects and a 15 per cent share in drainage projects is subject to depreciation (pumps, water-gates, buildings, etc.), the remainder having an essentially permanent character provided adequate maintenance is undertaken.

(2-g) *Veterinary stations* have been estimated on the basis of data prepared by Dr. Stipetić.

(2-h) *Stocks on farms.* This item consists of unprocessed and processed agricultural products stored on farms and sown seeds at the end of 1953, valued at average ex-farm prices prevailing in 1953. We attempted to estimate stocks on farms both by the production and by the expenditure approach. On the basis of the first approach we subtracted from production of major crops in 1953 all waste, sales, seeds, and food consumption on farms, for people and livestock, from June up to the end of 1953. The remainder represents stocks of maize, wheat, hay, etc., as presented in the table in Appendix I.

The second method consists in deriving stocks from the expenditure approach. On the basis of detailed estimates of consumption of food produced on farms, prepared for our study 'National Expenditure of Yugoslavia 1953–1954', we ascertained the volume of food and livestock fodder consumed on farms in the first half of 1954, which was necessarily taken from last year's stocks. Farm products, stored on farms at 31 December 1953 for sale in the subsequent year, were derived from a breakdown of National Bank statistics concerning purchases by commercial enterprises from farmers in the first half of 1954. The results obtained by the expenditure approach confirmed reasonably well the stocks figures derived from the production approach.

Sown seeds at 31 December 1953 represent seeds for winter crops, mainly wheat and barley. We have also included one-third of the value of sown lucerne seeds and one-fifth of the sown clover seeds in

phenomenon. Conceptually such stocks should be included in this item, but were disregarded owing to complete lack of information.

(2-j) *Fishing*. Fixed capital in sea fishery was estimated in collaboration with experts according to data on fishing crafts and nets, published in maritime statistics. Fish-ponds, occupying an area of nearly 7,000 hectares, were valued at 700,000 dinars per hectare on an average. Of the fixed capital we assumed that 40 per cent is subject to depreciation (buildings, gates, etc.), the remainder was considered as permanent. Fixed capital in inland-water fishery refers mainly to river fishery at Apatin on the Danube, as fixed capital in fishery at the Macedonian lakes is not significant.

(4) *Forestry and Logging*

(3-a) *Timber stands*. The volume of timber stands was valued at stumpage prices in 1953, assuming immediate sale of all timber for commercial purposes. An inventory of the volume of growing stock was taken in 1947 and is reported in the current forest statistics.

The distribution by type of the growing stock was estimated in collaboration with experts; scrub-woods are not taken into account.

TABLE VII

Valuation of Timber Stands by Type of Tree

Types of Tree	Net Timber Volume (million cubic metres)	Stumpage Price (dinars)	TOTAL (billions of dinars)
Total timber stands	637	952	606
Coniferous trees	177	1,292	228
Pulpwood	45	900	41
Firewood	9	100	1
Sawlogs	92	1,800	165
Other roundwood	31	700	21
Oak-trees	69	1,462	101
Sawlogs	25	2,500	62
Other roundwood	17	1,700	29
Tanning and fuelwood	27	350	10
Beech-trees	345	643	222
Firewood	198	300	59
Pulpwood	38	650	25
Sawlogs	74	1,250	93
Veneer logs	6	4,000	24
Logs for sleepers	20	800	16
Pit props	9	600	5
Other hardwood broad-leaved trees	40	1,220	49
Softwood broad-leaved trees	6	983	6

(3-b) *Timber stocks at forest depots* at the end of 1953 were valued on the basis of inventory statistics. In the summary table in Appendix

I this item is classified as business stocks. It refers to logging enterprises only. Wood stored on farms is not included in this item; firewood on farms is included in consumers' perishables in item (13-c), technical wood on farms is omitted because there was no information.

(3-c, d, e) *Communication lines, transport equipment, and buildings* were valued mainly from data in the study of Ing. Surić *Forestry and Timber Industry* (Jubilee edition of the Union of Engineers and Technicians, Beograd, 1955).

(3-f) *Flood-control equipment.* The source is the same as for item (2-f). Depreciation was calculated only for wooden objects, as stone and concrete objects are of permanent character. This equipment is located mainly in the Karst, i.e. in deforested areas; for this reason they are included in this branch.

