

DOCUMENT

PROGRAMME OF RESEARCH AND ACTIONS ON THE DEVELOPMENT OF THE LABOUR MARKET

Comparative follow-up and evaluation of
current employment measures



COMMISSION
OF THE EUROPEAN COMMUNITIES

This document has been prepared for use within the Commission. It does not necessarily represent the Commission's official position.

Cataloguing data can be found at the end of this publication

Luxembourg: Office for Official Publications of the European Communities, 1985

ISBN 92-825-5542-9

Catalogue number: CB-44-85-040-EN-C

Articles and texts appearing in this document may be reproduced freely in whole or in part providing their source is mentioned.

Printed in Belgium

Commission of the European Communities

PROGRAMME OF RESEARCH AND ACTIONS ON THE DEVELOPMENT OF THE LABOUR MARKET

**COMPARATIVE FOLLOW-UP AND EVALUATION OF
CURRENT EMPLOYMENT MEASURES**

By

Centre de Recherche "TRAVAIL ET SOCIETE"
Paris, France

Centro Studi di Politica Economica
Rome, Italy

Forschungsstelle Sozialökonomik der Arbeit
Berlin, Federal Republic of Germany

Policy Studies Institute
London, United Kingdom

Document

This document has been prepared for use within the Commission. It does not necessarily represent the Commission's official position.

THE

The research on which these reports were based was financed by the Commission of the European Communities as part of its programme of Research and Actions on the Development of the Labour Market.

THE

The analysis and conclusions are the responsibility of the authors. They do not necessarily reflect any views held within the Commission of the European Communities nor do they commit it to a particular view of the labour market or any other policy matters.

Foreword

This report was produced by a group of experts from the Federal Republic of Germany, France, Italy and the United Kingdom.

The experts were asked by the Commission of the European Community to investigate selected investment policies for the economies aimed to stimulate growth and employment.

The starting point for the work was the recognition that investment has fallen too low in the four economies. Remarkable enough the decline of investment was not only due to the pattern of private investment. Given tight financial constraints to the public budgets, public investment was also reduced from the desired level. In recent years and in line with initiatives of the Commission of the European Communities there is, however, a growing understanding that reductions in public investments are harmful for future growth and stable employment and will bring about negative impulses for the private economy.

The expert group did not investigate, in any detail, criteria for the allocation of public expenditures. From a more pragmatic point of view, the expert group analysed points of future growth in the four countries and corresponding investment programs. Special attention was paid to growth impulses and employment impacts of the different investment programs proposed.

This report starts out with a joint expertise on the issues involved. The country reports are prepared on an individual basis. The experts of each country are responsible for their own country reports.

The project was only made possible by the generous support of the Commission of the European Communities. This support was not restricted to funding the project. The scholarly advice and consultation and the gene-

ral interest shown in the work, especially by John Morley and Andy Chapman, formed a considerable part of the support given and were greatly appreciated.

Michael Bolle	Forschungsstelle Sozialökonomik der Arbeit, Berlin, Federal Republic of Germany
Raffaele Brancati	Cespe Center, Rom, Italy
Harry Cowie	Policy Forecasting Unit, London, United Kingdom
Xavier Greffe	Centre de Recherche , "Travail et Societé", Paris, France

April , 1984

Summary of a Report on

"Investment Policy and Employment in the Federal Republic of Germany, France, Italy and the United Kingdom"

This report was produced by a group of experts from the Federal Republic of Germany, France, Italy and the United Kingdom. The experts were asked by the Commission of the European Community to investigate investment policies for the corresponding economies aimed to stimulate growth and employment.

The starting point for the work was the recognition that investment has fallen too low in the four economies. Remarkable the decline of investment was not only due to the pattern of private investment. Given tight financial constraints to the public budgets, public investment was also reduced from the desired level. In recent years and in line with initiatives of the Commission of the European Communities there is, however, a growing understanding that reductions in investment are harmful for future growth and employment. The need for higher levels of both, private and public investment, has more widely accepted in all four countries now. There is a growing demand of policies to stimulate private investment and to increase public investment with particular emphasis on the move of the public budget towards capital expenditures.

A policy mix , which stimulates both, the supply side and the demand side, should be the basis for an appropriate future recovery of the economies. There is a process to concentrate on (a) the improvement of private investment via appropriate forms of government action as well as (b) an increase of public investment by the way of restructuring public budgets.

Policies aimed to increase private and public investment in specific sectors of the economie have to make clear what economic

and social needs they intend to match. From a pragmatic point of view, the expert group analyzed points of future growth in the four countries and corresponding investment programmes. Special intention was paid to growth impulses and employment impacts of the different investment programmes proposed. The report starts out with the joint expertise on the issues involved. The country reports are prepared on an individual basis.

The main outcome of the report clearly shows that there exist comparable and common areas for future growth in all of the four economies which require appropriate forms of government action to stimulate investment. The report emphasizes the following: (i): The economies discussed here have to specialize on new product and sophisticated technological processes. The high technology sectors are similar in each countries, for example, electronics, biotechnology, engineering and electronics communication technologies, chip and robot manufacturing, space. (ii): There are specific needs for public investment specially aimed to improve the infrastructure. This is specially true in all four economies for new roads and motorways, commune trains and faster rail-links. (iii): The problem of producing and saving energy plays an important role in all four economies. Public investment should be aimed toward the use of more efficiency production of energy via new technologies as well as energy conservation. (iv): The deterioration of the quality of life in terms of the natural economic and social environment put a heavy burden on all four economies. The pollution of water and air, the increasing threat to the biological balance and the destruction of community life require adequate economic and ecological policies. (v): In some countries public investment is needed for socially desirable job creation. Socially desirable jobs such as homehelps, probation offices, neighborhood centers etc. will bring down social costs and increase social benefits and should be carried out not with the intervention of the bureaucracy but in a

more decentralized way. In some cases, there is an obvious political desire to develop the culture sector and satisfy important needs in this field.

The report also stressed too important points: First, it became very clear, that any investment policy has to take into account the need for economic integration of different reaches of the economy. Second, in some cases much emphasis is laid on the problem of an unpayable high external deficit. Input-output-links between the capital good sector and consumption good sector should be improved as a basis for the balance of future growth.

Most of the investment projects proposed in the reports can be carried out by governments of each of the four countries. But it should be evident, too, that in quite some cases joint efforts on a European level are more effective. The report clearly states, that, if the investment projects proposed are to be carried out, as strengths stimulus for future growth and competitiveness of the economies as well as an improvement of the patterns of the employment are most likely.

Michael Bolle	Forschungsstelle Sozialökonomik der Arbeit, Berlin, Federal Republic of Germany
Raffaele Brancati	Cespe Center, Rom, Italy
Harry Cowie	Policy Forecasting Unit, London, United Kingdom
Xavier Greffe	Centre de Recherche, "Travail et Société", Paris, France

April 1984

C O N T E N T Spage

A.	<u>Investment Policy and Employment in the Federal Republic of Germany, France, the United Kingdom and Italy: A Comparative View</u>	1
	by	
	Michael Bolle, Raffaele Brancati, Harry Cowie, Xavier Greffe	
B.	<u>The Country Reports</u>	
	I. Investment Policy and Employment: The Federal Republic of Germany Michael Bolle Gunnar John	23
	II. Investment Policy and Employment: France Xavier Greffe	86
	III. Investment Policy and Employment: Italy Raffaele Brancati	130
	IV. Investment Policy and Employment: The United Kingdom Harry Cowie	173
C.	Policy Conclusion Michael Bolle	201

Investment Policy and Employment
in the Federal Republic of Germany,
France, the United Kingdom and Italy:

A Comparative View

by:

Michael Bolle

Raffaele Brancati

Harry Cowie

Xavier Greffe

List of tables

Table 1: Unemployment

Table 2: Growth Rates of GDP

Table 3: Growth Rates of Employment and Productivity

Table 4: Growth Rates of Investment and Investment
in per cent of GDP

Table 5: Public and Private Investment in per Cent

Table 6: Public Expenditures in per Cent and Public
Investment in per Cent of Public Expenditures

1. The Need for More Investment

The FRG, France, the United Kingdom and Italy, the economies analyzed here, suffer from high and even growing levels of unemployment. Unemployment puts a heavy burden on the performance of the economies as well as of the well-being of individuals. The costs of unemployment are unbearable high. Individuals are constrained by income losses, psychological, health and social prejudice. The public budget is subject to strain by necessary transfer payments to the unemployed, the opportunity costs in terms of losses in production amount to a high percentages of GNP.

What is more, the average unemployment rates, ranging between 9 per cent in the FRG and 13 per cent in Italy in 1984 (see table 1), do not reflect the problems properly. Given the large number of people not included in official unemployment statistics and the dispersion of unemployment rates, one may easily conclude that official statements often enough understand problems linked to unemployment. The share of long-term and unskilled unemployed people is growing, the burden of being unemployed is distributed unequally.

High and unevenly distributed unemployment rates are the major challenge to economic policies in all of the four economies. Given the relevance of the problem, economic policies should make use of all appropriate measures available and should develop new instruments at the same time.

Broadly speaking two approaches can be followed, policies (a) to increase the flexibility of working time and to reduce hours worked will have considerable employment impacts, policies (b) to stimulate growth of real GNP will bring about a higher level of income per capital as well as reduction of unemployment. Both approaches are needed simultaneously and cannot be substituted by each other.

Working time policies do play an important part in all of the four economies. In the UK and Italy, policies to increase the flexibility of working hours (part-time work, job sharing etc.) play a more important role; in France and the FRG, also developing new flexible working time patterns, policies to reduce working time are partly implemented (in France the 39-hour-week) or strongly demanded by major trade unions (for example the 35-hour-week by the IG Metall in the FRG). However, more efforts should be undertaken in all four economies to develop those working times schemes even further, which will have positive employment impacts and are in line with the attitudes of people and support the competitiveness of the economy.

Policies to stimulate growth are strongly debated in each of the four countries. Whereas the form of state intervention is questionable according to the economic philosophy policy believes in, there is a common understanding about the sense in which the term growth should be used. The quantitative approach, defining growth in terms of pure average figures of production, is history and replaced by the idea of qualitative growth. Growth should improve the quality of life as measured by specific and well-defined economic and social indicators. We consider this approach as useful indeed for an evaluation of policies to stimulate growth: growth policies should define their targets in terms of economic and social needs. Clearly, economic and social needs will differ from country to country. But, dealing with the fields of action for a sensible investment policy in more detail at a later stage, there definitely exist common issues for all of the four economies with regard to growth policies.

There is another point worthwhile to be stressed. From the point of view of employment impacts of growth and despite of the idea, that the structure of jobs, e.g. is the kind of work places created, matter, a higher growth rate will not create higher employment automatically. Employment patterns depend on the links between rates of growth of real GNP and the increase of labour productivity. Thus, to stimulate employ-

ment, economic policies have to stabilize the nexus between growth rates and changes of labour productivity: growth rates of real GNP should be higher than the increase of labour productivity.

During the seventies and at the beginning of the eighties remarkable structural changes effected growth and labour productivity. In the seventies annual averages growth rates of real GNP ranged between 3.6 per cent in France and 1.9 per cent in U.K. (see table 2). The pattern of labour productivity stabilized employment somewhat: with the exception of the FRG, employment still increased (France, Italy) or was at least stabilized (United Kingdom) (see table 3).

It should be noticed, however, that in all of the four economies employment patterns were not adequate to match the growing supply of labour. Unemployment grew because of the disappointing patterns of employment as compared with the increase of the supply of labour.

At the beginning of the eightieth, the economic performance of the four economies was even worse. Growth rates declined again, even showing negative signs. Given the increase of labour productivity, employment decreased (see table 3). With the exception of Italy, this downward move of employment was considerable high and contributed to the rise of unemployment given the ungoing growth of the labour force.

There are quite some reasons for the phenomenon of decreasing employment levels due to unfavourable growth-productivity-links. The rise of oil prices, the decline of the old and the difficult rise of a new international monetary system, a positive correlation of business cycles of the industrialized countries of the Western world, the new role of newly industrializing countries and dramatic technological changes, the "chips and robots phenomenon", challenged traditional economic policies and brought about a growing need for private and public investments to re-structure and to modernize the existing capital stock.

The recognition of a growing need for higher levels of investment with special emphasis on sophisticated new technologies is based on the view

that structural changes do require an adequate adjustment of the types of products and the technologies used, that is a modernization and restructuring of the existing capital stock via new investment.

What really happened, was exactly the opposite. Productivity grew not because of higher investment, but because of laying off redundant labour or of subsidizing traditional modes of production. Investment fell short of what was needed.

In each of the four countries, investment ratios as measured as the percentage of GDP, declined. Investment ratios range in the sixties in the average around 24.9 per cent of GDP (FRG) and 18.1 per cent (United Kingdom), whereas in 1983 investment ratios were as low as 20.8 per cent (FRG) and 16.0 per cent in the UK (see table 4). The available data prove, too, that the United Kingdom and Italy suffer from underaverage investment ratios, whereas investment ratios in France and Germany are higher, but still much lower also compared with the sixties and even the seventies.

Remarkable enough, this decline of investment ratios was not only due to patterns of private investment. Private investment did fall, but so did public investment. Finding themselves in a position of increasing net borrowing requirements to the public budget, government of Italy, the UK and the FRG cut back capital expenditures trying to cope with current consumption demands. Thus, given the trend in private investment, employment and growth were negatively effected by cut backs in public expenditures which discriminated against capital expenditures in favour of current consumption (see table 6). This evaluation is only partly true for France: French government tried in a first time to raise public investment and public expenditure and in a second time to not cut back them. In 1981/82 economic policies reflected in the budgets in France were aimed to two goals: to promote employment and to increase competitiveness however, that the increasing external disequilibrium led government to the inauguration of an austerity plan and brought about a revision of the scale of planned public investment. The level of public investment could at most ensure a minimum for the improvement of external competitive strength and employment.

Given these pattern, the need for higher levels of both, private and public investment, has more widely accepted in all four countries now. There is a growing demand for policies to stimulate private investment and to increase public investment, with particular emphasis on the move of the public budget towards capital expenditures, among parties, governments, employers' associations and trade unions. The recognition of the important role of investment for future growth and employment is also in line with initiatives of the Commission of the European Communities. Since 1982, the Commission emphasized the need for European policies to increase investment ratios, thereby stimulating competitiveness, growth and employment.

There is no easy way how the task to promote investment has to be done. In terms of strict economic philosophies, both, the traditional keynesian approach as well as the newly established supply -side approach fall short of an appropriate policy design facing the economic problems of the eighties. Given the needs for consolidating the public budgets and the unevitable adaption of the existing capital stock to new modes of production and technologies, the simple return to orthodox demand management proves to be ineffective. On the other hand, the short-comings of a supply-side approach are evident, too: The reduction of costs and the demolition of investment barriers may be effective from the point of view of the individual firm but will not bring about the necessary stimulus for profitable future investment.

Higher profits on the existing capital stock do not increase the rate of profit for the future investment unless demand is growing. Thus, a policy mix, which stimulate both, the supply side and the demand side, should be the basis for an appropriate future recovery of the economies.

This approach has to concentrate on

- the improvement of private investment via appropriate forms of state intervention as well as
- an increase of public investment by the way of restructuring public budgets.

2. An Evaluation of Selective Investment Programs with Special Regard to Public Investment

It is most likely that financial constraints to the public budget will remain tight in all of the four countries. If this is true, it is even more important to achieve an optimal use of scarce resources. Unfortunately, there is a lack of information about the objectives and the allocation of public expenditures. This lack of information does seem to introduce some irrationalities in public expenditures programs.

Policies aimed to increase private and public investment in specific sectors of the economy have to make clear what economic and social needs they intend to match. We did not, however, present here a concise system of economic and social indicators appropriate to define in any detail what is needed and what should be done. Instead and from a more pragmatic point of view, we do analyze growth poles which have been suggested by different groups in the corresponding economies. With regard to the specifics of each economy, details can be found in the country reports. In this joint report, some light will be thrown on comparable areas of growth and public expenditures.

- i) Technological changes in all four economies require an adequate adaptation of the existing capital stock via new investment. There are common features with regard to the kind of adaptation required: the economies have to specialize on new products and sophisticated technological processes which are to be defined by a high share of research and development. The implementation of high technologies are of growing importance for both, employment and future growth. The improvement of competitiveness is not restricted to specific economic sectors. It is true, that there exist out-of-date sectors to a much lesser extent than out-of-date technologies. But there still are some sectors in each economy in danger, sectors, which may not be defined as growth sectors. To improve competitiveness even in those sectors of danger it is useful to lower economic and social costs

during the periods of adaption to new equilibrium pathes of growth and employment via a reduction in social charges and the launching of technological programs. It should be noticed, however, that these sectors are not the important ones for programs of future and stable recovery.

