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Raising Productivity in Yugoslav Industry Some Issues

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Glossary of Abbreviations

BOAL	= Basic Organization of Associated Labor
COAL	= Complex Organization of Associated Labor
COI	= Community of Interest
GDP	= Gross Domestic Product
ICOR	= Incremental Capital Output Ratio
LDR	= Less Developed Regions (currently Bosnia-Herzegovina, Kosovo, Macedonia and Montenegro)
MDR	= More Developed Regions (currently Croatia, Serbia Slovenia and Vojvodina)

Exchange Rates

Following a devaluation on June 6, 1980, the market rate was adjusted from 21.08 Dinars to the US Dollar (1 Dinar = 0.047 US Dollar) to 27.40 Dinars to the US Dollar (1 dinar = 0.036 US Dollar). Since then the dinar has continued to depreciate against the US Dollar and on June 30, 1981 stood at 33.94 Dinars to the US Dollar (1 Dinar = 0.029 US Dollar).

RAISING PRODUCTIVITY IN YUGOSLAV INDUSTRY: SOME ISSUES

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This report is based on a mission which visited Yugoslavia in November 1980, consisting of Basil Kavalsky (chief of mission), Fred Kilby (general economist), Keith Marsden (industrial economist) and Harbaksh Sethi (industrial engineer).

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COUNTRY DATA - YUGOSLAVIA

AREA
255,804 sq. km.

POPULATION
22.0 million (mid-1978)
Rate of Growth: 0.9% (from 1970 to 1978)

DENSITY
86 persons per sq. km.
154 persons per sq. km. of agricultural land

POPULATION CHARACTERISTICS (1978)

Crude Birth Rate (per 1,000)	18.0
Crude Death Rate (per 1,000)	8.0
Infant Mortality (per 1,000 live births)	34.0

HEALTH (1977)

Population per physician	762
Population per hospital bed	166

INCOME DISTRIBUTION (1978)

% share of household income, lowest quintile	6.6
highest quintile	38.7

DISTRIBUTION OF LAND OWNERSHIP (1971)

% owned by top 10% of owners (social sector Kombinats)	15.1
% owned by smallest 10% of owners (private smallholders)	84.9

ACCESS TO PIPED WATER (1978)

Dwellings with piped water (%)	40.5

ACCESS TO ELECTRICITY

% of all dwellings (1978)	89.0
rural (1971)	80.0

NUTRITION (1977)

Per capita Calorie Supply (136% of requirement)	3,445
Per capita protein supply (grams/day)	101

EDUCATION

Adult Literacy rate (%)	85 (1975)
Primary school enrollment (%)	100 (1977)
Secondary school enrollment (%)	79 (1977)

GNP PER CAPITA IN 1979 1/: US$2429

GROSS DOMESTIC PRODUCT IN 1978

AVERAGE ANNUAL RATES OF GROWTH (%, constant prices)

	US $ Mln.	%	1970-75	1975-78	1978
GDP at Market Prices	53,765	100.0	6.6	4.9	6.8
Total Consumption	38,597	71.8	6.8	4.9	13.4
Gross Domestic Investment	18,811	35.0	5.9	6.7	-3.3
Gross Domestic Savings	15,168	28.2	5.7	13.8	2.6
Exports of Goods and Nonfactor Services	8,655	16.1	5.7 6.3	-1.8 0.7	2.5 9.5
Imports of Goods and Nonfactor Services	12,247	22.8			

OUTPUT, LABOR FORCE AND PRODUCTIVITY IN 1978

	GDP at Current Factor Cost (1978)		Labor Force 4/		Value Added Per Active Resident Worker	
	US$ Mln.	%	Mln.	%	US$ (1978)	%
Agriculture 2/	5,702	11.7	2.67	33.1	2,136	35.4
Industry 3/	21,945	45.1	2.69	33.4	8,158	135.2
Other	20,970	43.2	2.70	33.5	7,767	128.8
Total	48,617	100.0	8.06	100.0	6,032	100.0

GOVERNMENT FINANCE, consolidated, 1978

	US$ Mln.
Consolidated Public Sector Receipts	20,617
Expenditures	20,885
Surplus	-268
Ratio of Current Receipts to GDP at Market Prices (%)	38.3

MONEY, CREDIT AND PRICES (in billions of dinars)

	1974	1975	1976	1977	1978	1979
Money Supply 5/ (end-year position)	103.4	137.8	214.3	257.2	329.2	386.4
Money Supply as % of GDP at market prices	24.3	25.6	31.4	31.9	32.8	-
Bank Credit Total 6/	359.6	451.7	569.1	699.3	884.6	1,081.4
Enterprises	276.9	350.9	443.1	539.2	682.7	841.1
Government and other Social Sector	54.6	67.2	78.3	98.4	111.6	126.6
Households	28.5	38.7	50.5	65.1	90.3	113.7
Price Indices (Annual Percentage Change)						
Industrial Producer Prices	29	22	6	10	8	13
Agricultural Producer Prices	14	13	14	12	11	25
Retail Prices	26	26	9	13	13	22

1/ The per capita GNP estimate is at market prices, calculated by the same conversion technique as the 1979 World Atlas. All other conversions to dollars in these tables are at the prevailing period average exchange rate (see inside cover).
2/ Includes irrigation and forestry.
3/ Manufacturing, mining, construction, electricity, gas and water.
4/ Total active resident labor force, excluding unemployed.
5/ Currency in circulation, demand deposits and float.
6/ Short- and long-term credits.

BALANCE OF PAYMENTS, MERCHANDISE TRADE AND DEBT

Annual Data at Current Prices
(US$ Millions)

	1976	1977	1978	1979	1980 1/
SUMMARY OF BALANCE OF PAYMENTS					
Exports (f.o.b.)	4,893	5,191	5,809	6,795	8,978
Imports (c.i.f.)	-7,367	-9,789	-10,439	-14,019	-15,064
Trade Balance	-2,474	-4,598	-4,630	-7,225	-6,086
Non-Factor Service Receipts	2,275	2,755	3,140	3,901	5,075
Non-Factor Service Payments 2/	-1,102	-1,008	-1,138	-1,414	-1,735
Non-Factor Services Net Balance	1,173	1,747	2,002	2,487	3,340
Factor Service Receipts	1,974	2,640	3,120	3,581	4,247
Factor Service Payments	-838	-1,135	-1,775	-2,504	-3,792
Factor Services Net Balance	1,136	1,505	1,345	1,077	455
Current Account Balance	165	-1,346	-1,283	-3,661	-2,291
Medium & Long-Term Loans					
Disbursements	2,096	2,665	2,800	2,438	3,474
Amortization	-902	-1,050	-1,300	-1,304	1,446
Net Disbursements	1,194	1,615	1,500	1,134	2,028
Export Credits Extended (net)	-100	-183	-106	-125	-221
Capital Transactions n.e.i. 3/	-205	85	318	1,306	253
Use of Reserves	-989	-171	-429	1,346	231
MERCHANDISE TRADE 7/					
Imports					
Capital Goods	1,759	2,436	2,559	3,572	2,802
Intermediate Goods	4,697	5,989	6,325	8,935	11,479
Consumer Goods	911	1,208	1,099	1,512	783
Total Merchandise Imports (c.i.f.)	7,367	9,633	9,983	14,019	15,064
Exports					
Capital Goods	826	1,080	1,132	1,156	1,379
Intermediate Goods	2,589	2,667	2,809	3,627	4,679
Consumer Goods	1,463	1,509	1,730	2,011	2,919
Total Merchandise Exports (f.o.b.)	4,878	5,256	5,671	6,794	8,978
MERCHANDISE TRADE INDICES 7/			1976=100		
Index of Export Dollar Unit Values	100	113	122	141	162
Index of Import Dollar Unit Values	100	114	119	142	169
Terms of Trade Index	100	101	103	99	96
RATE OF EXCHANGE			Annual Averages		End June 1981
US$1.00 = Dinar	18.19	18.30	18.64	19.0	24.91	33.94
Dinar = US$	0.055	0.055	0.054	0.053	0.040	0.029

EXTERNAL DEBT, December 31, 1979 4/

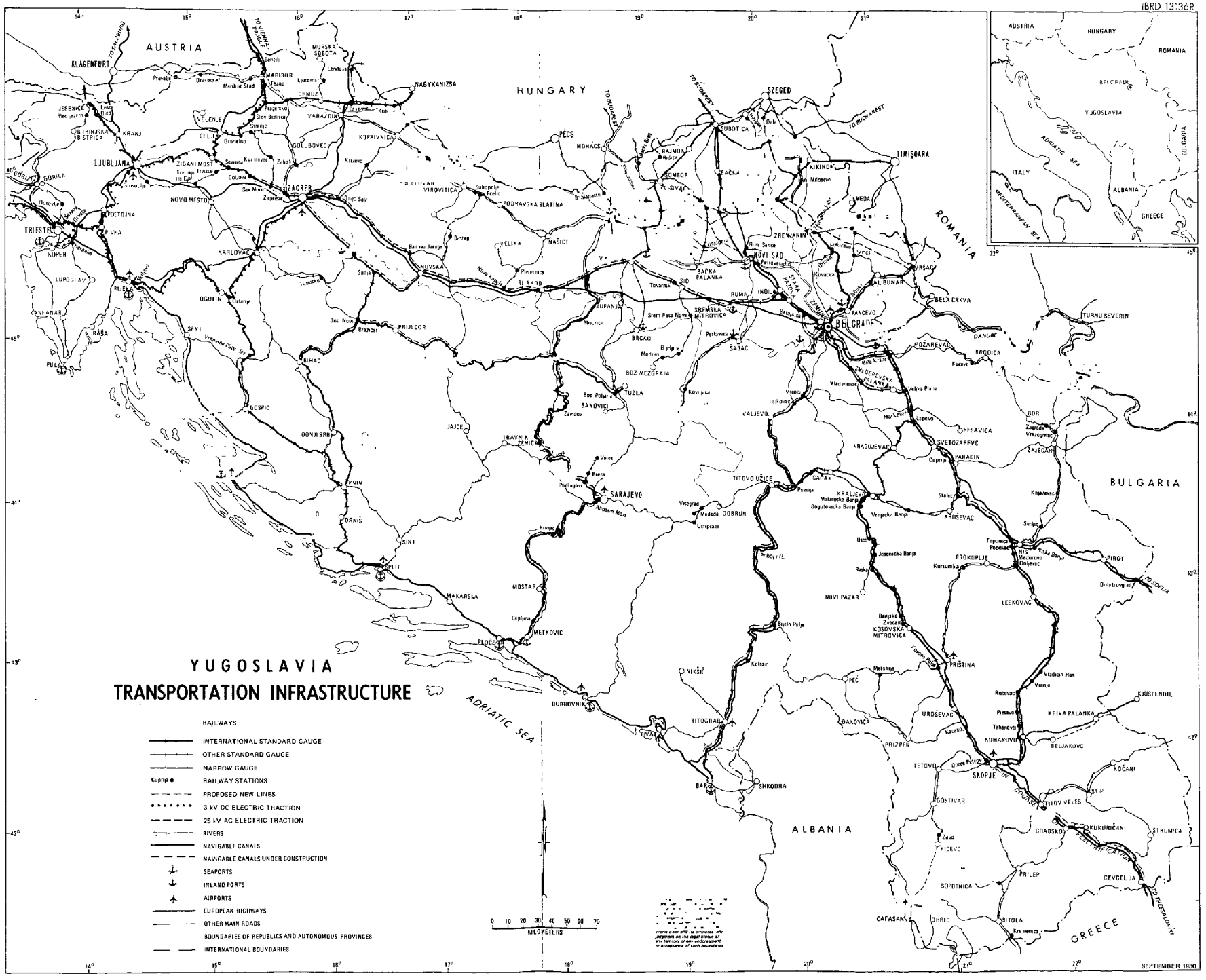
	US$ Millions
Debt Outstanding and Disbursed	13,645
Official	(3,326)
Private	(10,319)
Debt Service Ratio 5/ (%)	19.9
Debt Service Ratio 6/ (%)	14.9

IBRD LENDING, (as of April 30, 1981) (Million US$)

Outstanding & Disbursed	1,396.2
Undisbursed	1,082.2
	2,478.4

1/ Preliminary data.
2/ Including withdrawals from foreign currency deposits.
3/ Includes errors and omissions, short-term loans, IMF account, national and commercial bank credits. (Calculated residually.)
4/ Estimated.
5/ Debt service as a percentage of exports of goods and nonfactor services.
6/ Debt service as a percentage of exports of goods, nonfactor services and factor services.
7/ Merchandise trade data are estimated on the basis of statistical exchange rates which differ from period average exchange rates used in calculating balance of payments data during 1976-78.

IBRD 13136R


AUSTRIA
HUNGARY
ROMANIA
BULGARIA
ALBANIA
GREECE
KLAGENFURT
MARIBOR
LJUBLJANA
ZAGREB
TRIESTE
RIJEKA
PULA
SPLIT
DUBROVNIK
SARAJEVO
BELGRADE
NOVI SAD
SUBOTICA
SZEGED
PÉCS
TIMIŞOARA
ZRENJANIN
PANČEVO
KRAGUJEVAC
NIŠ
PRIŠTINA
SKOPJE
BITOLA
OHRID
TITOGRAD
SHKODRA
MOSTAR
METKOVIC
TITOVO UŽICE
VALJEVO
ADRIATIC SEA
YUGOSLAVIA
TRANSPORTATION INFRASTRUCTURE
RAILWAYS
INTERNATIONAL STANDARD GAUGE
OTHER STANDARD GAUGE
NARROW GAUGE
RAILWAY STATIONS
PROPOSED NEW LINES
3 kV DC ELECTRIC TRACTION
25 kV AC ELECTRIC TRACTION
RIVERS
NAVIGABLE CANALS
NAVIGABLE CANALS UNDER CONSTRUCTION
SEAPORTS
INLAND PORTS
AIRPORTS
EUROPEAN HIGHWAYS
OTHER MAIN ROADS
BOUNDARIES OF REPUBLICS AND AUTONOMOUS PROVINCES
INTERNATIONAL BOUNDARIES
KILOMETERS
SEPTEMBER 1980

Summary and Conclusions

i. Yugoslavia is one of the most important producers of manufactured goods among developing countries. Value-added in manufacturing is only 10 percent less than in India for example, a country with 30 times Yugoslavia's population. Since most of Yugoslavia's industrial production is in modern medium-and-large-scale units, the capital stock in the manufacturing sector is almost certainly considerably larger than in India. Among developing countries Yugoslavia's exports of manufactures are exceeded only by the East Asian countries: Korea, China, Taiwan, Hong Kong and Singapore. To do justice to the structure, problems and potentials of Yugoslav industry would require a study lasting many months, or years for that matter, and occupying volumes of description and analysis.

ii. It is important therefore to state clearly what we perceive as the object of this fairly concise study and the companion volume on small-scale industry which are the products of two World Bank missions to Yugoslavia for three weeks each in June and November of 1980. In these reports we have attempted to reflect the lively and open debate in Yugoslavia, both at the macro-sectoral level and within industrial enterprises, on the challenges which will face Yugoslav industry in the eighties. We have taken the issues and problems identified for us by those with whom the mission spoke in Yugoslavia and tried to bring some of the perspectives and experience, which the World Bank has gained through its analysis of the industrial sectors of a number of countries with very different economic systems, to bear on these issues. Finally we have attempted to evolve a set of workable suggestions for addressing these problems, which take Yugoslavia's unique socio-economic system into account and indeed, we would argue, are supportive of that system. Although this report is essentially directed at an audience within Yugoslavia, because of the wider distribution of World Bank reports, it has been necessary to provide the reader who is not familiar with the Yugoslav system with some guideposts in the form of a Preface on the Yugoslav enterprise and a brief discussion of planning objectives which introduces Section II.

iii. We have chosen to focus on a sub-set of industrial issues related to productivity. Our initial intention was to look at industry in very much the way it had been viewed in Yugoslavia itself in earlier decades; as a means of dealing with the related problems of the large numbers of people seeking social sector jobs and the low and, in some cases, lagging living standard of the southern half of the country which is termed the LDR (Less Developed Region) in this report. The seventies were years of very high levels of investment in industry with the primary purpose of meeting those objectives. Recently, however, there has been a shift in the view of the role which industry must play. The high levels of investment of the seventies were geared to production for a protected domestic market, and with the adverse shift in the terms-of-trade as a consequence of the oil price increases, it has become apparent that that particular growth path could not be maintained. As a result the intention has been expressed to move away from, what is called, the investment 'mania' of the seventies and the 1981-85 Plan contains far lower investment growth targets than in

previous plans. As a consequence the emphasis is on how to achieve higher levels of productivity, especially of capital, given the heavy past investment in industry, but also of labor. The Report reflects this new emphasis.

iv. The two major sections of the Report consist of first a macro-sectoral overview of Yugoslav industrial development and second an enterprise level discussion of productivity issues. As part of the first of these a study on industrial structure and total factor productivity (the productivity of a given combined unit of labor and capital) in various regions and sub-sectors of the Yugoslav economy was carried out. This study, which is detailed in an Annex to this Report, indicated a series of sharp differences between various regions and the potential for raising productivity in the LDR in particular. It also indicated to a surprising extent that industrial growth in the LDR has been concentrated in the more capital-intensive industry branches despite their evident relative abundance of labor which would have led one to expect a gravitation of labor-intensive industry into the LDR. It seemed useful therefore to gear the enterprise visits to look mainly at the problems facing labor-intensive industries in the LDR. The sample of 20 enterprises which the mission visited is therefore a biased one, but it had the advantage for a short mission such as ours, of dramatizing a series of issues which most parts of the country and most industrial branches will be grappling with, albeit in a less severe form, during much of the next decade. The second section of the Report takes eight issues which emerged from the enterprise-level discussions. Each of these represent areas where the opportunities for higher levels of productivity are not being fully exploited at present. The third and final section of the Report offers a set of suggested measures which might help in addressing these issues, for discussion within Yugoslavia.

v. The first of these issues is <u>foreign exchange allocation</u>. Because of the balance of payments difficulties of recent years, Yugoslavia devalued by 30 percent in mid-1980. At the same time the system whereby enterprises are required to earn through their own exports the foreign exchange which they need to pay for imports and the servicing of their foreign debt was extended and tightened. The mission found some evidence of enterprises exporting in situations where the domestic resource cost of their earning foreign exchange was relatively high, while others which could have exported more at lower domestic resource costs, only sold abroad what they needed to cover their imports. The system has benefits in that it has forced enterprises to explore overseas markets and of course provides an effective control over their expenditure of foreign exchange. The question is whether these objectives can be achieved without the rising costs in resource misallocation which are building up under the present system. A full answer would require addressing a number of additional subjects such as the pricing of foreign exchange and the extent of protection of the domestic market. A partial answer may be to re-vitalize the inter-bank market for foreign exchange by progressively reducing the proportion of its foreign exchange needs which an enterprise must meet directly from its own earnings.

vi. A second key area of resource allocation concerns the pricing of capital. With very high rates of inflation in the recent past and a shift in expectations on future inflation, interest rates on medium-and-long-term borrowing have become substantially negative in real terms. Investment on the basis of borrowed funds has thus become even more attractive at a time when there is an attempt to restrict the growth of investment. The Yugoslav system does not use interest rates as a device for allocating the supply of investable funds. Instead these are allocated through the self-management system which directs allocation according to a wide range of social and economic objectives. If the self-management authorities are to be in a position to give the kind of weight to efficient resource allocation which is implicit in the Plan projections for the next five years, then they will face an impossible task if presented with a large number of projects which do not take adequately into account, in their planning and design, the scarcity of capital. The use of the interest rate to screen out inappropriately designed and economically unsound projects can only strengthen the self-management system. Continued low productivity in industry and inappropriate investment patterns however, will weaken it.

vii. Two further issues concern the training and motivation of managers and workers. Although these are dealt with separately in the text they are clearly related. It is in this area that the LDR bias of the mission's work is most apparent. LDR managers face greater difficulties than those in the MDR (more developed regions) since the various forms of managerial training and support are not as well developed in the LDR. As a result productivity levels in the LDR lag substantially behind those in comparable MDR industries. The issue of regional productivity differences is also dealt with explicitly later in the Report. Managers have often been protected by the easy profitability conferred by negative real interest rates, and it is not surprising that in this situation the new investment is seen as 'the sweetest cup', the answer to all the enterprise's problems. The mission proposes a much more explicit focus on LDR management with better training and support services such as consultancy institutes etc. The Associated Banks (which channel investment funds from the Republics to the enterprises) could play a key role in identifying situations in which management require such support services.

viii. As far as worker motivation is concerned both the positive and negative incentives in the system may have eroded in practice since income variations within particular enterprises no longer seem to relate very closely to effort and skills. In practice the enterprise confers lifetime security on its employees given that there is virtually no firing for economic reasons or bankruptcy of enterprises. In this situation some managers have not succeeded in motivating the workforce to high levels of productivity and attention to quality. Yet others have, as the mission saw most notably in the case of Avala, a footwear enterprise in Novi Sad. So it isn't a problem which is inherent in the system. On the contrary the Yugoslav system offers the potential for a unique degree of worker motivation and commitment. It would seem to come back to the quality of management and the need for better management training and support. But it may also be necessary to give managers more flexibility in re-deploying the workforce so as to achieve higher levels of efficiency.

ix. Given the high degree of political decentralization in Yugoslavia it is not surprising that there are strong and effective pressures to decentralize industrial production within republics and provinces towards those communes with less than average levels of value-added in manufacturing. The availability of earmarked resources at subsidized interest rates for this purpose acts as a powerful incentive to enterprises at a time of substantial excess demand for investable funds. This objective is being pursued with too little recognition and measurement of the trade-off in terms of other objectives such as efficient resource allocation and the need to direct investment towards the LDR as a whole. In the mission's view this argues for better regional planning of longer-term social and demographic developments and more discriminate use of incentives to provide measures of economic costs and benefits of location decisions.

x. The need to raise levels of income and productivity in the LDR remains a national imperative. Despite substantially lower cost per man-hour in the LDR this is more than offset by lower productivity. As a consequence the labor-intensive industries serving the domestic market for final consumer goods, which should represent the LDR's comparative advantage in the medium-term, have not come to dominate their productive structure in the way that might have been expected. Part of the problem lies in the difficulty of moving capital, labor and final products across republican boundaries in Yugoslavia. As a consequence, joint ventures between LDR and MDR enterprises which have been seen as a major mechanism for raising LDR productivity, have been slow to get off the ground. The incen- tives on both sides (LDR and MDR) are too weak at present. In addition to recommendations cited in other parts of the Report for raising productivity in the LDR, the mission proposes that consideration be given to developing cooperative marketing arrangements between enterprises in different republics to promote more regional specialization, and also the development of mechanisms which would give an investing MDR enterprise some stake in the productivity and performance of its LDR partner.

xi. One of the fastest growing sectors of Yugoslav industry in the seventies has been the production of capital goods. This industry is characterized by the manufacture of complete machines for the domestic market based on licenses and technology (and often intermediate products) purchased from abroad. The foreign exchange needs are often met by exporting components to the foreign licensing firm, sometimes at prices which barely cover the raw material costs of production. In a number of cases the Yugoslav market is not of sufficient size to support the manufacture of complete machines at competitive prices, and this is of course even more so if it is the republican or provincial market which is the consideration. In the longer term Yugoslavia has the potential to be a major machinery manufacturer, but this will imply greater specialization with emphasis perhaps on longer production runs in components manufacture mainly for export, with import of complete machinery. In the area of complete machines there should be identification of a limited number of lines where domestic demand will support efficient production and encouragement of domestic technological development in those products. To move in this direction a reasonable uniform level of effective protection should be applied through domestic pricing policy to locally manufactured machinery and equipment.

xii. A companion volume of this Report deals with the subject of the development of small-scale industry. The perception that the development of small-scale production in both the social sector and the individual sector represents a potential advantage to the economy, is not yet a universal one. Despite incentives offered to small-scale producers in areas such as quality consumer products and service industries, numerous obstacles to the development of such production still exists. Until these obstacles are reduced it is unlikely that small-scale industry will realize its potential. The mission recommends that for the development of small-scale production in the social sector, the Associated Banks take a lead in bringing together potential consumers of such services as maintenance, repair and spare parts manufacture among the larger enterprises and encourage the formation of new specialized units which can serve more than one enterprise in these areas. To promote the individual sector there needs to be some relaxation of restrictions in the areas of rental of commercial property, employment conditions and pricing policy.

xiii. It is apparent from the above that the issues which have been identified overlap in their impact and in the measures needed to address them. These measures fall into two broad areas. First, a better design of the incentive system so as to reflect more clearly to decision-makers the costs and benefits of meeting various economic objectives, and second, the training and support of the decision-makers themselves. Yugoslavia has a strong industrial base and the opportunity for rapid industrial growth in the eighties with relatively small, but carefully chosen, investments geared to raising productivity. It is our hope that the discussion in this Report will make some contribution to the thinking and the debate in Yugoslavia on these questions.

RAISING PRODUCTIVITY IN YUGOSLAV INDUSTRY: SOME ISSUES

PREFACE

A YUGOSLAV ENTERPRISE

0.1 The room where the meeting is to take place is a large one. The table can seat 25 people. Around the walls are racks with some of the overcoats and suits which the company produces displayed on them. And a few awards which the company has received for its products. We are introduced to the managing director, the director of investment and the manager of the basic bank, which is in effect the local branch of 'Bankkos', the investment bank of Kosovo. The cups of coffee and the glasses of juice are set in front of us.

0.2 Djakovica itself is about 80 kilometers from Pristina, Kosovo's capital. The Albanian border is only 15 kilometers away. The town has about 20,000 people and the surrounding countryside is dotted with small landholdings. Napredak Textile Company was founded in 1947 by seven private tailors who formed a cooperative. It has expanded steadily and now has over a thousand employees. The enterprise has three main types of activity. There are two major production lines, one for ready-made clothing and one for knitted fabrics, and there is a network of 115 shops in Yugoslavia, 45 of them in Kosovo. Each of these activities is organized as a Basic Organization of Associated Labor (or BOAL as we shall call it from here on). Each BOAL is a separate unit for accounting purposes and remuneration of the unit as a whole will depend on its overall productivity. The distribution of the BOAL's total income between different alternative uses and among individual workers is also a decision which is made at the level of the BOAL.

0.3 The General Manager of Napredak who is in his early forties was chosen from within the company and has spent much of his working life there. He has a degree in engineering. He is subject to re-election every four years. It is far from axiomatic that the inside candidate will be chosen. The workers' council of the enterprise will normally interview a number of candidates before making a selection, though once a new manager is appointed it is usual to re-elect him or, much more rarely, her (only one senior manager in the twenty enterprises visited was a woman). The formal training of the manager is usually limited to a short course or a series of seminars. The position of the manager varies widely between enterprises. We met some who were able to influence the decisions that the enterprise would take down to the smallest item, while others seemed to defer to the views of section heads and shop foremen, and played a more passive, coordinating role. Without exception however, there was evidence of a genuine pride in the enterprise and its production and a personal rapport with the workers.

0.4 It is not our intention to explain at any length the system of workers self-management. The Law on Associated Labor provides a clear legal framework and this has been discussed in previous World Bank documents. 1/ In practice the system allows for a unique degree of

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1/ See for example Yugoslavia: Self-Management Socialism - Challenges of Development. 1979.

consultation between workers and management and in turn between enterprises and the socio-political bodies such as the communal or republican authorities. In a market economy, the enterprise is motivated by profit and the society's needs are introduced through taxes and incentives or through direct legal regulation. In a centrally planned economy, enterprise or local autonomy is subordinated to the planner's view of the good of the community. In the Yugoslav system a social consensus is built up through a series of agreements and compacts which relate the wider needs of the society directly to the decisions of the enterprise. Conceptually the objective function of the enterprise is 'harmonized' with the objective function of the society as a whole.