(5) *Transport and communication*

(4-a, b, c) *Railroad, maritime, and inland-water transport.* All assets, except quays, lighthouses, and winter ports, are derived from the 1953 fixed capital census (for railway rolling stock, however, some minor adjustments were introduced). Quays, lighthouses, and meteorological centres for maritime transport, as well as quays and winter ports for river transport, were not included in the official fixed-capital census in 1953. We have therefore prepared special estimates concerning these assets in collaboration with experts.

TABLE VIII

Valuation of Roads and Bridges

	Undepreciated Replacement Value	Depreciated Replacement Value
	(Billions of dinars at 1953 prices)	
Bridges – Total	46	39
27,200 m. permanent bridges over 7 m. latitude	27	25
24,000 m. permanent bridges 5–7 m. latitude	17	13
29,000 m. temporary bridges over 5 m. latitude	1	0
40,000 m. bridges under 5 m. latitude	1	0
Roads – Total	625	389
3,040 km. asphalt, stone cube, and concrete roads	91	71
49,000 km. macadam roads	441	265
129,000 km. earth roads	93	53

(4-d) *Road transport.* 'Rolling stock of public transport, including tram lines' was derived from the 1953 fixed capital census. This group includes, in addition to rolling stock, garages and repair shops

of public-transport establishments. Vehicles belonging to commercial, manufacturing, construction, logging, and other enterprises, as well as to public utilities, government, etc., are not included in this item (which covers about 14 per cent of passenger cars and 22 per cent of the total number of trucks). This item includes tram and trolley lines.

Roads and bridges (other than railroad bridges) were not included in the 1953 fixed capital census. We have therefore prepared estimates as summarized in Table 8.

Depreciation of roads applies to the road surface only; sub-structure is treated as permanent and not subject to depreciation. Streets and squares in urban areas are included in item (9-b), and not here.

(4-e, f) *Air transport, postal, telephone, and telegraph communication.* For all these items, fixed capital was derived from the 1953 fixed-capital census except for aerodromes, which were not covered by that census. For buildings, structures, and equipment on civilian aerodromes we prepared separate estimates.

(4-g) *Stocks* were taken from balance sheets of all enterprises in question, summarized by the National Bank.

(6) *Construction*

(5-a) *Fixed capital* was derived from the 1953 fixed capital census, adjusted for net increments of fixed capital. To this item we added the value of vessels and machinery engaged in the construction of the Syrian port Lataquie.

(5-b) *Stocks.* The same source as for item (4-g).

(7) *Commerce and hotels*

(6-a) *Fixed capital.* The same source and procedure as for item (5-a). To this item we added restaurants, etc., of industrial enterprises (see item 1-a).

(6-b) *Stocks.* The same source as item (4-g). Government stockpiles (excluding military stockpiles) are included in wholesale trade stocks.

(8) *Handicrafts and cottage industries*

(7-a) *Handicrafts.* Data for fixed capital in the socialized sector were derived from the 1953 fixed-capital census. Fixed capital for the private sector was estimated in collaboration with experts.

(7-b) *Cottage industries other than food processing.* The value of looms, spindles, and distaffs in agricultural households was estimated from a sample survey for 453 agricultural households in Serbia. In collaboration with experts we raised the samples from the various regions of Serbia to full coverage of other regions in Yugoslavia, where similar conditions prevail in this respect. Water-mills were

valued according to data of the number of water-mills and millstones.

(7-c) *Stocks.* For the socialized sector the same source as item (4-g). For the private sector estimates were prepared in collaboration with experts.

(9) *Residential buildings*

(8-a) *Rural dwellings.* The starting-point of our estimates are figures of the floor space volume, registered in all rural settlements of Yugoslavia on 15 January 1951. In collaboration with ethnographers and rural architects, we attempted to classify dwellings in each district by type of construction, applying 1953 construction prices to each type. For the purpose of ascertaining what sort of building material was used for walls we used a sample survey covering 32,389 rural households from all over Yugoslavia, which was prepared by the Statistical Office in 1955. We present a summary of these estimates.