Closely related to this aspect, one should also stress the need to reduce, in particular for countries (as for example Italy) with a strongly unbalanced economic structure the constraints to development stemming from considerable sectoral and regional disequilibrium.

There are specific sectors of growth in each economy, for which investment programs have to be launched. These high technology sectors are similar in each country, for example in France electronics, biotechnology, in the United Kingdom space, engineering and electronic development and communication technologies, electronics, chip and robot manufacturing. It is especially here, where public and private investment is needed. The introduction of technological transfer agencies, the stimulation of research and development via financial funds, joint ventures and the financing of risk capital are important instruments to achieve the goals.

The encouragement of investment in the sectors of growth mentioned should be aimed especially towards small and medium-sized firms. Small and medium-sized firms, being an important factor for growth and employment in all four economies, are often enough not able to invest continuously in research and development and taking over high risk links to the implementation of expensive high technologies. Financial aids and new ways of technological transfers have to be considered as an effective way to improve growth and employment by the way of stimulating research and development and the introduction of new technologies in small and medium-sized firms.

- ii) There are specific needs for public investment especially aimed to improve the infrastructure. This is true in all four economies for transport. The case of the United Kingdom proves, that new truck roads and motorways als well as road building programs are badly needed given the quality of the existing capital stock in transport. With regard to the Federal Republic of Germany and France structural changes are perhaps more important. In France, the project of the Atlantic train à grand vitesse proves to be useful and should be developed further. In the FRG, public investment is needed for com trains and railroads.

- iii) The problem of producing and saving energy plays an important role in all four economies. Public investment should be aimed towards the use of more efficient production of energy via new technologies as well as towards a more efficient way to conserve energy. With regard to France, programs for nuclear energy are probably more important than in the FRG. In the FRG, new technologies especially based on medium-distance-heating systems are widely discussed and seem to be efficient. With regard to the conservation of energy, there are similar issues in the United Kingdom, France and FRG: insulation of private and public buildings will bring about savings of energy, are labour intensive and will involve considerable employment effects.

- iv) The deterioration of the quality of life in terms of the natural, economic and social environment put a heavy burden on all four economies and societies. The pollution of water and air, the increasing threat to the biological balance of the woods and the destruction of community life require adequate economic and ecological policies. Especially in France, the United Kingdom and the FRG programs for housing and urban renewal are unevitabele to cope with the aging of housing and the apperance of areas of poverty. With special regard to the United Kingdom, capital programs of the water supply and the sewerage systems in the UK, constructed over a

hundred years ago, have to be improved with regard to renewing cities sewerages and industrial treatment networks as well as tackling the waste of water resources through leakage and inefficient use of system. In the FRG a further move to a more effective sewerage system has to concentrate on new technologies. Waste recycling and waste disposal play important role as well as air clearing. With regard to air clearing, the emission of sulphur dioxide has to be controlled via appropriate technologies, the disposal of chemical waste requires further efforts. The search for, transportation and treatment of chemical warfare agents are important fields for public investments in a considerable range.

- v) In the case of the United Kingdom and the FRG, public investment is needed for socially desirable job creation. Socially desirable jobs such as homehelps, probation offices, neighbourhood centres etc. will bring down social costs and increase social benefits. Programs should, however, not be carried out with a cumbersome bureaucracy which blunts their awareness of local needs. If more decentralized programs are implemented, a longterm low cost job creation with low costs for public funds is possible when account is taken of the savings because of decreasing unemployment benefits. With regard to France, there is an obvious political desire to develop the cultural sector and satisfy important needs in this field. The further development of already existing programs is most reasonable for the cultural development as well as job creation.

To summarize: in all four countries there is a need for the improvement of the implementation of high technologies in specific growth areas and advanced information technologies. With special regard to public investment programs, in the UK fields of action are to be identified for housing and urban renewal, energy conservation, environmental service, transport and socially desirable job creation. Very similar to the Uni-

ted Kingdom, public investment in FRG should concentrate on energy conservation and the production of energy, housing and urban renewal, environment protection, transport, chemical waste and waste recycling, social service and air clearing. In France, areas of public investment are identified for conventional investment in sectors like electronics, construction in public works, machine tools, transport, agrar food industries and wood. Energy and energy substitution, town environment, cultur and social activities are important areas of investment which are to be developed. In the case of Italy and besides of the importance of promoting technological innovation, public investment is needed to reduce social and economic bottlenecks as well as to improve the necessary degree of economic integration.

Two further points must be mentioned: (a) the regional aspect and, (b) the international trade links.

- a) Especially in the case of Italy it became very clear, that any investment policy has to take into account the need for economic integration of different regions of the economy. At it is pointed out in the country report, the Italian economy is disintegrated in terms of regional aspects. Thus, public investment policies have to consider the appropriate competitive balance of regions.
- b) In some country reports, especially in the case of France and Italy, much emphasis is laid on an open import substitution strategy. The argument runs as follows: due to unfavourable input-output-links between the capital goods sector and consumption goods sectors there is a high tendency to import capital goods. Thus, policies, aimed to increase investment, may in the short run involve an unbearable high external deficit, thereby decreasing employment instead of creating new jobs. Evidently, a successful policy to increase private and public investement has to improve the input-output-links by a cautious assessment of import-substitution policies. This should by no means end up in protectionism, but should be used to improve the input-output-links as a prerequisite for a balanced future growth, thereby increasing the level of imports in the medium and long run.

3. Policy Conclusions

Probably the most important problem of an evaluation of the proposed investment programs is related to the employment impacts. Evidently, an exact quantitative evaluation of employment impacts of selected investment programs is not an easy task to do. The total job creation effect of higher investment depends on the macroeconomic performance of the economies. This is especially true with regard to second round effects due to the income multiplier or investment accelerator as well as pattern of the international trade. Furthermore, the time-scope of employment functions play a decisive role. Due to unbalanced input-output-links and a high tendency of an economy (for example France, Italy) to import capital goods rather than producing them in the domestic economy, higher capital expenditures may involve an external deficit and a negative contribution to employment in the short run. In the medium term, however, the setting-up of more output capacity will lead to a more effective performance of the economy and eventually to higher employment. Any investment policy has to consider carefully the domestic input-output-links between the consumption and capital goods sectors. We do think, that the proposed investment projects will not only improve employment in the medium, but also in the short run because of the amelioration of capital goods producing industries.

With regard to direct and first round employment effects of the proposed investment programs, the outcomes of an evaluation are much clearer. The intensity of labour of specific investment programs is well known in most cases and allows for a precise calculation of direct job creation effects. In most cases, investment programs proposed above are labour intensive. This is especially true with regard to two types of investments:

- i) Investment programs aimed to improve the use of sophisticated technologies are labour intensive because of the skilled manpower involved. The share of labour used to develop blue prints and the share of research and development work to be done is above

average in high technologies such as biotechnology, space, robot and chip production, technology transfer agencies and advanced information technologies like computer and tele-communications manufacturing. In these areas, there is a double advantage of investment programs: investment is labour intensive as well as highly productive. Jobs created in these areas are to be regarded as highly stable with regard to future patterns in the economy.

- (ii) The direct job creating effect of investment programs is high in those areas, which are linked to environmental protection, energy conservation, housing and urban renewal as well as socially desirable job creation. The work to be done requires unskilled, semi-skilled and, to a lesser extent, skilled labour with a special bias towards construction work.

Exact quantitative figures are given in country reports. The overall effects of specific programs differ from country to country, but, to summarize, positive employment effects are most likely in almost all cases. The overall employment impact of investment programs then depend on the size and magnitude of investment programs actually carried out. With regard to public investment and given the calculated stimuli for private investment and on the basis of some realistic assumptions on financial constraints of the public budget, one ends up with a considerably high increase of employment in all four economies. The decrease of unemployment may be lower because of reactions of the labour supply, but a remarkable relief for the labour market is most likely. According to the economic performance of the individual economies as well as the size and magnitude of investment projects to be carried out, figures vary, but range around additional jobs of about one million with the next five years.

We also asked ourselves, whether there will be barriers on the labour market given the calculated additional demand for specific qualifications. First of all one has to remember, that unemployment in all four countries is at a level which makes shortages of labour unlikely even if employment will increase at a considerable range. The exact effect

depends on the dispersion of skills linked to additional demand for labour. The proposed investment projects involve a variety of skills. The additional demand for labour is linked to skilled labour for investment projects which are aimed towards high technologies. On the other hand, there is a bias in favour of semi-skilled labour linked to investment projects in the area of environmental protection, energy conservation and housing and urban renewal. There even will be an additional demand for unskilled and limited skilled labour. For example: projects in energy conservation require, apart from some operations such as heat control and lighting in installation and insulation, either no particular skills or only limited skills available after a short period of training. This is also true for housing and urban renewal programs and environmental protection with the further advantage, that these programs can be concentrated on depressed industrial and urban centres which tend to have exceptionally high levels of unemployment.

In all of the four economies analyzed here, unemployment is unequally distributed. The share of unskilled or low skilled people being unemployed is above average. Thus, the additional demand for unskilled labour related to proposed investment projects will not be constrained by shortage on the labour market. As far as academic qualifications are concerned, no shortages are likely with regard to socially desirably job creation as well as cultural activities. As far as skilled labour in specific high technology industries is concerned, scarcities on the labour market are likely if additional demand linked to investment projects is exceptionally high. We do think, that flanking measures, to improve the dynamics of labour market, are badly needed. These flanking measures should be related to improve mobility and flexibility of labour and should concentrate on programs which are aimed to improve qualifications in engineering, data processing, policies aimed at improving information/organization and managing access to jobs as well as reforms in the job placement system. They should systematically introduce new technologies in initial and vocational training.

Besides of the employment impacts of selective investment programs, the second important issue of this report is related to costs and revenue. We tried to deal with several aspects of the problems simultaneously. First, internal rates of return of programs are calculated on a micro-economic basis, second, the financial burden for the public budget is made clear, and third, regard is paid to opportunity costs.

Starting with some cases broad ideas on internal rates of return, investment programs should achieve at least a minimum rate of return. Some calculations of investment programs in the United Kingdom, suggesting a minimum rate of return of 5 per cent, may serve as an average figure. Using this as an indicator for rates of return to be achieved at a minimum by investment projects, one may distinguish between three types of investments:

- i) Investment projects aimed to the modernization of the existing capital stock with special emphasize on high technologies and new products will have an internal rate of return above average. This is true in the medium and long run. In the short run, investment in high technologies like space, advanced information technologies, biotechnology etc. will have a high impact on costs. At the same time risk is above average, too. Especially small and medium-sized firms find themselves in the position not being able to take the risk and to finance the projects. Thus, economic policy has to encourage these types of investment with special regard to small and medium-sized firms by the way of tax relieves, subsidies, financing risk capital and improving technology transfer by appropriate transfer agencies. In some cases, direct public investment proves to be useful, too.
- ii) With regard to areas like conservation of energy and energy saving, environmental protection, housing and urban renewal as well as inner-city traffic control, internal rates of return of expenditure are above average. Assuming a life span of investment varying between 20 and 30 years, savings achieved are high enough to ensure an econo-

mically adequate internal rate of return.

- iii) Somewhat lower internal rates of return are likely in the areas of socially desirable job creation and cultural activities. The problem involved in an evaluation of expenditures in these areas are mostly due to the definition of what is meant by costs and revenues. In most cases (for example United Kingdom, FRG) , a social cost-benefit-analysis shows, that on the basis of an appropriate definition of social costs and social benefits rates of return are high with regard to socially desirable job creation as well as on cultural activities (France).

With regard to the financial burden for the public budget the splitting of costs and revenues of investment projects heavily depend on the type of investment and the form of financing it. Given the differences of the four countries, it is somewhat hard to make general statements. But there are at least two points worth to be mentioned. We do think, that a) large part of public investment projects examined in this report such as housing, urban renewal, energy conservation and even socially desirable job creation or cultural activities can and should be managed by private contractors. Given an administrative framework which assessed bids for grants and public subsidies for the kind of job creation programs we have been discussing, there will be a long lasting stimulus for the private economy. We do think, too, that b) in many cases like the ones mentioned, investment programs can be financed by using private as well as public funds. For example: Householders and firms are often enough well able to pay for more extensive improvements by contributing by their own funds. Different schemes are developed in more detail in the country reports as well as some quantitative calculations.

The most important dilemma posed for government in deciding on the size and quality of public investment is linked to the present system of cash and public expenditure planning. Public expenditure plans are built up

by separating current spending from capital spending as well as splitting current spending between payments to employed and to unemployed. It does seem to us, that this system is ineffective for the medium term recovery program because it does not take into account the links between the financially separated and isolated budgets. This is true with regard to spending for transfer payments to the unemployed as compared with expenditures aimed towards job creation programs. It is also true for the balance between current spending and capital spending. Given the importance of holding down the public sector borrowing requirements in money terms, the present system of cash planning in all countries is adverse to a medium term oriented investment expenditures program. Because of the fact, that direct expenditures on wages and current consumption should be fairly predictable, most countries cut back capital spending in the past. Thus, it does seem to be important to remove the bias against capital expenditures prevailing in the current system of cash planning. This can be done by a) improving the accuracy and timelessness of the information to control public expenditure and, b) by increasing budget flexibility.

There is another point to be mentioned. The evaluation of investment projects heavily depend on the calculation of offsetting costs and extra revenues which would be generated from the employment effects. First of all, one has to take into account reductions in transfer payments to the unemployed and the increase of tax revenues and national insurance contributions from workers and companies involved in the programs. As it was mentioned above, the costs of unemployment put a heavy burden on the public budget. Given the employment effects linked to different investment projects, offsetting costs and extra revenues are remarkable high. Evidently, different investment programs involve also different cost-revenue-impacts because of their characteristic impulses on employment and growth. But there is no doubt, that, in general, there is a clear advantage of investment programs compared to transfer payments to the unemployed even with regard to the financial burden for the state.

The conclusion to be drawn from this report seem to be clear: in all of the four countries, there are a variety of investment projects with high employment effects and considerable rates of return. Most of these investment projects can be carried out by governments of each of the four countries. But it should be evident, too, that in quite some cases joint efforts are more effective. This is not only true for European ventures like the Channel link, Ariane, an European railroadsystem, Airbus or joint energy production and environmental protection, but also for advanced information technologies and other areas of future growth like biotechnology. Joint ventures should be approached by bilateral politics as well as on an European level.

This investment policy will increase the efficiency of the economy and their competitiveness. This shows a contrario that competitiveness cannot be ensured by a systematic policy of reduction of real wages but that investment is today as it was before an important requisite for growth and welfare.