0.5 The investment process provides a good practical example of this. The retail outlets through which Napredak markets its products also handle ready-made clothing of other producers - this accounts for 30 percent of total sales. In the early seventies the marketing BOAL brought to the attention of the enterprise that light textiles such as shirts and blouses, which the company did not produce, were good sellers. Some preliminary analysis was carried out in the investment department of the company and the workers' council authorized further investigation. The company approached Bankkos in Pristina which raised some questions about the design and flexibility of the proposed project. A team from the enterprise visited producers in other parts of the country and studied their facilities (these enterprises were understandably not overjoyed at the prospect of a new competitor and the welcome was somewhat grudging). After studying the market they settled on a capacity of 1.33 million pieces a year and invited offers from firms in the design field. They settled on Biton from Skopje, a firm with a good reputation in the field, and the designs were subsequently reviewed by the technical faculty of the University of Pristina. The feasibility study was then formally submitted to the associated bank i.e. Bankkos in Pristina. At various stages the project was discussed and studied by a collegium of the professional staff members of Napredak. It was discussed twice at general meetings of the workers of the company, once before the design stage and once afterwards. A five page report was prepared and read to the workers, but there was little discussion. General meetings sometimes provide only a formal approval of the considerable work and review which has already taken place.

0.6 Most funds for investment which come from outside the enterprise are channelled through the investment bank in the province or republic. The banks receive many more requests for financing than they can meet and decisions must be made on which should be funded. Even the republican or provincial plan does not provide clear guidance as it often includes more projects than can be financed. Napredak's project for light textiles was included in Kosovo's 1976-80 Plan but was not financed since textiles was a non-priority sector and the company already had an ongoing project for reconstructing its production facilities for heavy garments. Napredak is a 'founder' i.e, a part-owner of Bankkos and has some influence over the disposal of the Bank's funds. In addition the communal authorities are likely to bring strong pressures in the socio-political bodies of the province for the project, which will employ 450 additional workers, to be

financed. The odds are therefore very strong that it will be financed. The banks conceive their role as interpreting the republic or province's socio-political decisions through their allocative role. Thus once they have satisfied themselves as to the basic viability of the project and the adequacy of the market, they will assign priority to activities which have for example a high employment content or are located in some of the less-developed parts of the republic or province.

0.7 The managers of the enterprise are among the important figures in the commune and are in fairly regular contact with the President of the Executive Council and the Secretary General for example. It is critical to a project proposal to have the active support of the communal authorities, and Napredak for example discussed its project with the President of the Executive Council of the commune at an early stage in the process. The communal authorities requested that the employment content of the project should be increased, but it was pointed out by the company management that the only way this could be done was to increase from two shifts to three which was almost impossible especially given the large female workforce. The communal authorities accepted this and the project was included, as originally proposed, in the commune's plan. The communes are quite active in soliciting new projects and may offer incentives such as providing free land or contributing to the funding of enterprises which locate units in their jurisdiction. In addition to communes, the project is also discussed with the industry branch associations - Napredak approached the textile association in Kosovo to insure that the project was not in conflict with the plan of any other enterprise in the province. Since this was a relatively small project in a non-priority sector it was not discussed at the national level.

0.8 From the point of view of the enterprise, the project will first and foremost of course increase enterprise profits and raise personal incomes in the BOALs which are directly involved and also in the management group. It will also add 450 new employees and since Djakovica is a fairly small town the new workers will be drawn to some extent from the families of the existing workers in the enterprise. The large expansion will also permit the management to rationalize the use of existing workers. With the introduction of new machinery there is inevitably some redundancy, but the system does not permit workers to be laid off because of this. The expansion will permit the management to take workers out of lines of production where they are not needed or where their skills are not fully used and employ them in the new factory. The fact of expansion itself means that the larger enterprise will have more influence in the commune and province when it comes to allocating resources and getting permission to expand its marketing network. From the commune and the province's points of view the advantages of more employment in one of the less developed parts of Kosovo are obvious. Equally important is the tax revenues which will accrue from the successful operation of the project. The commune and republic are assuming a responsibility however, since there are numerous cases of loss-making enterprises which require subsidies from the local authorities in order to survive.

0.9 The company hopes to complete the new project for light textiles in 1982. Judging by the speed with which the existing project for heavy textiles is going ahead, they may well meet this ambitious target. The attractive and sophisticated styling of the new facility for heavy textiles suggests up-to-date and efficient standards of plant design. The more serious problem is likely to be on the side of adequate training of workers for the new plant. Closer to the time Napredak will prepare a staffing plan and advertise for applicants. For skilled managerial and workers positions about three or four people usually apply for each vacancy and a five man commission consisting of the General Manager, the President of the Worker's Council and other representatives of the management would normally make selections and recommend to the Workers council for approval. For unskilled worker positions there are usually about 15 applications for each position. The Bureau of Employment of the commune gives points to each applicant according to such factors as numbers of employed in the family, how long the person has been unemployed etc. In practice these criteria will tend to be over-ridden if the applicant has for example a parent already employed in the factory. In fact the company will often provide scholarships to such applicants to undertake training with a specific view to entering the company. Napredak provided scholarships to 48 people under its previous investment project. The new, 'oriented' education system provides direct links between enterprises and schools and builds the identification of new employees and their part-time training into the final years of schooling.

0.10 Once the project is completed and the new factory is in full operation the management will deal with the normal day-to-day concerns and of course the key question of the level and allocation of personal income. Firstly, the enterprise makes projections of its revenues and expenditures for the upcoming business period. The level of personal incomes actually paid to the workers in the business period are determined on the basis of these projections. The income of the enterprise consists of its sales receipts less operating expenses other than wages and salaries. These include a minimum level of depreciation which is fixed by law. The charges on income also include the various financial obligations of the enterprise - interest and amortization of its debt and the taxes it must pay (usually about 20 percent of income though it varies between republic, provinces and communes). The balance is divided between gross personal income and collective consumption of the workers which is usually housing, vacation bonuses and hot meals, on the one hand and the funds for reserves and accumulation on the other. Once the actual results for the business period are known any unallocated surpluses will be divided between personal incomes (through a bonus payment known as "licni dohodak po obracunu") and the other various enterprise funds, including voluntary depreciation. In practice, the final decision on how much should go to personal incomes will be based on the average of the sector and of other workers in the republic or province as a reference, and the profitability of the enterprise of course. The BOALs in turn will make decisions on allocating personal income between workers using a system of points allocated according to experience, skill levels, attendance and effort. The maximum for any one worker was fixed by law at 4 to 5 times the average until 1977 when this limit was removed.

bewildering number of overlapping associations - enterprises, communities of interest, trade associations, communal bodies etc. and according to many, sit in on a large number of lengthy discussions. This report addresses itself to the question of whether the decisions being made are the right ones to guide Yugoslavia through the stormy economic seas of the eighties. In order to make that assessment we must first understand more clearly what have been the effects of past decisions on the progress of the economy and specifically the industrial sector, and what are the key areas of policy which decision-makers will need to address in the near future.

SECTION I

THE INDUSTRIAL SECTOR IN YUGOSLAVIA

A. Industrial Development Strategies

1.1 The industrial sector of Yugoslavia is the mainspring of the country's economy. 1/ It plays a central role in domestic economic activity and dominates foreign trade. In 1979 Manufacturing and Mining accounted for one third of Yugoslavia's social product and employed one fifth of the total labor force. In the same year industrial exports accounted for over 95 percent of merchandise exports. Yugoslavia possesses a number of important basic processing and extractive industries such as coal, iron and steel, non-ferrous metals and non-metallic minerals. These are geared to the exploitation of its sizeable domestic energy and mineral resources. In addition the country has developed a diversified manufacturing industry which produces a wide range of capital goods (including machinery, ships, and transport equipment) and consumer products (notably textiles, footwear and electrical goods). There is also a well established agro-industrial sector.

1.2 Industrial output and employment has grown at an impressive pace since the end of World War II. Although Yugoslavia's industrial capacity suffered heavy damage during the war, industrial production quickly recovered and by 1953 surpassed the 1939 level by over 75 percent. This tremendous reconstruction effort paved the way for the modern development of Yugoslav industry. Between 1953 and 1979 industrial output increased tenfold and the share of industry in the social product climbed from 21 to 39 percent. During the same period, industrial employment increased from 600,000 to 2.1 million. Yugoslavia's industrial workers currently account for 22 percent of the total labor force compared with only 7 percent in 1953. The rapid expansion of industry in the postwar period has therefore been the instrument of dramatic social change. It has been the driving force behind Yugoslavia's transformation from a predominantly rural, agrarian based economy to a modern, urban oriented society.

1.3 The pattern of industrial development in Yugoslavia has been shaped by an active, flexible and innovative policy environment. Policy-makers have responded forcefully to the problems of industrial development. The need for industrial policy reform has acted as a catalyst for more wide-ranging changes in the management of the economy. The thrust of these changes has been to promote an increasingly decentralized and participatory system of economic decision-making.

1.4 After 1945 industrialization was centrally planned and coordinated through a system modelled on the command economies of eastern Europe. The

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1/ Unless otherwise noted the terms industrial sector and industry refer to the 35 branches classified under the heading Manufacturing and Mining in the Yugoslav uniform classification of industrial activity. Manufacturing and Mining includes electrical power but excludes other public utilities and construction.

bulk of the country's investable resources were channeled through the federal budget and priority was given to the creation of capital goods and basic industries. Gradually, however, policy began to shift: more encouragement was given to the development of geographically dispersed light industries to meet the repressed demand for consumer goods. A strong element of administrative control was retained to determine sectoral priorities. But within sectors market forces played a much greater role in determining the viability of specific industrial investments. The strategy followed was to establish industries which could generate high levels of savings (accumulation) which could in turn be used to finance the further expansion of industry. Industrial employment and output climbed rapidly but the mixture of quasi markets and centralized planning led to serious distortions in the pattern of industrial development. Administrative price controls, which covered 70 percent of all industrial commodities, generated a set of relative prices which did not reflect real production costs. Multiple exchange rates and import controls further reduced the link between domestic and international prices. As a result, the price system delivered meaningless signals and encouraged dubious investment and production decisions. These decisions resulted in lost output and the creation of inefficient and underutilized industrial capacities.

1.5 The pressures for a change in industrial policy culminated in the 1965 reforms. The reforms gave a much greater role to market forces in the process of resource allocation and coordination. The exchange rate was unified, export premia were abolished, and about one-quarter of imports were freed from restrictions. Average import duties were reduced by almost 50 percent. The aim of these policy measures was to foster the integration of the Yugoslav economy into world markets along the lines of its true comparative advantage. These moves were buttressed by an increase in the role of the market in the process of resource allocation. Domestic price distortions were substantially reduced by a realignment of prices. While there have been some continuing discrepancies, these changes brought the structure of domestic relative prices more closely in line with world markets. Subsidies were scaled back and enterprises were given more autonomy in price setting and investment decision-making. A new law on banking transferred the responsibility for overall resource allocation from the state to the banking system. The reforms aimed to reinforce the operation of market mechanisms to promote higher productivity and improved quality in industrial production.

1.6 In the ensuing period the industrial sector grew at an impressive pace. Between 1965 and 1971 industrial output increased at an average rate of almost 7 percent. Despite some transitory problems most enterprises successfully adjusted to the new conditions prevailing in the domestic market. But the liberalization of the foreign trade regime led to a significant increase in the vulnerability of the economy to external problems. The rate of growth of industrial exports declined in comparison to the pre-reform period and failed to keep pace with the surge in industrial imports; this resulted in a sharp increase in the merchandise trade deficit. As a consequence, the economy experienced recurring balance of payments difficulties, and the momentum of economic growth was punctuated

by a series of "stop go" cycles. These cycles had a particularly adverse effect on Yugoslav industry because industrial growth became increasingly tied to the importation of raw materials and intermediate products. Following the reforms the country's most significant economic policy problem was reconciling the goal of building a meaningful system of workers self-management with the need to achieve a reasonable degree of short and medium-term macroeconomic stability. The devolution of economic power weakened the capacity of federal authorities to regulate smoothly economic activity. Market forces, diluted by the Yugoslav institutional structure, were too weak to act as an adequate instrument of coordination. 1/

1.7 Yugoslavia responded to the need for improved macro-economic coordination by extending the principle of workers self-management from the microeconomic sphere to the realm of national economic policy. Between 1971 and 1974 a new constitution was developed which laid the foundation for new mechanisms of economic policy-making and administration. The economic structure has been further decentralized by splitting larger enterprises into legally autonomous Basic Organizations of Associated Labor (BOALs). Major enterprise decisions must be unanimously endorsed by all its constituent BOALs. As described in the Preface, these units, which all produce a specific marketable output, are the building blocks of Yugoslavia's unique system of self-management planning. Each BOAL develops its own production and investment plan. In turn these plans are extensively discussed in the trade associations (Chambers of Economy) to which all BOALs belong. An iterative process of consultation and negotiation takes place whereby these individual plans both form the basis for, and are harmonized with, the various aggregate social plans for the sector and the region. These aggregate plans are prepared by the regional and federal planning institutes. The aim of the process is to produce a consistent set of plans (of varying degrees of aggregation) at the enterprise, communal, regional and federal level, which reflect a broad political consensus. These plans provide the framework for economic coordination during the annual and 5-Year Plan periods. Each plan is supported by a set of social compacts and self-management agreements which impose socially and legally binding obligations on the plan participants. These instruments, which regulate activities in such areas as employment, prices and incomes and foreign exchange distribution, are also elaborated on the basis of consensus seeking between economic organizations and the Government in specially organized permanent bodies known as "Communities of Interest."

1.8 The new system of economic management has been introduced during a period in which Yugoslavia has had to contend with a marked worsening in its external economic cicumstances. The 1974 oil price increase signalled

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1/ Although the country remained committed to a policy of national economic integration and a unified market, economic decision-making became increasingly colored by attempts to pursue communal and regional advantages. The mobility of investable resources was limited and in practice highly regionalized.

a turning point for the economy and dramatized the need for Yugoslavia to reorient the pattern of its industrial development. The expansion of industry after 1965 had been geared toward serving a burgeoning domestic market and had been accompanied by a growing dependence on imported inputs of raw materials and intermediate products. While buoyant workers' remittances had enabled the economy to finance the bulk of these additional imports successfully, by the early 70's the country merchandise trade deficit was reaching uncomfortably high levels. The oil price increase and the onset of recession in Western Europe precipitated a significant deterioration in Yugoslavia's external economic position. The oil price increase had an immediate impact on the country's import bill. But the longer term implications of these new circumstances were more important. The onset of recession in Western Europe led to a sudden decline in the demand for migrant workers. This meant that workers' remittances - which until 1974 had been the fastest growing component of Yugoslavia's foreign exchange earnings - could no longer be relied on to play such an important role in financing the country's imports. Moreover, the slowdown of economic growth in Western Europe resulted in a weakening of demand in what had by then become Yugoslavia's most important export market.

1.9 The problem confronting Yugoslav policymakers in the 70's has been to engineer a reduction in the country's merchandise trade deficit in the face of increasingly competitive external market conditions. Since industrial goods account for over 90 percent of the country's merchandise trade, the burden of adjustment has fallen to industry. Yugoslavia has attempted to meet the need for external adjustment by embarking on a policy of simultaneous import substitution and export promotion. Both the 1971-75 and the 1976-80 five year economic plans called for radical structural changes in the composition of industrial production. The aim of these changes was to reduce the country's dependence on imported inputs. Certain branches of industry - notably energy, intermediate products and capital goods - were designated as priority sectors for investment purposes. It was envisaged that, by investing and increasing output in these key areas, industry would be able to continue to grow rapidly without unduly straining the country's balance of payments. While successive investment plans have been clearly linked to the goal of reducing import dependency in specific industrial branches, the emphasis of export strategy has been rather different. Economic plans have set aggregate targets for export growth, and policymakers have sought - with varying degrees of success from year to year - achieve these targets through more general incentive policy measures.

B. Industrial Performance in the Seventies

(i) Output

1.10 Despite an increasingly unfavorable external environment Yugoslavia has been remarkably successful in sustaining the momentum of industrial growth in the seventies. Between 1971 and 1979 industrial output increased at an annual rate of slightly over 7 percent in constant prices. This rate of industrial growth outpaced that achieved during the 1965-71 period when world markets were more conducive to rapid industrial expansion. This is shown in Table 1 below.

Table 1: THE PATTERN OF INDUSTRIAL GROWTH 1965-79

	Average Growth Rates	
	1965-71	1971-79
Total industrial output	6.4	7.1
Capital goods	6.3	8.8
Intermediate and semi-processed goods	5.9	5.3
Consumer goods	6.5	7.1
Industrial Employment	1.6	4.2
Industrial fixed assets	7.7	7.9 /a
Industrial exports	7.3	5.0
Industrial imports	11.9	4.6

/a 1971-78.

Source: Statistical Yearbook of Yugoslavia - 1980, 1976, 1972.

The production of capital goods accelerated sharply and was the fastest growing component of industrial output. This growth reflected the buoyant level of internal demand for investment goods and the priority status accorded to the domestic manufacture of industrial plant and equipment. Yugoslavia was, however, less successful in stimulating the growth of production of intermediate goods. Although the stated goal of industrial policy was to curb the dependence on imported inputs, the rate of growth of output of these commodities continued to lag behind that of total industrial output, and the gap between the rates of growth of intermediate goods and total output widened in comparison to the 1965-71 period. Given the rapid rate of industrial growth achieved since 1971, and the objective of restructuring the pattern of industrial output, the overall stability of the structure of industrial output has been quite striking. Virtually every branch of industrial production has increased at an annual rate of between 6-8 percent during the seventies. 1/ The machinery, chemical processing and iron ore mining industries were the only branches which succeeded in expanding production at rates significantly higher than the average. The only industrial branches where output growth lagged significantly behind the average were in coal production and crude petroleum refining.

(ii) Exports

1.11 Between 1971 and 1979 industrial exports accounted for over 90 percent of Yugoslavia's merchandise export revenues. As the foreign

1/ See Table 3.1 of the Statistical Appendix.

exchange constraints facing Yugoslavia have tightened, the prospects for the continued growth of its economy have become increasingly dependent on the ability of its industries to export successfully to keenly competitive overseas markets. Yugoslavia's export strategy has hinged on two objectives: first, to progress from the export of basic industrial commodities to the export of more complex manufactured goods; second, to narrow the merchandise trade deficit by increasing the proportion of merchandise imports covered by exports. The structure of merchandise trade has shifted in the direction desired by the policymakers. The share of manufactured goods in total exports climbed from 55 percent in 1970 to 66 percent by 1977, the share of metals and minerals declined from 19 percent to 14 percent. 1/ On the other hand, Yugoslavia failed to reverse the downward trend in the coverage of imports by exports exhibited since 1965. In 1971 exports covered 56 percent of the cost of imports, by 1979 import coverage dipped below 50 percent.

1.12 Although changing external circumstances required that Yugoslav industry redirect itself toward a more export-oriented pattern of development, this shift did not take place. Industrial exports grew more slowly in real terms between 1971 and 1979 (5.0 percent per annum) than they did between 1965 and 1971 (7.3 percent). This performance was well below the 8 percent growth targets embodied in Yugoslavia's 1971-75 and 1976-80 5-year plans and has been a source of continuing weakness in the economy's balance of payments. The primary orientation of Yugoslav enterprises has remained production for the domestic market. In 1971 industrial exports accounted for 11.2 percent of gross industrial output, by 1979 this proportion dwindled to 9.1 percent. Yugoslav enterprises have responded more readily to the needs of a booming domestic market than to the economy's need for increased foreign exchange earnings. In part the country's disappointing export performance has been a reflection of the emphasis on import substitution in industrial planning. But it is also a reflection of the more general policy environment which has dampened the incentive to export. While there are many individual Yugoslav enterprises which are aggressive exporters, exporting is a marginal activity in the output plans of most firms. The result is that Yugoslav industrial exports tend to be highly cyclical with respect to domestic market conditions. Yugoslav enterprises increase their exports significantly when domestic demand weakens (as in 1973, 1976 and 1980) but relatively few enterprises have geared their expansion plans to a long-term thrust into export markets. This reduces the motivation for enterprises to tie their production decisions to the discipline of maintaining their export competitiveness in overseas markets. Consequently, Yugoslavia possesses a highly diversified industrial export structure with a far lower degree of commodity export concentration than other newly industrializing countries. 2/

1/ See Yugoslavia: Export Performance and Policies, p. 14.

2/ See Yugoslavia: Export Performance and Policies, pp. 22-24.

(iii) Imports

1.13 Yugoslavia has been remarkably successful in curbing the rate of growth of its industrial imports during the seventies. The stress placed on import-saving investments has been rewarded by a reduction in the average rate of growth of industrial imports from almost 12 percent per annum recorded between 1965 and 1971 to less than 5 percent between 1971 and 1979. Despite this achievement, however, the country's trade deficit in industrial commodities has widened sharply. Yugoslavia entered the seventies with a trade deficit in industrial commodities equivalent to 90 percent of the value of its industrial exports. The economy needed to expand its exports considerably faster than imports to offset the impact of world inflation on the magnitude of the trade deficit, but industry was unable to attain this goal. Although Yugoslavia more than halved the import growth rate, industrial imports continued to grow only marginally more slowly than industrial exports. At the same time, the economy experienced two significant oil price induced deteriorations in its terms of trade (in 1974 and 1979) which further worsened its balance of trade position. For the 1971-79 period as a whole industrial import prices climbed by 202 percent, whereas industrial export prices increased by 156 percent. This prolonged terms of trade deterioration sharply exacerbated the industrial trade deficit, which soared from $1.4 billion in 1971 to $6.4 billion in 1979. Thus, by 1979 - despite an intensive import substitution drive - the economy's industrial trade deficit reached 9 percent of the value of gross industrial output or 29 percent of industrial value added.

1.14 The 1979 trade deficit considerably exceeded Yugoslavia's net surplus in invisible trade and thereby generated a record current account deficit of US$3.9 billion. As in 1974, the surge in oil prices in 1979 coincided with a domestic economic boom which would by itself have strained the country's balance of payments. But the 15 percent increase in import prices, coupled with an 18 percent rise in import volume boosted the balance of payments deficit to an unsustainably high level. At the same time, Yugoslavia's adjustment problem has been made more difficult, as compared with the 1974 period, because of its higher level of external debt. In the period since 1974 Yugoslavia has recorded only one current account surplus - in 1976 - and, consequently, the economy's high growth rate has been achieved at the cost of a considerable increase in foreign borrowing. This rise in external indebtedness, together with the lower than projected increase in exports, means that Yugoslavia enters the 80's with a higher debt service ratio than envisaged by the 1976-80 plan. This gives the economy considerably less room for maneuver. In contrast with the post 1974 period, therefore, external debt and balance of payments considerations will place a far more severe limitation on the feasible level of future economic growth.

(iv) Investment

1.15 Yugoslavia channels a considerable portion of its total resources into domestic investment. Between 1970 and 1978 the share of gross

investment in GDP climbed from 31 to 34 percent. 1/ Industry has absorbed a substantial and rising proportion of this overall investment. During the same period total industrial investment (excluding construction) climbed from 33 to 38 percent of gross fixed capital formation, or from 9 to 12 percent of GDP. As can be seen from Table 2 below, the share of gross fixed capital formation devoted to industry is markedly higher than in other southern European countries (such as Greece and Italy) or in the economies of Japan or Korea. It is, however, closely comparable with the performance of other eastern European economies such as Hungary and Poland.

Table 2: SHARE OF INDUSTRY IN GROSS FIXED CAPITAL FORMATION (%)

Country	Year	Mining and Quarrying	Manufacturing	Electricity Gas and Water	Construction	Total Industry
Yugoslavia	1970		32.7		3.1	35.7
	1978		38.1		3.1	41.2
Greece	1970	1.5	14.2	8.2	2.5	26.4
	1978	1.3	12.6	9.6	0.8	24.3
Hungary	1970		34.5		3.6	38.1
	1978		39.6		3.1	42.7
Italy	1970		23.4	6.2	1.3	30.9
	1978		27.0			27.0
Japan	1971	0.7	22.2	3.9	2.6	29.4
	1976	0.3	15.3	4.3	2.2	22.1
Korea	1970	0.5	19.6	11.2	1.2	32.5
	1978	0.8	20.9	9.5	1.8	33.0
Poland	1970		36.3		4.1	40.4
	1978		36.6		5.0	41.6

Source: UN: Yearbook of National Account Statistics 1979, Volume I.

1.16 The volume of real fixed investment in Yugoslav industry rose at an annual rate of 9 percent per annum between 1970 and 1978 compared with 7 percent for the economy as a whole. The strong secular rise in the volume of fixed industrial investment has facilitated a rapid increase in the industrial capital stock. Industrial fixed assets, which grew at an annual rate of 7 percent in constant prices, virtually doubled between 1971 and 1978. The greatest rate of increase occurred in the machinery, coal mining and non-ferrous metal industries--where fixed assets grew at an

1/ In 1978 the share of investment in GDP was over 50 percent higher than the weighted average prevailing in both the middle income and industrialized countries, which was 22 percent. World Development Report 1980.

annual rates exceeding 10 percent per annum. These are activities which might be expected to have made an especially important contribution to import substitution. Nevertheless, the extent of structural change in the composition of the industrial capital stock that has occurred during the seventies is quite modest. Industrial fixed assets in most industrial branches increased at annual rates of between 6 and 9 percent (see Appendix Table 3.3). Consequently, although Yugoslavia has managed to achieve a high level of investment in its priority sectors, this has not been achieved at the expense of a reduction in investment in non-priority sectors of industry.

1.17 Yugoslavia's inability to curb the growth of investment in the non-priority sectors of industry (and of the economy more generally) has to some extent undermined its investment strategy. If there had been more success in curbing the growth of investment in non-priority activities, it would have been possible to both increase the extent of needed structural change in the economy and reduce the strain on the level of aggregate demand created by high investment levels. Yugoslavia has developed a powerful set of policies to stimulate industrial investment demand (these are reviewed in more detail in Section II). These policies have created a situation in which any enterprise able to obtain the necessary financial resources is encouraged to embark on expansion programs. To the extent that resources can be successfully and efficiently rationed between priority and non-priority activities, these conditions foster the development of priority sectors. The problem is, however, that these conditions also generate a chronic excess demand for investable resources. This situation makes it extremely difficult to limit the resources which flow into non-priority activities. Since investment absorbs such a substantial proportion of GDP in Yugoslavia, this excess demand has had important macroeconomic repercussions on the economy. It has spilled over into inflation and exacerbated Yugoslavia's balance of payments difficulties.

1.18 Between 1971 and 1978 Yugoslavia's industrial ICOR (the ratio of gross industrial investment to incremental of industrial output) averaged 4.1. This is a strikingly high figure in comparison to Korea where the ICOR averaged 1.7 between 1971 and 1978, but it is by no means out of line with the level prevailing in other central European economies such as Hungary where the ICOR averaged 4.0. The ICOR is often used as a proxy for the efficiency of investment (the higher the ICOR the lower the presumed efficiency of investment) but its value as an indicator of comparative investment performance is rather limited. The structure of different countries' industrial sectors varies tremendously. A country with a preponderance of heavy industries would exhibit a higher ICOR than a country which specialized in the manufacture of labor intensive products, since the latter group of products require less capital per unit of output. Even if product groups are compared directly, the ICOR is a relatively poor guide to comparative efficiency. Technologies differ and gross investment does not accurately measure the value of capital services committed to new production over time.

1.19 It is, however, interesting to examine the behavior of Yugoslavia's industrial ICOR over time. The trend in the ICOR within a country is a much more significant indicator of investment performance. Between 1971 and 1975 Yugoslavia's ICOR averaged 3.6, but during the first three years of the current (1976-80) plan the ICOR jumped to 4.7. Since the 1976-80 plan placed greater emphasis in the development of capital intensive sectors of industry, such as energy and raw material production, some rise in the ICOR was inevitable, but the rise in the ICOR is far greater than could be expected from the change in the sectoral composition of industrial investment. The rise in the ICOR points to a more general decline in the efficiency of industrial investment. It suggests that while Yugoslav industrial enterprises have invested heavily since 1971 they have not all been equally successful in using this investment effectively. During the current plan there have been reports of severe bottlenecks in many investment programs. For example, 30 percent of investment projects completed in 1980 were begun before 1976. These delays are extremely costly for the economy. But the most serious consequence of a rising ICOR is its macro-economic repercussion. As the ICOR rises, the economy must devote an increasing proportion of its total economic resources to investment to maintain a given rate of economic growth. In Yugoslavia's case the level of industrial investment climbed from 30 percent of industrial output in 1971 to 42 percent of industrial output in 1978. In the latter year the share of investment financed by social sector enterprises own internal resources was only 36.2 percent. 1/ Consequently, Yugoslavia's industrial expansion program has required a substantial inflow of resources from other sectors of the economy (as well as from abroad). Clearly this pattern of expansion will be more difficult to sustain in the future. A key component of the country's current stabilization program (see 1.47 below) is to reduce the level of gross investment. Within this context industry needs to make a contribution toward economizing on the use of scarce investment resources.