TABLE IX

Valuation of Rural Dwellings

Building Material	Floor Space (mill. m.²)	Conversion Coefficient	Building Area (mill. m.²)	Price per m.² (dinars)	Total (billions of dinars)
YUGOSLAVIA .	104·0	0·82	126·6	9,624	1,218
Brick houses .	27·7	0·80	35·1	11,190	392
Stone houses .	19·2	0·76	25·3	10,750	272
Wooden houses .	14·9	0·88	17·0	9,878	168
Adobe and wicker houses . .	42·2	0·86	49·2	7,841	386

To ascertain depreciation we adopted the following procedure. The useful lifetime of brick houses was assumed at 70–80 years, stone houses at 100 years, wooden houses (except oak) at 50 years, and

TABLE X

Depreciation of Rural Dwellings

Building Material	Undepreciated Replacement Value at 1953 Prices (billion dinars)	Depreciation (%)	Remaining Value at 1953 Prices (billion dinars)
TOTAL STOCK .	1,218·5	44	682
Brick houses . .	392·8	22	306
Stone houses .	272·0	42	158
Wooden houses .	167·9	55	75
Adobe and wicker houses . .	385·8	63	143

adobe and wicker houses at 40–60 years. The average effective life of the total stock of rural dwellings, weighted according to building area, amounts to 66 years. The age composition of dwellings was derived from a sample survey for 561 dwellings in Serbia prepared by the Serbian Statistical Office and for 371 dwellings in Croatia prepared by the Institute of Agricultural Economics and the Central Institute for Hygiene in Croatia. From these data we derived an average age of the total stock of rural dwellings of 29 years. Applying the average age to the effective life-time of the various types of farmhouses we arrived at the result that the total stock of rural dwellings in 1953 had depreciated by 44 per cent.

(8-b) *Urban residential buildings.* This category of buildings refers to 346 settlements in Yugoslavia with about 4·2 million inhabitants at the end of 1953. All the other 27,624 settlements are treated as rural settlements with about 12·8 million inhabitants. Dwellings in these rural settlements are included above in item (8-a).

In our estimate we started from census data of urban dwellings in 1950, providing detailed information of floor space, age-composition, and equipment (but without any information about building area or value of dwellings). We added to the census data the completions in 1950–53 and arrived at a total floor space of 43·3 million square metres. To this figure we added 2·5 million square metres for commercial premises, public and other offices, etc., located in residential buildings, as we aimed at estimating total urban residential buildings rather than apartments. Using available statistics, we attempted to classify residential buildings in four categories and then to value each category at 1953 prices for residential buildings. We present below a summary of this estimate:

TABLE XI

Valuation of Urban Dwellings

Category	Floor Space (mill. m.²)	Conversion Coefficient	Building Area [1] (mill. m.²)	Price per m.² (dinars)	Total (billions of dinars)
TOTAL . .	45·8	0·60	76·0	16,280	1,238
Luxurious construction . .	2·1	0·50	4·2	23,000	97
Good-quality construction . .	20·0	0·55	36·4	18,300	666
Poor-quality construction . .	13·9	0·60	23·2	14,700	341
Suburban dwellings of very poor quality . .	9·8	0·80	12·2	11,000	134

[1] Building area is defined as total area covered by buildings exclusive of uncovered porches, terraces and steps, multiplied by the number of stories.

To ascertain depreciation we classified urban residential buildings in various age groups according to available census data, assuming a given useful length of life for each category. We now present in brief the results of this estimate.

TABLE XII

Depreciated Value of Urban Dwellings

Period of Construction	Undepreciated Replacement Value at 1953 Prices (billion dinars)	Useful Length of Life (years)	Average Age in 1953 (years)	Depreciation (%)	Nominal Depreciated Value at 1953 Prices (billion dinars)
TOTAL STOCK	1,238	83	41	48	640
Before 1918 .	610	90	63	70	183
1919–40 . .	460	73	25	34	303
1941–44 . .	31	73	11	15	26
1945–53 . .	137	80	5	6	128

From the above table a 48 per cent depreciation results for the whole stock of residential buildings in 1953. This estimate has been carried out, however, on the assumption of adequate repairs and maintenance. As repairs and maintenance of urban residential buildings were extremely poor between 1941 and 1953, the problem of adjusting the effective length of life still to be expected arises (resulting also in an increase of depreciation). To allow for inadequate repairs and maintenance during these 13 years, we assumed that the effective length of life of the total stock of urban residential buildings was reduced by 10 per cent. This means a reduction of the useful length of life from 83 to 75 years and an increase of depreciation from 48 to 55 per cent, resulting in a decrease of the depreciated value of the total stock of urban residential buildings at the end of 1953 from 640 to 557 billion of dinars. In fact, it is extremely difficult in practice to ascertain the acceleration of depreciation due to inadequate maintenance and repairs.