Table 1

Unemployment (in per cent)

	France	Germany	Italy	United Kingdom
1971-80 ⁺)	3,8	2,8	6,0	4,4
1981	7,8	4,7	8,8	9,6
1982	8,7	6,8	9,1	11,0
1983 ¹⁾	8,9	8,4	10,7	11,7
1984 ¹⁾	9,7	7,8	11,9	11,4

1) Estimation

Source: Europäische Wirtschaft, Nr. 2, Februar 1984

+) average annual growth rate

Table 2

Growth Rates of GDP (in real terms)

	France	Germany	Italy	United Kingdom
1971-80 ⁺)	3,6	2,8	3,1	1,9
1981	0,3	0,0	0,1	- 2,0
1982	1,6	- 1,0	- 0,3	1,4
1983 ¹⁾	0,3	1,0	- 1,4	3,0
1984 ¹⁾	0,6	3,0	2,2	2,1

1) Estimation

Source: Europäische Wirtschaft, Nr. 2, Februar 1984

+) average annual growth rate

Table 3

Growth Rates of Employment (E) and Productivity (P)

	France		Germany		Italy		United Kingdom	
	E	P	E	P	E	P	E	P
1971-80 ⁺)	0,4	3,2	-0,1	2,9	0,5	2,6	-0,0	1,9
1981	-0,7	1,0	-0,7	0,7	0,5	-0,6	-5,3	3,3
1982	-0,8	2,4	-1,9	0,9	-0,2	0,1	-1,7	3,1
1983 ¹⁾	-1,0	1,6	-2,0	3,0	0,2	-1,2	-0,6	3,6

1) Estimation

Source: Europäische Wirtschaft, Nr. 18, November 1983, FSA

+) average annual growth rate

Table 4

Growth Rates of Investment (real terms) (A)

Investment in per cent of GDP (B)

	France		Germany		Italy		United Kingdom	
	A	B	A	B	A	B	A	B
1961-70 ⁺)	7,8	22,9	4,5	24,9	5,1	21,3	5,0	18,1
1971-80 ⁺)	2,4	22,9	1,6	22,3	1,1	20,1	0,5	18,6
1981	-2,3	21,2	-3,9	22,0	-0,2	20,3	-8,2	15,9
1982	1,1	21,1	-5,4	20,6	-5,2	19,0	4,8	15,7
1983 ¹⁾	-3,8	20,3	3,3	20,8	-5,3	18,0	5,1	16,0

1) Estimation

Source: Europäische Wirtschaft, Nr. 18, November 1983, ISCO

+) average annual growth rate

Table 5

Public (A) and Private (B) Investment in per Cent of GNP

	France		Germany		Italy		United Kingdom	
	A	B	A	B	A	B	A	B
1960			3,2	21,1	3,6	24,7	3,3	12,6
1970			4,6	20,9	3,1	23,1	4,7	13,8
1980	2,8	18,9	3,8	19,0	3,4	25,0	2,4	14,9
1981	2,9	18,3	3,4	18,9	3,8	21,4	1,8	13,7
1982	2,9	17,7	3,0	17,9	4,1	20,4	1,6	13,8
1983					4,5	18,0	1,9	13,8

Source: SVR 1983/84, ISCO, INSEE

Table 6

Public Expenditures in per Cent of GNP (A) and Public Investment in per Cent of Public Expenditures

	France		Germany		Italy		United Kingdom	
	A ¹⁾	B ²⁾	A	B	A	B	A	B
1960	36,0	16,4	32,0	9,8	31,1	11,7	36,3	9,1
1970	34,0	17,1	37,6	11,8	35,4	8,8	40,3	11,8
1980	42,8	13,8	46,9	7,7	46,9	7,3	45,0	5,4
1981	44,0	14,0	46,3	6,8	51,9	7,3	45,6	4,1
1982	44,9	14,0	49,5	6,0	54,4	7,5	45,9	3,5
1983	46,0	15,0			57,7	7,8	45,8	4,2

Source: SVR 1983/84, ISCO, INSEE

1) in terms of G.D.P

2) State and Public enterprises

INVESTMENT POLICY AND EMPLOYMENT
IN THE FEDERAL REPUBLIC OF GERMANY

Prepared by
Forschungsstelle Sozialökonomik der Arbeit
FREIE UNIVERSITÄT BERLIN
for
The Commission of the European Community

Michael Bolle
Gunnar John
Albrechtstr. 36a
D-1000 Berlin 41
Tel.: 030-791 10 91/92

March 1984

C O N T E N T S

	page
1. The Need for More Investment	26
2. Alternative Projects: The Private and Public Economy	33
3. Public Activities and Job Creation	38
3.1. Energy Conservation	38
3.2. Housing and Urban Renewal	46
3.3. Transport	49
3.4. Environmental Protection	53
3.5. Social Services	59
3.6. Information and Communication Technology	63
3.7. Research and Development	66
4. The Impacts of Programmes: Job Creation, Forms of Intervention and Skill Requirements	69
5. A Brief Remark	75
<u>Appendix</u>	76
<u>Bibliography</u>	79

<u>List of Tables</u>	page
no 1 Growth Rates of GDP, Employment, Unemployment and Productivity	28
no 2 Structure of Unemployment	28
no 3 Private and Public Investment	30
no 4 Public Expenditures	31
no 5 Public Expenditures and Public Investment	32
no 6 Conservation of Energy: Housing	40
no 7 Employment + Effects of Investment in Alternative Energy Programmes	44
no 8 Energy Conseravtion: Different Scenarios on the impacts of Energy. Conservation, Employment Effects and Investment	45
no 9 Urban Renewal: Investment	48
no 10 Urban Renewal: Investment and Employment Effects	48
no 11 Infrastructure: Transport Investment and Employment	51
no 12 RoadBuilding: Employment Effects	52
no 13 Traffic Control and Cycle Tracks: Investment and Employment Effects.	53
no 14 Waste Disposal and Recycling: Investment and Employment	55
no 15 Old Chemical Waste: Investment and Employment	56
no 16 Sewegare System: Investment and Employment	57
no 17 Social Services: Employment Effects	62
no 18 Forms of State Intervention	70
no 19 Investment and Employment Effects	71
no 20 Costs Due to Unemployment	72
no 21 Skill Requirements	74
no 22 The Opinions of the Parties, Unions and Employers Association to the Growth Areas in the Public and Private Economy.	77
no 23 Labour market Patterns (1965 - 1990)	78

1. The Need For More Investment

To understand unemployment patterns, one can easily rely on some basic ideas of economic theory. Unemployment is determined by the links between growth of GNP and labour-productivity, by the supply of labour, and by working time patterns.

With regard to growth and labour productivity, the FRG suffered from declining growth rates since the middle of the seventies (see table 1, page 28). This development was somewhat similar to other EC-countries. There exist, however, a special phenomenon, e.g. the effect of above average increases of labour productivity in German economy. Thus, the patterns of both, growth as well as labour productivity destabilized employment.

The phenomenon of declining growth rates of GNP can be explained by quite some factors. The most well known are the restructuring of the economy due to higher oil prices, the patterns of exchange rates, satisfied demand for specific consumer goods and the growing competitiveness of newly industrializing countries. Growing structural problems, that is the obsolescence of traditional products and a loss of competitiveness for new products, aggravated the employment problem. Than, one should also notice, that redundancies especially in manufacturing industries could be compensated less and less by an expansion of employment in the public sector.

In addition, unemployment increased because of the patterns of labour supply as well as working time developments. Since the middle of the seventies, labour force potential was growing steadily because of demographical reasons. Additionally, the situation was sharpened because of a slowdown of annual average working time reductions. Annual average working time reductions fell from about 1 % at the beginning of the seventies to 0.4 % between 1975 to 1980.

The fact, that unemployment rates did not respond more sensitively to the development of working time, the supply and growth-productivity-links during the seventies is easy to explain. Firstly, foreign workers are moved back to their home countries, secondly, participation rates of women corresponded to discouragement effects, and, thirdly, due to reduction of the working age there was a considerable withdrawal of older workers from the labour market.

Finally, it should be stressed, that besides of the quantitative problem on the labour market, structural imbalances challenge economic policies. Unemployment is distributed unequally across specific groups of the labour force. There exists a positive bias in favour of skilled, middle-aged male workers and a negative discrimination effect towards unskilled workers, foreign workers, women, part-time workers, and, more recently, towards young workers and new entrance on the labour market. Moreover, the share of long-term unemployed grows steadily (see table 2, page 28).

With regard to future patterns of employment resp. unemployment a realistic prognosis depends on the patterns of labour supply as well as labour demand.

Labour supply will at least until 1988 grow because of still prevailing demographical reasons. Besides of that, participation rates of women will probably not decrease. Whether there will be an improvement of the unemployment situation because of the more flexible retirement age and an again massive move of foreign workers to their home countries, is unlikely. As far as labour demand is concerned, annual growth rates of about 2 % should be possible within the next years. If labour productivity increases more slowly than real GNP, a stabilization or even slight increase of the level of employment should be possible.

Given these figures within the next years, most economists

Table 1

Growth Rates of GDP, Employment (E), Unemployment (U) and Productivity (P)
(real terms)

	GDP	E	P	U
1971-80 ⁺)	2,8	-0,1	2,9	2,8
1981	0,0	-0,7	0,7	4,7
1982	1,0	-1,9	0,9	6,8
1983 ¹⁾	1,0	-2,0	3,0	8,4

1) Estimation

+) average annual growth rates

Source: Europäische Wirtschaft 1983

Europäische Wirtschaft 1984

Table 2

Structure of Unemployment (in per cent)

	1971	1974	1976	1978	1980	1982
foreign workers	0,6	2,9	5,1	5,3	5,0	12,0
women	1,1	3,1	5,8	5,8	5,2	8,6
part-time employed	-	-	10,6	11,5	10,4	11,0
average	0,8	2,6	4,6	4,3	3,8	8,2
men	0,7	2,2	3,9	3,4	3,0	7,9
youth under 20 years	-	-	-	4,3	3,2	7,6

Source: ANBA, 2/1982

would agree, that a more than 4 % growth rate of GNP is needed to regain full employment within the next ten years. A growth rate of GNP of at least 3 % is needed to stabilize employment. Given a more realistic assumption of a growth rate of GNP of 2 % and an ungoing growth of labour supply, unemployment will increase further.

Given these prospects, it is evident, that full employment will be of predominant concern of economic policies. Policy measures should be used to bring down unemployment as soon as possible, fresh looks are badly needed.

Firstly, working time policies should be aimed to increase the flexibility of working time as well as to reduce the working life or weekly working hours. As it is true in other countries, also in the FRG, these issues are widely discussed and partly implemented. It should be pointed out, however, that working time policies alone cannot solve the unemployment problem.

Secondly, policies to increase growth and to stabilize the link between rates of growth and the increase of labour productivity have to be implemented. These policies must be aimed towards an improvement of the pattern of investment in a quantitative as well as in a qualitative sense.

It is true, indeed, that the slowing down of growth rates in the seventies and low growth rates at the beginning of the eighties were linked to a decrease of investment-ratios. This is true for both, private as well as public investment.

Table 3: Private and Public Investment (in per cent)

	public investment in per cent of pub- lic expenditures	public investment in per cent of GNP	private investment in per cent of GNP
1960	9,8	3,2	21,1
1970	11,8	4,6	20,9
1975	7,9	3,9	16,5
1980	7,7	3,8	19,0
1981	6,8	3,4	18,9
1982	6,0	3,0	17,9

Source: SVR Jg. 1983/84

Private investment in per cent of GNP mounted in 1970 to 20.9 % of GNP. In 1982, the same figure declined to 17.9 %. This dramatic decrease of private investment was combined with a corresponding development of public investment. Public investment in per cent of GNP decreased from 4.6 % in 1970 to 3.0 % in 1982. These developments of investment-ratios heavily contributed to the slowing-down of growth rates of GNP and to the development of employment in the West-German economy.

It is most remarkable, that the decline of public investment in the last years was due not to cut-backs in public expenditures as per cent of GDP, but to a restructuring of the public budget. Evidently and latest since the end of the seventies, there was a growing need for consolidating the public budget. The social network ("Soziales Netz") in the FRG was built up at the beginning of the seventies under the auspicion of further growth. The slowing-down of growth rates as well as higher expenditures for unemployment benefits lead to a growing deficit in the public budget. Public expenditures in per cent of GNP did increase as well as expenditures for public consumption and income transfers to private households. The overall figures are given in the following table:

Table 4 : Public Expenditures

	public expenditures in per cent of GDP	public consumption in per cent of public expenditures	public transfers in per cent of public expenditures
1960	32,0	40,6	42,7
1970	37,6	40,3	40,6
1975	47,1	41,4	43,4
1980	46,9	41,1	42,6
1981	49,3	41,4	43,0
1982	49,5	40,8	43,7

Source: SVR, Jg. 1983/84

It is easily to be seen (table 4) that public expenditures in per cent of GDP increased dramatically due to an increase of public consumption as well as public transfers. Thus, the decrease of public investment in per cent of public expenditures should be explained by (a) the efforts to consolidate the budgets, and (b) by a restructuring of public expenditures in disfavour of public investment.

The argument even holds true since 1982. With sharp cut-backs in public expenditures, West-German government tried to bring down public deficits. At the same time, public investment was not enhanced to the desired extent. There still is a considerable need to increase public investment as compared with public consumption.

A closer look on the structure of public expenditures and public investment classified according to Federal Government and "Länder und Gemeinden" (local government), show, that the decrease of public investment is mostly due to investment patterns of the "Gemeinden und Länder" (see table 5, page 32). Thus, one should conclude, that public investment especially

Table 5:

Public Expenditures and Public Investment

	Federal Government				Länder				Local Government				Total			
	1981	1982	1983 ¹⁾	1984 ¹⁾	1981	1982	1983 ¹⁾	1984 ¹⁾	1981	1982	1983 ¹⁾	1984 ¹⁾	1981	1982	1983 ¹⁾	1984 ¹⁾
<u>Expenditures</u>																
in Bill. DM	233,0	244,6	252,2	259,0	210,6	217,6	220,8	226,5	136,5	135,7	138,0	142,5	501,7	518,8	532,8	548,7
Growth rate (in per cent)	8,0	5,0	3,1	2,7	3,6	3,3	1,5	2,6	4,9	-0,6	1,7	3,3	6,3	3,4	2,7	3,0
<u>Investment</u>																
in Bill. DM	7,3	7,0	7,5	7,3	9,2	9,1	9,0	9,0	37,9	32,9	31,7	32,2	54,4	48,9	48,2	48,5
Growth rate (in per cent)	-11,3	-4,5	7,8	-2,7	-5,5	-1,5	-0,5	0,0	-3,8	-13,1	-3,7	1,6	-5,2	-10,0	-1,5	0,6

1) Estimation

Source: DIW 38/83, FSA

on the level of "Gemeinden und Ländern" should be enhanced. But it is also true, that for an improvement of public investment with considerable spinover-effects on private investment does definitely require more efforts of Federal Government to restructure the public budget in favour of public investment.

The idea, that much emphasis has to be layed on the encouragement of private investment and the enhancement of public investment is agreed by almost all political decision-makers (CDU, 1982; FDP, 1982; SPD, 1982; DGB, 1982; BDI, 1982 a) as well as economists (SVR, 1982/83). Different views certainly do exist with regard to the form, in which government should intervene and the balance between private and public investment. We will deal with those problems in the next paragraph.

2. Alternative Projects: Private and Public Investment

Whereas a more traditional concept of employment policy defines targets in terms of the number of jobs created, a more sensible view tackles qualitative aspects. If economic and social needs are well defined one may determine areas of job creation which are aimed to future growth.

The relevance of specific growth areas in the public and private economy is highly disputed among economists and politicians (see Appendix, table22). But there is a consensus on future patterns of the German economy with regard to growth and investment, which is based on

- the growing role of technological innovations, and the
- existence of relevant new economic and social needs.

a)

The market for new technologies will expand for two reasons: first, traditional industries will increase competitiveness by introducing new modes of productions and by an inforcement of rationalization; secondly, the German economy will regain its leading position on the world market only by opening up new markets. Therefore the basic technological changes are expected at micro-electronics, bio-technology, robot-technology, and communication technologies.

It is definitely true, that the performance of the West-German economy heavily depend on the patterns of international trade. This is true because of the rather high degree of economic interdependencies of the German economy and the world market. Around one third of industrial production is exported, around 35 % of the total labour force in the FRG is working in the export sector.

Given these characteristics, it is easily to be seen that a worsening of the international competition of the West-German economy will be harmful. With regard to errors of futural growth this worsening of the degree of competition of the West-German economy already happened. Only within the EC-countries, the patterns of exports are satisfying, but, concerning to export developments to newly industrializing countries, to Japan and the United States, export shares declined and are under average with regard to other EC-countries.

Industries which are supposed to dominate in the future like electronics, data processing, information technologies, chip and robot production, air and space industries etc. are characterized in the FRG by a worsening of the degree of competition. The dynamics of growth in these industries are low: rates of growth of the FRG are economy with regard to the industries mentioned under average compared to the rates of growth on the world market.

Efforts to improve the degree of competition in these indu-

stries are needed. This is especially true for the implementation of new technologies in specific industries like electronics, engineering, tele-processing, and automotives, industries, which will be characterized by an increasing degree of implementing robots and chips. Chip production will increase all over the world, the same is true for the market for electronics. With regard to the world market, the robot production, biotechnology, and micro-electronic are supposed to have rates of growth of about 15 to 20 % in the eighties (Wirtschaftswoche, 26/1983; Wirtschaftswoche, 15/1983; Wirtschaftswoche, 5/1984 a; BDI 1982 c).

With regard to policy measures, the improvement of research and development as well as the implementation of new technologies are most important. As far as the employment impacts are concerned, there definitely will be a substitution effect between new jobs created on the one hand and other jobs vanishing because of rationalization. Whether an overall employment increase will occur, is uncertain. But it is almost certain, however, that the structure of qualifications demanded will change significantly. There is no doubt, that technological change will enforce the obsolescence of traditional industrial skills and does require new qualifications of labour in the areas of research and development, systems engineering, data processing etc. Thus, policies to improve the creation of jobs in areas of future growth should be combined with and linked to measures to improve and change qualification of labour, that is to embody technical progress also in human capital.

b)

Since the end of the seventies the German government is confronted by a growing need and sensibility for environmental protection and urban renewal. According to actual surveys more than 90 % of the population require policy measures to control air and water pollution and the damage of forests. Beyond that, a growing share of the population is willing to

make financial sacrifices for an improvement of the environment. Similar to that there is a growing demand for the protection of urban life styles as well as high quality housing. Additionally, some social and economic needs are not met by the given supply of goods and services. This is especially true for public transport, energy protection, and the improvement of the social and cultural standard of living.