(v) Employment

1.20 Between 1971 and 1979 industrial employment increased from 1.4 million to 2.4 million workers. The rate of industrial employment growth averaged 4.7 percent between 1971 and 1975, but during the first four years of the 1976-1980 plan it decelerated to 3.6 percent. This decline was projected at the outset of the plan, which placed emphasis on developing the more capital intensive branches of industry. This shift was however reinforced by a rise in the capital intensity of investments within industrial branches. Fixed assets per worker (in constant prices) increased at annual rates of between 3 and 5 percent per annum in most branches of industry (see Appendix Table 3.1). In some branches, notably quarrying,

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1/ The proportions vary considerably from sector to sector, being generally higher in light industry (e.g. 54.9 percent in footwear) and lower in heavy industry (e.g. 28.4 percent in electricity and 27.2 percent in chemicals).

coal mining, rubber, building materials and beverages, fixed assets per worker grew at rates of over 6 percent per annum. Consequently, the investment conditions which promoted high levels of total industrial investment also appeared to favor a fairly brisk pace of substitution of capital for labor at a time when Yugoslavia has faced an increasingly difficult employment problem. The result is a predominance of capital intensive investment projects, even in industries which are traditionally labor intensive. The combined effect of the shift in the pattern of industrial investment and the secular rise in the capital intensity of investment was to reduce the elasticity of employment to industrial investment from 0.73 between 1971 and 1975 to 0.48 between 1976 and 1979. We are not suggesting that the increase in industrial employment which took place over the last decade has been undesirable in itself, but that it might have been achieved at lower cost in investment resources. In the future Yugoslavia will need to make greater efforts to reduce the capital cost of its industrial expansion programs. More efficient management of the economy's manpower and capital resources will be crucial elements of this strategy. The cutback in overall industrial investment, however, need not imply a similarly drastic decline in employment growth, if it is accompanied by a switch in the composition of investment toward labor intensive industrial sub-sectors. Almost 50 percent of the new industrial jobs generated since 1971 were created in six labor intensive branches of Yugoslav industry: leather footwear, finished textiles, furniture and wood products, electrical products, machinery and metal fabrication. These activities, however, absorbed only 20 percent of net industrial investment. By shifting the composition of investment toward these types of activity Yugoslavia could increase the impact of each unit of investment on employment while curbing total investment expenditure.

1.21 It is difficult to trace the direct impact of the rise in the capital intensity of production in Yugoslav enterprises on labor productivity because of the extreme volatility of industrial output growth which ranged between 3 percent (1976) and 11 percent (1975). Employment growth, on the other hand, has been much more stable, increasing at rates ranging between 3 and 5 percent. Yugoslav enterprises seem to take a very long-term view of their employment and investment needs and do not quickly adjust their demand for these factors in response to short-term swings in aggregate demand. The underlying rate of productivity growth has averaged 3.7 percent since 1970. During the first four years of the current plan labor productivity increased by 4.1 percent. This improvement seems to be well below the potential considering the growth of industrial fixed assets that has taken place.

(vi) Total Factor Productivity Growth

1.22 The growth of industrial production in a given country can be theoretically accounted for by two factors: first, the rise in output due to an increase in the economic inputs (capital and labor) directed to industry; and second a residual change due to an improvement in the efficiency of resource use within the sector. As we have seen, during the seventies Yugoslavia has devoted an increasing proportion of its manpower

and capital resources toward industrial expansion. Clearly it is important to distinguish the extent to which Yugoslavia's dynamic industrial growth can be ascribed to this increase in the volume of resources flowing into the sector and the extent to which it is due to changes in the efficiency of resource use. 1/ The residual change in output due to changes in the technical efficiency of resource use is known as the rate of total factor productivity growth. Measuring total factor productivity growth enables us to assess the impact of changes in the overall efficiency of resource use in the sector on the industrial growth rate. 2/

1.23 Total factor productivity grew at an estimated average rate of 1.8 percent per annum during 1971-78. This indicates that there was an improvement in the technical efficiency of industrial production during the seventies. As appendix table 2.2 shows, most industrial branches experienced positive rates of total factor productivity growth. However, in 11 industrial branches which together accounted for 16 percent of industrial output total factor productivity growth was negative, indicating a decline in the efficiency of resource use in these activities. Relatively few studies of total factor productivity growth have been undertaken for developing countries. A recent Bank report found that total factor productivity in Turkish manufacturing industry grew by 2.1 percent between 1963 and 1976. 3/ Other studies--cited in the same report--indicate that total factor productivity grew by 2.3 percent in Hong Kong, 3.5 percent in Korea and 3.8 percent in Singapore during the sixties, and that various developed countries have achieved similar levels of performance (Norway 3.5 percent, Japan 3.7 percent and Italy 3.8 percent). Thus, in comparison to several developing and developed countries total factor productivity growth in Yugoslav industry has not been particularly dynamic. This suggests that Yugoslav industry has not made full use of the productive potential of the resources which have flowed into the industrial sector.

1.24 Interregional comparisons of industrial performance within industry lend additional support to this view. Industrial productivity levels vary considerably between the various regions of Yugoslavia (see Section 1C). In 15 branches of Yugoslav industry, covering 46 percent of total industrial output, the national level of economic efficiency in 1978 was

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1/ The extent to which Yugoslavia's industries are efficient when evaluated at international prices would depend on the degree to which the structure of relative prices within Yugoslavia corresponds to the world market price structure.

2/ Since the measurement of total factor productivity growth involves estimating a residual, it is highly sensitive to biases in the specification of the production function. These results, therefore, need to be treated with caution.

3/ Estimating Total Factor Productivity Growth in a Developing Country, World Bank Staff Working Paper No. 422.

less than 75 percent of the average level attained in these branches in the republic of Slovenia. This implies that, had national efficiency in these branches attained Slovenian levels, total industrial output would have been more than 10 percent higher in 1978.

C. Regional Differences in the Level of Output and Employment

(i) Industrial Structure

1.25 There are marked differences in the levels of economic development of the various republics and provinces in Yugoslavia. In the less developed regions (LDR), which comprise the republics of Bosnia-Herzegovina, Macedonia and Montenegro and the autonomous province of Kosovo, economic output per capita varied between 37 and 70 percent of the national average in 1978. Household incomes per capita varied between 46 and 82 percent of the national average. Industrial growth is regarded as being one of the most important vehicles for the economic development of the country as a whole and the LDR in particular. Successive economic plans have called for above average rates of growth of industrial output and employment in the LDR in order to reduce the disparities in regional levels of economic development.

1.26 The industrial structure of the LDR is more heavily weighted towards capital intensive, resource based industries than is the case for MDR. If Yugoslavia's 35 industrial branches are ranked according to the degree of capital intensity 1/ of their production the extent of the concentration of the LDR's production in capital intensive branches becomes apparent. Over 56 percent of the LDR capital stock is invested in Yugoslavia's 13 most capital intensive industrial branches. 2/ These branches generated 37 percent of the LDR's industrial output. These branches also figure importantly in the productive structures of the more developed region (MDR) but not to the same degree. They accounted for 46 percent of MDR industrial fixed assets and 21 percent of output. To some extent, the concentration of capital intensive industries in the LDR reflects a locational comparative advantage stemming from the presence of substantial mineral and energy resources in these regions. From the national point of view it makes sense to save transportation costs by processing these resources near their source. In addition, regional industrial planners have advocated the development of heavy industries because of their ability to generate high levels of accumulation (savings). This consideration creates a direct trade off between channelling investment into labor intensive investments which would generate industrial jobs and capital intensive investments which improve regional savings performance. This choice is particularly difficult for the LDR since their level of income per capita is much lower and their employment problem is more pressing.

1/ Defined as fixed assets per worker in constant 1972 prices.

2/ All figures in paras. 1.26 refer to 1978.

1.27 There are significant weaknesses in the industrial structure of the LDR compared with the MDR. This is apparent from Table 3 below. In 1978 the average capital output ratio in the LDR was 4.8 compared with 3.1 in the MDR. In other words the average productivity of industrial capital in the LDR is about 30 percent lower than in the MDR. To some extent the lower level of capital productivity in the LDR is a reflection of the more capital intensive structure of production. Capital intensive industries require more capital and less labor per unit of output than labor intensive industries. Labor productivity levels in capital intensive industries, therefore, are normally correspondingly higher. But in the LDR average labor productivity levels are also lower than in the MDR. In the LDR as a whole labor productivity was 21 percent lower than in the MDR. This implies that the overall efficiency of industry in the LDR is considerably lower than in the MDR: each unit of industrial output requires both more labor and more capital in the LDR compared with the MDR. The most extreme example of this problem is Kosovo; its average productivity of capital is only 55 percent of the MDR average and labor productivity is only 71 percent of the MDR average. Even within the MDR, however, there are considerable differences in industrial productivity levels. The productivity of Slovenian industry is higher than that of the other MDR.

Table 3: SOME BASIC INDICATORS OF INDUSTRIAL PERFORMANCE IN 1978

	Bosnia	Kosovo	Macedonia	Montenegro	Total LDR	Croatia	Serbia	Slovenia	Vojvodina	Total MDR	Yugoslavia
% of Distribution of Industrial Fixed Assets	16.6	3.4	6.1	3.1	29.2	22.9	22.8	17.2	8.0	70.8	100
% of Distribution of Industrial Employment	14.7	2.6	6.9	1.6	25.9	23.0	25.0	16.7	9.4	74.1	100
% of Distribution of Industrial Output	12.9	2.0	6.1	1.6	22.5	24.2	24.0	19.7	9.6	77.5	100
Capital Output Ratio	4.7	6.4	3.7	7.3	4.8	3.5	3.5	3.2	3.1	3.4	3.7
Industrial Fixed Assets per Worker (Millions 1972 Dinars)	232.0	264.9	180.8	390.4	231.6	204.7	187.4	211.2	175.8	196.7	205.7
Index of Labor Productivity	87.2	74.3	87.7	95.8	86.6	105.5	96.2	116.9	102.4	104.7	100

1.28 The pattern of industrial growth over time in the LDR also gives some cause for concern. Admittedly, as Table 4 below shows, industrial growth has been slightly faster in the LDR than in the MDR.

Table 4: REGIONAL VARIATIONS IN THE PATTERN OF INDUSTRIAL GROWTH 1971-78
(Annual Percentage Rates)

	LDR	MDR	Yugoslavia
Industrial Output /a	7.3	6.9	7.1
Industrial Fixed Assets /a	8.4	7.4	7.7
Industrial Employment	5.4	2.9	4.2
Labor Productivity	1.9	4.0	2.9

/a Constant 1972 prices.
Source: Statistical Yearbook 1980 and Federal Institute of Statistics.

But the difference in the relative growth rates of industry in the LDR and the MDR is quite modest in relation to Yugoslavia's aim of substantially raising the share of the LDR in total industrial output. On the other hand, the capital stock of the LDR has grown faster than in the MDR, and LDR employment growth has outstripped that of the MDR by a substantial margin. Consequently, the relatively faster rate of growth of LDR inputs has not been rewarded by a correspondingly higher rate of growth of LDR output. As a result, labor productivity has grown much more slowly in the LDR (1.8 percent) than the MDR (4.0 percent) and the gap between the average productivity of industrial capital in the LDR and the MDR has continued to widen. At the same time, real industrial wages have grown at virtually the same rates in the LDR as the MDR. This has resulted in a continued erosion of the profitability of industry in the LDR relative to the MDR.

(ii) Regional Policy Instruments

1.29 Although the responsibility for industrial planning and coordination has been transferred to its constituent republics and provinces, Yugoslavia has developed two important interegional policy instruments for promoting the industrial development of the LDR. These are the Federal Fund for the Development of the LDR (the Fund) and the joint venture system. The Fund has become an important element of interregional resource transfer within Yugoslavia. At the beginning of each 5-year plan period the republics and provinces agree on the level of contributions which will be made to the Fund and the allocation of the Fund between the LDR. For the 1981-85 Plan period, the draft social compact sets this annual contribution at 1.83 percent of each region's social product. 1/ Kosovo,

1/ In addition to these investable resources the LDR will receive direct budgetary support for the provision of social services equivalent of a further 1 percent of national social product.

the least developed region of Yugoslavia, will receive almost 45 percent of the Fund's resources or an annual sum approximately equivalent to 38 percent of its social product. The net transfer to the other LDR varies between 4 and 11 percent of their regional social product. The Fund is therefore a major source of investable resources for the LDR. Each of the LDR determines the distribution of the Fund resources between sectors. In Bosnia, for example, the Fund accounted for 20 percent of total bank credit during 1976-80. Fifty percent of Bosnia's share of the Fund's resources was committed to industrial lending. These resources could be used to finance up to 50 percent of project costs at rates of interest varying between 5.5 and 6.5 percent (except for energy-related projects for which it was 2.0 percent).

1.30 The other instrument of industrial resource transfer has been the joint venture law. Under the law BOALs or enterprises "can pool their financial resources" in order to undertake an investment project of mutual interest. This pooling can take two forms: joint pooling with shared income and risk, and pooling through a conventional credit relationship. In joint pooling BOALs or enterprises can make resources available to other BOALs or enterprises, either with the right to share in the income and associated risk of the venture or with the provision for such other benefits as commitments to deliver supplies to purchase supplies from the investing enterprise. Alternatively, joint pooling can take place in the form of financial credit, with fixed contractual terms for repayment and interest. Both forms of pooling are now commonplace within regions, but interregional pooling arrangements are still rare. The joint venture law provides an additional inducement for MDR enterprises to pool their resources with enterprises in the LDR; it allows them to deduct these investments from the obligatory contributions they would otherwise make to the Federal Fund. Few enterprises have taken advantage of this provision. So far the joint venture law has had a minimal impact on interregional resource transfer. Apparently, there have been a few joint ventures in Kosovo but the total volume of such investment during the 1976-80 Plan amounted to less than US$75 million. Joint ventures are to be given a much greater prominence in the current (1981-85) five year plan. A draft social compact allocates 50 percent of the 228 billion dinars in the Federal Fund to joint ventures.

(iii) Employment

1.31 Interregional labor mobility has not played a very significant role in the alleviation of regional unemployment problems. Census data for 1961 and 1971 indicate that only 24,000 people migrated from the LDR to the MDR each year. The level of interrepublican migration has probably increased somewhat since 1971. The strategy of regional employment policy, however, has remained firmly committed to the expansion of employment opportunities in the LDR. There are strong social reasons for creating employment within the LDR (rather than encouraging labor mobility) since this enables workers to maintain the family ties and links with the local community. There are also important economic arguments in favor of expanding employment opportunities in areas of high unemployment rather than

encouraging regional labor mobility. These arguments stem from the fact that production techniques in many modern industries are becoming less dependent on being in close geographical proximity to raw material supplies, and also from the economic savings which can be reaped by avoiding the housing and related infrastructural costs involved in additional urbanization.

1.32 The low degree of labor mobility has resulted in a situation in which labor shortages in some areas of the country can coexist with pronounced structural unemployment problems in other regions. This is shown in Table 5 below.

Table 5: REGIONAL UNEMPLOYMENT INDICATORS 1980
(thousands)

	Registered Job Seekers/1	Social Sector Employment/1	Labor Force/2	Ratio of Registered Job Seekers to Social Sector Employment (Percent)	Ratio of Registered Job Seekers to Labor Force (Percent)
Less Developed Republics	339	1,519	2,879	22.3	11.7
Bosnia	134	810	1,554	16.5	8.6
Kosovo	67	171	410	39.2	16.3
Macedonia	116	414	717	28.0	16.1
Montenegro	22	124	198	17.7	11.1
More Developed Republics	443	4,117	6,545	10.8	6.8
Croatia	79	1,369	2,089	5.8	3.8
Serbia	275	1,433	2,715	19.2	10.1
Slovenia	10	771	859	1.3	1.2
Vojvodina	79	544	882	14.5	9.0
Yugoslavia	782	5,636	9,424	13.9	8.3

/1 January - August 1980

/2 Sentic and Breznik "Projections of the Total and Active Population of Yugoslavia, including Migration."

In 1980 the ratio of registered job seekers to social sector employment in the LDR was more than double the level prevailing in the MDR. In Kosovo, the number of registered job seekers was equivalent to 39.2 percent of the social sector work force. At the other extreme, in Slovenia, the number of registered job seekers was equal to only 1.3 percent of the social sector

work force. Croatia - the largest region of the Yugoslavia in terms of economic output - also has a ratio of registered job seekers to social sector employment which is less than half the national average. As explained below (see para. 1.38), not all registered job seekers are unemployed, but in Yugoslavia it is common to measure the economy's or a given region's unemployment situation by expressing the number of registered job seekers in relation to the level of social sector employment. Although this index of unemployment is not comparable with unemployment rates in other countries, it gives a good indication of relative differences in the employment conditions between regions and over time. This is because it conveys the relationship between the number of workers seeking employment outside agriculture and the capacity of the social sector - the most important source of employment growth - to provide these opportunities.

(iv) Labor Intensive Industrial Development

1.33 During the seventies the LDR have continued to channel the bulk of their investable resources into the development of capital intensive branches of industry. By their nature these industries can only make a very limited contribution to solving the employment problems of the LDR. For the future the LDR need to do more to promote the growth of labor intensive industries. The LDR have already established a good base for this expansion. Six labor intensive industries (finished textiles, footwear, furniture and fixtures, electrical products, machinery and fabricated metal products) accounted for over 40 percent of new industrial jobs created in the LDR between 1971 and 1978. Employment grew at a substantially faster pace in these industries in the LDR than in the MDR and they now account for 36 percent of total LDR employment. The LDR currently produce only 20 percent of total Yugoslav output of these commodities, so there is considerable scope for generating additional employment in these industries in the LDR. Indeed, the prospects for significantly reducing the magnitude of the unemployment problems facing the LDR hinge on their ability to develop these industries successfully. Unfortunately, the cost structure of these industries acts as a major disincentive against the migration of these industries from the MDR to the LDR.

1.34 In the LDR the levels of net personal incomes per worker in industry are slightly lower than the Yugoslav average. 1/ Labor costs form a high proportion of total costs in labor intensive industries. If LDR enterprises were as technically efficient as average Yugoslav enterprises, the lower "wage" structure prevailing in the LDR would give LDR enterprises a competitive cost advantage in these industries, because they would have lower unit labor costs. As Table 6 indicates, however, few LDR industries have managed to capture these potential cost advantages. Labor productivity is generally well below the Yugoslav average. Consequently, unit labor costs are higher than average. This squeezes profit margins in LDR

1/ In 1978 they varied between 83 percent (Kosovo) and 93 percent (Bosnia) of the Yugoslav average.

Table 6: INDEXES OF REGIONAL VARIATIONS IN THE COST STRUCTURE OF SELECTED LABOR INTENSIVE INDUSTRIES IN 1978
(Yugoslavia = 100)

	Footwear and Fancy Leather Goods	Finished Textiles	Furniture and Fixtures	Electrical Machinery	Machinery	Fabricated Metal Products
Bosnia						
Labor Productivity /a	125	93	99	80	157	67
Net Personal Incomes /b	89	88	93	98	91	97
Unit Labor Costs /c	71	94	94	123	58	144
Capital Productivity /d	149	93	94	71	104	59
Labor Intensity /e	124	100	95	66	66	88
Kosovo						
Labor Productivity /a	70	100	54	51	..	60
Net Personal Incomes /b	79	79	67	74	..	75
Unit Labor Costs /c	113	79	124	145	..	125
Capital Productivity /d	74	64	60	64	..	28
Labor Intensity /e	108	64	110	62	66	54
Macedonia						
Labor Productivity /a	98	81	68	63	62	72
Net Personal Incomes /b	75	84	80	84	85	87
Unit Labor Costs /c	77	104	118	133	137	121
Capital Productivity /d	140	97	101	114	10	96
Labor Intensity /e	159	121	150	83	16	133
Montenegro						
Labor Productivity /a	60	86	71	83	157	51
Net Personal Incomes /b	77	80	92	79	97	87
Unit Labor Costs /c	128	93	130	95	62	171
Capital Productivity /d	72	89	63	48	121	50
Labor Intensity /e	72	104	88	42	77	85
Slovenia						
Labor Productivity /a	142	120	132	172	110	141
Net Personal Incomes /b	154	126	120	109	110	111
Unit Labor Costs /c	108	105	91	64	100	79
Capital Productivity /d	90	115	121	105	86	115
Labor Intensity /e	59	96	92	126	78	82

/a Output per worker in constant 1972 prices.
/b In current prices.
/c Net personal incomes were used as a proxy for total labor costs.
/d Output per unit of capital in constant 1972 prices.
/e Labor per unit of capital.

industries. At the same time, with the significant exception of Macedonia, virtually all of these industries were less labor intensive (i.e., more capital intensive) in the LDR than the Yugoslav average. Therefore not only are profit margins lower but these margins have to cover a higher level of capital depreciation. This implies that the returns to capital invested in these industries in the LDR must be considerably lower than in the MDR. In Yugoslav terms this means that the accumulation or savings potential of these industries is fairly limited. The poor financial performance of these industries considerably reduces the incentive for enterprises in these sectors in other regions to embark on joint venture investments in the LDR. Slovenian enterprises, for example, pay their workers the highest level of net income in Yugoslavia and operate in relatively tight labor markets. As Table 6 shows, workers in labor intensive industries in Slovenia receive much higher incomes than workers in the LDR. Slovenian labor productivity, however, is so high that unit labor costs are generally lower than in the LDR. Consequently, the returns to a Slovenian enterprise on investments in the LDR are likely to be significantly lower than might be achieved through expansion within the republic. Clearly, if labor intensive industries are to gravitate toward the LDR more needs to be done to raise their efficiency. We return to this theme in Section II.

D. The Role of Industry in Absorbing Labor

(i) Structure of the Labor Force

1.35 One of the principal objectives of post war economic policy has been to stimulate the growth of employment in the modern (industrial and tertiary) sectors of the economy in order to provide the opportunity for migration out of low productivity private sector agriculture. Yugoslavia has been remarkably successful in achieving these goals as shown in Table 7 below.

Table 7: STRUCTURE OF THE LABOR FORCE 1953-79

	1953		1961		1971		1979	
	No.	%	No.	%	No.	%	No.	%
Social Sector Industry	567	7.2	1128	13.5	1418	16.0	2102	22.4
Other Social Sector Employment	1217	15.5	2042	24.5	2338	26.4	3404	36.4
Private Agriculture	5361	68.3	4755	57.0	3545	40.1	2211	23.6
Private Non-Agricultural Employment	n.a.	n.a.	230	2.8	301	3.4	386	4.1
(Total Resident Active)	(n.a.)	(n.a.)	(8155)	(97.8)	(7873)	(89.0)	(8103)	86.5
Unemployed	n.a.	n.a.	115	1.4	192	2.2	457	4.9
Migrant Workers	n.a.	n.a.	70	0.8	783	8.8	800	8.6
Total Labor Force /a	7849	100	8340	100	8848	100	9360	100

/a Census data for 1953, 1961 and 1971; 1979 is a projection of the Federal Institute for Demographic Studies.

Between 1953 and 1979 non-agricultural employment grew by 3.7 million to 6.0 million (an annual rate of 4.3 percent). During the same period the private sector agricultural labor force declined from 5.7 million to 2.2 million. There has been a dramatic reversal in the importance of private sector agriculture and the social sector since 1953. The social sector currently now accounts for almost 70 percent of the domestic labor force compared with 23 percent in 1953. The Yugoslav constitution allows for the operation of small scale private enterprise units outside agriculture, but their economic importance is quite modest; non-agricultural private sector employment is estimated to account for less than 5 percent of the domestic labor force.

1.36 Since 1965 when employment abroad was negligible, a significant number of Yugoslav workers have found temporary employment outside the country, particularly in Western Europe. The migrant work force reached an estimated peak level of 1.1 million workers (or 14 percent of the total domestic labor force) in 1973. But the onset of recession in Western Europe reinforced by a change in policies toward migrant workers in the host countries has sharply curtailed the demand for migrant workers, with the result that, since then, the number of migrant workers has declined. Between 1974 and 1977 over a quarter of a million workers returned to Yugoslavia, generating acute pressures in the internal labor market. Following this surge, the reflux of migrant workers has slowed to an estimated 10,000-15,000 workers per year. As a result only about 150,000 migrants will have returned during the 1976-80 plan, rather than the 250,000 projected at the outset of the plan. Many of the remaining 800,000 migrant workers temporarily employed abroad are gradually becoming in effect longer term residents of the host countries. Most of them, however, wish to return to Yugoslavia eventually. The long term aim of employment policy is to create adequate employment opportunities both to enable existing migrant workers to return and to obviate the need for new workers to move abroad in search of employment.

1.37 Despite the rapid outflow of labor from the agricultural work force there is still significant underemployment in the agricultural sector, and the labor market continues to be characterized by a pronounced dualism. Productivity and income levels in the private agriculture sector are considerably below those prevailing in the social sector. In 1978 the average earnings of workers in agricultural households were equivalent to only 57 percent of the gross personal incomes of unskilled workers in the social sector. This suggests that the marginal productivity of agricultural workers is considerably lower than that of workers in the social sector. There is also a significant differential between the disposable income levels of (predominantly private sector employed) agricultural households and (predominantly social sector employed) non agricultural households. In 1970, household incomes per worker in agriculture were about 31 percent of those for non-agricultural households. Primarily as a result of the steady outflow of workers from agriculture, this gap narrowed to 46 percent by 1978. Nevertheless, the persistent gulf between modern social sector incomes and those of private sector agriculture has continued to fuel the demand for non agricultural employment in Yugoslavia.

1.38 Between 1973 and 1977 the number of registered job seekers increased by 0.3 mn to 0.7 mn workers. This sharp rise reflected the severe deterioration in Yugoslavia's domestic unemployment situation caused by the decline in the number of Yugoslavs able to find temporary employment abroad. Although the growth in the number of registered job seekers has slowed considerably during the course of the 1976-80 plan, their numbers have continued to rise and in 1979 amounted to almost 0.8 mn, or 9.7 percent of the domestic labor force. Not all registered job seekers are necessarily unemployed. It is thought that about 40 percent of registered job seekers are currently employed; most of these employed job seekers are currently engaged in low productivity agriculture and are seeking more remunerative occupations in the social sector, but the list of registered job seekers also includes workers looking for transfers and some students. If these "employed job seekers" are deducted from the total of registered job seekers this would give a figure for the level of unemployment in 1979 of approximately 0.5 mn or 5.6 percent of the domestic labor force.

1.39 The statistics for registered job seekers for 1979 indicate that the majority are young (55 percent under 25), unskilled (58 percent), female (55 percent), are seeking employment for the first time (68 percent) and have been registered as unemployed for less than one year (53 percent). The Yugoslavs are attempting to respond to the needs of these groups by developing a more technically oriented education system which will enable young people to acquire the necessary skills for entry level positions in industry and the tertiary sector. In some communes enterprises receive grants for hiring new workers from the local authorities. Although only 23 percent of registered job seekers were receiving unemployment benefits in 1979 the social consequences of unemployment are less severe in Yugoslavia than in some other countries. Redundancies are infrequent so unemployment rarely affects the primary income earner in a family. Registered job seekers are generally either already employed but looking for new jobs or members of households where one or more family members are already working.

(ii) The Future Pattern of Employment Growth

1.40 During the current plan the main emphasis of employment policy has been directed toward stimulating the growth of social sector employment. This objective has been perfectly understandable given the need to absorb the reflux of migrant workers returning from Europe since 1974. In the period up to 1979, their return resulted in a virtual doubling of the number of new workers seeking employment in the domestic market compared with the demographic component of labor force growth due to population change. But for the forthcoming plan the emphasis of employment policy is expected to shift. There is a growing consensus that measures need to be taken to foster the growth of labor productivity in the economy. Commentators within Yugoslavia have suggested the economy's growth path has required both too much capital and too much labor and point to the need to improve efficiency. In addition, rapidly rising personal incomes and other benefits, which have tended to outstrip labor productivity growth, have weakened the capacity of enterprises to finance their investment programs

and contributed to inflation. Finally, Yugoslavia's balance of payments difficulties have dramatized the need for a more sustainable pattern of economic development. These considerations imply a slower rate of employment growth at least for the next plan period (1981-85).