(10) *Public utilities*

(9-a) *Waterworks, sewage, etc.* This item comprises all types of public utilities with the exception of the electricity network and power plants (the latter are in item 1-a). Depreciated and undepreciated values of these assets were mainly derived from the fixed-capital census as taken in 1953 and 1955. For those assets which for one reason or another were not covered by the census, like sewage, etc., we prepared estimates in collaboration with experts.

(9-b) *Streets and squares in urban areas.* For this item we prepared estimates on the assumption that the sub-structure is of permanent character, only the surface being subject to depreciation. Total area of streets and squares in the 346 urban settlements amounts to 86·3 million square metres. This total was divided into three main categories – as was our estimate for roads – and evaluated at 1953 prices.

(9-c) *Green areas.* For this item we prepared estimates in collaboration with experts.

(9-d) *Wells and cisterns in urban and rural areas.* For these assets we prepared estimates according to a comprehensive census, prepared in 1949/50 by the sanitary authorities, covering all urban and rural settlements.

(11) *Health and social security*

(10-a, c) *Public health and social security institutions.* Data were derived from the 1955 fixed-capital census, though some minor adjustments had to be introduced. Clinics and institutes of Faculties of Medicine are included.

(10-b) *Physicians' private surgeries* were estimated in collaboration with experts. Dentists' surgeries are included.

(12) *Education, research, and art*

(11-a, b) *Elementary and secondary schools.* For elementary schools, eight-year schools, secondary and vocational schools, the basis of our estimates is the 1951 census of schools (except universities and colleges). These census data provide detailed information about floor space, age composition of school buildings, building materials, etc. Depreciation was ascertained by applying the average age of school buildings – amounting to 30 years for elementary and 24 years for secondary schools – to an assumed useful life of 45 years for elementary and 55 years for secondary schools.

(11-c) *Universities and colleges.* For these schools no census data are available. Our estimate is derived from the valuation of universities and colleges in Zagreb, prepared in our study *Investments in Croatia in the Inter-war Period* (Beograd, 1955) In this estimate we assumed that Zagreb accounts for about 30 per cent of all university and college institutions in Yugoslavia. Clinics and institutes of the Faculties of Medicine are included in item (10-a) rather than in this item.

(11-d, e, f, g, h, i). Figures for research institutes, theatres, cinemas, cultural centres, athletic fields, etc., are based on our estimates prepared in collaboration with experts. Inventories of museums, monuments, and other objects of art are excluded. Rural co-operative

cultural centres are valued on the basis of data, published in *Co-operative Lexicon* (*Zadružni leksikon*), p. 223.

(13) *Public administration*

(12-a, b, c) *Central and local government buildings, vehicles, and equipment.* For public buildings and equipment no census data are available. We valued the buildings on the basis of the number of government employees (excluding health, education, and defence personnel), assuming a *per capita* floor space of 10 square metres. Passenger cars and other vehicles were estimated according to the number of cars, etc., published in current statistics.

(12-d) *Building and equipment of banks and insurance institutions.* This item was derived from fixed-capital census data.

(14) *Consumer durables and non-durables*

(13-a, b) *Household equipment, clothing, and footwear.* These items are valued at market prices for second-hand goods (i.e. taking into account the fact that these goods are used up to a certain extent). Our estimates are based on a sample survey for 453 agricultural households in various regions of Serbia pr., Vojvodina, and Kosmet and Metohia. The sampling results for these regions were then applied to other regions of Yugoslavia, where similar conditions prevail. For Slovenia we applied sample results of Vojvodina, for Macedonia sample results of Kosmet and Metohia, for Croatia and Bosnia and Hercegovina combined sample results of Serbia, etc.

For non-agricultural households direct measurements are lacking. The Serbian Statistical Office took inventories in 1954 for over 200 non-agricultural households, but this material is not yet available. In our estimate we assumed, therefore, that the value of household furniture and appliances is about two-thirds higher than the level in agricultural households. For clothing and footwear we assumed that the value per head of the non-agricultural population is twice the value per head of the agricultural population.

(13-c, d) *Fuel and food.* This item was derived from an analysis of expenditure data, prepared in our study *National Expenditure of Yugoslavia 1953–1954* (p. 368 in the English summary). Food stored on farms for farmers' own use is included in Agriculture (see comments item 2-h).

(13-c) *Passenger vehicles* are valued according to current statistical data, though bicycles had to be estimated separately, as they are not compulsorily registered. Passenger vehicles held by business, government, and other institutions are not included, nor are farm carts.