One should mention, too, that further need for new investment exists because of a somewhat aging capital stock of the FRG. economy. Empirical evidence shows, that, during the seventies, the average age of the capital stock did increase in the West-German economy (RWI, 1983). A more cautious assessment still proves, that the process of renewal of the capital stock during the sixties has come to an end in the seventies (HWWA, 1983). If it is true (DIW, 1983), that investment in construction and houses was lower than investment in the manufacturing industries, one may state, that there is a growing need for further investment in the infra-structure, especially in construction, road-building, houses etc. to prevent from a further aging of this part of the capital stock.

Despite of the general acceptance of these patterns, it is heavily discussed which policy measures should be undertaken. The debate refers to the form of state intervention. West-German government nowadays believes more in some sort of supply-side economies with the consequence of emphasizing the need for a consolidation of the public budget. More traditional Keynesian views not being in the underdog, but in a minority position, argue, that more deficit spending is needed. This does not contrast with the conservative idea of stimulating the supply side, but is mostly based on the distributional aspect of the problem: cuts in the "Soziales Netz" are evaluated as being unfair in terms of income distribution. One may state, that supply-side economics and more traditional Keynesian economics at least in the FRG both agree that there is a growing need for public as well as private investment. They

disagree about the way this should be done as well as the distributional aspect.

One should learn something from past experiences. In the seventies, most EC-countries reacted to a recession by implementing a kind of traditional Keynesian policies, that is demand stimulation by deficit spending policy. This is also true for the FRG, in which, in 1974/75 and 1977/78, a more expansionary policy pattern was pursued. Especially in 1977/78 emphasis was laid on programs of investment in areas of future growth (Zukunftsinvestitionsprogramm, ZIP). Even a cautious evaluation proves, that there was an additional employment effect of around 160.000 workers in those years (DIW, 11/1980). This expansional policy pattern was removed from 1980.

Empirical based simulations of possible effects of a more expansionally policy from the beginning of 1980 show, however, that there could have been an additional employment impact of 200.000 people (DIW, 50/1982).

In this paper we argue that public policy should not rely on one of the competing economic philosophies, but has to look for a policy-mix-strategy:

- if market forces are strong, a positive and high rate of profit will encourage private activities, and no state intervention is necessary;
- if market forces are weak in the short run, but are supposed to improve in the medium term, state intervention can concentrate on tax relief and/or subsidies with special regard to risk-taking and research and development;
- evidently there exist areas of production in which the principles of a market economy will not show acceptable results. The term acceptable reflects both, an economical as well as a distributional aspect.

We will define more precisely those areas of future growth, which will require public activities. There seems to be a

consensus, that industries for leisure goods and services are growing without any state intervention and that the adaptation of new technologies should be enforced by public support of research and development as well as an improvement of the infrastructure through an extension of new information and communication systems. The main public activities will be in the area of social and economic needs: social services, energy conservation, housing and urban renewal, environmental protection, transport, information and communication systems, and research and development.

We will deal with these activities in more detail with regard especially to rates of return, employment impacts, and growth stimuli. Some ideas on the adequate form of state intervention are to be found at the end of this paper.

3. Public Activities and Job Creation

3.1. Energy Conservation

Since the beginning of the worldwide recession, the job-argument plays an increasing role within the energy policy debate. On the one hand, it is argued, that the production of more energy is needed not only because of growing demand of the economy, but especially because of a number of jobs which are additionally created in this areas. On the other hand, some economists argue, that future demand for energy is overstated as well as the number of jobs which could be created by increasing energy. Today, there is a growing understanding, that the alternative between energy-saving versus more employment is simply wrong. The relationship between the use of energy and the development of employment is more complex. It depends on the overall economic growth, the inter-sectoral changes (that means the development of energy intensive modes of pro-

duction or industries with low energy consumption) and last but not least the intra-sectoral developments of energy conservation and new forms of energy production.

To the same extent as the failure of prognoses of further increasing energy consumption became evident and the vision of a stagnating demand for energy became more realistic, the aspect of energy conservation became more important. More optimistic prognoses are expecting additional investments of 40 bill. DM (Krupp, 1983), and new employment possibilities for 950.000 persons (Roth, W1983). Concerning to more pessimistic estimations, there is a need for additional investment of 10 bill. DM per year (Spitzley, 1983), and lower employment effects. Beyond the PROGNOSE (Prognos AG, 1981) an improvement estimates of the balance of payment of 50 bill. DM, if all proposed investment in energy conservation will be realized.

a) Insulation

It is widely accepted, that major parts of existing houses are to be insulated. PROGNOSE estimates, that their share is about 80 - 90 % of all houses, that is 20 million dwellings (BMFT-PROGNOSE, 1982). Some figures are even higher, they amount to 26 - 28 million dwellings (Roth et al., 1980), some figures are lower (Spitzley, 1983).

According to various estimations, figures for investment needed for insulation differ from 100 bill. DM to 400 bill. DM. Concerning to major statements, the PROGNOSE estimations seem to be the most realistic ones. The following arguments are based on the PROGNOSE figures. They are calculated on unit costs of insulation in the range of about 20.000 DM up to 40.000 DM, which gives a total amount of about 400 bill. DM (PROGNOSE AG, 1978) PROGNOSE estimates that only one quarter of this potential investment would be realized, if the recent economic trends and the forms of state intervention remain unchanged.

Table 6 : Conservation of Energy: Housing; Capital Expenditures (bill. DM, real terms, basis 1976)

	1976 - 1990
Industry	65,1
Housing	243,4
Low Consumers	175,8
Total	484,3

Source: FSA; PROGNOs AG, 1978

There are at least two advantages of energy-saving by the way of an improvement of insulation. Firstly, the degree of self-financing is rather high, but evidently dependent on the future pattern of energy prices. Secondly, job creation in this area is rather high because investment is labour intensive.

With regard to the first argument, it is calculated, that around 18 % of primary energy or some 45 % of energy used for heating systems for residential premises can be saved. These figures are developed under the assumption of a rather stable oil price. Given the view of higher oil prices, the internal rate of return of investment in insulation will be higher.

But even given the assumption of rather stable prices of energy, self-financing of capital expenditure in insulation of dwellings amounts to some considerable 60 %. This figure only accounts for revenues from energy-saving, not taking into account returns for the public budget because of a lower unemployment compensation, given a specific employment impact of investment in energy-saving. This additional employment impact of investment in insulation amounts to 300.000 workers per year (PROGNOS, 1982), taken into account direct, and, due to the income multiplier, indirect employment impacts of investment.

This rather high employment impact of investment in insulation is due to the fact, that investment is labour intensive. The degree of self-financing due to energy conservation and the impact on the public budget evidently depends not only on the patterns of energy prices, but also on the form of state intervention. A recent IFO-study on the efficiency of public energy saving policies shows, that public energy policy was just as important for energy-saving as the increase of energy prices. There are some well developed concepts of government intervention in this area:

- Under the cover of a federal program a first and final subsidy of 25 % was paid for investment in insulation of dwellings. The "Länder" of the FRG now use different systems, for example in Berlin (West) annual subsidies are paid up to 30,6 % of total costs (maximum 12.000 DM per unit) for a period of nine years.
- Zero-interest credits or credits with a low rate of interest, subsidized by government, are suggested, too (Roth,W1983; Klauder, 1980).
- The stabilization of energy import prices by introducing temporary import duties (Krupp, 1983).
- To combine the interests of tenants with those of landlords, it is suggested to introduce a splitted heating cost calculation (Roth,W,1983) Umweltrat und Enquête-Kommission, 1983; Hennicke, 1983).

As a whole, one may conclude that capital expenditure for insulation of dwellings will have a considerable positive impact, both on energy-saving and employment without putting too heavy costs on public budgets as well as the private economy.

b) Production of Primary Energy

With regard to the degree of efficiency of using primary energy, new and more efficient systems may be used and developed. Up to now the degree of efficiency of production of energy amounts to only 1/3. The key for higher efficiency lays in the simultaneous generation of heat and energy (cogeneration / Wärmekraftkopplung). With already existing technologies the exploitation rate of primary energy could be increased to 50 per cent and more. The degree of efficiency of using primary energy can be increased by improving the existing systems or developing new ones. At the moment two concepts are widely discussed:

- A more traditional concept is based on the idea to develop long-distance heating systems further on the grounds of the existing power plants. If this more traditional concept is used and simultaneously assumed that one fourth of the demand for heat should be provided for by long-distance heating systems, a direct employment effect of 60.000 workers can be calculated for a time period from 1980 up to 1985 (Spitzley, 1983; Ströbele, 1978). This figure is not equivalent to other models, using different time periods and different patterns of supply. Therefore, Roth calculates an employment effect of 550.000 persons (Roth, W, 1983). This employment effect is related to the construction of new, long-distance heating pipelines. Additionally, about 10.000 - 20.000 workers are needed for operating the system. Given the concept of the energy producing companies (Energieversorgungsunternehmen) up to the end of the decade there is an overall investment gap of about 100 billion DM. According to IFO-estimations, the share of public investment subsidies are about 40 % of total investments. This more traditional concept draws on the existing structure of power plants. Still, it is debated whether nuclear power stations are more effective than coal operated

power plants. It was shown (Weiss, 1978), that at least in terms of operating plants, nuclear power stations require a number of workers which is lower as compared to traditional power stations which are operated by coal. Power plants operated by coal require some additional 4.000 manyears to running the plants. In addition they will require about 80.000 new jobs in the mining industry (Haak).

- Somewhat more revolutionary concepts are based on the idea to develop smaller Power stations which are based on cogeneration (Wärme-Kraftkopplung). These new technologies require a more decentralized organization of the heating system in favour of medium-distance concepts. If it is true, that these technologies already exist (Schweizer Energiestiftung, 1977), the degree of efficiency of using energy can be increased. Positive and considerable employment effects are likely. On the basis of a rather moderate scenario with regard to future patterns of demand for energy, an employment effect of about one per cent of the labour force is assumed, given a decentralized concept.

Whereas the more traditional argument normally runs in favour of lower costs, for the centralized solution with somewhat bigger power plants whether they operate by nuclear power or coal, a recent study shows (BMFT-PROGNOS, 1982), that even with regard to costs there are arguments in favour of a decentralized and medium-distance heating system solution using the cogeneration of heat and electricity (Wärme-Kraftkopplung). Conventional power stations imply costs of 2.000,- DM per KW, whereas the decentralized solution using new technologies will bring about costs of about 1.000 to 1.500 DM per KW. Thus, there is a double advantage of the decentralized solution: changes from the conventional and decentralized pattern of energy generation

and distribution to decentralized systems using the heat-electricity-model with small plants are labour-intensive, are creating more jobs and are more cost-efficient at the same time.

The same argument is stressed by the study of Homeyer and Rahmer on the basis of input-output-analysis of the DIW (according to Binswanger, 1983). In a recent study by Homeyer and Rahmer the effects of seven different energy policy measures are compared as shown. The results are as follows:

Table 7 : Employment Effects of Investments in Alternative Energy Programmes.

Measure	Total Employment Effect +)	Direct Employment Effect	Indirect Employment Effect
bio-gas-plants	24,7	16,3	8,4
dezentraliz. energy cogeneration (Blockheizkraft-Werke)	23,6	14,1	9,5
energy recycling (Wärme pumpen)	23,6	14,2	9,4
solar-energy	21,4	13,8	7,6
wind energy	20,6	12,4	8,2
insulation	18,8	11,0	7,8
nuclear power plants	17,8	11,2	6,6

Source: WINTER, et al., 1983 - on the basis of HOMEYER/RAHNER study

+) in 1.000 manyears per billion amount of investment

These figures are not undisputed as shown in the following table, which compares the result of the main studies concerning the energy-employment-relation.

Table 8

Energy Conservation: Different Scenarios on the Impacts of Energy Conservation; Employment Effects and Investment per Year (bill. DM, basis 1980)

	Investment	Employment Effects	
Total		950.000	Roth, W., 1983
	20-40	600.000	Krupp, 1983
	28,5	540.000	PROGNOS, 1981
	25		DGB, 1980
	10,7	190.000	Spitzley, 1983
Insulation	16	300.000	PROGNOS, 1981
	14		DGB, 1980
	5,5	100.000	Spitzley, 1983
	102 ^{a)}		Pfaffenberger/ Renschhausen, 1983
Production of Energy	12,5	240.000	PROGNOS, 1981
	5,2	90.000	Spitzley, 1983
	70 ^{a)}		Pfaffenberger/ Renschhausen, 1983
of that long distance heating systems		550.000	Roth, W., 1983
		215.000	Haak
	2,4	60.000	Bonner Gesamtstudie
	3	55.000	Spitzley, 1983
		50.000	Ströbele, 1978

a) not per year, total investment

Source: Bonner Gesamtstudie; DGB, 1980; Haak; Krupp, 1983; Pfaffenberger/Renschhausen, 1983; PROGNOS AC, 1981; Roth, W. 1983
Spitzley, 1983; Ströbele, 1978; FSA

3.2 Housing and Urban Renewal

Given destroyed cities and a growing population at the end of the second world war, one of the central fields of investment was housing. Public house building played a decisive role and had a high priority up to 1975. The "Sozialer Wohnungsbau" (public house building) provided new, rent-controlled flats for low income groups.

In the fifties and sixties priority was given to new buildings. This philosophy changed in the middle of the seventies, when

- there was a sharp decrease in the construction of new buildings and
- a higher priority for urban renewal and the rehabilitation of old dwellings was evidently needed.

a) Public House Building

PROGNOS AG estimates an additional need of 50.000 - 60.000 flat units per year (PROGNOS AG Hessen, 1981). This figure, which signifies a doubling of the present stock of apartments till the end of the decade is also confirmed by Höhnen (Höhnen, 1982). To satisfy this need there is necessary an investment volume of about 6 to 8 billion DM per year. This is adequate to an employment effect of 100.000 to 120.000 construction jobs per year.

b) Urban Renewal

Due to public programmes (Zukunftsinvestitionsprogramm) urban renewal had rather high growth rates till the end of the seventies. From 1976 to 1981 the real growth rate was about 8 %. The 'Deutsches Institut für Urbanistik' (DIFU, 1980)

estimates, that the need for urban renewal will last until the end of the decade. The DIFU-study shows three main issues:

- It is calculated that about 10 per cent of the existing old dwellings are either to be pulled down or to be restored with costs similar to new buildings. The 10 per cent figure refers to 2.3 million units with a total of 161 billion DM.
- About 25 per cent of the existing old dwellings can be rehabilitated and renovated (5.75 million units) with capital expenditure of about 115 billion DM.
- The "Städtebau-Förderungsgesetz" (urban renewal promotion act) defines specific "areas for renewal", areas, which suffer badly from the need for rehabilitation of old dwellings. It was calculated, that at least 4.680 "areas of renewal" do exist in the FRG (DIFU, 1980). It is assumed, that in the average there are 523 units per area, the hardcore of old dwellings due to renewal amounts to 2.5 million units. Because of the fact, that most old dwellings are privately owned, in these areas capital expenditure for renewal is remarkably high and amounts to around 120 billion DM for the public budget.

In the following table the total amount of capital expenditures as well as the employment effects are summarized, given the goals mentioned and assuming a time-period from 1976-1990.

Table 9

Urban Renewal: Investment (bill. DM, real terms, basis 1976) (time period 1976-1990)

	Investment	Public Financial Requirement
Modernization with Goals Similar to New Buildings	161	92
Simple Modernization	115	38,5
'Areas of Renewal'	30	120
Total	306	250,5

Source: DIFU, 1980; FSA

On the basis of a time horizon, lasting from 1984 to 1990, one ends up with the following figures:

Table 10

Urban Renewal: Investment (bill. DM, real terms, basis 1982) and Employment Effects per Year (time period 1984-1990)

	Investment	Public Financial Requirement ¹⁾	Employment Effects
Modernization with Goals Similar to New Buildings	12	6,8	265.000
Simple Modernization	9,4	3,1	210.000
'Areas of Renewal' ²⁾	3,6	10,8 ³⁾	
Total	25,0	20,7	475.000

- 1) The public financial requirement is estimated analogical to the calculation of the DIFU.
- 2) For overlaps with the transport area a calculation of employment effects had to be abandoned.
- 3) There of sources according to "Städtebau-Förderungsgesetz" circa 3 bill. DM (actual one billion DM).