1.41 The slower rate of employment growth envisaged by the economic planners for the medium term plan will inevitably result in some worsening Yugoslavia's employment situation, particularly in the short-term. But there are a number of factors which should help to alleviate the impact of a slower rate of economic growth on the domestic labor market. Yugoslav demographers predict that the natural rate of labor force growth will decline from 0.06 percent during 1976-80 to 0.02 percent during 1980-85. This principally reflects the shift in the occupational structure of the population. As the agricultural population has fallen activity rates among younger and older segments of the population have declined. This has resulted in a slowing down of the rate of labor force growth. The decline in the rate of labor force growth will mean that only 18,000 new workers per year will enter the domestic labor force during the 1980-85 period compared with an average of 56,000 during the 1975-80 period. In addition, the pressures to create modern sector employment opportunities to accommodate the migration from agriculture and the return of migrant workers can be expected to ease. The share of the labor force employed in private agriculture has fallen from 40 percent in 1971 to 24 percent in 1979. This is equivalent to an outflow of 6 percent per annum. Even if agricultural employment continues to decline as rapidly during the eighties, the absolute number of workers leaving agriculture each year will decline.

1.42 At the same time, the rapid outflow of surplus labor from private sector agriculture is enabling average labor productivity and hence average incomes to grew more quickly in this sector than in the rest of the economy. Migration from agriculture is likely to lead to further productivity gains in agriculture and should result in a continued narrowing in the income differential between agricultural and non-agricultural households. The level of demand for migrant workers is determined by the policies of the host countries. Barring a major European recession, it is unlikely that the demand for Yugoslav workers will fall markedly during the eighties. Consequently, the principal determinant of the rate of return of migrant workers will be the availability of jobs in Yugoslavia. Thus in the eighties, in contrast to the 1974-77 period when the return of migrants considerably aggravated domestic labor conditions, external migration is likely to have a more neutral impact on the domestic employment situation. The combined impact of the slowdown in the rate of labor force growth, the declining number of agricultural workers in the economy and the more stable demand conditions for migrant workers should together enable the economy to make the transition to a slower period of employment growth without precipitating an excessive increase in domestic unemployment.

1.43 An illustration of the possible developments which might occur in the Yugoslav labor market in the period up to 1990 is provided in Table 8. The projection suggests that even though the level of unemployment is unlikely to drop before 1985 the employment outlook for Yugoslavia is by

Table 8: LABOR FORCE PROJECTIONS 1979-90

	(Estimated) 1979	%	(Projected) 1985	%	(Projected) 1990	%
Total Labor Force (Assuming 0.02 percent growth)	9,360	100	9,516 /a	100	9,611	100
Social Sector Employment (Assuming 25 percent growth)	5,506	59	6,416	67	7,259	75
(of which industry)	(2,102)	(22)	(2,450)	26	(2,771)	
Private Sector Non-Agriculture (Assuming 3 percent growth)	386	4	451	5	534	6
Private Agriculture /b (Assuming 6 percent decline annually)	2,211	24	1,558	16	1,164	12
Migrant Work Force (Assuming 30,000 year return)	800	9	620	7	470	5
Active Labor Force	8,903	95	9,045	95	9,427	98
Unemployed /c	457	5	468	5	184	2
Impact on Number of Unemployed:						
(a) 2 percent social sector employment growth			+215		+413	
(b) 8 percent agricultural outflow			+164		+216	
(c) 3 percent agricultural outflow			-293		-433	
(d) If 50,000 migrants return annually			+120		+220	
(e) 6 percent increase in non-agricultural private sector employment			-97		-199	

/a Source: Sertic and Breznic (op. cit.).
/b 1979 estimate derived residually.
/c Estimated to be 60 percent of registered job-seekers.

no means bleak. If the economy can achieve the 2.5 percent rate of social sector employment growth envisaged for the 1981-85 plan period, this growth will be sufficient to generate a significant improvement in Yugoslavia's employment situation. The share of the labor force engaged in low productivity agriculture would decline by one third to 16 percent of the labor force. In addition, a return of 30,000 migrants per annum together with the

projected demographic increase in the labor force could also be accommodated. The share of social sector employment in the labor force would increase from 59 to 67 percent. By 1990, the social sector would account for 75 percent of the labor force and the numbers of unemployed would more than halve. The importance of external migration and private agriculture in the labor market would be substantially reduced.

1.44 Table 8 also indicates the impact on the numbers of unemployed of changing assumptions about the components of incremental labor supply (agricultural outflows and external migration) and demand (social sector employment and non-agricultural private sector employment). If the rate of agricultural outflow increases to 8 percent the numbers of unemployed would rise by a further 164,000 in 1985. On the other hand, a reduction in the agricultural outflow would make a substantial contribution to the alleviation of unemployment; unemployment would decline by 215,000 by 1985 if the agricultural outflow declined to 3 percent. Thus, agricultural policies which help raise productivity and incomes in the private sector could make an important contribution toward easing society's employment problems in the forthcoming plan 1981-85 period.

1.45 The projection assumes that 30,000 migrant workers will return annually or double the number returning in 1979. But, if the rate of reflux accelerates further, to 50,000 per annum, unemployment would rise by an additional 120,000 or roughly one percent during the next plan. The consequences of a smaller than projected rate of social sector employment increase would be more severe. If social sector employment growth declined to 2 percent unemployment would rise by an additional 215,000 to over 7 percent of the labor force. If the Yugoslavs fail to meet their employment growth targets in the social sector, the employment consequences would be serious. The non-agricultural private sector is expected to make a relatively modest contribution to employment growth during the next plan. Employment in this sector is projected to rise by 3 percent per annum. A 6 percent increase in the employment growth rate would, however, result in the creation of further 97,000 jobs in this sector.

1.46 As we have noted in section I.C of this report there are pronounced regional differences in the employment situation in Yugoslavia. These differences will be reinforced by regional variations in labor force growth during the eighties. Unless there is a significant increase in inter-republican migration, it is projected that the labor force will decline in some of the MDR while in the others it will rise relatively slowly. In the LDR, however, the labor force is expected to continue to increase at between 3 (Bosnia) and 15 (Kosovo) times the national rate. Demographic pressures will therefore serve to ease unemployment problems in the MDR while exacerbating the unemployment situation in the LDR. During the eighties, therefore, unemployment and underemployment problems will become increasingly concentrated in the LDR. At the same time the MDR may face relative labor shortages and rising labor costs in their economically developed centers. Yugoslavia will need to map out a strategy which will enable the economy to respond to this problem. A key element must be measures which will stimulate the relocation of labor intensive activities in the developed and labor short

regions of the country to the labor surplus and economically undeveloped regions. Each region within Yugoslavia has developed a set of instruments to encourage the industrialization of the less developed areas within each region. But the pace of interregional industrial mobility has, so far, been snaillike-only 0.6 percent of investment crossed republican and provincial boundaries in 1980. As we discuss in Section II, these efforts need to be stepped up in the future, so that the pattern of industrial development becomes more responsive to the regional characteristics of country's unemployment problems.

E. Industry in the 80's

1.47 Policymakers within Yugoslavia now recognize that its past pattern of economic development is no longer sustainable. The economy has achieved an impressive rate of overall economic growth in the face of mounting external difficulties; but it has become increasingly clear that the process of economic adjustment to the more turbulent conditions in the world economy can no longer be delayed. Yugoslav industry has been remarkably successful in reducing its import dependency during the seventies while recording a high average rate of growth. But the incentives given to industrial investment have generated a surge in the volume of industrial investment expenditures which has placed the whole economy under increasing strain. At the same time, Yugoslavia's industry has failed to meet the challenge of exporting in the more competitive conditions prevailing in international commodity markets.

1.48 The sharp increase in the price of oil in 1979 precipitated a major balance of payments crisis which confronted the government with the need for an urgent change in economic policy. During 1980 the government introduced a series of strict stabilization measures. The dinar was devalued by 30 percent and there was a sharp cutback in the growth of domestic demand. Exports of goods and services climbed by 8 percent while imports fell by 15 percent. As a result, the balance of payments deficit narrowed from $3.7 billion to $2.2 billion despite a continued worsening in Yugoslavia's terms of trade. Particular attention was paid to reducing the level of investment expenditures which was regarded as a serious source of instability in the economy. Low priority projects were postponed or abandoned and gross fixed investment was reduced by 1.5 percent. 1/ These measures were the initial phase of a longer term stabilization program. Over the course of the next 5-year plan (1981-85) the government aims to reduce the share of investment in social product from 34 to 30 percent. Yugoslavia's industry can make an important contribution to this goal by improving the efficiency with which it uses investable resources.

1.49 For the 1980's, Yugoslavia will have to focus on improving the rationality and efficiency of its industrial structure. The foreign exchange constraints facing the economy mean that it will have to develop more effective policies to promote efficient export industries. As the

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1/ These measures were, however, bought at the cost of a significant decline in the rate of economic growth which slowed from 7 to 3 percent. The rate of growth of industrial output fell from 8 to 4 percent.

events of the 70's demonstrate, a major increase in import substitution by itself does not constitute an adjustment strategy. Exports are vital. Yugoslavia will undoubtedly continue to develop import substituting industries, but as it progresses along the path, unless a careful evaluation of these investments is made, it will embark on activities which may lead to declining industrial efficiency. Consequently, Yugoslavia needs to create the conditions where individual industrial investment decisions are made which more accurately reflect the foreign exchange costs and benefits to the economy of employing resources in each activity. Inevitably this entails a reduction in the scope of the current level of investment subsidies and the implicit protection given to production for domestic or regional markets. Industry needs to graduate to a more competitive environment. Although this will cause inevitable transitional problems, the emphasis of industrial policy must shift toward fostering productivity growth. The balance of investment needs to be tilted in a direction which will enable the economy to reap the rewards of increased regional and sectoral specialization. The challenge facing industry in the 80's, therefore, is to make the transition from an essentially inward-oriented pattern of development (which characterized its growth in the 70's) to a more outward-oriented growth process that will make intraregional and international trade the mainstay of its future growth.

SECTION II

INDUSTRIAL PRODUCTIVITY: OBJECTIVES AND ISSUES

A. The Objectives and Mechanisms of the Self-Management System

2.1 The Preface to this report attempted to give the reader an understanding of the investment process as viewed by the enterprise. In Section I the focus was shifted to the national economy and especially the role of the industrial sector. It is the link between these two themes which forms the subject of this Section of the report. New investment by social sector enterprises is probably the most important means by which Yugoslavia achieves its national economic objectives. Because of the degree of political decentralization in Yugoslavia, account must also be taken of the objectives of each republic and province and indeed each commune within the republics and provinces. Even where objectives are common it is likely that the weights attached to them will differ between these different groupings of decision-makers. The self-management system has evolved as a response to the need to 'harmonise' the objectives of decentralized decision-makers. This harmonisation is carried out through formal procedures of consultation and agreement.

2.2 The way in which the system works may perhaps become clearer if we examine the specific objectives of each group of decision-makers and how they are harmonised in practice. The enterprise naturally gives the highest weight to increasing the personal incomes of its managers and workers. For reasons explained below this objective has become synonymous with undertaking new investment in the course of the past decade. 'Investment mania' is the term often used in Yugoslavia to describe the situation which has prevailed in

which enterprises have sought to invest amounts far in excess of the resources available for investment. Despite investment rates in industry exceeding 10 percent of GNP, which, as mentioned in Section I, are high by international standards, those responsible for allocating funds for investment have at times been faced with applications which represent in total double or more of the resources at their disposal. The mission visited twenty enterprises in six of Yugoslavia's republics and provinces. Of these all but one had project proposals, which they were promoting actively, to expand total capacity of the enterprise, in some cases by two or three times the existing level.

2.3 There are a number of reasons as to why new investment is so attractive to the enterprise. First, the availability of borrowed funds at an effective cost of capital well below the past actual and future expected rates of inflation increases the potential financial profitability of investment. Second, the implied social guarantee of floor incomes for enterprise workers, not very different from past actuals, and the assurance that jobs will not be lost in the event of a poor investment decision practically eliminates risk from the workers' viewpoint. Third, the practice of setting prices of products sold in the domestic market on a cost plus basis, and the protection of many items through trade restrictions, reduces risk from the managers' viewpoint. Fourth, since workers cannot be made redundant, if the enterprise as a whole is to capture the benefits of producing the same output through higher labor productivity it must invest in new capacity in order to re-deploy its workforce. Fifth, insofar as the new investment means additional hiring by the enterprise, preference is often given to family members of the existing workforce which can mean a quantum increase in household income, particularly in the LDR where unemployment is high.

2.4 There are also pressures for new investment from outside the enterprise however. Since investment proposals must originate with enterprises, unless there is a perfect identity of objectives between enterprises and other groups in the society, it is almost a sine qua non that the supply of investment projects must exceed the demand for resources to be allocated so as to take other objectives into account. These other objectives begin with the commune, the smallest political and administrative unit in the system. The commune is responsible for carrying out various social services which are paid for mainly through tax revenues related to personal incomes in social sector enterprises. The commune is therefore concerned to expand the volume of social sector employment within its area, either through the expansion of local enterprises, or through other enterprises setting up a new facility in the commune, or through other enterprises moving an existing facility to the commune. There are of course differences between communes. The large cities, for example, are attempting in some cases to persuade existing enterprises to move their labor force to other areas. In the LDR however, the pressures to expand employment within the commune are particularly strong since this allows private agriculturalists to maintain their farms while at the same time gaining substantially increased incomes, as well as housing and pensions, from work in the social sector.

2.5 At the level of republics and provinces the objectives depend somewhat on the stage of development. In the LDR the goal has been mainly to

expand new investment and employment as rapidly as possible. This has meant that the natural resources of the LDR should be exploited to the fullest extent and that enterprises should be developed to meet the needs of the domestic market of the particular republic and province. In the MDR with its more highly developed industrial structure and its labor shortages in some areas, the emphasis has been much more on large investment to promote higher levels of labor productivity, while shifting more labor-intensive activities to the less developed communes within the republic or province.

2.6 It is important to recognize that these are not the only objectives of each of these decision-making groups. These represent the primary objectives however which become the basic cost when they are asked to trade them off against objectives at the federal level. These federal objectives and their relative weights are changing over time, but in the late seventies certainly included the rapid growth of total output and employment, the maintenance of a healthy balance of payments situation, the development of the nation's energy resources, the achievement of more equal income levels between republics and provinces, and the evolution of a balanced industrial structure at an advanced level of technological development. The relative priority of these objectives is established through the consultative process.

2.7 There are various mechanisms which are used to translate the decisions taken through the republican and federal chambers of the economy into signals which impact on the formulation of investments by enterprises and the allocation of investment funds by the responsible agencies. The first of these is the process of consultation itself which enables each economic agent to make an input into broad policy formulation. The decisions which are taken are then formalised through a series of self-management agreements and, for major national policy issues, social compacts which in theory carry the force of law and of which the most important is the five-year Plan. In practice, social compacts have not been completely effective in ensuring the implementation of the Plan. The problem seems to have been that they are too broad, and the long list of priorities allows implementing agencies to trade off one objective against another. Where policies do not lend themselves to formal agreements, there is usually resort to mechanisms which operate through the incentive system. One of the most common of these is the provision of earmarked resources at subsidised interest rates. Thus large amounts of resources are transferred from the MDR to the LDR at very low interest rates through the Federal Fund, and each Republic provides special funds at subsidised rates to enterprises which locate in less developed communes. The objective of closing the balance of payments gap is being pursued through a requirement that each enterprise should pay for its foreign exchange needs through its foreign exchange earnings. The introduction of these mechanisms is also undertaken through the self-management process, but the distinction between agreements on objectives and those on mechanisms to achieve them is useful in demonstrating the difference in the way in which the Yugoslav Plan will be carried out as compared to the situation in a centrally planned economy like Romania where, for example, export and import targets would be established for each individual enterprise.

2.8 On balance the system worked well in the seventies. Growth was rapid, investment was high, and employment expanded at an impressive rate, particularly in social sector industry. In other areas however performance was mixed. The response to high energy prices and to the widening balance of

payments gap did not prove as timely or as effective as was needed. The perception of the problem and the actions needed at the federal level proved difficult to communicate to other decision-makers in the system. Communes and enterprises saw little to their own advantage in promoting exports for example. At the same time there was reluctance to utilise the kind of mechanisms which might have elicited the necessary response until it was clear to all that other avenues had been exhausted.

2.9 Partly as a consequence, Yugoslavia enters the eighties with overriding concerns about the balance of payments and the energy deficits. It must address these concerns at a time when the international economic environment, as explained earlier, is likely to make the actions needed still more difficult. The seventies was a decade of expansion. In the context of high investment little attention was paid to the question of the productivity of capital. If the achievement of other objectives meant some trade-offs in terms of efficiency, this was easily afforded within the large total volume of investment. It is the premise of the discussion that follows that this can no longer be the case. The Yugoslav authorities have already announced a sharp cut in investment over the next Plan period (1981-85). It is important that Yugoslavia achieves the maximum output from each unit of investment if it is to maintain adequate rates of economic growth and also achieve such objectives as reduced regional disparity, which remains critical to its national future.

2.10 The mission found broad agreement in Yugoslavia with the view that emphasis now needs to be placed on raising industrial productivity, and further that the existing policy mechanisms are not adequate to the achievement of that objective. Studies undertaken by institutes in Belgrade and Ljubljana on economic rates of return on past investments in industry have yielded results in the 3 percent to 10 percent range. Low rates of return may reflect poor project planning and design, delays in implementation or low levels of utilisation of the capacity which has been created. With regard to the planning and design of projects the evidence is that inefficiencies are economic rather than technical. It is in the choice of sub-sectors, products, production techniques and scale that investors are not getting the right signals particularly with regard to the relative prices of capital and labor. With inappropriate investment choices and very high levels of investment, operational efficiency has also suffered in certain cases. It is apparent that the self-management system will need to be strengthened if it is to deal with these problems effectively. Below we discuss a number of areas in which substantial productivity improvements could be achieved. They fall into two broad categories: first, the more effective use of the incentive system so as to help decision makers, at both the project formulation and the investment allocation stages, to a more explicit understanding of the trade-offs between higher productivity and other objectives, and second, improved institutional support, motivation and training for decision-makers to contribute to better quality decision-making.

B. Productivity Issues

2.11. Any discussion which is based on a sample of twenty out of the more than four thousand social sector manufacturing enterprises in Yugoslavia is necessarily impressionistic and suggestive rather than thorough and

conclusive. In addition the sample was intentionally biased towards labor-intensive subsectors (textiles, footwear, metal-working) in the less developed republics and Kosovo. Indeed the initial focus on the mission was to look at the kind of steps which might be taken to stimulate the development of such industry. In the course of the mission it became apparent however, that the problems facing such enterprises could not be solved in the context of selected industrial groups or republics but required attention at a broader policy level.

2.12. The interviews with these enterprises and various local and federal bodies left us with a series of questions: Is the present system of allocating foreign exchange promoting the right exports and substituting the right imports? Do low real interest rates bias allocation toward more capital-intensive activities and production techniques than the relative scarcity of capital resources would imply is appropriate? Are managers and workers being adequately trained and motivated for the task of raising productivity? Are policies to increase income in the LDR at a more rapid pace than in the MDR effective? Is the emphasis on equalizing value-added per capita between individual communes an appropriate one? Are these locational policies being carried out at the expense of higher productivity overall? Is the preference for up-to-date imported technology the right choice for Yugoslavia? Are policies for the promotion of small-scale and individual sector enterprise adequate to that task? In the succeeding paragraphs we have attempted to address these questions and, where we judge the policy framework to be ineffective to the task, to make suggestions for strengthening it.

(i) The Allocation of Foreign Exchange

2.13 Because of the shortages of foreign exchange in the past few years, various measures have been introduced to stimulate exports and induce enterprises to economize on imports. Prior to the devaluation of mid-1980 there was a combination of premia on certain types of exports, import duties and a system whereby enterprises needing foreign exchange had either to earn it or enter into agreements with enterprises with surpluses to obtain access to it. Such agreements were co-ordinated through communities of interest (SIZ) for foreign economic relations at the level of the republic and province. Since devaluation, while export premia and import duties have been reduced, the system of exchange allocation, if anything, has been made more rigid and each enterprise is now expected to earn back its foreign exchange needs. This system, whereby the 'balance of payments' of the individual enterprise is the consideration, has both benefits and costs. On the positive side it provides greater certainty and ease of control over the size of the foreign exchange deficit. It has also created an interest, at the enterprise level, in marketing output abroad. Most enterprises visited by the mission had sent their managers abroad in the past two years to attend trade fairs. Some had entered into new agreements with one of the large trading enterprises. In one case the manager of a small firm had approached other enterprises to enter into joint production in order to win an order which was substantially beyond the capacity of the first firm. These benefits are real and substantial, but so are the costs. From a national economic point of view

Yugoslavia should be exporting (and indeed producing) those products for which the domestic resource cost of earning a unit of foreign exchange is lowest. This would be promoted by a unified foreign exchange market. It is easy to demonstrate that with the present system, Yugoslavia is 'spending' more domestic resources than necessary in order to earn the foreign exchange to cover its import requirements. By increasing the exports of enterprises with lower domestic resource costs and reducing exports of other enterprises, the total domestic resource cost of exporting could be lowered 1/. The cases below illustrate some aspects of this.

2.14 Obod, a refrigerator manufacturer in Cetinje in Montenegro produces a small refrigerator under license from Bauknecht a German firm. These refrigerators sell retail on the domestic market for 7,000 dinars. Of this amount 1,400 dinars is the marketing margin and 1,400 dinars are paid in tax, leaving Obod with 4,200 dinars for each small refrigerator it sells. This still leaves a reasonable profit however when compared to the production cost of 3,500 dinars. Obod has a buy back arrangement with Bauknecht however, which enables it to cover the servicing on the suppliers' credits it received when purchasing the equipment for the plant and also the imported components of the machine. For each machine sent to Bauknecht, Obod receives the equivalent of 2,500 dinars, a loss of 1,000 dinars per refrigerator. (The loss was of course even larger prior to the mid-1980 devaluation.) Between 80,000 and 100,000 of these units are exported to Bauknecht.

2.15 Obviously it is still in Obod's interest to export as profitably as possible and indeed the enterprise has a plan to increase its output of large refrigerators which are both more profitable on the domestic market and roughly break even on the export market. The point however, is not whether Obod should be exporting at less of a loss, but whether Obod should be exporting at all (or for that matter, producing at all). At the other extreme is the Avala shoe factory, an extremely profitable, well-run enterprise in Novi Sad in Vojvodina. On domestic sales Avala gets about 480 dinars per pair of shoes sold. On export sales the enterprise receives about 440 dinars (this includes a 9 percent export premium). Since the domestic sales are more attractive and there is no problem for the enterprise to market its output within the country, exports, though profitable for the enterprise, till now have not been more than 10 percent of total output which is all that is required to cover the limited import costs of both Avala and its raw material suppliers. Another example is provided by a small leather goods manufacturing enterprise (purses, attache cases etc.) in Sopod in Serbia. In this case it would be possible to increase exports if the enterprise was able to secure

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1/ The arguments above are derived under static assumptions. These are however the major arguments which relate narrowly to the system of enterprise-level foreign exchange allocations. Any broadening of the argument would require an examination of issues such as the attractiveness of production for the domestic market relative to the export market, and the system of relative price determination in Yugoslavia. Aspects of these have been dealt with in other World Bank reports.

foreign exchange to import certain items such as high quality buckles and locks, but they are unable to do so because they do not export enough in the first place to earn the necessary foreign exchange.

2.16 The solution to this is obviously to price foreign exchange at levels which permit liberalized allocation and thus enable efficient exporters to expand their overseas sales while firms which should not be exporting are relieved of the necessity. In the short term a practical way to approach this might be to progressively reduce the degree of coverage of their foreign exchange needs which enterprises must earn directly. The proportion might for example be reduced to 75 percent at the initial stage. If this results in balance of payments pressure then it would imply a need for exchange rate adjustment to raise the returns to exports and the cost of imports 1/. It is essential that the market for foreign exchange be revived, and that it operate across products and regions. The proposal would represent a first step in that direction.

2.17 It is important to recognise that this is not just a question of trade but of the productive structure as a whole. The incentive system should be providing signals to direct investors into the areas where Yugoslavia has a long-term comparative advantage. This is not merely a matter of foreign exchange allocation, but also applies to such questions as factor and product pricing, domestic marketing arrangements and so on. It would be quite wrong to conclude from the above discussion for example that Yugoslavia's long-term comparative advantage lies in shoes rather than refrigerators. With four refrigerator producers, each in a different republic, none is able to capture the economies of scale which might follow from a larger market share. High levels of domestic resource costs indicate that there are significant problems of inefficiency in the sub-sector or industry concerned. The solution lies in a wide range of policies and institutional arrangements.

(ii) The Pricing of Capital

2.18 During the past 1976-80 plan interest rates did not play an active role as a policy instrument for allocating investable resources. Nominal interest rates were fixed at the beginning of the plan period and have fluctuated in real terms with movements in inflation. Until recently, the general view in Yugoslavia has been that interest rates should not play an active role in influencing investment decisions. Rather, it was felt that if interest rates were to become a binding constraint on investment planning, this would preempt the dominant role of social planning and group consensus in determining investment allocation. It was also argued that situations could easily arise where an investment might meet social standards of efficiency, but could not support the financial burden of positive real interest rates. The general view has been that as a practical matter it is easier to respond to these situations by setting interest rates at affordable levels (i.e. negative in real terms) rather than designing more complex forms of subsidy intervention. Within Yugoslavia it is now becoming clearer that interest rates can play a limited role in the process of investment allocation without undermining

1/ A variant of this, which is being applied in Slovenia, is to permit exporters to retain a uniform percentage of export earnings (65% in this case) which can be used either for their own imports or 'traded' with other enterprises.

the system of social planning. For example, it is recognized that a rise in interest rates could have a significant impact in reducing the level of investment in the non-priority sectors of the economy and thereby bring the total value of investment more closely in line with the savings capacity of the economy. Some economists within Yugoslavia have also suggested that the discipline of more realistic interest rates could have a beneficial effect in the priority sectors of the economy by encouraging a more economical approach to investment in these sectors.

2.19 In the past decade inflation in Yugoslavia, as measured by the retail price index, has averaged 16 percent per annum. The producer price index has gone up somewhat more slowly, at a rate of 13 percent per annum. 1/ In the period 1976-79 these rates were 13 percent and 9 percent respectively, with a sharp rise again in 1980. By comparison interest rates on various forms of domestic borrowing ranged between 5 percent and 10 percent. This is shown in Table 9 below.

Table 9: A COMPARISON OF RATES OF INFLATION AND INTEREST

	1966-70	1971-75	1976-79
Retail Price Index	9.5	18.4	13.4
Producer Price Index	5.0	16.5	8.9
Average Interest Rate on Total Credit	4.0	5.0	4.8 /a
Medium and Long-Term Loans financed from Banks	8.0	9.2	9.3
Medium and Long-term Loans Financed by Federal Fund for LDR	..	4.0	5.5-6.5
Short-Term Loans	8.0	9.8	9.6
One-year Time Deposits of social Sector Enterprises	..	1-11	2-6 /b

/a Average reflects actual interest paid on total credit outstanding.

/b 1977-78.

2.20 Enterprises were thus able to obtain dinar loans at interest rates which have been substantially negative in real terms during the past decade. In addition, many of the republics offer special incentive schemes based on the sector or the location of the investment which bring the cost

1/ The difference is not quite clear, but may be accounted for by higher rates of taxation and/or lower subsidies on final consumer goods, and price controls on basic raw materials which have a heavier weight in the producer price index.

below the nominal rate. 1/ A good example of what this might mean in practice is provided by the financial plan for a reconstruction project for the Dundjerski work organization, a loss-making enterprise producing canned foods in the Morava region of Serbia which is regarded as one of the less developed parts of that republic. Of the fixed assets 25 percent will be provided from the Republican Fund for Undeveloped regions in Serbia. Repayment is over 10 years and the interest rate is 5 percent. The balance will be obtained from commercial bank loans with repayment also over 10 years and the interest rate at 9 percent. In addition 10 year loans are provided for working capital which is quite a substantial amount in the case of this enterprise. Of the working capital 30 percent will be from the Republican Fund and the balance from commercial bank loans on exactly the same terms as for fixed assets. The result is an effective interest rate of 7.4 percent on the Dundjerski enterprise's borrowed funds.