(15) *Land*

(14-a) *Agricultural land* is estimated at current 1953 market prices on the basis of a sample survey prepared by the Institute of Agricultural Economics and additional information received from cadastres. We present a summary of our estimates.

Category	Area (in 000 hectares)	Price in 1953 per hectare (dinars)	TOTAL (billions of dinars)
TOTAL AGRICULTURAL AREA	14,251·1	126,930	1,808
Arable land and gardens	7,283·0	166,500	1,212
Orchards	374·4	179,220	67
Vineyards	261·1	157,410	41
Meadows	1,892·1	157,910	299
Pastures	4,440·5	42,630	189

For orchards and vineyards we took into account only land under orchards and vineyards, as all improvements and plants are included in agriculture (see item 2-e, f). In practice, a market price hardly exists for this category of bare land; we have, therefore, imputed market prices for orchards ranging from 10 to 20 per cent below the corresponding market price for arable land in the region in question and for vineyards ranging from 25 to 30 per cent below the price for arable land.

Land under fish-ponds is added to agricultural land, valued on an average at 80,000 dinars per hectare. Land under marshes and reeds is excluded.

The computation of average prices for all agricultural land presents a difficult problem, since market prices of land vary greatly as a result not only of economic factors, such as fertility of soil, etc., but predominantly because of sociological and other factors.

(14-b) *Forest land.* The valuation of forest land encounters the same problem as land under orchards and vineyards. In our estimate we assumed that in 1953 land under forests accounts for one-eighth on average of the value of growing stock. In 1938 this proportion was estimated by experts at over one-third of growing stock; taking into account the rise in stumpage prices and average prices for agricultural land in 1953 as compared with 1938 (about 16 times for stumpage prices and 6·5 times for agricultural land), we arrived at the above-mentioned ratio of forest land to growing stock. In this way we reached an average price for land under forests amounting to roughly 20,000 dinars per hectare. Land under scrubs, karst, and other barren ground is not included.

(14-c) *Urban and other land.* As market prices for urban land, especially in the central parts of cities, are not representative, we attempted to value land under urban residential buildings (including courtyards) in proportion to the value of buildings. We ascertained in collaboration with experts that land under residential buildings (including courtyards) represented in 1938 in urban areas on average about 19 per cent of the total value of such real estate or roughly 24 per cent of the undepreciated value of buildings. Deflating the total of urban residential building to 1938 undepreciated value, we arrive at 55·9 billions of dinars at 1938 prices. Applying to this amount the above-mentioned ratio of 24 per cent, we derived the value of urban land under buildings at 1938 prices 13·4 billions of dinars. To arrive at 1953 prices for urban land we applied a conversion factor of 4·5. This factor was obtained from expert estimates (in the central parts of cities the rise of prices was about twice and even less, but in the outskirts it ranged from five to seven times).

For land under streets and squares as well as in green areas we applied an average price of 45 dinars per square metre, representing an increase of about 4·5 times as compared with 1938 prices.

Land under railroad lines and roads was valued on an average of 10 dinars per square metre, by analogy with prices for farm land and land under forests. Land under industrial and commercial establishments was valued at 20 dinars per square metre.

(16) *Net foreign assets*

In our valuation of net foreign assets we applied to all liabilities and claims a conversion rate of 540 dinars for 1 U.S. dollar. We adopted this exchange rate for the purpose of national-wealth estimates only. The reason we applied this exchange rate is that nearly all equipment, representing a substantial component of total national wealth, was computed in this estimate at West-European prices prevailing in 1952/53 converted by a unified exchange rate of 540 dinars for 1 U.S. dollar.

(15-a) *Liabilities for foreign credits, loans, and nationalized assets.* This item refers to actual liabilities of Yugoslavia in favour of the International Bank for Reconstruction and Development, the Export–Import Bank, and other foreign institutions at 31 December 1953. Yugoslav liabilities for nationalized assets are included.

(15-b) *Monetary gold and claims against foreign countries.* The stock of Yugoslavia's monetary gold, including her quota at the International Monetary Fund, is treated here as a claim against the rest of

the world. Claims for reparations and other indemnities include those Yugoslav claims against foreign countries which were stipulated in agreements with foreign governments. Agreements concluded with foreign governments after 1953 were taken into account, because these claims existed *de facto* at 31 December 1953, and were for one reason or another realized in agreements after that date.