Source: DIFU, 1980; FSA, Baustatistisches Jahrbuch 1983

It is not an easy task to distinguish capital expenditures required between (first) the burden for the private and, (second) the public economy. Evidently, the ways of financing investment play an important role. Instead of being very precise, we give a first impression with table 10. Remarkable enough, the burden for public expenditures is rather high with regard to "areas of renewal" as defined by the "Städtebauförderungsgesetz".

It should be noticed, that, again, there is a common belief even between politicians about the importance of urban renewal. The present German Government does seem to believe, however, that priority should be given to the construction of new buildings instead of laying too much emphasis on the rehabilitation of old dwellings. But if the task of urban renewal is taken seriously on the grounds of the figures given in table 10 considerable employment effects are likely. These employment impacts are probably higher as compared with the concept of construction new buildings because of the labour intensiveness of the work to be done.

3.3 Transport

Given the decline of growth rates of GNP one might consider the need for further net investment (not: re-investment) for transport as unnecessary. It does seem, indeed, that this point of view is the basis for investment policies in transport. Since the beginning of the seventies capital expenditures did decrease in real terms in this area. This is especially true for capital expenditures for highways, roads and bridges. In the average of the last three years, capital expenditures in transport did decrease even further by an annual rate of about 7.5 per cent. If this pattern is

going to continue, re-investment will become impossible with the consequence of a worthening of the infrastructure in the area of transport. It is calculated, that a reduction of capital expenditure in real terms of about 1.8 per cent is the upper limit to ensure the necessary re-investment.

a) Traffic Systems

There is a case, that, even with slow growth rates, capital expenditure in transport is necessary. A well-functioning infrastructure, by the way of a more efficient transport system in qualitative and quantitative terms, will bring about the external economies for the private economy which are necessary for a higher growth rate.

Thus, three strategies are to be considered as economically and socially profitable ways to improve transport and thereby helping the private economy to grow.

- To avoid a further worthening of the infrastructure in the field of transport (road transport, railroad transport and ships) the necessary re-investment has to be ensured.
- Because of changes in the behaviour of people (more leisuretime, more mobility and growing differences in the location of the work place and residential areas) as well as growing needs in terms of the distribution of goods, mass transport will increase in the future. Serious calculations (DIW, 26/1983) consider an increase in transport of about 20 per cent up to 1990 as necessary to match the needs.
- Qualitative changes are badly needed. A more efficient transport system requires a fast development of commuter trains and railroads. According to IFO (IFO, 1983) the public traffic system also has some cost advantages compared with the private traffic. Most economists and public decision makers also agree with the fact, that public traffic could improve environmental conditions. Therefore several strategies to enhance the attractiveness

of railroads are proposed. The most important are firstly to gain price competitiveness in order to attract the transport of goods, and secondly to rise quality (f.e. speed) in order to attract private intercity voyagers (Wolke, 1984). Therefore, as in France and Britain, the development of high-speed railroad tracks should have a middle-range priority. Investments in fast commuter trains and railroads will have a high employment impact of about 15 per cent as compared to the present structure of capital investment in transport.

The need for additional investment are steadily estimated by the Deutsches Institut für Wirtschaftsforschung (DIW) in cooperation with the DIFU and the Ministry of Transport. The following table shows capital expenditure necessary up to 1990, the required re-investment as well as the employment impacts.

Table 11

Infrastructure; Transport: Investment (bill. DM, real terms, basis 1976) and Employment (time period 1981-1990)

Type of Infrastructure Measures	Investment	of them Net Investment	Potential Employment
Railroads	45,3	26,2	102.000
Commuter Trains	16,0	4,8	38.000
Roads and Brigdes	166,0	60,1	430.000
Canals and Ports	7,6	3,3	18.000
Airports	5,2	2,9	12.000
Total	240,1	97,3	600.000
	Employment Effects		150.000 ¹⁾

1) Employment Effect = Potential Employment - Actual Employment

Source: DIW, 26/1983; Baustatistisches Jahrbuch 1983; Bauwirtschaft im Zahlenbild 1983; FSA

The figures are calculated on the basis of matching the required needs and the types of investment mentioned. As a whole, this would mean an annual increase of capital expenditures for transport of about 15 per cent in real terms (DIW, 26/1983). However, more moderate calculations only account for an annual increase of capital expenditures up to 1990 in the range of 3 to 4 per cent in real terms to balance at least the core of what seems necessary.

The term 'necessary' refers to the idea, that a qualitative change of the structure of capital expenditure in favour of commuter trains and railroads instead of motorways will bring about higher employment effects, will be more cost-effective and seems to be politically desirable. The employment impact of seven different road building measures, which are shown in the following table, are calculated on the basis of direct and indirect (income multiplier) effects given some assumptions on the range of capital-labour-ratios of different activities.

Table 12

Road Building: Employment Effects (on each 100 mill. DM, real terms, basis 1976)

Road Project	Direct Employment Effect	Employment Effects
Motorways	1.201	1.441
Mainroads	1.563	1.876
Inner City Roads	2.570	3.084
Inner City Traffic Control	2.573	3.088
Commuter Trains	1.992	2.390
Railroads	1.880	2.256

Source: Baum 1982a, Baum 1982b, FSA

As shown in the table, highest employment effects are stimulated by innercity road building as street construction, traffic control, cycle tracks etc.

b) Innercity Traffic Control

It is worthwhile to mention at least one environmental aspect with regard to qualitative changes in innercity traffic. It is widely discussed, that innercity traffic control and the improvement of cycle tracks seem unavoidable to make cities more attractive in terms of the quality of life. A study of the impact of innercity traffic control areas on traffic accidents shows, that the number of injured fell back for 70 per cent.

Innercity traffic control and the construction of cycle tracks will require capital expenditures in the range of 1-2 billion DM. Employment impacts are calculated in the following table.

Table 13

Traffic Control and Cycle Tracks: Investment (bill. DM, real terms, basis 1976) and Employment Effects per Year (time period 1981-1995)

	Investment	Employment Effects
Traffic Control and Measures against Noise	6	185.000
Cycle Tracks	1,7	50.000
Total	7,7	235.000

Source: PROGNOSE AG Hessen 1981, Baum 1982a, FSA

3.4 Environmental Protection

There is no doubt, that the natural environment worsened dramatically during the last years. The OECD estimates the economic losses on 3 to 5 per cent of the GNP. The indirect impacts on health and quality of life are not included in this figure.

Nowadays environmental protection measures are included in programmes of all parties and governments. The most important issues are related to:

- waste recycling and waste disposal
- water clearing
- air clearing.

Whereas there is a common belief (DIFU, 1980; PROGNOSE, 1981; Roth, W. 1983; Meißner/Hödl, 1982) even across relevant political decision makers, calculations differ widely on the amount of capital expenditures required to meet the goals. On the following we concentrate on a moderate scenario.

a) Waste Recycling and Waste Disposal

Due to increasing prices of raw materials as well as too high energy prices, an improved system of waste recycling can be considered as profitable from an economic point of view.

According to the Wirtschaftswoche (Wirtschaftswoche 8/1983a) the 30 mill. tons of private garbage are containing paper and glass which represents a value of one bill. DM. Evidently, the rates of return on investment in waste recycling heavily depend on the future patterns of prices of raw materials.

If these prices increase further, capital expenditures are profitable. But there are also possibilities to economize the collection and separation of recycable garbage. Experts have calculated a necessary increase of capital expenditures of 15 per cent till the end of the decade. High

growth rates are also expected in construction of centralized and decentralized waste sorting equipments as well as recycling equipments.

In the following table capital expenditures as well as the employment impacts are calculated on the basis of the planned measures to match the growing supply of waste and a more efficient recycling system.

Table 14

Waste Disposal and Recycling: Investment (mill. DM, real terms, basis 1976) and Employment per Year (time period 1984-1990)

	Investment	Potential Employment
Waste Disposal	150	3.800
Waste Incinerators and Waste Transfer	190	4.800
Former Investment	600	15.000
Total	940	23.600
	Employment Effects	15.000 ¹⁾

1) Employment Effect = Potential Employment - Actual Employment

Source: DIFU 1980, FSA

In addition to the expected amount of waste there are problems with already stored waste. The Umweltbundesamt estimates, that one thousand of the existing total of 21.000 waste stocks are containing dangerous chemicals.

The search for, transportation and treatment of chemical waste and chemical warfare agents require capital expenditures in the range of some twenty billion DM, which will have considerable employment effects on different industries. The total of employment effects, given the capital expenditures, and the distribution of employment effects across different industries are calculated in the following table.

Table 15

Old Chemical Waste: Investment (bill. DM, real terms, basis 1976) and Employment Effects (in thousand) (time period 1981-1995)

	Investment (1981.1995)	Employment Effects		
		1985	1990	1995
Mechanical Engineering		3,6	5,5	4,9
Building Trade		1,5	2,5	2,2
Former Services		10,0	15,0	15,0
State		10,0	15,0	15,0
Total	20	25,1	38,0	37,1

Source: PROG NOS AG Hessen 1981

Ways of financing public expenditures in this area are heavily controversial. A practicable concept, which is already implemented in the USA, is based on financial contributions of producers of waste, mainly in the chemical industry (Wirtschaftswoche, 4/1984a).

b) Water Clearing

In the last decade the quality of water has been extremely worsened (Koch/Vahrenholt, 1983). Due to water pollution, prices for water clearing have been increased. It is worthwhile to notify, however, that the West-German sewerage system is well developed. A further move for a more effective sewerage system requires changes in quality, given the goal, that until 1990 some 94 % of the population should be covered by a sewerage system based on self-purifying technologies. Growth rates in this area are probably the highest as compared with growth rates in other industries. According to the DIFU (DIFU, 1980) the average capital expenditures per year are 4.5 bill. DM. The overall capital expenditure required and the employment effects are given in the following table.

Table 16

Sewerage System: Investment (bill. DM, real terms, basis 1976) and Employment Effects (different time periods)

	I n v e s t m e n t			Employment Effects
	(1976-90)	(1976-84)	per year 1984-90	
Drainage	41,7			
Purification Plant	23,6			
Total	63,3	30,3	5	55.000

Source: DIFU 1980, FSA

As this table shows, capital expenditure for sewerage systems will increase employment in this field dramatically. If chemical water clearing systems will be introduced, the employment effect could be even higher. There are some few examples, which show first results (the clearing of the Tegeler See in Berlin (West)). It is calculated, that investment in chemical purifying does require some four bill. DM for the time period of 1984 until 1990.

A well used method to stimulate the constructions of new chemical and biological purifying plants is to increase the duties for dirty water. This concerns communities as well as private enterprises and households and should be persued further.

c) Air Clearing

Pollution of air is mostly due to exhaust from fumes of cars as well as of sulphur emissions of power stations. Even more conservative policies do acknowledge the need for emission control based on the control of exhaust fumes of cars as well as the emission of sulphur by power stations. This concept evidently is profitable even from an economic point of view: the damages of woods and forests due to the "Saurer Regen" account for some six bill. DM. (Wirtschaftswoche 5/1984 b) Damages of buildings and art sculptures are not estimated.

If the idea of introducing lead-free gas in the FRG by the way of new equipments for motorcars should be introduced, capital expenditures of three billion DM are required in the private economy.

As far as emission control for power stations (sulphur) is concerned, the new legislation which only allows 400 mg/m³ of sulphur will require capital expenditures in the range of 12 to 15 billion DM (Vereinigung deutscher Elektrizitätswerke (VDEW), Wirtschaftswoche 4/1984b). It should be noted, however, that the permissible values for the emission of sulphur are still much higher than they are in Japan or the USA. To reduce the permissible value of the emission of sulphur further and to bring them down to the level of Japan (200-250 mg/m³) would require more investment.

For the time period of five years from the beginning of 1984 investment is needed in the range of 2.5 bill. DM. These investments will create additional 50.000 jobs.

Different incentive systems to reduce air pollution are discussed. A more traditional concept is based on pollution fees, other concepts try to stimulate modes of production, which do not overload the environment (Wicke, 1982b).

Even a brief look on the issues involved in environmental protection make clear that state intervention is necessary. Environment is a public good, the process of allocation of public goods are provided for by state intervention. Evidently, the allocation should be efficient from the point of view of welfare economics. Policies should rely on some basic principles of public finance: those economic units, whose activities bring about a demolition of the environment, should be punished by indirect taxes on their products or by legal regulations.

If government actions, based on these principles ("Verursacherprinzip"), are enforced, a change in the economic system is more than likely. This change will bring about a higher productivity of using natural resources linked to a lower degree of demolition of the natural environment.

3.5 Social Services

Expenditures for the expansion of social services are commonly handled as non-productive budget expenses. In an other view those expenditures are similar to infrastructural investments because they are preventing society from financial obedience because of a worsening of social conditions. Furthermore they can increase productivity and integrate marginal social groups into the labour market.

Most economists and political decision makers in West-Germany agree that there are quite some arguments in favour of job-creation in the social services. At least two points are worthwhile to be mentioned. First, there is a case for prevention against, for example, physical and mental disease as well as drugs and crime, second, there is some responsibility for the society to help socially disadvantaged and disabled people.

Given these principles it is nevertheless hard to calculate social benefits and social costs linked to efficient systems of social services in different areas. In a recent study (BMA-PROGNOS, 1980) social costs and social benefits are calculated with regard to seven different fields of activities: physical and mental disease, drug addiction, crime and socially undesirable conduct, problems linked to age, services in health care, services for younger people and the family, services for the humanization of the working place.

The calculations of social benefits and social costs heavily depend on (a) the range of services provided, (b) the organizational structure, and (c) the way how these services are financed. Not going into details, it should be noted, however, that the basic principles for quantitative calculations are the following: sources are supplied at public expense and social benefits calculated with regard to prevention and social responsibility. As far as the organizational structure is concerned, calculations rest on the assumption of small teams, which work on a house-to-house basis instead of setting-up big institutions. The way of financing is given by the principle that jobs are offered to comparable wages, but that there is a wide range of part-time jobs.

The calculations show that benefits are higher than costs for prophylactic health care and systems to prevent from crime. Even given the deficits with regard to social costs and social benefits one may conclude, that government action in the fields mentioned are low cost activities.

According to the PROGNOSE-study till the end of the decade there is an employment potential of 350.000 persons. This figure increases to 500.000, if the indirect employment effects are added (see the following table

As a result of the federal structure of the West-German society, job creation in social services is a task of the Länderregierung and especially of the communities. Therefore the extension of social services extremely depend on the willingness and creativity of city administrations. The federal government is able to support decentralized activities by initial financement of specific job creation measures. The activity of the Senat of Hamburg is one of the recent positive experiences, starting with a new kind of cooperation between Federal Government institutions (Bundesanstalt für Arbeit) and community activities.

The idea of the 'Hamburg-project' was to employ long-term unemployed by using federal funds of unemployment benefits. Three scopes and corresponding employment areas have been:

- improvement of the social services: services in social care, services for unemployed, services for the youth and prisoners, work in therapeutic groups, services for foreign workers and their families, services in suburban living areas etc.;
- improvement of the city infrastructure: renovations on public buildings, extension of leisure areas etc.;
- environmental protection: collection of data of air and water pollution, creation of national preserved parks etc.

The total volume of the Hamburg-project was 100 mill. DM. The share of the Hamburg-Senat was 40.5 mill., the other part was financed by the Bundesanstalt für Arbeit. In total, 3.500 new jobs for long-term unemployed had been created. The jobs created are mainly part-time jobs.

Wages did not exceed unemployment benefits (ca. 27.000,--DM per unemployed per year on the average) to a large extent.

The overall positive experiences of the 'Hamburg model' led the SPD to require a federal initiative for the creation of the 'second labour market' for 100.000 workers (SPD, 22.2.1983). The SPD-proposal is based on two assumptions:

- support by the Bundesanstalt für Arbeit
 - part-time employment in form of four working days per week.
- The SPD-proposal provides a financial requirement of 5.8 bill. DM per budget year. The fiscal savings are in total 3.33 bill. DM (unemployment benefits, taxes etc.).

It was mentioned at the beginning, that there is a common belief in the FRG about the need for the improvement of so-

cial services. It could be argued, however, that this improvement is linked to some qualitative changes. A more conservative idea of the organization of social services (CDU, 1983) emphasizes the role of the family and the community instead of state intervention. This idea is somewhat close to the US-principle of volunteers, and is normally used to substantiate cutbacks in government expenditures. Yet, one may argue that this concept does not work efficiently enough to ensure the social benefits required to match the social needs. On the other hand, the set-up of big institutions in the field of social services has proved to bring about results, which are not overwhelming. It does seem that the decentralized system of small teams working on a house-to-house basis is the most efficient concept available at the moment. This concept ensures the well-functioning of social services as well as considerable employment effects for the job which are socially desirable.