2.21 Low interest rates on domestically borrowed funds increase the financial profitability of enterprises which have already carried out large expansion programs and thus the funds which they can contribute to further investment. It has been easy for managers in such enterprises to show high profit margins even at relatively low levels of capital and labor productivity. Without a new investment project, an enterprise such as Dundjerski which is using old equipment with high costs of maintenance and spares may experience difficulties in paying its workforce at the going wage rate, which has been rising by 3 to 5 percent a year in real terms. An enterprise which is investing in new plant with a much smaller work force pays interest at say 8 percent a year at a time when product prices may be rising at say 15 percent a year. Even if Dundjerski could raise the productivity of its work force it cannot reduce their number except through attrition, so this avenue to higher income is not available. The enterprise with new plant can often move workers from an older plant within the enterprise to its new facility and thus improve its profitability on both the new and the old activity. The scales of profit are heavily weighted in favor of the newer, larger, more capital-intensive enterprises. The higher profitability of enterprises that benefit from low interest rates comes at the expense of other enterprises and personal or institutional savers.

2.22 It is not just past profitability which is significant however, but also future profitability. It is clear that enterprise managers in Yugoslavia expect rates of inflation to remain well above the nominal interest rate level in the near future. It is also obvious that enterprises which have invested heavily in recent years have been able to pay their workers higher and rising net incomes than others. What is not clear

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1/ Unlike many other countries where the effective cost of credit is often higher than nominal rates through the imposition of special charges or compulsory deposit requirements, in Yugoslavia it is probably lower as a consequence of the refunding of banking profits to the borrowing enterprises and the practice of blending concessionary funds with regular funds to provide a lower average rate to the borrower.

is how explicit this calculation is when it comes down to preparing and presenting projects. The approach used in Yugoslavia seems to be a cash flow calculation which uses constant prices of the year in which the calculation is done, but then tries to insure that the project can cover all its financial obligations including interest payments. If the projection is not done in current prices, nominal interest rates become real, and the fact that in practice they are likely to be lower than the rate of inflation is not an explicit consideration. It would be astonishing, however, if the general awareness of the potential gains from negative real interest rates did not influence the volume and content of investment proposals put forward by the enterprises.

2.23 It is not clear whether in the final outcome, the level of investment carried out is higher overall than it might otherwise be as a consequence of the low level of interest rates. As far as enterprise investment is concerned the limits on new investment tend to be set by the availability of borrowed funds. If interest rates were higher, presumably more funds would be available for investment through the financial intermediaries. It would be the pattern of investment which would change rather than the overall level since firms which had more profitable investments would invest more at the expense of other firms. The overall level of enterprise savings might be raised however, by establishing a firmer policy on linking the enterprise's own contribution to new investment with its access to borrowed funds. The link is very weak at present, somewhat stronger in the MDR and for the non-priority sectors, but almost non-existent in the LDR where there is greater access to borrowed funds relative to the demand from enterprises.

2.24 The subject of interest rates in Yugoslavia has been dealt with at considerable length in a number of studies in order to analyze the effects of low or negative real interest rates. We cannot duplicate the thoroughness of that analysis here. With negative real interest rates and consequently a great demand for investable funds relative to the supply of such funds, the responsibility for allocation falls on the various agents of the self-management system; the enterprises themselves, the banks, the communal, republican and federal socio-political bodies. The market determination of interest rates would indeed lead to projects being selected on the basis of profitability, but it would not insure that the broader needs of the community are addressed. A significant increase in nominal interest rates (i.e. at least three percentage points) and even more important, the rationalization or elimination of the many subsidized interest rates, would narrow down the universe of possible investments to a more manageable number and enable a careful and studied selection to be made by the various self-managing bodies with consequent benefits to both efficient production and broader social objectives.

(iii) The Training and Motivation of Managers

2.25 As explained in Section I, attempting to measure the performance of a country's industrial sector either by comparison with other countries or over time is a hazardous and often inconclusive procedure. The analysis

in paras. 1.22 to 1.24 allows comparison between the various republics and provinces of Yugoslavia however. The gap between total factor productivity in Slovenia and the other republics is evidence of the potential gains to the country as a whole from improving X-efficiency, defined for this purpose as the level of productivity of a given combined unit of labor and capital. In the Yugoslav context the most important explanation for regional variations relates to the quality of managerial and work skills, since the incentive system and the institutional framework are basically the same for all republics.

2.26 As in any country there is a wide variation in the quality of management in Yugoslavia and the mission met with individuals of outstanding ability. It is difficult to generalize about the overall quality of management from relatively brief enterprise visits. For example, there was clear evidence in many enterprises of capacity standing idle. Yet no manager admitted to a level of capacity utilization of less than 90 percent. It is invidious to cite individual cases, but we have little option if a report such as this is to carry conviction. The idle equipment at a metal-working plant in Montenegro; the imbalance in the capacity of various parts of the production process at a steel works in Macedonia; the maintenance shop of a shock absorber factory in Kosovo where elaborate modern equipment cannot be properly utilized because of inadequate numbers of trained workers; the serious financial difficulties of a synthetic fiber plant in Kosovo; these and other examples suggest that managerial capacity, especially in the LDR, deserves attention in any study of the ways in which productivity can be raised.

2.27 University degree training for managers is available only at the universities of Belgrade and Ljubljana. The faculty of organizational sciences of the University of Belgrade for example has 3,000 full-time students and 9,000 part-time students spread over the four years of its program. Courses give good coverage of the operational research and systems analysis field, but are less adequate in topics such as marketing and financial planning. The graduates are thus more attractive to the very large enterprises, like the railways for example, which need specialists in fields such as operations research, than to smaller enterprises seeking more rounded managerial personnel. For the most part managers in Yugoslavia are trained through short courses which are offered by various agencies. While these seem to offer good basic training in management, there appear to be some gaps in the system. First, there is a need to extend formal managerial training to the LDR and to give wider coverage to issues such as marketing and financial planning. Second, mechanisms should be developed for renewing the skills of the more experienced managers and enabling them to exchange ideas with other managers in their branch of industry. The various industry branch associations could play a greater role in this regard.

2.28 In addition to training of managers it may be necessary to consider a more comprehensive support system for enterprises which appear to be running into serious difficulties, or even enterprises which are not in their own view realizing their full productive potential. There are a few

specialized consultancy firms in Yugoslavia such as the Bureau for Expert Studies and the Institute for Organization and Management in Belgrade, but the mission was told that enterprises do not consult these until problems have reached crisis proportions. This would seem to be an area where the Associated Banks might play a useful role by identifying likely problems at an early stage and referring the enterprise to expert consultants for review of their programs and practices. This would require a major strengthening of the supervision capabilities of the Associated Banks and an improvement in the flow of information to them from enterprises and basic banks. The case of the synthetic fiber plant referred to above is an example of a situation where the Associated Bank might play a constructive role in guiding the enterprise to seek appropriate technical assistance. The enterprise just breaks even at present. It is highly capital-intensive. The average workers' income is only 4,500 dinars, well below the Yugoslav average for this branch of industry. The enterprise's response to the problems it faces now and the problems it is likely to face in the future is, predictably, a large new investment project to produce certain intermediate inputs which are in considerable oversupply on world markets. This seems the kind of situation which would benefit from a careful study both to evaluate existing production and the advisability of the proposed project. The Associated Bank is well placed to make a judgement on the need for such a study and to urge the enterprise to seek assistance. Enterprises may be put off by the cost of such assistance, but given the interests of both the banks and the socio-political bodies in the viability of the enterprise, it should be possible to agree to some cost-sharing formula.

2.29 The windfall profit which has accrued to many enterprises in Yugoslavia as a result of the high rates of inflation relative to nominal interest rates means that large profits cannot be taken as a proxy for good management. 1/ It is a safe bet that a good deal of pressure has been taken off management by the easy financial profitability of the past decade. This should not be the case in the eighties. The impact of good management was eloquently brought home by a comparison of two enterprises; Kosuta footwear in Cetinje and Avala footwear in Novi Sad. By coincidence the present manager of Avala was formerly the technical director of Kosuta (he comes from Montenegro) and indeed gave up part of his annual vacation last year to assist Kosuta. The average income in Avala is nearly 40 percent higher than in Kosuta. What is even more striking is the atmosphere however. Avala has a very attractive work environment with excellent lighting and a row of green plants running down the center of the workshop. The production was planned in a way which made it possible to identify each worker's output separately and provide incentives accordingly. Yet Avala was not by any means a capital intensive unit. There were numerous parts of the production process which could be mechanized at some future time.

1/ The obverse may well be true however, i.e. that an enterprise with substantial past borrowing which is making losses has been poorly managed.

2.30 Kosuta by contrast is a traditional footwear factory operating at about the branch average in terms of productivity. The crisp atmosphere of Avala is missing here. This reflects in part the peeling plaster on the factory walls and older machinery, but also the much more casual attitude of the workforce. We asked the manager of Avala what he would do to upgrade the productive process at Kosuta and in his view it required a team of experts working for an extended period to change the work sequence, introduce new machinery and adopt an appropriate incentive system. There is no way in the present set-up for that to happen, yet these average enterprises are not competitive in overseas markets and indeed are having a rough time in the highly competitive Yugoslav footwear market (Avala by contrast plans to increase production in the near future through an additional shift). The response is to invest in a new line - rubber products in this case, in the hope that this might prove a growth point for the enterprise. It is critical to break the psychology which makes new investment the stock managerial response to any problem which the enterprise faces.

2.31 The complexity and importance of management seems to be underestimated in Yugoslavia at present. Perhaps this is a consequence of self-management itself and the concept that in principle any worker could be elected to a managerial position. In practice this is not what happens. Managers are drawn from an informal managerial cadre at the junior executive level of enterprises. Most of the managers with whom the mission met had university degrees often of a technical nature. Concern about creating a class of technocrats has perhaps muted both the positive and negative incentives to good management. On the positive side managerial incomes rarely reflect their critical role, while on the negative side it often takes little more than a good personal relationship with the workforce for the manager to retain his position. There seems little focus in the Yugoslav system on evaluation of managerial performance. An effective manager is too often seen as one who can steer a new investment through the financial and planning system, not as someone who ensures high levels of operational efficiency. It is left to the workers in the enterprise to react to such problems as low capacity utilization or lagging personal incomes. The Associated Banks which are in a good position to size up the quality of managers do not seem to bring explicitly into the question of providing resources whether the enterprise has managers of the experience and ability needed to make the project a success. Managers must be better trained at all stages of their career and their careers ought to be much more diversified. There could perhaps be more mobility from junior management positions in one enterprise to another and thus more opportunity for exchange of ideas and learning from others. There should be more exchange of managerial personnel between enterprises. And finally managers must have access to specialized managerial support services in the economic and commercial areas, and not just in technical fields as is mostly the case at present.

(iv) The Training and Motivation of Workers

2.32 There has been considerable public discussion in Yugoslavia recently of the subject of worker motivation. The mission's perceptions are inevitably mainly second-hand. The subject of motivation of workers is not really separable from that of the quality of management. In enterprises where managers have been innovative, worker productivity and morale

is high. What has become apparent however, is that self-management by itself provides no guarantee of a motivated work-force. The self-management system provides the potential for a workforce which is committed to the enterprise and identifies its own future with that of the enterprise. At its best, with a first-rate manager, this is the result. At its worst the workforce regards the enterprise as a job with lifetime security.

2.33 Worker motivation is normally the product of both positive and negative incentives. On the negative side the most significant is the possible loss of a job. In theory workers in Yugoslavia can lose their jobs (a) if the enterprise is liquidated, (b) if they are sent to prison for more than six months, or (c) if they make important errors in their field of expertise. In practice even these limited situations do not lead to many dismissals, since liquidation in Yugoslavia usually takes the form of the absorption of a loss-making enterprise into a more successful one, in which case the new enterprise or the commune will find new jobs for the workers. Absenteeism is not grounds for dismissal and this has become a very important contributor to productivity losses especially in the less developed republics and Kosovo where the potential loss to the worker in lower income in the enterprise may be more than compensated through his or her gain in income from private agriculture during key seasons of the year. The social loss from absenteeism may outweigh the social gain from higher agricultural output however, since other operations of the enterprise may be jeopardized by the worker's absence. In some enterprises managers have responded by offering bonuses to workers with good attendance records.

2.34 The other side of the coin from dismissal is the positive motivation which can be provided through achieving higher productivity, skill levels or managerial positions. The effect of this is also somewhat lessened in Yugoslavia because variations in income levels within enterprises as a consequence of higher skills or management positions are not very significant. The differences between enterprises and between industry groups are much more important. In theory the system now allows for substantial variation in income within enterprises. Until 1977 there was a maximum income level of four to five times the average within the enterprise. This has been eliminated (except in Bosnia where there is a legal maximum for non-productive activities). If managers wish to introduce systems of individual incentives so as to relate personal incomes directly to productivity, based for example on piece work, they require the agreement of the Workers' Council. In the case of Avala, management was successful in getting this agreement, but by and large there is a tendency to minimize the differences between those doing similar types of work within the BOAL. The feeling among most of the managers with whom the mission spoke was that both differences based on productivity in the same line of work and those based on the premium attached to technical and professional skills within enterprises are too narrow and need to be widened. On the other hand there was the sentiment that the differentials between similar kinds of work in different enterprises or industrial branches are too wide and should be narrowed. They create a sense among

workers that income levels are essentially out of their control and simply reflect the luck of the draw as to which enterprise they were able to get a job in, and how the market for that enterprise's products has evolved. The minimum income is roughly 50-55 percent of the average personal income in the republic or province during the previous year. There are proposals at present to raise this to 70 percent. In practice enterprises usually pay more than the minimum even if they are making losses, and often regardless of the productivity of the worker as long as he or she was not absent without proper cause.

2.35 The story of the worker who says 'You cannot pay me as little as I can work' has gained wide currency in Yugoslavia. At a time when enterprises in both the East and West are turning to increased worker participation as an effective incentive and when there is great interest in the Japanese system of worker-management relations which has certain features in common with Yugoslavia, it is somewhat surprising to find the self-management system itself under this kind of stress. It is our view that the self-management system can provide a unique degree of dignity and motivation for enterprise workers but that it still requires good management and proper incentives to do so. In the absence of quality management, workers' meetings can become rituals in which the workers 'listen and applaud'. The manager who told us that the worker is not 'yet an adequate decision-maker' may have been providing more insight into his own managerial abilities than the need for more worker education. In the absence of incentives which are fair and accessible to all, the worker's objective may well be to achieve the most pay for the least work. Yugoslavia has demonstrated its capacity to innovate in these areas in the past, and will doubtless do so again. Among the possibilities likely to be considered are separating out the 'fixed' element in salary which should be standardized according to skills and professions, and the variable incentive element which would reflect individual productivity, and the introduction of dismissal for persistent absenteeism without cause.

(v) Location within Republics and Provinces

2.36 The objective of industrial decentralization has much to commend it. On the one hand it may avoid too much concentration of population in particular urban centres with very high associated infrastructure costs and the human costs of slums and squatters' settlements. On the other hand it may promote higher income levels in depressed rural areas and provide alternative employment opportunities for the younger, better-educated sections of the population within their own communities. The externalities are not all positive however. Decentralised industries may require costly new infrastructure, may pollute the countryside, and may divert the energies of the community away from the potentials of agricultural development. In addition the development of small-scale industry through sub-contracting to larger enterprises, and artisanal activities, often requires a certain degree of concentration to provide a sufficiently large market. There are few countries in which the goal of industrial decentralization has been given more weight than in Yugoslavia. Yugoslavia's overall record, with respect to equality of income and of

meeting the basic needs of its population, is an excellent one. This is particularly the case within each republic and province. Given this record and the new set of weights which apply to various objectives in the eighties, a more careful scrutiny of the social costs and benefits of decentralization seems appropriate.

2.37 The commune of Sopod is a thirty minute drive from Belgrade. It has 20,000 inhabitants and is regarded as one of the less developed communes in the Belgrade region. As a result, enterprises which invest in facilities in the commune are entitled to loans from a special earmarked fund at subsidized interest rates. The visitor would be hard put to explain what makes Sopod less developed however. It is a charming rural landscape with substantial and often very attractive houses, some of them the second homes of Belgrade residents. There are a large number of private farmers in the area. The reason Sopod is labelled less developed is that value added per inhabitant of the commune is only 70 percent of the Serbian average and 43 percent of the Belgrade average. The reason for that in turn is that only 1,350 people are employed in the social sector in Sopod. However, of the 20,000 people in Sopod 2,500 or 12.5 percent are employed in Belgrade. They are included among the inhabitants but their incomes are not included as part of the value-added. If they are assumed to earn at the average of Belgrade, then Sopod's income per inhabitant rises to the Serbian average.

2.38 The republics and provinces in Yugoslavia are pursuing an aggressive policy of equalizing value-added in the various communes. Every republic has a special fund or special preferences for investment in the less-developed communes. The communes court large enterprises to persuade them to re-locate and often provide attractive incentives through inexpensive land for facilities and housing. In the case of Sopod for example, approaches were made to the companies which use labor from the Sopod area to open units in the commune. The communal authorities are presently negotiating with the 21st May enterprise in Belgrade to open a plant in Sopod to produce energy efficient motors. It would employ over 1,000 people. The commune will provide the company with seven hectares of land at a cost of 10 million dinars to be taken from the reserve funds of the commune. A new school has been set up in the commune, oriented towards providing training in foundry work for high school students, with evening classes for adults as well. In addition the company will be eligible for special incentives from the coordinating body for the Belgrade region. Even without these incentives, however, many enterprises in the large cities are attempting to move some of their operations to less costly locations. One manager suggested that costs in Belgrade were 40 percent higher overall than they might be in the smaller towns in the south of Serbia for example - the difference being in the higher cost of housing, land and infrastructure in the Belgrade area.

2.39 The pressures to persuade enterprises to locate in the commune derive from two sources. First, with the decentralisation of responsibility for many basic services to the commune, tax revenues derived from new enterprises provide resources to expand such services. Second

there is the prospect of additional social sector employment. The new plants which are being set up in Sopod will involve a good deal of re-location but they also require additional labor which will be recruited from the commune. At present there are 725 job-seekers in Sopod, 390 of whom are unskilled. Many of these are active in private agriculture at present. If an enterprise locates in the commune these job-seekers will find full-time employment while being able to continue with their farming on a part-time basis. Although some fall in farm income is likely it will be more than compensated by the new social sector income. Where workers are already employed, the new enterprises will provide openings for their spouses or children. In addition they will provide potential access to new housing, even if the family already has a house, and pensions. For these reasons a social sector job is very attractive even to a family which already has a good income which is in part derived from private agriculture.

2.40 The weight attached to the objective of equalizing value-added per capita between communes within each republic and province is a consequence of the degree of political decentralization in the Yugoslav system which permits, in the words of one observer, 'the smallest commune to dictate to the largest enterprise.' From the point of view of a commune with less than average social sector employment it is quite understandable that investment in new capacity is seen as the route to increase the income of the local inhabitants, to provision of better social services, and to prevent further migration to the urban or coastal areas of the country. And in many respects this emphasis is a positive force. There are sound economic reasons for many enterprises to relocate away from crowded cities with overburdened infrastructure, and many of the communes, mainly in the LDR, are not as well-off as Sopod. There are genuine income differentials which can best be addressed by new investment in industry.

2.41 The costs of this policy have not been explicitly recognized in Yugoslavia however. First the attention which is being given to equalizing communal value-added within regions is sometimes at the expense of the more important objective of greater income equality between regions. Croatia for example now has incentives for its enterprises to set up facilities in less developed communes which are far more attractive than the incentive to locate in Kosovo for example. It seems necessary at the very least to offer the same incentives to MDR enterprises to invest in the LDR as to invest within their own republic or province. Second the pressures on enterprises do not always result in those units being set up in the least developed communes which would derive the greatest economic advantage or suffer the least economic cost from doing so. It may simply be an enterprise which cannot obtain the funds to expand unless it agrees to locate a factory in such a commune, and thus gains access to the special funds earmarked for this purpose. Such funds should be limited to the very poorest communes, and in other areas substituted by incentives which lead enterprises to reach the location decision on the basis of efficiency criteria. A third factor is the apparent lack of any relationship of the push to spread out industrial location and the longer term outlook for demographic development and land-use. There are mountainous regions where population can only be retained in the long run at very high cost. There

are rich agricultural areas where industrial expansion may result in private farming becoming increasingly a part-time occupation with low levels of productivity and a resulting loss to the economy as a whole. Finally the environmental impact of large-scale industrial enterprises on the countryside also needs to be studied.

(vi) Productivity Differences between Republics and Provinces

2.42 The analysis of Section I provides a clear indication of the lower productivity levels in the LDR by comparison with the MDR, and it is readily apparent from visits to enterprises in various parts of the country. This hardly comes as a surprise, the MDR have an industrial tradition and an ample supply of skilled managerial and technical abilities. What the LDR have on the other hand is unskilled labor. Over time one would expect the more labor-intensive industries to gravitate towards the LDR whereas the capital-intensive and technology-intensive industries would expand in the MDR. 1/ In practice this has not happened. While labor-intensive industries have expanded somewhat faster in the LDR than in the MDR, since the base of production is so much higher in the latter it still means that in the past five years the major share of the new investment in such enterprises took place in the MDR. The consequence has been that in order to promote the rates of growth of social sector industry which they need to grow more rapidly than the Yugoslav average, the LDR have invested very heavily in capital-intensive industry. In some cases this has been a reasonable choice reflecting downstream development of their raw materials. But in other cases their comparative advantage is doubtful and such investment may represent a considerable reduction in the return to investment of the country as a whole.

2.43 Why has there not been a more rapid shift of labor-intensive production towards the LDR? It has often been argued that the system does not allow the labor cost advantages of the LDR to reflect themselves in practice because of the establishment of national minimum wages and the tendency to base personal incomes at the enterprise level on national averages for each industry branch. The mission found however, that labor cost differentials were quite considerable. Managers in Belgrade for example judged their costs to be double those in Kosovo. Furthermore Kosovo retains its labor cost advantage even by comparison with the less developed parts of Serbia. The relative costs of housing are an important component of this advantage which is not readily apparent from the direct comparison of personal income. The problems facing the expansion of labor-intensive enterprises in the LDR are numerous and complex. Their significance for the long-term development of Yugoslav industry merits a full discussion, however.

2.44 First there is the problem of creating a new enterprise for an activity which may not have been carried out in the LDR previously.

1/ As discussed in Section I tne option of increased labor mobility is limited in the Yugoslav political context.

Industrial expansion in Yugoslavia comes through larger capacity or diversification along the lines of the enterprise's own experience. It is unusual for an enterprise to branch out in a line of activity unrelated to its major purposes. When a section of a printing enterprise in Cetinje wanted to expand its activities to include production of adhesive labels, their proposal was rejected by the Workers' Council. The unit had to take the risky step of breaking away from the parent enterprise and forming a new Work Organization, Obod Gennex, in order to carry out the proposed expansion. Until quite recently, the LDR have simply not had the diversified industrial base which would have permitted very rapid expansion of labor-intensive activities through the expansion of existing enterprises. An exception which might be mentioned is the device of the Complex Organization of Associated Labor (COAL), a conglomerate which invests in a varied range of products. Unis in Bosnia is an example of such an entity. While there is no evidence that Unis has made a contribution to a more labor-intensive output structure than otherwise, the COAL is a mechanism which could be used for this purpose given the greater flexibility it has.

2.45 Second there is the problem of market access. Producers of final products must market them either through their own outlets or through large marketing enterprises. If it is a matter of setting up its own shops then the enterprise is dependent on communal authorities for permission to do so. Given the unusually close relationship in Yugoslavia between the socio-political authorities and the enterprises, there is a tendency to protect the market of local producers. Similarly a marketing enterprise may receive permission to set up a shop on the basis of stocking products of local producers. Since final goods figure strongly among the list of labor-intensive products, the LDR producers may find themselves confined to their local market which is of course much smaller than in the MDR, and even if it is growing more rapidly in percentage terms is still expanding less than in the MDR in absolute terms.

2.46 Third is the problem of acquiring suitable management. At this point in time the restricted market access mentioned above may even work in the LDR's favor since their lower productivity and more limited marketing experience would probably make it difficult for many enterprises to survive without the protected local market. The key to higher LDR productivity and improved marketing is the capacity of their enterprises to hire and retain good managers. This subject has been dealt with earlier, but in this context some additional points are worth noting. The LDR need the best managers but are in the worst position to attract them. They must often offer financial rewards and fringe benefits far beyond what would be required in the MDR. Even their own good managers tend to get drawn away to other areas, partly as a consequence of the attractiveness of living in the coastal areas and the large inland cities. In the LDR itself preference may be given to the local man who has risen through the ranks of the enterprise rather than look for the best in the country as a whole. Unfortunately there is often a premium on the political skills of the senior executive in securing access to markets and investment funds for the enterprise. This makes local background virtually indispensable. However, even a first-rate manager in the LDR, and there are some of the highest

quality, does not have the back-up access to technical advice, knowledge of how the market is evolving and in-service training which would be available in some parts of the MDR.

2.47 It is apparent that many of these problems could be resolved if an established MDR enterprise invests in the LDR, providing its subsidiary with production experience, market channels and managerial assistance in the process. About three years ago added efforts were made to promote joint ventures between MDR and LDR enterprises. The results so far have been disappointing, but these are still early days and it may be too soon to judge the success of this approach. The economic forces are there. Beko, a large garment manufacturer, with its main production in Belgrade, is finding that production costs for this kind of activity are making it less and less competitive. As a result they propose to reduce their output in Belgrade and locate new units in the LDR. The reduction in Belgrade will be achieved through normal attrition (about 150 workers a year out of the total employment of 5,500). Workers in Belgrade will be moved into the higher technology parts of the production process, such as the new computerised cutting facility which Beko recently introduced which reduced labor requirements for cutting from 430 to 30. Despite the obvious incentive however the mission encountered other enterprises and local representatives in both the LDR and MDR who stated quite flatly that they had no interest in joint ventures. In the LDR there is an unwillingness to concede that this 'senior partner' role of the MDR enterprise is needed. In the MDR there are few enterprises which can, like Beko, persuade their workers that helping someone else in a distant LDR to expand may be preferable to the enterprise's own expansion. There are no direct returns to the senior partner role. And even though in the short run there may be advantages through guaranteed access to intermediate inputs, or entry to the LDR market, in the longer run the MDR firm cannot control the operations or policies of its LDR partner so that these advantages may be lost.

2.48 Most of the thrust in Yugoslav policy has been to promote industry in the LDR as rapidly as possible. There has been too little attention to promoting the right kind of industry and achieving higher levels of productivity of both labor and capital. The joint venture scheme is evidence of growing awareness of the need for higher productivity. The major mechanism to promote industry in the LDR remains the Federal Fund for the less-developed Republics and Provinces. As discussed earlier this Fund is channelled to enterprises in the LDR at rates of interest which imply substantial subsidies to the more capital-intensive activities i.e. promote exactly the kinds of industries in which the LDR is likely to be less competitive in the medium and long term. There have been proposals to link the operations of the Federal Fund with the joint venture scheme. The danger of this is that it will again attract mainly those enterprises with large capital requirements. An interest rate of 5 or 6 percent is likely to do a lot more for the profit and loss statement of a heavy electrical producer, for example, than a firm like Beko.

2.49 Yugoslavia needs to raise incomes in the LDR and the main avenue to this will be through creating more social sector employment. In the

seventies, with high growth rates in the country as a whole, it mattered less that this was achieved through high levels of investment, often with disappointingly low rates of return in practice. In the eighties the country needs to get the most for its investment in terms of growth in productivity and thus income. Inevitably the discussion under the various headings in this section tends to overlap. The same policies which will reflect the labor cost advantages of the LDR are needed for raising productivity within the country as a whole. In the long run Yugoslavia must evolve specialized enterprises capable of serving the market in a wider area than the republic or province itself and capable of exporting competitively as well. By moving towards eight separate markets with a fairly balanced industrial structure within each, the advantages of specialization are reduced. The development of more multi-republican enterprises may in time mean that a large Kosovan enterprise finds it desirable to invest in production facilities in Croatia. Perhaps one way to do this is to encourage negotiations between enterprises within industrial branches in which they might agree on certain lines of specialization and undertake to market the other's products in fields where they are not producing or not planning to expand. This is obviously a very difficult question politically, but it is a key in the evolution of an efficient industrial structure in the longer term.

(vii) The Development of the Capital Goods Industry

2.50 The preferred technology in Yugoslavia is invariably the latest available on the international market. This preference appears to be shared at all levels of decision making--workers' councils, enterprise managers, banks, technical and economic institutions, planning bodies and political authorities. The choice is an understandable one given Yugoslavia's need to compete on foreign markets and the sophistication of many of its products. But it can be questioned whether the most up-to-date German machinery (a frequent choice) is always optimal in the Yugoslav situation of substantially lower labor costs, scarcity of foreign exchange, limited repair facilities and servicing know-how (especially in the LDR) and smaller, localized markets.

2.51 These technological choices of industrial investors have had an impact on the development of the Yugoslav machine-building industry. In principle enterprises must use domestic machinery if in the view of the licensing agency it is competitive in terms of cost and output. In practice enterprises may be able to design and specify their equipment needs in ways which make it relatively easy to get permission to import. There may be a number of reasons why they may wish to do this. First, the foreign supplier may be willing to provide credits which would not be available from local suppliers. The investor would normally prefer to obtain domestic credit since its effective cost is so much lower, but given the demand this may be difficult for a non-priority investment. The real choice facing the investor may therefore be between foreign equipment or none at all, rather than whether to buy from foreign or domestic suppliers. It is noteworthy that the some of the energy-related sub-sectors which have priority access to domestic credit also have the

largest proportion of domestic equipment. Second, there is the possibility of entering into a buy-back arrangement with the foreign supplier on a scale which would not only allow servicing of the credit but also earn foreign exchange for the Yugoslav investor's other import needs. Third, where the equipment supplier is based in a different republic the investor may be reluctant to commit itself to the supplier in a line where it may wish to develop its own production at some later stage through vertical integration. A clear example of this came up recently when a Bosnian enterprise which proposed to manufacture compressors for refrigerators was unable to negotiate contracts with refrigerator manufacturers in other republics, all of whom are importing compressors at present.

2.52. The proportion of total equipment purchases by industrial enterprises which were supplied by Yugoslav manufacturers has been increasing over the years and reached 49.7 percent in 1978. The high figure overstates the position since a fair part of domestic machinery 'manufacture' is assembly of imported components. The proportions vary from industry to industry but Yugoslav producers now supply some of the equipment needs of all 35 major sectors. In 1978 Yugoslav-made equipment accounted for over 70 percent of total equipment purchases by the coal processing, petroleum refinery, stone and gravel quarrying, leather tanning and animal feedstuff industries. Market penetration by imports had dropped below 50 percent of total equipment purchases in electricity generation, natural gas production, non-ferrous metals, fabricated metal products, manufacture of machinery, transport equipment, electrical machinery and apparatus, building materials, sawmills, furniture and fixtures, food products and beverages sectors. Only in two industries (iron ore mining and paper) was the share of local equipment manufacturers below 20 percent. Overall, the manufacture of machinery has been one of the fastest growing sectors of Yugoslav manufacturing; output grew by 10.6 percent per annum and employment by 4.8 percent p.a. between 1970 and 1978. However, it was the industry with the lowest coefficient of shifts of machine work (1.27) and lowest average number of machine hours of work per day (9.0) in 1978.

2.53 The indigenous machinery is often made under license from well-known foreign engineering companies. Because of the more limited experience of Yugoslav machinery manufacturers and the fact that they are largely dependent upon past technical innovations, it can be conjectured that this equipment is generally not the most advanced design available on the world market. However, there is no evidence that this has retarded the rate of productivity growth in the consumer industries. There appears to be no consistent pattern linking the rates of employment and output growth in particular industries to the degree of dependence upon imported or domestic equipment. As a consequence of the general bias towards foreign technology, and the domestic engineering industry's own reliance on foreign licenses there has been little emphasis on technological innovation within Yugoslav firms themselves. It is apparent that industrial research and development has not received high priority at the enterprise level. As a result Yugoslavia's machinery exports are mainly in the area of components manufactured under license rather than final products. At this stage of its development this probably makes a good deal of sense, but over time it

may prove advantageous to move further into the export of selected types of machines and to develop the technological capacity which that will require.

2.54 The machine building industry is one of the priority sectors in the next five-year plan. It is a moderately labor-intensive industry which ought to correspond to Yugoslavia's comparative advantages (high levels of education combined with relatively low wage costs). But it is doubtful whether it should attempt to cover the full range of domestic machinery requirements by progressively filling in the gaps on the technological shelf. The terms of foreign technology licenses usually exclude Yugoslav producers from most overseas markets and therefore limit the economies of scale that can be gained. The system of protection is too arbitrary and uncertain. At times their potential customers are allowed virtually free import of machinery with what has sometimes been, in effect, subsidized foreign exchange, making it impossible for local machinery manufacturers to compete. On other occasions, they are afforded complete protection through a ban on import licenses. This provides little incentive to efficiency or indigenous adaptation and innovation. It would be preferable to allow Yugoslav manufacturing enterprises relatively liberal access to foreign technology embodied in imported machinery (but ensuring that they pay the real opportunity cost of foreign exchange and capital) and to provide infant-industry protection for the domestic machinery manufacturing industry through a uniform level of effective protection with less restrictive license controls. This would encourage those indigenous engineering firms with the greatest comparative advantages to strengthen their own R&D activities so that their customers would be provided with equipment better adapted to their needs. At the same time domestic suppliers should be put on an equal footing with foreign suppliers, by being enabled to offer unsubsidized credit to purchasers.

(viii) Promoting the Small-Scale and Individual Sectors

2.55 A companion volume to this report, documents the bias in Yugoslavia's industrial sector towards medium- and large-scale social sector enterprises. The individual sector, which is limited by law to five employees, consists mostly of artisans who do not employ additional workers. The paucity of small-scale enterprises in the social sector is probably due mainly to the difficulty of establishing completely new enterprises combined with the incentives to existing enterprises to undertake large investment programs. The constraints on individual sector growth are placed by social and political attitudes which result in strict controls over the operations of private entrepreneurs. In the last few years the lack of small-scale and individual sector enterprises has become a matter of concern to policy-makers at both the federal and republican levels for a number of reasons. First it is argued that the bias towards medium- and large-scale units has left serious gaps in the overall structure of Yugoslav industry such as inadequate services e.g. repair shops, shortages of small-series items like spare parts, and inadequate supplies of specialty items for domestic consumers. Second it is pointed out that small-scale units tend to be more labor-intensive and are more easily dispersed to less developed communes than larger-scale enterprises so that an equivalent

investment might make a greater contribution to providing employment and improving regional distribution. By reducing some of the pressures on larger units to absorb new workers and relocate plants, the overall productivity gains could be considerable. Third there is a realization of the opportunities which the earnings of migrants could represent for the economy if channelled into investment in the individual sector. These earnings go mainly into housing or consumer durables at present and the benefits from diverting them into investment in key sub-sectors such as services and tourism could be substantial.

2.56 In view of this, ambitious plans have been formulated in most of the republics and provinces for the expansion of both small-scale social sector and individual sector enterprises. Special incentives and new programs have been introduced in each republic or province. In Vojvodina for example special funds have been earmarked for small-scale industry, certain tax exemptions are offered and there are also some regulations which allow the individual sector enterprise to circumvent the limit of 5 workers. In addition a returning migrant can borrow three times his holding of time deposits of foreign exchange for 10 years at an interest rate of 4 percent. Despite these generous incentives, of 30,000 new jobs in the individual sector projected for Vojvodina's 1976-80 Plan, only 1,000 were created. By contrast the social sector target of 90,000 new jobs was met. The story has been similar in most other regions.

2.57 Why do these intentions and the policies introduced to support them, not appear to be working out in practice? First one must note that these are rather early days to make a judgment. The plans assumed an almost instant response to the new policies whereas in practice this is an area where confidence and experience takes time to build up. Second, however, it is not clear how far this perception of the usefulness of small-scale activities has filtered down to the communal level. Private enterprises have received little active encouragement from the communal authorities. The most notable example is commercial land and building purchases and rentals where the individual is often charged far more than a social sector enterprise would pay. Third the social sector enterprises tend to internalize as far as possible their various needs even when these might be carried out quite efficiently by a small-scale enterprise. They are thus unwilling to enter into the kind of sub-contracting arrangements which have helped small-scale industry to develop in many parts of the world. Sometimes the service units set up by large enterprises, such as repair shops, may have the capacity to evolve into viable small-scale enterprises serving other firms as well. If the parent firm has other priorities, however, then, as we saw in the case of Obod Gennex in para. 2.43 above, the prospective small-scale enterprise will need to take the risky step of going it alone, giving up the security which the large enterprise provides. Fourth the degree of regulation and the limits on expansion of individual sector production remain serious disincentives. The controls on individual enterprises relate to employment practices and perhaps most seriously to pricing. Even the smallest price change must be

submitted to the price control authorities. 1/ With regard to expansion, the life cycle of the enterprise may well include a point at which survival requires investment in a machine which needs more than the number of workers the enterprise is permitted by law. For an investor looking down the road this might well make even the start of the activity unattractive.

2.58 Given these difficulties the objectives which have been set for the expansion of small-scale and individual sector enterprises are going to be very difficult to achieve. A selective approach might perhaps be more effective than what has been tried so far. Many of the gaps in the industrial structure might for example be filled by larger enterprises joining to set up either new, independent enterprises or specializing in repair activities or small-series output which can cater to other enterprises as well. This kind of specialization will be encouraged by the implementation of the incentives to use machinery and equipment more intensively described earlier. Too many enterprises find that it pays them at present to invest in expensive maintenance and production machines even if they stand idle much of the time because their capacity is out of phase with other parts of the production process. The Associated Banks and the various trade associations should play a more active role in sponsoring this kind of specialization. In addition the COALs described earlier could play a part in both identifying needs of these kinds and in encouraging units within existing enterprises which have the potential to become independent producers to set up on their own, by providing an umbrella under which workers might have some share of the COAL's reserves against losses.

2.59 A number of approaches are needed to encourage the individual sector to invest. The restrictions on size might for example recognize the need for enterprises to grow over time. Perhaps the maximum number of workers could be related to the 'vintage' of the enterprise, i.e. the limit could be higher after ten years of operations than say five. In addition the conditions under which such enterprises can release labor could be made more flexible than in the social sector, since it is obviously much more difficult for such a small activity to carry unneeded workers. Further encouragement could take the form of reducing the area of price controls and of providing land and buildings at prices or rents which are comparable with those charged to social sector enterprises. A particularly promising initiative is the attempt to set up cooperative enterprises which link the private and social sectors. A number of such enterprises have been set up already, mainly in Slovenia, and their progress should be carefully monitored since, if successful they could perhaps meet the need for more flexibility in Yugoslavia's industrial structure.

1/ The mission encountered a private restaurateur catering to foreign tourists who was unable to add roast liver to her menu because the local price control authorities refused to permit her to set the price at a profitable level.

SECTION III

CONCLUSIONS AND SUGGESTIONS

3.1 Singling out the problem areas, as we have done in Section II, inevitably suggests a degree of pessimism concerning the state of Yugoslav industry which is not an accurate reflection of the mission's broad view. It is easy to enumerate the positives. Yugoslavia has a considerable raw material base, a well-trained labor force and numerous competent and dedicated managers. It is ideally located both geographically and ideologically to serve growing markets in both Eastern and Western Europe and the Middle East. Even those policies which may have worked against higher productivity have had some longer term benefits. Thus the foreign exchange allocation system for all its faults has forced individual enterprises to take an interest in foreign markets and marketing, while the emphasis on imported technology provides a base of modern equipment for future productivity gains. Indeed what is exciting about the situation is that Yugoslavia now has the possibility of sub- stantial increases in productivity with relatively little new investment if the signals to the producing enterprises can be made more appropriate. We offer some suggestions as to how this might be done for discussion within Yugoslavia.

3.2 Section II outlined a series of issues which seemed significant to the mission in the context of raising total factor productivity in Yugoslav industry. That list is by no means exhaustive; we are aware of major gaps, such as the question of price determination, the level and promotion of research and development, export marketing and so on. These should be the subject of future analysis. What has emerged however are a set of overlapping issues relating in part to the incentive system and in part to institutional arrangements. The text of Section II contains numerous suggestions as to how the incentive system and the institutional set up could be modified to take advantage of the opportunities for higher productivity in the eighties. We have attempted to summarize these and put them into a more operational form in the rest of this section.

3.3 The present system of foreign exchange allocation has costs in promoting inefficient exports and import substitutes which, in our view, outweigh its benefits as a device to control foreign exchange use and to induce marketing efforts by producers. In the long run policy must obviously be directed at a unified exchange rate which is conducive to equilibrium in the foreign exchange markets. In the short run one of the alternatives which might be considered is:

(i) to reduce progressively the proportion of its foreign exchange requirements which the enterprise must earn directly. The initial step could be to reduce the requirement from 100 percent to 75 percent.

We recognize that this step will have implications for the pricing of foreign exchange as well as its allocation between users if overall balance

is to be maintained. Nevertheless the reactivation of a unified market for foreign exchange has high priority, not only to improve the present productive structure but because the system as it works now is going to put even more pressure on enterprises to enter into buy-back arrangements with equipment suppliers which are are in many cases uneconomic. These arrangements sometimes seem to imply the export of Yugoslav raw materials, labor and energy at prices well below their opportunity cost to the economy. One way to prevent this would be:

(ii) to make the calculation of domestic resource costs of any investment a feature of the system, institutionalized in banks and other planning and evaluation bodies. This will make enterprises aware of the need to define investments which are competitive by international standards.

3.4 The persistence of negative real interest rates rewards enterprises with substantial access to domestically borrowed funds, i.e. those with large fixed investment programs. The overall excess demand for borrowed funds which in part results from this puts a tremendous strain on the allocative mechanisms within the self-management system and hampers them from operating as efficiently as they could otherwise. We would urge that consideration be given:

(iii) to unifying nominal interest rates at a level of about 16 percent for medium-term credit, to encourage better utilization of existing capacity rather than installation of new capacity.

Instead of the plethora of interest rate subsidies which exist at present especially in the LDR, subsidies should be re-directed to correct distortions or deal explicitly with problems. This might require action:

(iv) to link interest rate subsidies with cost per job in order to give some further inducement to the more labor-intensive subsectors which will still be discriminated against even with the increased interest rates proposed above. Such subsidies should not however bring the cost of domestic funds to the enterprise below a floor rate of about 10 percent. Subsidies along these lines will provide substantial benefits for the LDR where investment in the future should increasingly be in labor-intensive subsectors.

3.5 All in all it is surprising how high the quality of management is in Yugoslavia, given the limited training and overall support which is available and given the additional aspects of the job which the self-management system involves. It is probably more difficult to be a first-rate manager in Yugoslavia than in any other system. On the other hand during the past decade it has probably been too easy to be a second-rate manager and get away with it given the subsidy to profits which the interest rate has supplied. The time is ripe for a re-thinking of the role of managers within the Yugoslav system. This is too broad a subject for a short mission to address: The first step would be:

(v) to study how best to upgrade the skills of managers, motivate them to more effective performance and monitor the results. The terms of reference for such a study should include a review of the existing standard measures of efficiency, which do not provide enough emphasis on productivity, and proposals for revision.

While such a study is being undertaken there are a number of measures which should be implemented to assist with the development of managers in the LDR. These should be:

(vi) to establish management training programs in the LDR with emphasis initially on in-service training of existing managers. Special industry-specific programs should also be established e.g. footwear, textiles, etc. Marketing and financial planning should be incorporated into the curricula of such programs;

(vii) to set up more industrial consulting institutes with the capacity to provide assistance to enterprises which are facing problems. Perhaps each institute might concentrate on selected sub-sectors. Further financial assistance from the Associated banks to enterprises in difficulties should be made conditional on their retaining consultants, while the costs of such consultancy services could be shared with the banks and socio-political bodies so as not to overburden the enterprise;

(viii) to strengthen the capacity of the Associated Banks to monitor enterprise performance and perhaps provide the workers in an enterprise with an independent assessment of this;

(ix) to arrange visits for LDR managers to efficient enterprises in the MDR and abroad with seminars on return to review the possibility of applying the techniques used and realizing productive potentials.

3.6 The problems of worker motivation are something for which the mission inevitably depends on second-hand descriptions. It would be quite unfair for us to generalize either from the workers standing around chatting in small groups in one factory or the obvious commitment and hard work at Avala in Novi Sad. A number of those with whom the mission met judged this to be an area where substantial productivity improvement could be achieved. Certainly part of the answer lies with managers, but there are ways in which the system might be modified to help deal with this question. These include:

(x) to rationalize the wage structure by separating out more clearly the element which is fixed for each skill level regardless of industry, the part that reflects the workers own productivity, and the part which results from the profitability of the enterprise.

In addition to salary, motivation should include the possibility of using underemployed labor more productively through encouraging more mobility

of workers between enterprises and dealing with the problem of worker absenteeism. In order:

(xi) to use temporarily underemployed workers more productively, enterprises might be permitted to hire out such workers to other enterprises on a contract basis, i.e. direct pooling of labor. This could be made attractive to the worker if he was allowed to retain a small share of his income from his own enterprise thus making his total income higher than it would otherwise have been;

(xii) to use redundant workers more productively, enterprises should be permitted to negotiate directly with other enterprises. If this required the re-location of the worker then the sending enterprise could for example offer to the receiving enterprise that it will meet the worker's housing costs;

(xiii) to reduce the negative effects of absenteeism, enterprises in the LDR might actually plan for such absenteeism during for example the harvest season and give workers special leave during that period, associated of course with some reduction in net income. Outside of this, persistent absenteeism without cause should be grounds for dismissal.

3.7 The pressure to locate industry in the less developed communes within republics and provinces has become one of the most significant variables in the decision-making process in Yugoslavia. The pressure for equal development of production in all communes (as opposed to equal income in all communes) does not adequately take into account long-term demographic and social trends. There are economic forces which are leading to such re-location and they should be supported by incentives which establish a relationship between social and private costs and benefits. The practice of earmarking funds within republics does not do this. The problem also needs to be addressed in the context of a longer-term social plan and an assessment of the level of income and the agricultural potential of a region. The suggestion is therefore:

(xiv) to reduce earmarked funds for location in the less developed regions within republics and substitute them in certain regions with lower income levels and limited agricultural potential by subsidized interest rates graduated according to the communés income level which could be added to the cost per job subsidy cited earlier, with the proviso of the floor interest rate of 10 percent being maintained.

3.8 A key area of attention is the need to raise productivity in the LDR. The substantial transfers which take place through the Federal Fund have not always in the past promoted the right kinds of LDR investment. The Fund has been made available to LDR enterprises at very heavily subsidized interest rates, and the allocation has not accorded much weight to the criterion of efficiency of production. The discussion on interest rates above suggests the reduction of subsidies and linking them with cost

per job. In addition it is important for the country as a whole, but even more so for the LDR to adopt techniques of project evaluation which allow investments to be selected according to their economic rates of return. Getting the right kind of industry to expand in the LDR and insuring that investment and operations are efficient will take effort and imagination. We would suggest that the LDR give some thought:

(xv) to establishing COALs to invest in new enterprises with low costs per job created. These COALs might provide seed capital and managerial assistance and could be funded through the difference between the terms on which the LDR receives and re-lends Federal Fund resources, if the subsidy to the enterprise is reduced.

The idea of joint ventures still merits support. It provides assistance in the areas of management and marketing which is precisely where the LDR are weakest. While we have no quarrel with the proposal to tie part of the Federal Fund to financing of joint ventures, this may not serve the best interests of the country or the LDR if it is made available with the enormous interest rate subsidy which is the case at present. The investing firm might instead be encouraged by measures:

(xvi) to permit the investing firm to charge its partner in the joint venture a small fixed percentage of profits over say 10 years of normal operations of the LDR enterprise. This would provide in effect an indexation of the contribution of the investor and a longer term interest in the success of the new undertaking.

In the long run the structure of production needs to shift so that more labor-intensive products feature more prominently in the LDR. The structural shifts, as shown in Section I, have been much less than might have been expected over the past decade because of the drive of every enterprise to expand its capacity. Ways to achieve this objective might be:

(xvii) to encourage enterprises to enter into negotiations to delineate areas of specialization and access of products to unified markets.

(xviii) to study the present marketing arrangements and ascertain whether they represent a disincentive to regional specialization and if so, what steps can be taken to remedy this.

This is a critical area. The development of a larger number of specialized enterprises serving the national and international market may be the key to Yugoslavia's industrial future.

3.9 Yugoslavia has built up a <u>domestic capital goods industry</u> which produces complete machines for the domestic market on the basis for licenses from foreign manufacturers. In return components are often exported to the licensing firm to pay for the capital imports, technological transfer and other direct imports. It is not at all clear that the balance on these transactions has been to Yugoslavia's advantage. In some cases Yugoslavia is producing complete machines for the domestic market at

high cost because of relatively short production runs while it is a captive exporter of components to a single foreign firm. These arrangements need careful looking into. Domestic machinery manufacture should not be permitted simply because there is a gap in the domestic productive structure. The machinery industry should probably evolve in the direction of more specialization; increasing component export while importing complete machines on a very selective basis. This last objective will require a substantial investment in research and development. At the same time it is only realistic to recognize that final producers will continue to opt for imported machines even at a significant premium so that protection of domestic producers is still needed. It is recommended:

(xix) to establish a uniform level of effective protection for domestic machinery manufacturers, to supplement the licensing procedures. The prices of competing domestic machinery should be set no higher than the c.i.f. cost of the equivalent import plus the protective margin. This would imply that a machinery user is forced to buy the domestic product only when it is reasonably competitive. It may be necessary to introduce controls on quality to insure that domestic suppliers do not downgrade quality in this situation.

At the same time to provide positive encouragement to domestic producers it may be useful:

(xx) to provide incentive funds to enterprises which are willing to devote resources above a prescribed minimum level, to further research and development.

(xxi) to enable domestic equipment suppliers to give credit terms to local industry which are comparable to those of foreign suppliers;

3.10 The final point raised in this report concerns the development of small-scale and individual sector industry. As explained in a companion volume to this report, there is a perception in Yugoslavia that the slow pace of development of these industries has resulted in gaps in the industrial structure in the areas of services, spare parts and quality consumer products. It is apparent that a consensus has not yet evolved on the importance and usefulness of developing small-scale and individual sector activities particularly among the existing larger enterprises, and at the local level where considerable obstacles have been put in the way of such enterprises developing. The perceived gaps in the industrial structure could in many cases be filled by encouraging specialized units in larger enterprises, which are often not used to the full extent of their capacity at present, to cater to the needs of other enterprises as well. In order to promote this it may be useful:

(xxii) to give greater responsibility to Associated Banks and industry branch associations in identifying such opportunities and bringing together enterprises which might benefit from common operation of certain production or maintenance facilities;

(xxiii) to use the mechanism of the COAL to give greater confidence to workers in certain sections of enterprises who perceive opportunities of expanding the activities in their section, to form a new enterprise. The COAL would be used to provide insurance that salaries would be paid in the event of losses.

In order to encourage investment in the individual sector, it is suggested:

(xxiv) to relate the limits on the number of employees which an individual sector enterprise is permitted to the length of time the enterprise has been in operation.

(xxv) to free small-scale social sector enterprises below a certain size and all individual enterprises, from price controls for any activity which does not require the use of an imported raw material;

(xxvi) to allocate land to individual sector enterprises at the same price or rent as it would be made available to a social sector enterprise;

3.11 When this study was originally conceived the objective was to look at the development of labor intensive industry. In practice we found that the labor-intensity focus was not an especially useful one. Yugoslavia needs to develop efficient industries whether or not they are labor-intensive. The emphasis given to the employment problem is a consequence of the number of people in the LDR who are seeking employment in the social sector. Many of these are active in private agriculture and the consequences of employing them in social sector enterprises might be a substantial drop in output in private sector agriculture. Given the pressure to employ new workers it is important to avoid situations where the marginal product of those employed in social sector industry falls below their marginal product in private sector agriculture.

3.12 The objective of raising productivity in Yugoslav industry is one of the major challenges facing the economy in the eighties. We have argued that the incentive system does not at present adequately reward high capital and labor productivity. As a result the universe of programs and projects which are prepared do not reflect appropriate economic choices on the balance between domestic production and trade, machinery and labor, or signal producers on the most economic location. The allocation of limited resources between these programs is done for the most part by regional socio-political bodies with legitimate priorities which may conflict with national long-term economic needs. The universe of programs and projects is probably too large even to permit these decision-makers to reflect local needs in the most economic fashion. The supposed corrective of earmarked federal or republican funds is a very partial instrument, which is only useful if the decision-makers who allocate these funds take efficiency considerations adequately into account. Increased reliance on incentives as devices for resource allocation and more explicit evaluation of the economics of alternative investment decisions, will not weaken the self-management system. Continued low productivity in industry, inappropriate

investment patterns, and further separation of regional markets, however, will. The growing awareness of this which the mission encountered in Yugoslavia and the lively debate on the subject within the country give us confidence that the issue will be addressed in the pragmatic fashion which characterizes Yugoslavia's approach to such questions. It is hoped that the analysis in this report and the suggestions we have made will prove a useful contribution to the program of action which is eventually adopted.

Statistical Appendix

Table No.

1.1 Labor Force 1970-79
1.2 Social Sector Employment by Sector 1970-80
2.1 Fixed Assets Per Worker in 1971 and 1978
2.2 Total Factor Productivity Growth in Industry 1971-78
3.1 Regional Rates of Growth of Industrial Output in Yugoslavia 1971-78 According to Degree of Sectoral Capital Intensity
3.2 Regional Rates of Growth of Industrial Employment in Yugoslavia 1971-78 According to Degree of Sectoral Capital Intensity
3.3 Regional Rates of Growth of Industrial 'Fixed Assets' in Yugoslavia 1971-78 According to Degree of Sectoral Capital Intensity

Table 1.1: LABOR FORCE 1970-79
(Thousands)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Social Sector Employment /1	3,756	3,966	4,130	4,222	4,421	4,667	4,833	5,065	5,282	5,506
Private Agriculture	3,816	3,545	3,350	3,145	2,997	2,853	2,740	2,560	2,385	2,211
Private Non-Agriculture /2	301	310	322	334	346	363	365	370	378	386
Total Resident Active	7,873	7,821	7,802	7,701	7,764	7,883	7,938	7,995	8,047	8,103
Migrant Workers /3	783	913	1,020.	1,100	1,050	940	870	825	815	800
Total Active	8,656	8,734	8,822	8,801	8,814	8,823	8,808	8,820	8,862	8,903
Unemployed /4	192	175	189	229	269	324	381	420	441	457
Total /5	8,848	8,909	9,011	9,030	9,083	9,147	9,189	9,240	9,303	9,360

/1 As reported in the Statistical Yearbook of Yugoslavia 1978, Table 105.1.
/2 Mission estimate.
/3 Estimate by Federal Secretariat for Employment.
/4 Estimated at 60 percent of workers registered as unemployed.
/5 Census figures for 1961 and Sentic and Breznik "Projekcije Ukupnog I Aktivnog Stanovnistva Jugoslavije Sa Migracionom Komponentom", STANOVNISTVO 1971-73.

Table 1.2: SOCIAL SECTOR EMPLOYMENT BY SECTOR 1970-80
(Thousands)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
ECONOMIC										
Industry	1,418	1,493	1,572	1,621	1,707	1,802	1,873	1,961	2,022	2,102
Agriculture	152	151	152	153	160	168	170	179	183	187
Forestry	63	64	64	63	64	66	64	64	63	62
Irrigation	12	12	13	14	14	14	14	16	17	17
Construction	423	433	436	424	448	485	497	531	568	602
Transport and Communications	308	319	331	336	344	360	361	374	381	387
Trade	337	366	396	415	439	463	489	507	529	558
Catering and Tourism	114	124	133	141	152	160	169	180	186	194
Handicrafts	131	135	134	128	129	132	135	139	152	160
Public Utilities	72	75	79	81	86	90	92	98	102	107
Financial Institutions	91	99	104	111	120	129	135	146	163	184
Total	3,121	3,271	3,414	3,487	3,663	3,869	3,999	4,195	4,365	4,560
NONECONOMIC										
Education and Culture	295	308	320	329	341	355	367	376	387	395
Health and Welfare	183	194	205	214	226	239	251	265	284	300
Socialpolitical Communities and Organizations	166	171	176	183	193	204	216	229	245	251
Total	644	673	701	726	760	798	834	870	917	946
GRAND TOTAL	3,765	3,944	4,115	4,213	4,423	4,667	4,833	5,065	5,282	5,506

Source: Statistical Yearbook of Yugoslavia 1979, Table 105.1.