Table 17

Social Services: Employment Effects (in thousand, time period 1980-90)

	Employment Effects		
	direct	indirect	total
	(in thousand)		
Physical, Mental and Psychological Disabilities	30	36	66
	and ca. 133 jobs for disabled persons		
Drug Abuse	30	30	60
Crime and Social Anomalous Behaviour	24	8	32
Problems of Old Age	63	16	79
Services within Health Services	120	47	167
Services for Youth and Families	66	38	104
Services for Gainful Employment	39	15	54
Total (recalculated to double counting)	345	155	

Source: BMA-PROGNOS AG 1980, FSA

3.6 Information and Communication Technology

Information and communication are probably the fields in which the most revolutionary changes are likely. Political and scientific assessments of the impacts of these new technologies are extremely controversial and impressed by hope and fear. There are some visions, that the introduction of a new communication system will effect losses of billions of jobs (EMFT, Technischer Fortschritt 1980). Optimistic prognoses are estimating enormous job gainings.

Recently, controversies seem to be based on a more realistic view. Evidently, the introduction of new information and communication systems is to be looked as both, unevitable as well as reasonable. This is true, if one distinguishes carefully between, firstly impacts of new information and communication technologies for private households and, secondly, the impacts on the infrastructure.

With regard to the first issue, e.g. the impacts for private households, cable television as well as television data monitoring on a local level as well as to a smaller extent on a regional level is even agreed by former opponents of this idea. With regard to further growth additional employment patterns will depend on the way and the speed of how these new media are introduced and implemented. Nowadays, there already exist some pilot-projects like the "Ludwigsburg cable-network", which has started at the beginning of 1984. Probably, some more pilot-projects will be run before the introduction of new media will be persued on a larger scale.

Considering the second argument, e.g. the impacts on economy, three issues are most important: (a) Growth and employment impacts depend heavily on the time horizon, (b) politics persued by the Deutsche Bundespost and, (c) the process of diffusion of impulses to private business.

The time horizon for introducing the new information and communication technologies is estimated between ten and fifteen years. Beyond that, we will discuss the main impacts for growth and employment in quantitative figures. Secondly, and as far as investment behaviour of the Deutsche Bundespost is concerned, one may state, that the new Telefax-system and Teletype-services require relatively high investments by the Deutsche Bundespost. The same is true for "Bildschirmtext" (television data monitoring), but still these new types of services supplied by the Deutsche Bundespost, will not substitute traditional ways of information and communication. Both systems will exist simultaneously even in the nineties. From then on the new types of information and communication will substitute to a larger extent traditional forms (Ifo, 33/1983).

On the basis of some realistic assumptions of the investment behaviour of the Deutsche Bundespost can give us a time horizon mentioned, one may conclude, that massive spinover-effects to private economy will occur. This is especially true for traditional technologies in administration, technical services, and retail trade. Thus, the introduction of new information and communication technologies will stimulate the creation of new jobs in some areas, whereas the introduction of new technologies for text and data processing will bring about considerable job losses in other industries, too.

The introduction of new technologies was characterized above as both, unevitable as well as reasonable. The argument is based on the idea, that communication should not be a bottleneck for the expansion of economy. But, if the new communication and information technologies are introduced, it is more than unlikely, that communication will become a bottle-neck in the West-German economy. One should stress, however, the fact, that investments are to a lesser extent profitable with regard to somewhat already well-known technologies like coaxial-copper-cable-networks, but much more efficient with regard to the new fibre-glass-technology. At the same time,

this also requires the digitalization of communication networks, which should be implemented from the beginning of 1985, even in the local network. If this scenario, that is the digitalization as well as the implementation of fibre-glass-cables, will be pursued, one may calculate the total effects of the introduction of new technologies within the next ten years. According to the Ifo-Institute (Ifo, 33/1983), the following figures are most likely:

- New technologies will induce a growth rate of real GNP of 0.3 % per year.
- Total production will increase in the range of 72 to 80 bill. DM. The distribution by industries is as follows: electrotechnical industries: 20 to 25 bill. DM; retail trade: 12.5 bill. DM; Deutsche Bundespost: 6 bill. DM; construction: 4.5 bill. DM, and other services: 4 bill. DM.
- There will be an employment effect of 50.000 to 55.000 employees. One half of this amount are additional jobs at the Deutsche Bundespost.

The mentioned patterns describe the impacts of investments by the Deutsche Bundespost on public economy, but also on private economy. Thus, the above figures do take into account the spinover-effects for private economy, too. But, this is still to be mentioned, because of the introduction of new technologies and because of new services supplied also by private industries. This is true with regard to the fact, that the introduction of new information and communication technologies will have considerable impacts on all aspects of life and will bring about somewhat revolutionary change in social and economic patterns. A few examples will throw some light on social and economic patterns. A few examples will throw some light on

on what is meant: Private households will communicate in a very different form in the future as well as private economy. If the new services supplied are used by private economy and private households, new investments in the range of around 100 to 200 bill. DM are estimated over the next 20 years (Schrape, 1982). Given this massive investment pattern, it still is uncertain, whether there is an increase in the total level of employment for the economy as the whole. This is true because of the substitution effects already mentioned. By the introduction of new technologies job losses in specific industries are likely as well as job gainings in others. But it is almost certain, that considerable changes in the structure of qualification needed for supplying new jobs will change dramatically.

3.7 Research and Development

Compared with Japan and the US, as the technological leading nations, there are evidences of technological backwardnesses in West-Germany. This concern applies for patents (Ifo, 1983) as well as expenses for research and development in the private industry (Wirtschaftswoche, 51-52/1982). Even bigger gaps do exist in marketing strategies for new technologies. According to PROGNOSE, already implemented programs still discriminate against medium and small-sized firms (PROGNOS AG, 1983). Especially the US-case shows, however, that new technologies are developed primarily within small and medium sized enterprises.

One may conclude, that in the present system of research and development in the FRG there are at least two disadvantages. First of all, whereas research is probably well developed in the FRG, the transfer of research to new technologies is not satisfying (embodiment of progress in investment). Secondly, the present system, changing the design somewhat, still discriminates against small and medium sized firms,

being of major importance for future growth and employment. If this is true, policy should concentrate on both issues, that is on the idea of technology-transfer taking seriously into account the importance of the size of firms.

Policy up to now tries to acknowledge these facts, but still improvements are necessary. Thus, a policy design should be developed further on these grounds. Three types, not at all substituting each other, can be pursued: the financial aspect, the information aspect, and the aspect of cooperation.

The financial aspect is tackled by new forms of financing the introduction of new technologies via investment. As it is well known, investment using advanced technologies requires quite some money, is linked to risk above average and will be profitable only in the medium or long run. Thus, the supply of risk capital plays a more important role, especially for small and medium sized firms. In the FRG, a system of supplying risk capital is not well developed. For example, the "Deutsche Wagnis-Finanzierungsgesellschaft" is only able to provide for capital in the short run (5 years) and to a limited amount. But, just to introduce robots, at least 15 to 20 million DM are needed. It is estimated, too, that firms, which are using new technologies and are risk-taking and innovative, will probably make profit after a time period of 6 years (Wirtschaftswoche, 1-2/1984). It is already suggested (for example SVR 1983/1984; CDU/FDP, 1984) to learn from experiences made abroad. Especially experiences made in the US are encouraging. Venture capital, joint ventures, the supply of risk capital, new ways of financing firms via the stock-market are ways to solve the problem, ways which have been pursued successful in the United Kingdom and France.

With regard to the aspect of information, some rather unconventional concepts are already implemented in some parts of the FRG. Evidently, traditional measures as text-releases, direct subsidies etc. are helpful, but not sufficient.

As it was mentioned above, around 98 % of German inventions are not implemented and used.

Thus, the aspect of information and technology transfer gains more and more importance. Two types of policy, partly already pursued, could be implemented: One issue is to enforce research at universities in specific technologies like Laser-technology, micro-electronics, bio-technology, genetic engineering, air and space technologies etc., and to emphasize the technology transfer from university research to private economy. This is, for example, already done in Baden-Württemberg, as well as started in Berlin (West). Secondly, the provision for information centers, enterprise service, technology parks etc. should help to improve information on new technologies at how to implement them via investment. For example, the Senate of Berlin plans to provide 87 bill. DM until 1988 for the "Berliner Gründerzentrum", a kind of science park, as well as for task forces. These task forces are groups of experts to explore expanding markets and search for innovation, especially aimed for medium and small sized firms. Similar problems are implemented in Baden-Württemberg or will be implemented in Bremen.

There still are new ways of cooperation between State and private economy. Recently, in the FRG a "Arbeitsgemeinschaft Informationstechnische Industrie" was initiated by the State, a kind of cooperative between medium and small sized firms and the state to make joint efforts with regard to research and development. The same is true for the program "Kooperative Selbsthilfe", which was implemented recently with regard to a research cooperative between the Deutsche Bundespost, Bundeswehr, and universities (Wirtschaftswoche, 37/1983). It was suggested, too, that firms should engage themselves in joint research institutions (Mensch, 1984). We do think, that these are new ways of cooperation are stimulating and encouraging.

With regard to the overall employment effects of these new

types of research and development, nothing can be said very precisely. But it is certainly true and it is accepted by almost all relevant political groups, even by the trade unions, that the introduction of new technologies is necessary to improve the performance of the economy.

4. The Impacts of Programs: Job Creation, Forms of Interventions, and Skill Requirements

The analysis of investment projects prove, that

- there do exist economic and social needs, which
- can be fulfilled with a rather high internal rate of return, and
- that the projects will have considerable employment effects.

With regard to the activities mentioned, one may still consider different ways of state intervention as possible and sensible. The types of state intervention mentioned above, are related to public investment, schemes of direct job creation, even a limited time period, subsidies and tax relief, public credits as well as legislative regulations.

The following table provides a systematic summary of sensible ways of state intervention for the areas analyzed.

Most of the projects analysed above require at least some public investment. Direct job creation plays an important part in social services, whereas subsidies and tax relief seem to be the most promising way for housing and urban renewal, tax increases in energy-saving and environmental protection should be used for financial investment in those areas. Given different forms of state intervention, it is again quite a task to calculate the costs of projects as a whole and to distinguish between the burden for the public budget and those

Table 18

Forms of State Intervention

	Public Investment	Direct Job Creation	Subsidies	Tax Relief	Tax Increase	Public Credits	Legislative Obligations
Insulation	X		X	X	X	X	X
Production of Energy	X		X		X		X
Public House Building			X	X		X	
Urban Renewal	X		X	X		X	
Transport	X						
Traffic Control	X						
Waste/Recycling	X		X		X		
Water Clearing	X				X		X
Air Clearing	X				X		X
Social Services		X					
Information and Telecommunication	X						

Research and Development

Venture Capital Funds; Second Stock Market; Management and Technology Consulting; Technology Parks; Center of Innovation; Cooperation of State and Companies.

costs, which will be paid for by private economy. This is also true for calculating the employment effects of the different investment projects. In the following table, a first impression on the magnitude is provided for. With regard to costs, costs for the federal budget as well as for the "Länder" are summarized. Employment figures are calculated on the basis of a direct employment effect, an indirect employment effect with regard to intermediate goods and a third impulse due to the income-multiplier.

Table 19

Investment (bill. DM, real terms, different basis)
and Employment Effects (in thousand) per Year

	Investment	Employment Effects
Insulation	4 -5 (16) ²⁾	300
Production of Energy of that Long Distance Heating Systems	3,5-4 (12,5) ²⁾ 2,5-3 ³⁾	240 60
Public House Building	6 -8 ³⁾	100-120
Urban Renewal	20,7 (25,0) ³⁾	475
Transport	8 ¹⁾	150
Traffic Control and Cycle Trades	7,7 ¹⁾	235
Waste Disposal and Recycling	0,6 ¹⁾	15
Chemical Waste	1,4 ¹⁾	30
Sewerage System	5 ¹⁾	55
Emission Control	2,5 ³⁾	50
Social Services	20,8 ¹⁾	500
Information and Telecommunication	1,5 (6 Mrd.) ³⁾	50-55
Total		2.200

1) real terms, basis 1976

2) real terms, basis 1980

3) real terms, basis 1982

Source: FSA

If one compares the increase of public capital expenditure with their employment effects, one may consider the net job creation as a low cost activity. It should be noticed, however, that costs only refer to the increase of public expenditure, whereas employment effects are calculated on the basis of direct, indirect and third-round effects. But, still, it is true, that public capital expenditure is a low-cost activity as compared to costs rising from unemployment benefits.

This last aspect was already mentioned above. Due to unemployment, the total of fiscal costs amount at least to 55 billion DM. Opportunity costs are being calculated for to be in the range of 125 billion DM.

Table 2o

Costs Due to Unemployment

1) Fiscal Costs per Capita	
a) Unemployment Benefits (ca. 50 % of registered unemployment)	ca. 29.000 DM
b) Unemployment Aids (ca. 17 % of registered unemployment)	ca. 26.000 DM
c) Transfer for the Poor (ca. 33 % of registered unemployment)	ca. 15.000 DM
d) Average Cost	ca. 24.000 DM
2) Total Fiscal Costs (2,3 Mio. x 24.000 DM)	ca. 55 bill. DM
3) Opportunity Costs	ca.125 bill. DM (ca. 8 % GDP)

Cost do not implicate medical and social costs of unemployment.

Source: Klauder, 1983

Evidently, if one compares fiscal costs due to unemployment, opportunity costs and costs of public investment and other forms of state intervention to improve employment and the performance of the economy, one definitely ends up with a rather optimistic assessment of public activities. It should be emphasized, that the economy of the FRG does not live beyond its means, but that there do exist unused resources which can be mobilized.

There are certainly some caveats. With regard to the functioning of the labour market these caveats are related to a possible disequilibrium with regard to qualifications demanded and qualifications supplied.

As far as imbalances of skill requirements are concerned, there was a case in the FRG in the late seventies. Even with a growing unemployment, skill shortages due to a biased process of lay-offs did exist. At the beginning of the eighties, however, also highly skilled workers ("Facharbeiter") suffer from unemployment.

At least, following trends are evident for the next ten years: jobs for unskilled workers will decrease above average, job for skilled workers with rather narrow-defined qualifications will decrease, too. Job, which require high skills and a degree of flexibility above average are likely to increase. A sharp increase is almost certain for those jobs, which are related to new technologies like the above mentioned bio- and robot-technology as well as technologies of data and text processing. Even within the service sector specific kinds of jobs will expand. Whether traditional "social-worker-jobs" are likely to expand or not, depends on policies pursued (table 21).

Table 21

Skill Requirements

	low skills	high skills	academic skills
Insulation Production of Energy	installation fitting up cleaning	installation	
Public House Building Urban Renewal	construction assistance	construction workers	architects urbanistics social re- search
Transport Traffic Control	construction assistance transporta- tion as- sistance	construction workers	engineering
Waste Recycling Water Clearing Air Clearing	installation	construction workers supervising	engineering
Social Services	great variety of skills	great variety of skills	great variety of skills - teachers - social scientists
Information and Communication	installation	installation engineering supervising	scientific research
Research and Development		engineering	scientific research economics marketing

Given the dispersion of unemployment rates in the FRG, there will be some, but not massive, skill shortages, even if employment policy is linked to the investment projects mentioned above. However, in the medium term, economic policy in the sense analyzed must be supported by flanking measures to improve the functioning of the labour market. Labour market policies have to concentrate on schemes for a better qualification of people as well as on more flexibility and mobility. This, however, is a medium or even long-term issue, whereas in the short term no severe skill shortages are likely even given a more expansionary economic policy.

5. A Brief Remark

The economic philosophy of this paper relies on the idea, that a policy mix of supply-oriented as well as demand-oriented measures are needed to improve the performance of the economy as well as the employment situation. This policy mix should be aimed to encourage private investment, but should also increase public investment. Public investment, necessary for the capital stock with regard to the infrastructure, will have considerable direct and indirect spin-over-effects for private economy, thereby improving the patterns of private investment, too.

Most policies analyzed in this report are efficient from an economic point of view, even in the short run, and will bring about a higher degree of employment. They can be pursued without laying a too heavy burden on the public budget and should be linked to measures to improve the quality of human capital as there are qualification and vocational training problems.