Table 2.1: FIXED ASSETS PER WORKER IN 1971 AND 1978 (1972 US$000)

	1971	1978	% Growth
Labor Intensive Industries			
Manufacture of Leather Footwear and Fancy Goods	1.65	2.23	4.3
Manufacture of Finished Textile Products	2.23	3.18	5.1
Manufacture of Miscellaneous Products	2.52	4.09	6.9
Manufacture of Furniture and Fixtures	3.54	5.16	5.4
Printing, Publishing and Allied Industries	3.66	5.57	6.0
Manufacture of Electrical Machinery	4.32	5.83	4.3
Moderately Labor Intensive Industries			
Manufacture of Machinery	4.46	6.66	5.7
Extraction of Stone and Sand	4.52	8.85	9.6
Manufacture of Fabricated Metal Products	4.82	6.52	4.3
Sawmills and Manufacture of Wood Boards	4.89	7.42	6.0
Manufacture of Rubber	5.0	7.97	6.7
Manufacture of Leather and Fur	5.85	8.05	4.6
Median Industries			
Manufacture of Yarns and Fabrics	5.96	7.72	3.7
Manufacture of Nonmetallic Mineral Products	6.02	8.41	4.8
Processing of Chemicals	6.37	8.61	4.3
Manufacture of Transport Equipment	6.52	8.09	3.1
Extraction of Coal	7.74	15.06	9.5
Manufacture of Food Products	7.89	9.34	2.4
Manufacture of Building Materials	8.36	13.23	6.6
Shipbulding	8.51	11.23	4.0
Extraction of Nonmetallic Mineral Products	8.53	11.69	4.5
Manufacture of Beverages	8.66	14.44	7.3
Capital Intensive Industries			
Tobacco Manufactures	10.56	11.05	0.6
Manufacture of Paper	13.41	17.08	3.5
Non Ferrous Ore Mining	14.44	20.94	5.3
Smelting, Alloying and Refining of Non-Metals	16.20	24.80	6.1
Iron and Steel Basic Industries	19.70	27.62	4.8
Manufacture of Chemicals	25.56	25.29	-0.15
Highly Capital Intensive Industries			
Manufacture of Animal Feeds	28.05	24.68	-1.8
Non Ferrous Metal Basic Industries	28.38	38.87	4.5
Iron Ore Mining	33.12	32.40	-0.3
Coal Processing	37.97	54.43	5.1
Crude Petroleum Refineries	52.98	57.16	1.1
Generation, Transmission and Distribution-Electricity	82.16	95.02	2.1
Extraction of Crude Petroleum and Gas	95.35	86.79	-1.3

Table 2.2: TOTAL FACTOR PRODUCTIVITY GROWTH IN INDUSTRY 1971-78
(Annual Percentage Rates)

Labor Intensive Industries	
Manufacture of Leather Footwear and Fancy Goods	-1.2
Manufacture of Finished Textile Products	3.0
Manufacture of Miscellaneous Products	8.5
Manufacture of Furniture and Fixtures	1.0
Printing, Publishing and Allied Industries	-0.2
Manufacture of Electrical Machinery	2.7
Moderately Labor Intensive Industries	
Manufacture of Machinery	4.4
Extraction of Stone and Sand	3.7
Manufacture of Fabricated Metal Products	1.1
Sawmills and Manufacture of Wood Boards	0.6
Manufacture of Rubber	3.1
Manufacture of Leather and Fur	0.2
Median Industries	
Manufacture of Yarns and Fabrics	-0.6
Manufacture of Nonmetallic Mineral Products	1.9
Processing of Chemicals	5.5
Manufacture of Transport Equipment	3.4
Extraction of Coal	-0.5
Manufacture of Food Products	1.0
Manufacture of Building Materials	2.9
Shipbulding	-2.8
Extraction of Nonmetallic Mineral Products	-2.6
Manufacture of Beverages	1.3
Capital Intensive Industries	
Tobacco Manufactures	2.6
Manufacture of Paper	2.4
Non Ferrous Ore Mining	-1.1
Smelting, Alloying and Refining of Non-Metals	7.0
Iron and Steel Basic Industries	0.7
Manufacture of Chemicals	2.2
Highly Capital Intensive Industries	
Manufacture of Animal Feeds	-1.8
Non Ferrous Metal Basic Industries	2.0
Iron Ore Mining	-1.6
Coal Processing	12.3
Crude Petroleum Refineries	-5.9
Generation, Transmission and Distribution-Electricity	2.3
Extraction of Crude Petroleum and Gas	-1.8

Table 3.1: REGIONAL RATES OF GROWTH OF INDUSTRIAL OUTPUT IN YUGOSLAVIA 1971-78 (IN 1972 CONSTANT PRICES) ACCORDING TO DEGREE OF SECTORAL CAPITAL INTENSITY

	MDR	LDR	Yugoslavia
Labor Intensive Industries	6.6	9.4	7.1
Manufacture of Leather Footwear and Fancy Goods	4.4	7.8	5.2
Manufacture of Finished Textile Products	6.8	10.4	7.6
Manufacture of Miscellaneous Products	9.5	14.7	9.9
Manufacture of Furniture and Fixtures	5.7	6.2	5.8
Printing, Publishing and Allied Industries	4.2	5.4	4.4
Manufacture of Electrical Machinery	8.1	13.0	8.8
Moderately Labor Intensive Industries	7.6	7.7	7.6
Manufacture of Machinery	11.2	8.1	10.6
Extraction of Stone and Sand	8.8	9.4	8.9
Manufacture of Fabricated Metal Products	6.2	9.1	6.6
Sawmills and Manufacture of Wood Boards	4.4	4.4	4.4
Manufacture of Rubber	9.2	11.7	9.4
Manufacture of Leather and Fur	3.7	8.9	4.9
Median Industries	6.8	7.2	6.9
Manufacture of Yarns and Fabrics	3.6	5.3	4.0
Manufacture of Nonmetallic Mineral Products	6.2	10.2	6.9
Processing of Chemicals	12.4	15.0	12.7
Manufacture of Transport Equipment	9.7	4.6	9.1
Extraction of Coal	0.7	3.8	2.2
Manufacture of Food Products	6.2	8.9	6.6
Manufacture of Building Materials	6.5	10.5	7.3
Shipbuilding	0.5	4.2	0.7
Extraction of Nonmetallic Mineral Products	-2.5	2.0	0.1
Manufacture of Beverages	6.2	15.1	7.7
Capital Intensive Industries			
Tobacco Manufactures	6.8	4.5	5.6
Manufacture of Paper	8.4	5.0	7.5
Non-Ferrous Ore Mining	4.3	4.4	4.3
Smelting, Alloying and Refining of Non-Metals	8.4	21.0	9.7
Iron and Steel Basic Industries	5.6	6.9	6.9
Manufacture of Chemicals	6.5	11.7	7.9
Highly Capital Intensive Industries	5.8	8.1	6.3
Manufacture of Animal Feeds	6.8	11.6	7.5
Non-Ferrous Metal Basic Industries	7.8	20.8	9.1
Coal Processing	-	2.4	3.6
Iron Ore Mining	-	18.4	18.4
Crude Petroleum Refineries	-3.6	5.0	-1.6
Generation, Transmission and Distribution-Electricity	7.6	6.8	7.4
Extraction of Crude Petroleum and Gas	4.9	-	4.9
Total Industry	7.0	7.5	7.1

Table 3.2: REGIONAL RATES OF GROWTH OF INDUSTRIAL EMPLOYMENT IN YUGOSLAVIA 1971-78 ACCORDING TO DEGREE OF SECTORAL CAPITAL INTENSITY

	MDR	LDR	Yugoslavia
Labor Intensive Industries	3.7	6.2	4.2
Manufacture of Leather Footwear and Fancy Goods	4.9	8.0	5.6
Manufacture of Finished Textile Products	2.9	6.4	3.8
Manufacture of Miscellaneous Products	-0.6	2.8	-0.5
Manufacture of Furniture and Fixtures	3.4	5.1	3.9
Printing, Publishing and Allied Industries	2.5	4.8	2.9
Manufacture of Electrical Machinery	5.0	6.5	5.2
Moderately Labor Intensive Industries	3.8	5.7	4.2
Manufacture of Machinery	4.4	7.7	4.8
Extraction of Stone and Sand	3.5	1.7	3.0
Manufacture of Fabricated Metal Products	3.7	7.3	4.5
Sawmills and Manufacture of Wood Boards	2.4	3.4	2.9
Manufacture of Rubber	4.4	8.5	4.7
Manufacture of Leather and Fur	2.3	6.8	3.5
Median Industries	3.6	5.0	4.0
Manufacture of Yarns and Fabrics	2.9	6.3	3.9
Manufacture of Nonmetallic Mineral Products	3.4	4.9	3.7
Processing of Chemicals	5.1	7.9	5.7
Manufacture of Transport Equipment	4.8	4.4	4.8
Extraction of Coal	-0.1	2.3	1.1
Manufacture of Food Products	4.6	6.5	4.9
Manufacture of Building Materials	2.3	4.4	2.7
Shipbuilding	2.1	9.7	2.2
Extraction of Nonmetallic Mineral Products	1.7	0.9	1.3
Manufacture of Beverages	3.5	7.6	4.2
Capital Intensive Industries	3.3	4.9	4.0
Tobacco Manufactures	2.6	3.2	2.9
Manufacture of Paper	4.5	3.2	4.1
Non-Ferrous Ore Mining	1.8	5.5	3.9
Smelting, Alloying and Refining of Non-Metals	0.5	2.5	0.7
Iron and Steel Basic Industries	1.6	5.4	3.7
Manufacture of Chemicals	5.4	6.8	5.8
Highly Capital Intensive Industries	5.0	4.7	4.9
Manufacture of Animal Feeds	9.8	10.3	9.8
Non-Ferrous Metal Basic Industries	5.3	8.6	6.6
Coal Processing	10.2	4.0	4.5
Iron Ore Mining	-	3.4	3.4
Crude Petroleum Refineries	5.7	-3.5	3.8
Generation, Transmission and Distribution-Electricity	3.7	4.5	4.0
Extraction of Crude Petroleum and Gas	7.8	-	7.8
Total Industry	2.9	5.5	4.1

Table 3.3: REGIONAL RATES OF GROWTH OF INDUSTRIAL 'FIXED ASSETS' IN YUGOSLAVIA 1971-78 (IN 1972 CONSTANT PRICES) ACCORDING TO DEGREE OF SECTORAL CAPITAL INTENSITY

	MDR	LDR	Yugoslavia
Labor Intensive Industries	8.7	11.1	9.2
Manufacture of Leather Footwear and Fancy Goods	9.4	12.2	9.9
Manufacture of Finished Textile Products	8.8	9.1	8.9
Manufacture of Miscellaneous Products	6.2	18.4	6.4
Manufacture of Furniture and Fixtures	8.8	10.4	9.2
Printing, Publishing and Allied Industries	7.8	15.5	8.9
Manufacture of Electrical Machinery	8.7	12.7	9.4
Moderately Labor Intensive Industries	9.8	8.9	9.5
Manufacture of Machinery	10.5	10.3	10.5
Extraction of Stone and Sand	13.6	11.2	12.6
Manufacture of Fabricated Metal Products	8.7	8.9	8.8
Sawmills and Manufacture of Wood Boards	11.0	6.8	8.8
Manufacture of Rubber	11.0	18.9	11.4
Manufacture of Leather and Fur	8.1	8.2	8.1
Median Industries	8.3	9.2	8.5
Manufacture of Yarns and Fabrics	7.3	8.3	7.5
Manufacture of Nonmetallic Mineral Products	7.9	10.4	8.5
Processing of Chemicals	9.3	12.9	10.0
Manufacture of Transport Equipment	7.6	8.7	7.8
Extraction of Coal	13.4	7.5	10.6
Manufacture of Food Products	6.9	9.5	7.4
Manufacture of Building Materials	8.3	14.0	9.3
Shipbuilding	5.8	11.6	6.2
Extraction of Nonmetallic Mineral Products	7.2	5.0	5.8
Manufacture of Beverages	12.0	10.0	11.6
Capital Intensive Industries	6.7	8.1	7.2
Tobacco Manufactures	-0.5	7.1	3.6
Manufacture of Paper	9.6	4.0	7.5
Non-Ferrous Ore Mining	8.3	11.8	9.2
Smelting, Alloying and Refining of Non-Metals	7.1	5.8	6.8
Iron and Steel Basic Industries	7.7	9.2	8.5
Manufacture of Chemicals	4.8	8.4	5.6
Highly Capital Intensive Industries	6.1	7.1	6.4
Manufacture of Animal Feeds	7.2	22.0	8.0
Non-Ferrous Metal Basic Industries	6.5	20.5	11.1
Coal Processing	8.4	4.1	4.2
Iron Ore Mining	-	8.5	8.5
Crude Petroleum Refineries	5.5	1.8	4.9
Generation, Transmission and Distribution-Electricity	6.0	6.2	6.1
Extraction of Crude Petroleum and Gas	6.4	-	6.4
Total Industry	7.4	8.4	8.1

Annex I

REGIONAL DIFFERENCES IN INDUSTRIAL PRODUCTIVITY

Introduction

1. Yugoslavia is a federation of six republics and two autonomous provinces. Four of these regions,-- Croatia, Serbia, Slovenia and Vojvodina--are classified as more developed republics (MDR). In 1979 the MDR had per capita incomes ranging between $2,329 and $4,855; this compares with an average per capita income level of $2,429 for Yugoslavia as a whole 1/. The other four regions --Bosnia, Kosovo, Macedonia and Montenegro--are considered to be less developed regions (LDR). Per capita incomes in the LDR ranged between $750 and $1,659.

2. The relatively lower level of economic development of the LDR stems from a variety of factors. Largely it is a question of historical legacy. Prior to World War II the more developed regions--in the north of Yugoslavia--benefited from their proximity to the rapidly industrializing countries of central Europe. In contrast, the LDR, with the exception of a few enclaves, remained a backwater of development 2/. Since 1945 one of the principal goals of economic policy has been to reduce the levels of interregional disparity. The problems faced by economic policymakers are similar to those in other developing countries: higher rates of population increase which have eroded the gains from economic growth; low levels of productivity in agriculture --the predominant employer; an underdeveloped physical and social infrastructure, necessitating high levels of spending on such items as roads, schools and hospitals; and finally a relatively underdeveloped economic infrastructure, with shortages of skilled personnel in such areas as banking, trade, administration and management.

3. A major objective of postwar economic policy has been to stimulate industrial growth in the LDR so as to enable these regions to share the fruits of Yugoslavia's rapid postwar industrialization. In line with this objective, successive economic plans have set higher targets for industrial growth in the LDR than the MDR. As described in Part I of this report, a considerable volume of national resources have been channeled into the development of LDR industry. These resources have enabled the LDR to increase their industrial capital stock, and to a lesser extent their output levels, at faster rates than the LDR.

1/ The estimates of regional per capita income are based on the value of economic output (Gross Material Product) in each region. Substantial interregional resource transfers narrow the differentiation in regional disposable incomes per capita considerably.

2/ See Yugoslavia: Self-Management Socialism and the Challenges of Development, Chapter II.

4. This performance is quite remarkable given the handicaps facing the LDR in developing their industrial base. For the most part their industrial structure is composed of infant industries. The LDR's do not have the broader industrial tradition of the MDR. The LDR have, therefore, been obliged to acquire industrial skills while competing in the domestic market with the more established enterprises of the MDR. With the important exception of credit policy the LDR have few policy instruments for supporting industrial development. Their regional markets are limited so the potential for successful industrialization to meet purely local demand is severely constrained. 1/ Incomes policy has aimed at keeping interregional income differentials in the social sector within fairly narrow bounds. Consequently, the opportunity for pursuing a lower wage strategy to offset the learning costs of developing new industries is also circumscribed.

5. One of the main areas left to regional planners is that of sectoral choice. In the past, regional planners in Yugoslavia have argued that the process of industrialization should commence with the establishment of basic industries in each region. Once these industries are established the next stage is to develop a balanced or "rounded" industrial structure which would permit the exploitation of intra-regional linkages between different sectors. As a result, less attention has been given to the potential benefits arising from greater interregional specialization. It can be argued that, if a region attempts to develop too many infant industries simultaneously, the process of graduating to nationally and internationally competitive levels of productivity can become excessively protracted. On the other hand, by concentrating on a more limited number of activities a region may acquire the necessary expertise more quickly. There are many potential economies that can be reaped by specialization.

6. The purpose of this annex is to indicate the extent to which regional productivity levels vary in different branches of industry and the extent to which these relative differences in productivity levels have changed over time. This information may be useful in two ways. First to point to fields in which a particular region exhibits high levels of productivity compared with the national average. These branches might be considered for further encouragement when investment priorities in a given region are determined. Secondly, the analysis enables us to point to activities in which a given region displays lower productivity. This may indicate the need for reconsidering whether the region should encourage the development of these activities. Alternatively, it may suggest that policymakers pay more attention to identifying the problems which are retarding productivity performance in these activities. As we suggest in the main report, there are many industries within Yugoslavia which would benefit from comprehensive support packages, which, in addition to financial assistance, would include technical and managerial consultancy services.

1/ The largest of the LDR (Bosnia) accounted for 13%; the remainder of the LDR together only 10% of Yugoslavia's total economic output (See Appendix Table A).

Regional Variations in the Capital Intensity of Industrial Production

7. Disaggregated regional data for Yugoslav industry classified according to the national uniform classification of industrial activities for 1976 is available for the period 1971-78. This data covers employment, output and capital stock (fixed assets) for 35 subsectors. The employment data are annual averages and relate to all workers (excluding apprentices) who were in regular employment during a given year with organizations of associated labor; including seasonal workers. The output data used are in constant 1972 prices and are based on the Yugoslav concept of social product, which includes depreciation as well as direct and indirect taxes and is, therefore, essentially the same as value added. The data for industrial fixed assets are calculated by the Yugoslav authorities in constant 1972 prices. These data exclude assets under construction.

8. The 35 industrial subsectors have been ranked according to the value of fixed assets per worker in 1971 and on this basis grouped into 6 categories: labor intensive industries, moderately labor intensive industries, median industries, capital intensive industries and highly capital intensive industries. Table 1 shows this ranking together with the value of fixed assets per worker in 1978.

9. This ranking corresponds closely with the ranking obtained by ordering the national data for 1978 according to the value of fixed assets (the Spearman rank correlation coefficient is 0.958). Similarly, the rankings obtained by ordering the regional industrial data for both 1971 and 1978 according to the value of fixed assets corresponded closely with the 1971 national ranking. This is an important result, because it means that despite regional variations in the capital intensity of each industrial branch, the labor intensive branches in each region of Yugoslavia are essentially the same. Similarly, the capital intensive branches of industry also tend to be the same in each region. This enables us to refer unambiguously to industries as being either labor or capital intensive. The rank correlation coefficients are shown in Table 2.

10. As we pointed out in the main report, the level of fixed assets per worker is considerably higher in the LDR than the MDR. The main reason for this situation is that the pattern of production in the LDR is heavily concentrated in the capital intensive (CI) and highly capital intensive (HCI) industries. This is shown in Table 3 which presents the distribution of output, employment and fixed assets in the LDR and the MDR. CI and MCI industries generated 37% of LDR output and accounted for almost 57% of the LDR's capital stock. In particular the shares of electricity generation, basic iron and steel industries and the manufacture of chemicals in the LDR's output and employment are considerably higher; despite their limited employment potential these three industries accounted for 40% of the LDR's capital stock in 1978 as opposed to 31% in the MDR. The effect of this distribution on employment in the LDR may be gauged from the fact that the six branches in the labor intensive (LI) group of industries together accounted for only 8% of the LDR's capital stock, almost 26% of the LDR's labor force. Thus relatively small shifts in the composition of LDR investment away from capital intensive subsectors toward labor intensive subsectors could be expected to have a significant impact on the level of industrial employment in the LDR.

TABLE 1: FIXED ASSETS PER WORKER IN 1971 and 1978 (1972 US$000)

	1971	1978	% Growth
Labor Intensive Industries			
Manufacture of Leather Footwear and Fancy Goods	1.65	2.23	4.3
Manufacture of Finished Textile Products	2.23	3.18	5.1
Manufacture of Miscellaneous Products	2.52	4.09	6.9
Manufacture of Furniture and Fixtures	3.54	5.16	5.4
Printing, Publishing and Allied Industries	3.66	5.57	6.0
Manufacture of Electrical Machinery	4.32	5.83	4.3
Moderately Labor Intensive Industries			
Manufacture of Machinery	4.46	6.66	5.7
Extraction of Stone and Sand	4.52	8.85	9.6
Manufacture of Fabricated Metal Products	4.82	6.52	4.3
Sawmills and Manufacture of Wood Boards	4.89	7.42	6.0
Manufacture of Rubber	5.0	7.97	6.7
Manufacture of Leather and Fur	5.85	8.05	4.6
Median Industries			
Manufacture of Yarns and Fabrics	5.96	7.72	3.7
Manufacture of Nonmetallic Mineral Products	6.02	8.41	4.8
Processing of Chemicals	6.37	8.61	4.3
Manufacture of Transport Equipment	6.52	8.09	3.1
Extraction of Coal	7.74	15.06	9.5
Manufacture of Food Products	7.89	9.34	2.4
Manufacture of Building Materials	8.36	13.23	6.6
Shipbuilding	8.51	11.23	4.0
Extraction of Nonmetallic Mineral Products	8.53	11.69	4.5
Manufacture of Beverages	8.66	14.44	7.3
Capital Intensive Industries			
Tobacco Manufacturers	10.56	11.05	0.6
Manufacture of Paper	13.41	17.08	3.5
Non Ferrous Ore Mining	14.44	20.94	5.3
Smelting, Alloying and Refining of Non-Metals	16.20	24.80	6.1
Iron and Steel Basic Industries	19.70	27.62	4.8
Manufacture of Chemicals	25.56	25.29	-0.15
Highly Capital Intensive Industries			
Manufacture of Animal Feeds	28.05	24.68	-1.8
Non Ferrous Metal Basic Industries	28.38	38.87	4.5
Iron Ore Mining	33.12	32.40	-0.3
Coal Processing	37.97	54.43	5.1
Crude Petroleum Refineries	52.98	57.16	1.1
Generation, Transmission and Distribution-Electricity	82.16	95.02	2.1
Extraction of Crude Petroleum and Gas	95.35	86.79	-1.3

TABLE 2: SPEARMAN RANK CORRELATION COEFFICIENTS BETWEEN INDUSTRIAL BRANCHES RANKED BY VALUE OF FIXED ASSETS PER WORKER AND 1971 RANKING

	1971	1978
Less Developed Republics		
Bosnia-Herzegovina	0.937	0.957
Kosovo	0.937	0.965
Macedonia	0.968	0.988
Montenegro	0.948	0.975
More Developed Republics		
Croatia	0.963	0.983
Serbia	0.806	0.977
Slovenia	0.951	0.965
Vojvodina	0.968	0.988
Yugoslavia		0.958

Source: Data Provided by Federal Institute for Statistics.

TABLE 3: PERCENTAGE DISTRIBUTION OF OUTPUT, EMPLOYMENT AND FIXED ASSETS IN THE LDR AND MDR BY INDUSTRIAL GROUP IN 1978

	Output		Employment		Industrial Fixed Assets	
	LDR	MDR	LDR	MDR	LDR	MDR
Labor Intensive Industries.	18.6	21.3	25.6	30.0	8.2	11.1
Moderately Labor Intensive Industries	17.1	21.9	19.7	22.1	11.7	12.6
Median Industries	27.1	36.6	32.8	36.1	23.6	30.8
Capital Intensive Industries	22.8	11.0	15.2	7.3	22.3	15.0
Highly Capital Intensive Industries	14.4	9.4	6.7	4.6	34.3	30.6

Source: Federal Institute of Statistics.

Note: Due to rounding some totals do not equal 100.

11. Table 4 shows the average level of monthly net personal incomes per industrial worker by region in 1978.

TABLE 4: REGIONAL VARIATIONS IN NET PERSONAL INCOMES PER INDUSTRIAL WORKER IN 1978
(Dinars)

	LDR				MDR				Yug.
	Bosnia	Kosovo	Maced.	Mont.	Croatia	Serbia	Sloven.	Voj.	
Net Monthly (Personal Inc.)	4,407	3,891	4,193	4,034	5,009	4,564	5,484	4,548	4,732
(Index)	93.1	82.2	88.6	85.2	105.8	96.4	115.9	96.1	100

Source: Statistical Yearbook of Yugoslavia, 1979 Table 204.8.

Average incomes per worker in industry in the LDR vary between 82% (Kosovo) and 93% (Bosnia) of the national average. Average incomes in the MDR are higher than the level prevailing in the LDR and vary between 96% (Vojvodina and Serbia) and 116% (Slovenia) of the national average.It might be expected that the lower level of personal incomes in the industrial sector in the LDR would encourage enterprises in the LDR to engage in the production of relatively labor intensive products within each industrial branch and also to utilize more labor intensive technologies. In practice however, with the important exception of Macedonia, the lower level of incomes in the LDR does not seem to have resulted in a particularly strong bias in favor of labor intensive production. Thus a second and rather more surprising reason for the higher capital intensity of industry in the LDR is that even within individual industrial branches the LDR frequently exhibit a higher level of fixed assets per worker. Table 5 shows the indexes of the relative labor intensity of production in each region of Yugoslavia by industrial branch, as measured by fixed assets per worker in 1978. The national average for each branch is 100, a value greater than 100 indicates that the respective branch is more labor intensive than the national average; a value lower than 100 indicates that the branch is less labor intensive (i.e. more capital intensive) than the national average.

12. Among the LDR, the most striking difference is between the republics of Kosovo and Macedonia. In Kosovo, which had the lowest level of personal incomes per worker in industry in 1978 (82% of the national average), 13 of its 26 industrial branches were more labor intensive than average but only 3 of these branches were in the LI and moderately labor intensive groups (MLI) groups of industries. In Macedonia, on the other hand, where personal income levels were only 3% higher than in Kosovo, 19 of its 29 industrial branches were more labor intensive than average, 5 of the 6 industries in the LI group were more labor intensive than average, but in the MLI group only metal

TABLE 5: INDEXES OF REGIONAL LEVELS OF LABOR INTENSITY IN 1978
(YUGOSLAVIA = 100)

	LDR				MDR			
	Bos.	Kos.	Mac.	Mont.	Croa.	Ser.	Slov.	Voj.
Labor Intensive Industries								
Mfg. Footwear & Leather Goods	124	108	160	72	100	105	59	146
Mfg. Finished Textiles	100	64	121	104	98	108	96	89
Mfg. Miscellaneous Products	-	0	151	-	87	50	151	145
Mfg. Furniture and Fixtures	95	110	150	88	78	145	92	150
Printing & Publishing	107	60	136	121	103	97	74	154
Mfg. Electrical Machinery	66	62	83	42	101	105	126	89
Moderately Labor Intensive Industries								
Mfg. Machinery	66	-	16	77	100	169	78	129
Extraction Stone and Sand	74	85	59	114	152	200	37	38
Mfg. Fabricated Metal Products	88	54	133	85	105	109	82	133
Sawmills & Mfg. Wood Boards	113	73	69	114	162	95	52	135
Mfg. Rubber	190	102	-	127	88	129	58	182
Mfg. Leather & Fur	89	93	75	254	162	177	87	20
Median Industries								
Mfg. Yarns and Fabrics	122	116	122	76	111	129	59	100
Mfg. Nonmetal. Min. Prod.	61	66	98	-	117	90	123	133
Processing Chemicals	113	84	81	130	108	95	94	106
Mfg. Transport Equipment	71	95	110	-	104	104	104	122
Extraction Coal	150	77	-	-	30	90	90	-
Mfg. Food Products	97	87	112	116	110	137	79	81
Mfg. Building Materials	124	170	109	77	77	140	82	106
Shipbuilding	-	-	-	42	91	189	135	293
Extraction Nonmetal. Min. Prod.	55	127	175	33	85	175	123	41
Mfg. Beverages	156	64	88	81	92	115	99	89
Capital Intensive Industries								
Tobacco Mfg.	62	239	110	63	114	101	78	173
Mfg. Paper	77	279	157	64	120	143	78	119
Non-Ferrous Ore Mining	287	168	398	122	38	59	75	-
Smelting, Refining Non-Metals	111	-	29	-	51	132	121	-
Iron & Steel Basic Industries	99	-	141	73	101	103	86	314
Mfg. Chemicals	105	123	155	144	86	103	106	74
Highly Capital Intensive Industries								
Mfg. Animal Feeds	106	404	32	-	129	40	109	252
Non-Ferrous Metal Industries	74	116	134	77	99	110	111	-
Coal Processing	88	-	133	-	-	242	-	-
Iron Ore Mining	101	-	-	81	-	-	-	-
Crude Petroleum Refineries	116	-	-	-	85	409	109	102
Electricity Generation	93	139	135	80	123	86	80	103
Extrac. Crude Petrol. & Gas	-	-	-	-	79	-	-	124

fabrication was more labor intensive than average. In Montenegro, only 10 of its 26 industrial branches were more labor intensive than average, 6 of these were in the MLI and LI categories, but its electrical machinery, furniture, machinery and the bulk of its CI and MCI industries were significantly more capital intensive than the national average. In Bosnia, most LI industries were fairly close to the national average degree of capital intensity, but with the exception of wood boards and rubber the MCI industries were more capital intensive than average.

13. The relationship between capital intensity and personal income levels in the MDR more closely resembles the pattern which one would normally expect to find. In the republic of Serbia and the autonomous province of Vojvodina industrial wages are below the national average. These two regions both exhibited a higher than average degree of labor intensity. Twenty-four branches of Serbian industry and 21 branches of industry in Vojvodina were more labor intensive than the Yugoslav average. Their above average degree of labor intensity was particularly pronounced in the LI and MLI groups of industries. In contrast, Slovenia has the highest level of personal incomes per worker and also exhibited marked capital intensity at the branch level. Only eleven branches of Slovenian industry were more labor intensive than average, just two of these were labor intensive industries--miscellaneous products and electrical machinery. In Croatia, where income levels are above the Yugoslav industrial average but lower than those in Slovenia, the capital intensity of industry at the branch level tended to be lower than in Slovenia but higher than in Serbia and Vojvodina.

14. The overall pattern of regional factor proportions suggests that there is substantial scope for the substitution of labor for capital in Yugoslav industry. In many subsectors the regional variation in the labor intensity of production between the most labor intensive method of production and the most capital intensive method of production excceds a ratio of 2 to 1. In the LI and MLI subsectors--where labor costs form a high proportion of total production costs--enterprises in Slovenia have responded to the high cost of labor in the region by conserving on the use of labor. These industries are generally more capital intensive than the national average. This has also occurred, albeit less markedly, in Croatia. In the LDR, however, only Macedonia has managed to develop labor intensive methods of production which seem suited to its lower wage structure and its need for employment generation.

15. Enterprises in Serbia and Vojvodina have been far more successful than developing labor intensive methods of production which conserve on capital and also reflect their lower than average labor costs. The examples of the footwear industry (in Vojvodina), wooden furniture and fixtures, machinery, metal fabrication, rubber and the manufacture of leather and fur products are particularly striking. The labor intensity of production in these groups is considerably higher than the LDR 1/. These examples are

1/ Higher labor intensity may also be a reflection of overmanning (in the sense that the MDR might be able to achieve the same output levels with fewer workers). See para 26 below.

particularly noteworthy because it is in these product areas (along with textiles) that the LDR need to expand their output if they are to succeed in generating more low cost employment. These industries have been important sources of employment growth for the LDR in the seventies, but the examples of Serbia and Vojvodina suggest that even in these areas the LDR have been using unnecessarily capital intensive industrial technologies. If the LDR had chosen the labor intensive technologies used by the MDR within subsectors they would have been able to significantly expand employment, particularly in the labor intensive industries. It may, of course, be the case that the reason for the generally higher level of capital intensity of LDR industry may be due to differences in product choice rather than technology. Even a 35 subsector classification may still not be sufficiently fine to capture genuine differences in the commodities being produced within subsectors by different regions. If this is the case, then the LDR seem to be specializing in the production of the wrong types of commodities given their serious unemployment problems.

Regional Differences in Total Factor Productivity

16. The results of the previous section indicate that the production techniques (and/or the subsector product choices) of the LDR do not appear to closely conform to the pattern which would be suggested by their considerable labor force endownment and their lower level of per capita investable resources relative to the MDR. Employment generation is, however, only one normative goal of industrial policy in Yugoslavia. The LDR are also committed to the (positive) objective of expanding their total output as rapidly as possible. In some subsectors it may be the case that capital intensive methods of production may be superior to labor intensive technologies. This would happen where the volume of total output which can be generated by employing a given amount of capital in the capital intensive method of production exceeds that which can be achieved by employing the same amount of capital in a more labor intensive fashion. The former technology would be technically more efficient in the sense of requiring a smaller amount of combined inputs than the latter to achieve the same output. In this case the LDR would be economically justified --in the positive sense--in employing capital intensive production techniques at the subsectoral level.

17. A second but related question is whether the LDR are following their true comparative advantage in developing capital intensive industrial subsectors geared to the exploitation of their natural resource endownment. An alternative development strategy would be to channel more resources into more labor intensive subsectors and rely more heavily on the MDR for resource based intermediate products. From a national perspective the economy is best served by regional specialization along lines of comparative advantage because this ensures that total production is maximized. This means that in certain cases it may be economically efficient for the LDR to expand their output in capital intensive subsectors in those areas where they exhibit strong comparative advantage, even though this strategy may result in lower levels of overall industrial employment in the LDR.

18. This section attempts to answer two questions:

(a) What are the regional differences in the level of productivity of total (capital and labor) resource use by sector;?

(b) To what extent are the more capital intensive technologies adopted by some of the LDR within subsectors associated with higher levels of productivity of total resource use?

19. Total factor productivity indices were estimated assuming production functions of the Cobb Douglas form where

$$Q_{ij} = A_{ij}K_{ij}^{a} L_{ij}^{(1-a)}$$

Q_{ij} represents output in the i_{th} sector in the j_{th} region; K_{ij} represents capital stock in the i_{th} industry in the j_{th} region; and L_{ij} represents the labor force in the i_{th} sector in the j_{th} region. A_{ij} is a region specific shift parameter representing the state of the art of production in industry i in region j. By transposition:

$$A_{ij} = \left(\frac{Q_{ij}}{K_{ij}}\right)^{a} \left(\frac{Q_{ij}}{L_{ij}}\right)^{(1-a)}$$

A natural measure of regional variations in the level of total factor productivity is provided by:

$$\frac{A_{ij}}{A_{i.}} = \left[\frac{Q_{ij}/K_{ij}}{Q_{i.}/K_{i.}}\right]^{a} \left[\frac{Q_{ij}/K_{ij}}{Q_{i.}/L_{i.}}\right]^{(1-a)}$$

where $A_{i.}$ is the industry wide national average level of total factor productivity in Yugoslavia.

20. The results of this calculation are presented in table 6 below. A score of 100 indicates that the region was operating at the average level of efficiency in the subsector. A score of 110, for example, indicates that total factor productivity was 10% higher than the national average. As might be expected the two most developed republics --Slovenia and Croatia-- exhibited higher than average levels of productivity in almost every branch of industrial activity in which they are engaged. Total factor productivity levels were generally lower than average in the LDR but the picture is far from uniform. Individual regions in the LDR display high levels of productivity in a number of areas. This above average performance is particularly marked in the capital intensive subsectors of industry. Bosnia, for example, has slightly higher than average total productivity in most capital intensive and highly capital intensive subsectors. There are, however, significant exceptions to this rule such as power generation in Kosovo, iron and steel basic industries in Kosovo and Montenegro, and the production of animal feeds in Macedonia.

21. Among the labor intensive product groups, with the exception of footwear in Bosnia and electrical products in Macedonia, total factor productivity was lower than average in the LDR. It is interesting to note that whereas the latter industry is more capital intensive than average the Bosnian footwear industry is both more labor intensive and more productive

TABLE 6: REGIONAL VARIATIONS IN THE LEVEL OF TOTAL FACTOR PRODUCTIVITY IN 1978 (YUGOSLAVIA = 100)

	LDR				MDR			
	Bos.	Kos.	Mac.	Mont.	Croa.	Ser.	Slov.	Voj.
Labor Intensive Industries								
Mfg. Footwear & Leather Goods	125	70	96	94	81	88	138	105
Mfg. Finished Textiles	93	94	83	87	91	99	119	119
Mfg. Miscellaneous Products	-	-	81	-	99	91	119	88
Mfg. Furniture and Fixtures	98	55	72	70	88	77	130	141
Printing & Publishing	81	45	68	87	114	77	159	105
Mfg. Electrical Machinery	100	93	133	95	125	90	87	119
Moderately Labor Intensive Industries								
Mfg. Machinery	142	-	39	147	80	116	103	69
Extraction Stone and Sand	88	120	45	51	124	101	172	78
Mfg. Fabricated Metal Products	65	44	77	57	111	91	135	119
Sawmills & Mfg. Wood Boards	81	104	18	81	108	85	174	91
Mfg. Rubber	22	128	-	117	104	83	162	55
Mfg. Leather & Fur	104	40	59	65	112	85	105	404
Median Industries								
Mfg. Yarns and Fabrics	85	69	88	49	117	84	144	73
Mfg. Nonmetal. Min. Prod.	74	160	90	-	98	91	124	130
Processing Chemicals	21	102	89	66	135	87	120	77
Mfg. Transport Equipment	34	96	91	-	35	133	110	94
Extraction Coal	82	179	-	-	76	108	99	-
Mfg. Food Products	91	34	71	74	105	86	141	104
Mfg. Building Materials	91	70	124	30	124	80	91	109
Shipbuilding	-	-	-	91	103	88	93	108
Extraction Nonmetal. Min. Prod.	187	43	80	139	76	69	128	-
Mfg. Beverages	159	5	96	108	115	62	153	99
Capital Intensive Industries								
Tobacco Mfg.	57	119	90	146	121	93	298	59
Mfg. Paper	94	76	72	61	100	90	138	61
Non-Ferrous Ore Mining	90	86	78	23	21	159	77	-
Smelting, Refining Non-Metals	-	-	154	-	235	110	52	-
Iron & Steel Basic Industries	93	-	94	89	139	72	113	158
Mfg. Chemicals	124	47	142	9	106	72	149	92
Highly Capital Intensive Industries								
Mfg. Animal Feeds	166	195	240	-	105	3	119	188
Non-Ferrous Metal Industries	-	21	35	85	71	142	184	-
Coal Processing	113	-	39	-	-	-	-	-
Iron Ore Mining	100	-	-	-	-	-	-	-
Crude Petroleum Refineries	197	-	-	-	20	259	154	213
Electricity Generation	100	73	60	145	103	121	76	119
Extrac. Crude Petrol. & Gas	0	-	-	-	119	-	-	89

TABLE 7: REGIONAL DISTRIBUTION OF INDUSTRIAL OUTPUT BY LEVEL OF TOTAL FACTOR PRODUCTIVITY IN 1971 AND 1978
(Percentages)

	LDR				MDR			
	Bosnia	Kosovo	Maced.	Mont.	Croatia	Serb.	Slov.	Vojvod.
1971 Productivity Relative to National Average								
Less than 50%	0.7	9.0	1.3	4.3	0.9	0	0	0
50-75%	12.4	25.6	8.4	9.2	1.1	8.9	4.0	3.2
75-100%	44.7	29.3	53.8	40.6	11.6	45.8	7.7	43.0
100-125%	30.5	21.3	30.6	27.8	74.3	39.7	38.8	39.0
125-150%	5.0	7.0	5.9	4.1	11.7	3.8	27.4	8.1
Greater than 150%	6.6	7.8	0	14.1	0.4	1.8	22.0	6.7
1978 Productivity Relative to National Average								
Less than 50%	2.9	11.3	2.1	7.0	1.4	0	0	0
50-75%	9.8	26.5	16.2	12.9	0.6	6.4	0.6	7.8
75-100%	60.7	30.3	61.8	38.3	22.4	50.5	16.1	18.4
100-125%	12.3	9.0	5.8	2.8	63.7	23.2	33.6	59.9
125-150%	9.1	3.1	12.0	39.0	11.5	15.4	37.6	7.0
Greater than 150%	5.1	19.5	2.1	0	0.4	4.5	12.1	7.0

than the national average. It is also noteworthy that Macedonia's footwear industry succeeded in almost reaching the national average level of total factor productivity whilst employing almost 60% more labor per unit of capital stock. Serbia's labor intensive industries exhibited below average total factor productivity suggesting that there may be some overemployment in these subsectors. The results for Vojvodina are particularly interesting, since the region succeeded in combining a more labor intensive pattern of production with above average levels of total factor productivity in 11 of its industries, including 3 labor intensive product categories (footwear, furniture and fixtures and printing and publishing).

22. The results of table 6 point toward two main conclusions. First, the LDR have succeeded in achieving high levels of total factor productivity in a number of subsectors. Frequently these subsectors are in areas where the regions possess an important natural resource endownment. It is far from axiomatic, however, that the exploitation of these resources is always justified from the point of view of regional or national policy. In a number of cases these subsectors suffer from poor productivity. Second, the capital intensive pattern of investment within subsectors in the LDR has not always been rewarded by higher levels of total factor productivity. The Slovenian example indicates that capital intensive technologies can result in high levels of total factor productivity. In the LDR, however, relatively capital intensive methods of production within subsectors are frequently associated with low levels of total factor productivity across a broad range of industries. This means that in many subsectors industrial investment in the LDR has a poor record of both low employment and low productivity.

23. In many subsectors the MDR have succeeded in developing industries which are both more labor intensive and more productive than their LDR counterparts. This suggests that if the LDR can succeed in tapping the MDR's experience in these product groups they should be able to both expand employment and output in these subsectors at a much lower capital cost than the LDR's present production pattern suggests. The data, therefore, lend additional force to our argument that the policy to promote more interregional joint ventures is a highly important potential mechanism for improving productivity in the LDR. In many subsectors the production technologies employed by the MDR are well suited to the relative LDR's capital/labor endownment and the LDR should be able to reap substantial benefits from sharing in the industrial traditions and experience of the MDR.

The Pattern of Regional Specialization

24. The analysis of total productivity enables us to indicate the extent to which the regional pattern of industrial production corresponds to regional differences in the efficiency of total resource use. Table 7 shows the distribution of regional industrial output in 1971 and 1978 according to the subsectoral level of total factor productivity 1/. For example, in 1971 7.8%

1/ The estimates of regional levels of total factor productivity in 1971 are shown in Appendix, Table 3.

of Kosovo's industrial output was generated in subsectors where the level of total factor productivity was more than 50% higher than the Yugoslav average for that year. In 1978 the proportion of output produced in branches where total productivity was more than 50% of the Yugoslav average was 19.5%. There are two factors which can account for such a change in Kosovo's output structure: a faster than average rate of regional growth in the sector(s) where total factor productivity exceeded the national average by 50%; and/or a change in the number of sectors where total factor productivity exceeded the national average by 50%. In the case of Kosovo the change was due to an improvement in the relative productivity of the coal mining sector (which accounts for over 14 percent of the region's output).

25. In both 1971 and 1978 the bulk of industrial output in the MDR was produced in industries where regional levels of total factor productivity are higher than the national average. Given that the MDR accounted for almost 80% of Yugoslavia's industrial output this result is rather striking. Since the MDR account for such a high proportion of industrial output their productivity levels tend to define the norm for the county as a whole. The MDR have, nevertheless, managed to develop particular areas of specialization where they have achieved above average levels of productivity. The most notable example is Slovenia: in 1978 over 80% of the region's output was produced in industrial branches where productivity exceeded the national average; and almost 50% was produced in industries where productivity was more than 25% higher than average. It is also interesting to note that Slovenia has been losing its pre-eminence over the other regions in terms of total factor productivity during the seventies. This is a trend which is also evident, albeit less markedly, in Croatia. These relative declines in the position of the two most highly developed republics are probably to be expected over time. The importance of their longer industrial tradition as a factor influencing their productivity vis-a-vis other regions may be diminishing as these other regions acquire more industrial experience of their own.

26. The pattern of industrial production moved in opposite directions in Serbia and Vojvodina. In Vojvodina relative productivity in the food industry (by far the most important industry in the region) improved significantly. This markedly raised the proportion of the region's industrial production which was generated by industries where total factor productivity exceeded the national average in 1978. In contrast, in Serbia there were marked declines in the relative productivity of both the food industry and in non-metallic extraction which reduced the proportion of output produced in the 100-125% range. This decline was counterbalanced by improvements in other areas, however, so that the proportion of the region's output produced at productivity levels exceeding 25% of the national average increased from 5.6% to 19.9%. Serbia's output pattern is markedly different from the other MDR. A much higher proportion of its industries operate at lower than average levels of productivity. This is probably a response to the serious nature of unemployment problems in the region which are more severe in Serbia than in the other MDR. Serbian enterprises may be employing more workers than they may really need in order to provide additional jobs for the region's labor force.

27. The bulk of industrial output produced in the LDR is generated in industries which operate at lower than average levels of total factor productivity. The most notable characteristics of the pattern of regional output brought out by Table 7 is the absence of any tendency for the LDR to close the gap between their sectoral productivity levels and the Yugoslav average. Rather the proportion of output generated in below average productivity industries increased markedly from a range of 54-64% of total output in 1971 to a range of 58-80% in 1978. In a number of instances product unity in labor intensive industries (which operated at above average levels of productivity in 1971) has fallen below the national average. These include: finished textiles in Bosnia, Macedonia and Montenegro; textile yarns in Bosnia, Macedonia and Kosovo; and furniture and fixtures and footwear in Macedonia. These are all instances where each of the industries in question is more labor intensive than the average for the subsector. This suggests that low productivity in these sectors is the result of the desire to expand employment rather than the low capital productivity which characterizes most of the LDR industry. Although the general pattern which emerges is one of erosion in the level of LDR industrial productivity relative to the national average there was a strong improvement in some subsectors which are geared to the exploitation of the LDR's natural resources. Examples include electricity generation in Montenegro, coal mining in Kosovo, the extraction of non-metallic minerals in Bosnia and aluminum production in Macedonia. For the future, however, the LDR need to focus on measures which will improve productivity in the nascent processing industries which employ the bulk of their industrial workers.

Total Factor Productivity Growth

28. So far the focus of this annex has been on interregional comparisons of total factor productivity levels. The advantage of the total factor productivity measure of efficiency is that it captures the relationship between total input use and the output level. A similar approach can be used to track changes in the productivity of total resource use over time. Assuming production functions of the Cobb-Douglas form:

$$Q_{it} = A_{it} K_{it}^{\alpha} L_{it}^{(1-\alpha)}$$

where Q_{it} represents output of industry i in year t, and A_{it} represents the "state of art" in industry i at time t. Total factor productivity growth (TFPG) can then be measured as:

$$\frac{dA_{it}}{dt} = \frac{dQ_{it}}{dt} - \alpha \frac{dK_{it}}{dt} - (1-\alpha) \frac{dL_{it}}{dt}$$

This TFPG measure tells us how much of the growth of output in a given subsector is attributable to increases in capital and labor resources used by the subsector and how much of the output is due to (Hicks-neutral) changes in the productivity of resource use in the subsector.

29. Table 8 below presents estimates of TFPG in Yugoslav industry for the period 1971-78 (using end point data). As we noted in the main report these results need to be treated with some caution as they involve the estimation of a residual growth effect. Any errors in the measurement of factor inputs or in the weighting of these inputs in the production function therefore spill over into the estimate of TFPG 1/.

1/ A more comprehensive study of TFPG in the Yugoslav economy, which examines these issues in detail, is currently under preparation.

30. In the major priority sectors of the last two 5-year plans (1971-75 and 1976-80) - electric power, ferrous metallurgy, non-ferrous metallurgy, chemicals, and coal production - TFPG was generally above the average. This indicates that the strategic choice to promote the development of these sectors tended to improve the overall industrial growth rate. It is interesting to note, however, that within the priority sectors, productivity growth was considerably faster in the processing branches than in the raw material branches. The extraction of coal and non-metallic mineral products and iron ore and non ferrous ore mining all recorded negative TFPG, signalling a decline in the efficiency of resource use in these subsectors. TFPG was also considerably slower in the manufacture of chemicals than in the processing of chemicals. These results strongly suggest that although the import substitution efforts in these subsectors (which were aimed at increasing the domestic production of raw materials) may have paved the way for the further development of processing activities, the negative TFPG in the raw material subsectors lowered the overall industrial growth rate and therefore imposed significant costs on the Yugoslav economy. The low or negative rates of TFPG in these sectors may have been caused by the attempt to expand production in these areas too quickly, resulting in production bottlenecks and lengthening project gestation periods.

31. The other point of interest brought out by Table 8 is that a number of non priority sectors such as finished textiles and the manufacture of rubber, tobacco and paper products recorded high rates of TFPG. A possible explanation for the above average performance of these sectors might be that because of their non priority status the investment plans of enterprises in these sectors may have come under closer scrutiny. This situation may have encouraged a more efficient deployment of resources within these branches and perhaps limited the development of excess and underutilized capacities.

32. The general pattern which emerges from the analysis of TFPG in Yugoslav industry is that technical progress - in the sense of obtaining greater output from a given level of factor inputs- made a significant contribution to the growth of industrial output in the 1971-78 period. The overall level of TFPG (1.8%) accounted for about 25% of Yugoslavia's 7% average industrial growth rate. This performance is particularly impressive given the multiple objectives that the industrial sector has been expected to attain during the seventies. This has included not only output growth but also the absorption of a growing labor force, the industrial development of the LDR and the relocation of industry outside of the main industrial centers. Inevitably there has been some trade off between output growth and the attainment of this latter group of objectives which has retarded the growth of overall industrial productivity. As we point out in the main text, for the future, as Yugoslavia moves from an extensive to a more intensive pattern of industrial development, planners will need to give more explicit attention to this trade off. As the focus of industrial policymakers shifts toward improving the efficiency of resource use in the industrial sector, productivity may be expected to make an increasing contribution to the overall rate of industrial growth.

TABLE 8: TOTAL FACTOR PRODUCTIVITY GROWTH IN INDUSTRY 1971-78
(Annual Percentage Rates)

Labor Intensive Industries	
Manufacture of Leather Footwear and Fancy Goods	-1.2
Manufacture of Finished Textile Products	3.0
Manufacture of Miscellaneous Products	8.5
Manufacture of Furniture and Fixtures	1.0
Printing, Publishing and Allied Industries	-0.2
Manufacture of Electrical Machinery	2.7
Moderately Labor Intensive Industries	
Manufacture of Machinery	4.4
Extraction of Stone and Sand	3.7
Manufacture of Fabricated Metal Products	1.1
Sawmills and Manufacture of Wood Boards	0.6
Manufacture of Rubber	3.1
Manufacture of Leather and Fur	0.2
Median Industries	
Manufacture of Yarns and Fabrics	-0.6
Manufacture of Nonmetallic Mineral Products	1.9
Processing of Chemicals	5.5
Manufacture of Transport Equipment	3.4
Extraction of Coal	-0.5
Manufacture of Food Products	1.0
Manufacture of Building Materials	2.9
Shipbuilding	-2.8
Extraction of Nonmetallic Mineral Products	-2.6
Manufacture of Beverages	1.3
Capital Intensive Industries	
Tobacco Manufactures	2.6
Manufacture of Paper	2.4
Non Ferrous Ore Mining	-1.1
Smelting, Alloying and Refining of Non-Metals	7.0
Iron and Steel Basic Industries	0.7
Manufacture of Chemicals	2.2
Highly Capital Intensive Industries	
Manufacture of Animal Feeds	-1.8
Non Ferrous Metal Basic Industries	2.0
Iron Ore Mining	-1.6
Coal Processing	12.3
Crude Petroleum Refineries	-5.9
Generation, Transmission and Distribution-Electricity	2.3
Extraction of Crude Petroleum and Gas	-1.8
Industry Total	1.8

SUPPLEMENTARY TABLES

TABLE A: Percentage Regional Distribution of Industrial Output Employment and Fixed Assets in Yugoslavia

TABLE B: Regional Variations in the Level of Total Factor Productivity in 1971

TABLE NO A: - PERCENTAGE REGIONAL DISTRIBUTION OF INDUSTRIAL OUTPUT EMPLOYMENT AND FIXED ASSETS IN YUGOSLAVIA

1971, 1978 (Yugoslavia=100)

	LDR				MDR			
	Bosnia	Kosovo	Macedonia	Montenegro	Croatia	Serbia	Slovenia	Vojvodina
Output (in 1972 constant prices)								
1971	13.2	1.9	5.4	1.5	25.3	22.3	20.3	9.5
1978	13.0	2.1	6.0	1.6	24.2	23.7	19.8	9.5
(growth rate)	(6.8)	(9.0)	(8.5)	(7.8)	(6.4)	(7.9)	(6.7)	(7.0)
Employment								
1971	13.6	2.3	6.2	1.5	23.8	25.5	17.6	9.5
1978	14.7	2.6	6.8	1.6	23.6	24.5	16.9	9.3
(growth rate)	(4.9)	(5.0)	(4.9)	(4.9)	(3.6)	(3.2)	(3.2)	(3.5)
Fixed Assets (in 1972 constant prices)								
1971	16.5	3.2	5.3	2.7	23.0	24.7	16.6	8.0
1978	16.6	3.4	6.1	3.1	23.6	22.8	17.2	8.0
(growth rate)	(7.8)	(8.4)	(9.6)	(9.8)	(8.1)	(6.6)	(8.2)	(7.7)

Source: Statistical Yearbook of Yugoslavia 1980, and data supplied by the Federal Institute of Statistics.

TABLE B: REGIONAL VARIATIONS IN THE LEVEL OF TOTAL FACTOR PRODUCTIVITY IN 1971

	LDR				MDR			
	Bos.	Kos.	Mac.	Mont.	Croa.	Ser.	Slov.	Voj.
Labor Intensive Industries								
Mfg. Footwear & Leather Goods	132	72	105	53	83	89	132	105
Mfg. Finished Textiles	85	110	80	124	108	88	131	92
Mfg. Miscellaneous Products	-	-	102	-	93	168	156	69
Mfg. Furniture and Fixtures	93	48	60	198	83	105	121	109
Printing & Publishing	107	54	57	89	121	81	121	110
Mfg. Electrical Machinery	95	127	109	94	127	84	97	143
Moderately Labor Intensive Industries								
Mfg. Machinery	189	-	79	150	93	78	110	89
Extraction Stone and Sand	70	55	64	31	110	123	172	141
Mfg. Fabricated Metal Products	68	48	22	26	110	77	154	122
Sawmills & Mfg. Wood Boards	80	694	-	83	115	98	155	86
Mfg. Rubber	65	134	58	85	125	71	138	83
Mfg. Leather & Fur	90	48	96	92	119	106	108	133
Median Industries								
Mfg. Yarns and Fabrics	91	75	98	52	117	83	132	75
Mfg. Nonmetal. Min. Prod.	61	-	-	-	110	99	105	108
Processing Chemicals	28	59	84	71	134	86	118	63
Mfg. Transport Equipment	77	54	88	-	37	113	140	85
Extraction Coal	86	125	-	-	100	130	116	-
Mfg. Food Products	80	36	77	89	107	107	120	97
Mfg. Building Materials	74	52	128	48	113	74	111	125
Shipbuilding	-	-	-	114	103	88	101	116
Extraction Nonmetal. Min. Prod.	137	143	49	41	123	101	79	-
Mfg. Beverages	134	12	54	82	101	94	130	131
Capital Intensive Industries								
Tobacco Mfg.	65	154	103	122	67	100	283	111
Mfg. Paper	91	59	78	149	115	100	115	65
Non-Ferrous Ore Mining	105	79	124	57	102	120	166	-
Smelting, Refining Non-Metals	-	-	60	-	230	111	82	-
Iron & Steel Basic Industries	112	-	87	77	122	64	100	169
Mfg. Chemicals	110	54	104	9	119	71	163	123
Highly Capital Intensive Industries								
Mfg. Animal Feeds	620	177	108	-	120	3	186	170
Non-Ferrous Metal Industries	-	32	107	-	28	167	144	-
Coal Processing	103	-	7	-	-	-	-	-
Iron Ore Mining	100	-	89	-	-	-	-	-
Crude Petroleum Refineries	91	-	-	-	106	-	72	108
Electricity Generation	105	69	-	108	108	103	74	173
Extrac. Crude Petrol. & Gas	-	-	95	-	108	-	-	94