A P P E N D I X

Table 22

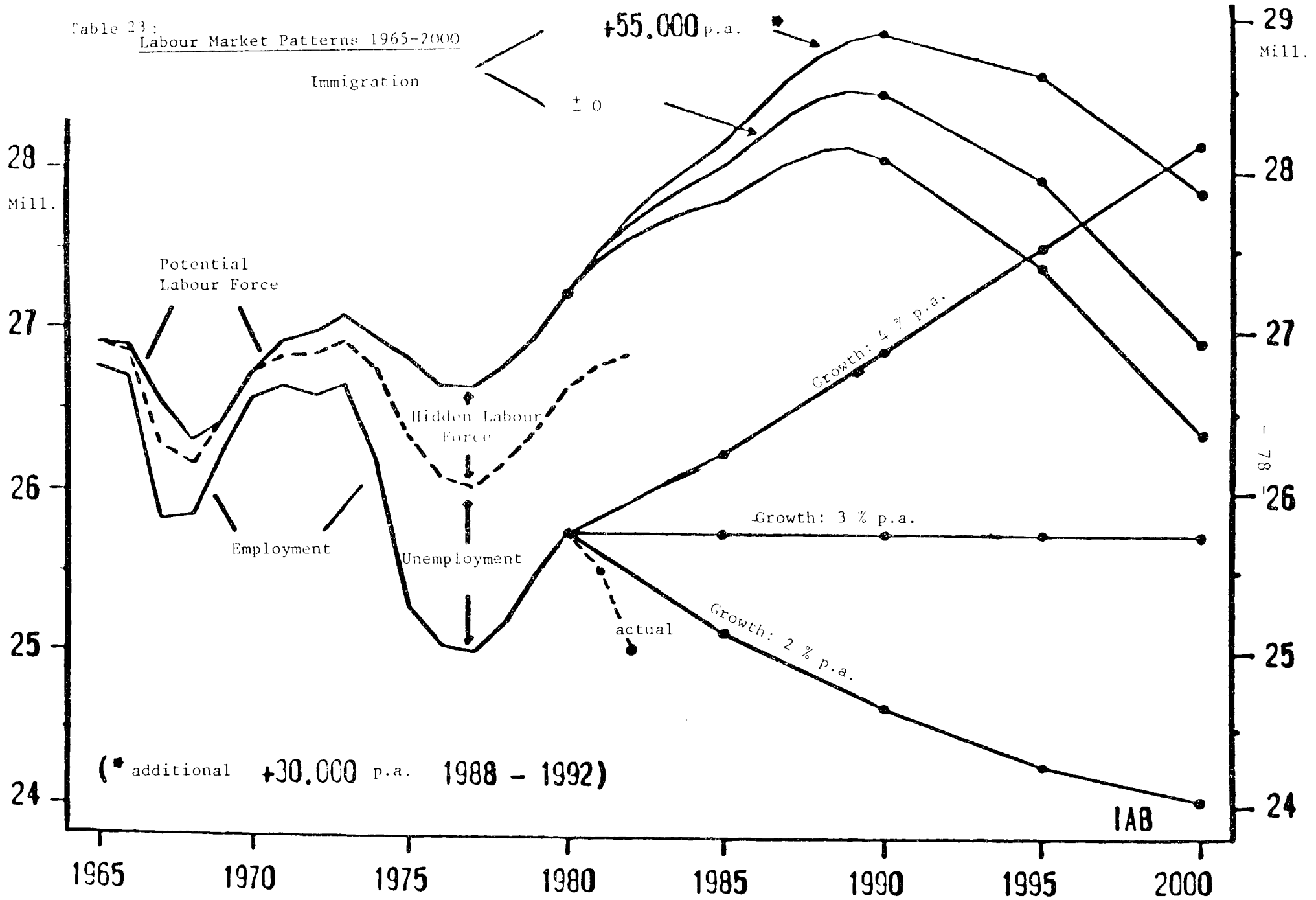
The Opinions of the Parties, Unions and Employers Association to the Growth Areas in the Public and Private Economy

	Energy Conservation						Housing and Urban Renewal			Transport				Environmental Protection			Social Services	Information and Communication Technology	Research and Development			
	Insulation	Long-Distance Heating Systems	Decentralized Heating Systems	Nuclearenergy	Renewable Energy Systems		Public House Building	Private House Building	Urban Renewal	Public Transport	Roads and Motorways	Cycle Tracs	Traffic Control	Waste Disposal and Waste Recycling	Water Cleaning	Air Cleaning				Bio-Technology	Micro-Electronics	Laser Technology
CDU/CSU	+	+	+	++	-		+	++		+				+	+	+	+		+	+	++	
FDP	+	+			+			+						+	+	+			++	+	++	
Grüne	++	++	++	-	++		+	0	++	+	-	++	++	++	++	++			-	+	+	
SPD	+	++	+	0	+		+	+	++	+	0	+		+	+	++			+	+	+	
Employers Association EDA, EDI	+	+	+	++	+														++	++	++	++
Union DGB	+	+	+	+	+		+	+	+	+	0	+	+	+	+	+			++	+	+	

Legende: ++ / + / 0 / - / -; Growth or decrease areas of employment.

Source: CDU, 1982; FDP, 1982; Grüne NRW, 1982; Grüne, 1983; Roth, 1983; SPD, 1982; SPD 1983
BDI, 1980; BDI, 1981; BDI 1982b; BDI 1982 c; DGB Id, 303, 1981

Table 23:
Labour Market Patterns 1965-2000



Source: Klauder, 1983

Bibliography

(ANBA 2/1982)

Amtliche Nachrichten der Bundesanstalt für Arbeit,
Heft 2/1982

(Baum 1982 a)

H. Baum, Beschäftigungswirkungen von Straßenbauinvestitionen,
Ausgabe 4 der Broschürenreihe der Deutschen Straßenliga e.V.,
Bonn 1982

(Baum 1982 b)

H. Baum, Beschäftigungswirkungen von Straßenbauinvestitionen
- eine Berechnung aus Input/Output-Analyse und einzelwirt-
schaftlichen Kostenstrukturen. In: Verkehr 1982, S. 3 ff.

(Bauwirtschaft im Zahlenbild 1983)

Hauptverband der Deutschen Bauindustrie e.V., Bauwirtschaft
im Zahlenbild 1983, Wiesbaden 1983

(Baustatistisches Jahrbuch 1983)

Hauptverband der Deutschen Bauindustrie e.V., Bauwirtschaft
im Zahlenbild 1983, Wiesbaden 1983

(Binswanger 1983)

H.C. Binswanger, u.a., Arbeit ohne Umweltzerstörung, Strategien
einer neuen Wirtschaftspolitik, Frankfurt a.M. 1983

(BMA-PROGNOS AG 1980)

Der Bundesminister für Arbeit und Sozialordnung (Hg.), Forschungs-
bericht 43, Soziale Dienstleistungen als Träger potentiellen
Wachstums und ihr Beitrag zum Abbau der längerfristigen Ar-
beitslosigkeit. Untersuchung der Prognos AG, H. Browa, I.M.
Blohm, J. Weidig, Bonn 1980

(BMFT-Technischer Fortschritt 1980)

Bundesminister für Forschung und Technologie
Technologie und Beschäftigung Bd. 2, Technischer Fortschritt.
Untersuchung der Prognos AG und Mackintosh Consultants Company
Ltd., H. Browa, T. Jacobs, P. Walker, W. Wolff, Düsseldorf 1980

(BMFT-Prognos AG 1982)

Der Bundesminister für Forschung und Technologie,
Schriftenreihe Technologie und Beschäftigung, Bd.6,
Politik, Wertewandel, Technologie. Untersuchung der Prognos
AG, Bearbeiter: D. Schröder, H. Wolff, H. Bülow, P. Hofer;
Düsseldorf 1982

(Bonner Gesamtstudie)

Bonner Studie "Gesamtstudie über die Möglichkeiten der Fern-
wärmeversorgung aus Heizkraftwerkern in der Bundesrepublik
Deutschland", zit. nach .V., Fernwärme, Milliarden verheizt ",
in: Wirtschaftswoche Nr. 3 vom 14.1.1983

(BDI 1980)

Bundesverband der Deutschen Industrie e.B. (Hrsg.), Technischer Fortschritt - Wachstum - Beschäftigung, Fakten, Trends und wirtschaftspolitische Implikationen, Köln 1980

(BDI 1981)

Bundesverband der Deutschen Industrie e.V. (Hrsg.), Energiepolitik für die oer Jahre, zur dritten Fortschreibung des Energieprogramms der Bundesregierung, Köln 1981

(BDI 1982 a)

BDI Jahresbericht 1980-82; 33. ordentliche Mitgliederversammlung 17. Mai 1982, Bonn

(BDI 1982 b)

Bundesverband der Deutschen Industrie e.V., Neue Informations- und Kommunikationstechniken und ihre gesamtwirtschaftlichen Auswirkungen, Köln 1982

(BDI 1982 c)

Bundesverband der Deutschen Industrie e.V. (Hrsg.), Industrieforschung, Sicherung der Zukunft, Köln 1982

(CDU 1982)

CDU Bundesgeschäftsstelle, Hauptabteilung Politik, Überlegungen für die Wiederbelebung der Wirtschaft und den Abbau der Arbeitslosigkeit, Bonn 1982

(CDU 1983)

'Albrecht-Papier', zitiert nach "Der Spiegel" v. 12.9.83

(CDU/FDP 1984)

o.V., Koalition will Bildung und Risikokapital fördern, in: Frankfurter Rundschau vom 26.1.1984

(DGB 1980)

B. Riegert, Gesamtwirtschaftliche Beschäftigungseffekt der energiepolitischen Konzeption des DGB. in: Sozialer Fortschritt, Heft 12/1980, S. 272 ff.

(DGB ID 2/1981)

Bundespressestelle des Deutschen Gewerkschaftsbundes, DGB-Informations-Dienst, Ausgabe 2/1981 vom 30.3.1981

(DGB-Kongreß 1982)

DGB 12. ordentlicher Bundeskongreß, Berlin 16./22.5.1982

(Difu 1980)

Deutsches Institut für Urbanistik und Deutscher Städtetag (HG.): Kommunalen Investitionsbedarf bis 1990; Berlin 1980

(DIW 11/1980)

Deutsches Institut für Wirtschaftsforschung, Arbeitskreis Arbeitsmarktperspektiven, Welchen Beitrag hat die Finanzpolitik zum Aufschwung 1978 und 1979 geleistet ?, in: DIW-Wochenbericht Heft 11/1980, S.121 ff.

(DIW 34/1982)

J. Müller, H. Wessels, Produktions- und Beschaffungseffekte von Fernmeldeinvestitionen der Deutschen Bundespost, in: DIW-Wochenbericht Heft 34/1982, S. 433 ff.

(DIW 50/1982)

H. Seidel, R. Zwiener, Kürzung öffentlicher Investitionen führt nicht zur Konsolidierung, Wirtschaftspolitische Stimulation mit dem ökonomischen Modell, in: DIW-Wochenbericht Heft 50/1982, S. 619 ff.

(DIW 1983)

Deutsches Institut für Wirtschaftsforschung, Erhöhter Handlungsbedarf im Strukturwandel, Analyse der strukturellen Entwicklung der deutschen Wirtschaft, Strukturberichterstattung 1983, Berlin 1983

(DIW 26/1983)

U. Voigt, Verkehrsinvestitionen bis 1990, in: DIW Wochenbericht 26/83, S. 333 ff.

(DIW 38/1983)

D. Teichmann, D. Vesper, Restriktionspolitik behindert wirtschaftliche Erholung, in: DIW-Wochenbericht Heft 38/1983, S. 463 ff.

(Europäische Wirtschaft 1983)

Europäische Wirtschaft, Nr. 18, November 1983

(Europäische Wirtschaft 1984)

Europäische Wirtschaft, Beiheft, Nr. 2, Februar 1984

(FDP 1982)

FDP im 9. Deutschen Bundestag, Stichworte zur Sozial-, Gesellschafts- und Gesundheitspolitik, Bonn 1982

(Grüne NRW 1982)

Landesarbeitsgemeinschaft Wirtschaft, Die Grünen Nordrhein-Westfalen; Sinnvolle Arbeit für alle. Konzept gegen Arbeitslosigkeit, Düsseldorf 1982

(Grüne 1983)

Die Grünen, sinnvoll arbeiten - solidarisch leben; Bundesdelegiertenversammlung 15/16, Januar 1983

(Haak)

D. Haak, Haak-Papier; zit. nach o.V.; Fernwärme, Milliarden verheizt ?; in: Wirtschaftswoche, Nr. 3 vom 14.1.1983

(Hennicke 1983)

P. Hennicke, Möglichkeiten und Grenzen der Energieeinsparung im Rahmen regionaler Energiekonzepte, in: WSI-Mitteilungen, Heft 11/1983, S. 666 ff.

(Höhnen 1982)

W. Höhnen, Das DGB-Investitionsprogramm zur Sicherung der Beschäftigung durch qualitatives Wachstum, in: WSI 10/1982, S. 257 ff

(HWWA 1983)

Hamburger Weltwirtschaftsarchiv, Ergebnisse des Strukturberichts, Hamburg 1983

(IFO 1983)

W. Gerstenberger u.a., Analyse der strukturellen Entwicklung der deutschen Wirtschaft, Band I zur Strukturberichterstattung 1983, Hauptband, November 1983

(IFO 33/83)

M. Reinhard, L. Scholz; Wirtschaftliche Perspektiven der Telekommunikation in der Bundesrepublik Deutschland, in: IFO-Schnelldienst 33/84

(Klauder 1980)

W. Klauder; Zu den Arbeitsmarktauswirkungen unterschiedlicher Energiestrukturen, in: MittAB, Heft 1/80, S. 1 ff.

(Klauder 1983)

W. Klauder, Arbeitsmarktendenzen 1950-2000. Vortrag bei den Cloppenburgern Wirtschaftsgesprächen 'Arbeitslosigkeit- unser Schicksal?' am 7.6.1983

(Koch/Vahrenholt, 1983)

E.R. Koch, F. Vahrenholt, Die Lage der Nation, Umwelt-Atlas der Bundesrepublik Deutschland-Daten, Analysen, Konsequenzen, Hamburg 1983

(Krupp 1983)

H. Krupp, Strukturpolitik, Den Wandel fördern, in: Wirtschaftswoche, Heft 40 vom 30.9.1983

(Meißner/Hödl 1982)

H. Meißner, E. Hödl, Möglichkeiten und Voraussetzungen zur stärkeren Berücksichtigung umweltverbessernde Maßnahmen bei konjunktur- und wachstumsfördernden Programmen von Bund und Ländern, Frankfurt/Wuppertal 1982

(Mensch 1984)

G.O. Mensch, Innovation. Ende der Durststrecke, in: Wirtschaftswoche, Heft 12 vom 6.1.1984

(Pfaffenberger/Renschhausen 1983)

W. Pfaffenberger, M.M. Renschhausen, Die volkswirtschaftlichen Auswirkungen von Energiepreissteigerungen und -einsparungen; in: Wirtschaftsdienst, V/1983, S. 248 ff.

(PROGNOS AG 1978)

H. Browa, K. Eckerle, K. Masuhr; I. Weidig, Längerfristige Wirtschafts- und Arbeitsmarktentwicklung in der Bundesrepublik Deutschland und Baden-Württemberg sowie Handlungsmöglichkeiten zur Sicherung der Vollbeschäftigung und des Wirtschaftswachstums, Basel 1978

(PROGNOS AG 1981)

H. Browa, Szenarien zur wirtschaftlichen und technologischen Entwicklung in der Bundesrepublik Deutschland bis 1995. Analysen, Thesen, Anregungen und Argumente zur Erweiterung des Diskussionsrahmens der Technologie- und Gesellschaftspolitik, Basel 1981

(Prognos AG Hessen 1981)

Der Hessische Minister für Landesentwicklung, Umwelt, Landwirtschaft und Forsten, Überprüfung von Zielen und Maßnahmen des hessischen Landesentwicklungsplans unter Berücksichtigung geänderter Rahmenbedingungen. Untersuchung der Prognos AG, Wiesbaden 1981

(Prognos AG 1983)

Prognos AG (Hrsg.), Das Forschungs- und Technologiesystem in Japan; Köln 1983, Band 1-4, zit. nach: Wirtschaftswoche, Heft 7 vom 10.2.1984

(Roth, U. 1980)

U. Roth u.a., Wechselwirkung zwischen der Siedlungsstruktur und Wärmeversorgungssystemen, Hrsg. vom Bundesministerium für Bauwesen, Bonn 1980

(Roth, W. 1983)

W. Roth; "Was tun?" in: M. Bolle, P. Grottian. (Hrsg.), Arbeit schaffen jetzt, Reinbeck b. Hamburg 1983

(RWI 1983)

Rheinisch-Westfälisches Institut für Wirtschaftsforschung - Strukturabteilung -, Analyse der strukturellen Entwicklung der deutschen Wirtschaft (Strukturbericht 1983), Band I: Gesamtdarstellung/Zusammenfassung, Essen 1983

(SVR 1983/84)

Sachverständigenrat, Jahresgutachten 1983/84

(Schrape 1982)

K. Schrape, Chancen und Risiken der neuen Informations- und Kommunikationstechnologien, Basel 1982

(Schweizer Energiestiftung 1977)

Schweizer Energiestiftung, Energie, Stabilisierung und Arbeitsplätze, in: Technologie und Politik 9, 1977, S. 109 ff

(SPD 1982)

SPD-Parteitag München 19./23.4.1982, Beschlüsse

(SPD 22.2.1983)

Sozialdemokratische Partei Deutschlands, Der Parteivorstand, Sozialdemokraten, Service, Presse, Funk, TV, Nr. 175/83 vom 22.2.1983

(SPD 1983)

SPD-Landesverband Baden-Württemberg, Report: Zukunft Baden-Württemberg. Wie arbeiten und leben wir morgen?, Mannheim 1983

(Spitzley 1983)

H. Spitzley, Sinnvoll arbeiten statt sinnvoll verschwenden. Energie sparen schont die Umwelt, macht unabhängiger, schafft Arbeitsplätze und finanziert sich selbst, in: M. Bolle, P. Grottian (Hrsg.), Arbeit schaffen, jetzt!, Reinbeck b. Hamburg 1983

(Ströbele 1978)

W. Ströbele, Mögliche Arbeitsmarktkonsequenzen durch Übergang zu anderen Energiequellen und Programme zur rationellen Energieanwendung, in: Argumente in der Energiediskussion, Hg. V. Hauff, Red. W. Klauder, Villagen 1978, S. 650 ff

(Weiss 1978)

J.P. Weiss, Produktions- und Beschäftigungseffekte des Baus von Kraftwerken. In: Argumente in der Energiediskussion, Hg. V. Hauff, Red. W. Klauder, Villagen 1978, S. 588 ff

(Wicke 1982)

L. Wicke, F. Schaffhausen, Instrumente zur Durchsetzung des Umweltschutzes, in: WISU, Heft 8,9 und 10, 1982, S. 409 ff.

(Wirtschaftswoche 51-52/1982)

o.V., Telekommunikation. Griff nach den Sternen, in: Wirtschaftswoche, Heft 51/51 vom 17.12.1982

(Wirtschaftswoche 8/1983a)

o.V., Abfallhalden. Mißachtete Schätze, in: Wirtschaftswoche Heft 8 vom 18.2.1983

(Wirtschaftswoche 15/1983)

o.V., Industrieroboter. Der Wettkampf beginnt, in: Wirtschaftswoche, Heft 15 vom 8.4.1983

(Wirtschaftswoche 26/1983)

o.V., Lasertechnik-Markt, Verschlafene Deutsche, in: Wirtschaftswoche, Heft 26 vom 24.6.1983

(Wirtschaftswoche 37/1983)

o.V., Industriepolitik, Mini-Miti am Rhein, in: Wirtschaftswoche Heft 37 vom 9.9.1983

(Wirtschaftswoche 4/1984a)

o.V., Giftmülldeponien, Wer soll das bezahlen?, in: Wirtschaftswoche Heft 4 vom 20.1.1984

(Wirtschaftswoche 4/1984b)

o.V., Anlagenbau, Boom für vier Jahre, in: Wirtschaftswoche Heft 4 vom 20.1.1984

(Wirtschaftswoche 5/1984a)

o.V., Halbleiter, Intel im Schweinezyklus, in: Wirtschaftswoche Heft 5 vom 27.1.1984

(Wirtschaftswoche 5/1984b)

o.V., Wirtschaftsfaktor Wald. Überdruß am Überfluß, in: Wirtschaftswoche Heft 5 vom 27.1.1984

(Wirtschaftswoche 7/1984)

o.V., Energiepolitik, Angst vorm Durchbruch, in: Wirtschaftswoche Heft 7 vom 10.2.1984

(Wirtschaftswoche 9/1984)

o.V., Privatfernsehen, Dabeisein ist alles, in: Wirtschaftswoche Heft 9 vom 24.2.1984

CONTENTS

	<u>Page</u>
1. <u>INVESTMENT POLICY IN FRANCE SINCE 1981</u>	
1.1 THE FEATURES OF THE DEVELOPMENT OF INVESTMENT	90
1.1.1 Growth, Employment and Productivity Since the Sixties	90
1.1.2 The Decline of Private Investment	91
1.1.3 The Counter-trend in Public Investment	93
1.2 THE DIFFICULTIES IN MAKING THE CONNECTION INVESTMENT/EMPLOYMENT	98
1.2.1 The Fundamental Debate	98
1.2.2 The Conceptual Categories Debate	99
1.2.3 The Debate Concerning the Methods of Appraisal	101
1.3 THE TWO FIELDS OF ANALYSIS CONCERNING THE CONNECTION BETWEEN INVESTMENT AND EMPLOYMENT	102
2. <u>ANALYSIS OF THE DIFFERENT RELATIONSHIPS INVESTMENT/EMPLOYMENT</u>	105
2.1 CONVENTIONAL INVESTMENT	105
2.1.1 Electronics	105
2.1.2 Construction and Public Works	106
2.1.3 Machine-tools	107
2.1.4 Transport	108
2.1.5 Agro-food Industry	109
2.1.6 Wood	110
2.1.7 The Sectors in Difficulties	111
2.2 NEW STYLE DEVELOPMENT INVESTMENT	111
2.2.1 Cable Communications	112
2.2.2 Energy and Energy Substitution	112
2.2.3 Biotechnology	114
2.2.4 Culture	114
2.2.5 Town Environment and Socio-cultural Activities	119

3.	<u>AN EX ANTE EVALUATION</u>	
3.1	THE DIVERSITY OF THE MEASURES	120
3.2	THE MULTIPLICITY OF THE INDIVIDUAL CASES	122
3.2.1	Vertical Reading of Table No. 6B	123
3.2.2	Horizontal reading of Table No. 6 B.	124
3.3	DIFFICULTIES OF SPECIFIC APPRAISAL	127
3.4	QUALITY OF THE DEVELOPED JOBS AND THE JOB DISEQUILIBRIUM IN THE LABOUR MARKET	128

UNIVERSITE PARIS IX-DAUPHINE

**INVESTMENT POLICY
AND
EMPLOYMENT IN FRANCE**

Xavier GREFFE

**Centre de Recherche
"TRAVAIL ET SOCIETE"**

LIST OF TABLES

		<u>Page</u>
No. 1	Investment by Sector - Percentage Growth Rates	92
No. 2	Position of the Public Groups in Industry before and after Nationalisation. Development 1976-1980.	95
No. 3	Progress of the Budgetary aids to Investment in 1984	97
No. 4	Variation of the Financing Capacity of the Nation	100
No. 5	Typology of the Measures	121
No. 6	A and B - Sector by Sector Simulation of the 9th Plan.	125

1. INVESTMENT POLICY IN FRANCE SINCE 1981

1.1. THE FEATURES OF THE DEVELOPMENT OF INVESTMENT

1.1.1. Growth, employment and productivity since the sixties.

The productivity and employment trends in France in the last twenty years have confirmed the effects of the fall off in investments and highlights the necessity of increasing governmental efforts in this field.

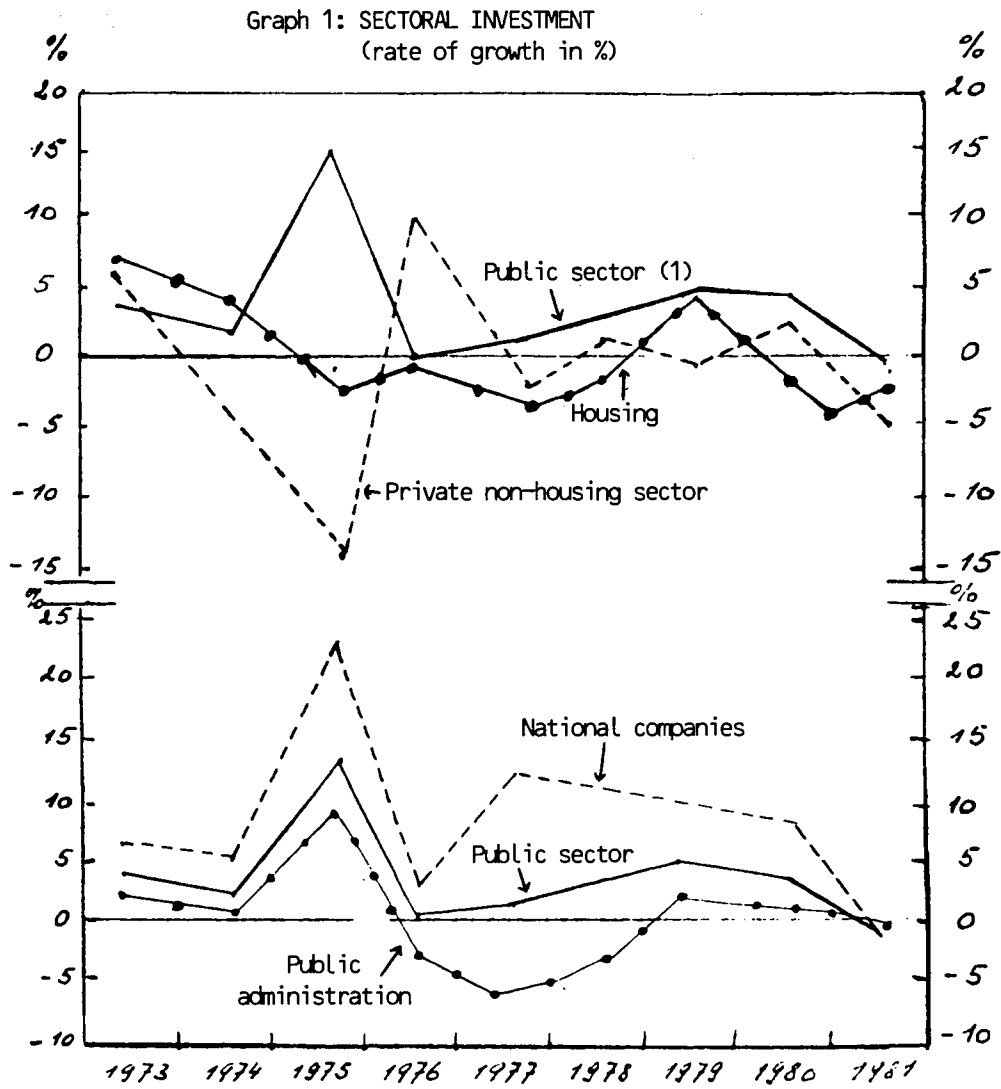
The data given in Table No. 1 enables us to define three different periods in the French economy:-

- during the sixties and up until 1974-1975, the steady growth in production was higher than the already high growth rate of productivity per worker. This resulted in a positive contribution to employment which, nevertheless, did not stop the rise in unemployment which was due to the arrival of new groups of workers on the labour market;
- in 1975, a first upset took place: the growth rate weakened and dropped to a figure similar to that of the productivity rate. The result was that the total number of hours worked remained about the same, which did not stop the rise in unemployment for the same reason as above. This double decline in productivity and growth can be linked to the fall in the investment rate, which was all the more striking since the financial conditions covering private investment were not bad at this time;
- in 1980-1981, another upset took place: growth was close to zero and the few gains in productivity led to a decrease in the number of jobs on offer, which

thus reinforced the dynamics of unemployment. This time, the movement was clearly due to the reduction in self-financing and investment from 1978 on. The question is why even weak gains in productivity did not lead to a reversal of investment behaviour, however weak. This seems to be due to the fact that the small volume of investment was aimed more at replacement than expansion. Anyway, it was not really profitable to employment, a factor which was more and more considered as "quasi fixed" and has to be made flexible again at any price. Another question is to know if there were more precise explanations of the fall in investments than the usual decrease in growth and the limitation of gains in productivity. As a matter of fact, there were several of them, which all played a part at different levels in France: the loss of competitive strength of a production structure concentrated on consumer goods while these were experiencing increasing competition from the Third-World and Eastern Europe; the financial problems and the presence of high positive real interest rates which limited the demand for "loanable" funds and stimulated annuitants' and speculators' behaviour; a decreasing in foreign investments and the relocation abroad of some important firms.

1.1.2. The decline of private investment

One of the French economy's most important features in the last ten years was thus the low volume of real investment. Apart from the public investments in the fields of nuclear industry and railway construction, investment became slowly steady as its growth rate approximated to zero and was even negative in the private sectors, both residential and non-residential (see Table No. 2).



SOURCE: INSEE "Rapport sur Les Comptes de la Nation". OECD Secretariat
(1) Not including housing investment

This last trend has been unfortunately confirmed since the beginning of the eighties. The figures published by INSEE show indeed that company and household investment will be limited. Apart from a slight upward forecast for the end of 1981 due to the expectation of a high growth rate by the public authorities, the trends have been amplified between 1982 and 1983 - the investment growth will be nil for companies and negative for households (-3.5%).

1.1.3. The counter-trend in public investment

A new trend of giving an increasing role to public investment appeared by the end of the seventies and will probably be amplified because of the political choices made during the second six months of 1981. Faced with the obvious decline in private investments and the concentration of public investments on a few specific fields, the first Maurcy government showed as early as July 1981, their will to remedy the situation. This will was often underestimated as the first measures were most of the time considered simply as aimed at increasing consumption. But the logic of it was the following - the point was on one hand to stimulate household purchasing, and, on the other hand, to modify the behaviour of firms and banks (by a nationalisation of their leading positions) in order to stimulate investment from a solid base. The increase in consumption should then have been replaced by an increase in investment - that was the aim of the interim economic plan (1982-1983). The 9th Plan (1984-1988) should have strengthened investment and allowed France to find the new poles of competitive strength, which is lacking today. The 1982 budget had laid down that the whole public sector (civil service + public enterprises) would have to restore the investment effort with two goals

in view - to match the production capacity of our economy to the dictates of foreign competition and to defend and promote employment. The stimulation of public investment was to be organised along two main ideas:-

- an increase (+27.7% for 1982) in the State expenditure on civil capital investment compared with those envisaged before the presidential election. In the 1983 budget, this post increased more than any other (+13.7% against 12.5% for operating expenditure);
- the nationalisation of firms having an important role in terms of investment - in 1980 the pre-reform public sector ensured 43.5% of the energy related and industrial investment - after the nationalisations, this extended sector ensured 51.9% of it. Energy excluded, the figures, for the industrial activities only, are respectively 12.1% and 25.9%. This statistical data is remarkable as the multiplier effect of the investments in this sector is very important. A survey showed that a 1% variation in public sector investment involved an automatic variation of 1.3% in the investment of private firms⁽¹⁾ (see Table No. 3).

Therefore, it is understandable that the policy of public investment is determinative for all investment, and will have a lever effect except in sectors such as agro-food industry, biotechnology etc. But anyway, these mutations reveal a specific responsibility for public investment, whatever the field may be - a responsibility for maintaining or increasing employment.

(1) P. ARTUS et P. A. MUET, "Politique conjoncturelle et investissement dans les années 1970", Revue OFCE, No. 1, June 1982.

TABLE 2: SHARE OF PUBLIC INDUSTRIES BEFORE AND AFTER NATIONALISATION
(1976-1980)

	1976			1978			1980		
	Total	before nationalisation in %	after nationalisation in %	Total	before nationalisation in %	after nationalisation in %	Total	before nationalisation in %	after nationalisation in %
<u>SALES (b.f.)</u>									
Total of industry	1,051,159	14.0	26.5	1,240,780	15.0	27.9	1,706,063	17.2	29.4
Industries energy excluded	831,345	7.6	23.2	1,029,815	8.2	23.7	1,352,200	8.9	24.3
<u>EMPLOYEES</u>									
Total of industry	4,845,249	10.2	22.1	4,688,741	10.7	22.6	4,473,921	11.0	22.2
Industries energy excluded	4,559,896	5.8	18.3	4,428,453	6.2	18.8	4,220,427	6.4	18.3
<u>INVESTMENT (b.f.)</u>									
Total of industry	53,857	33.5	44.2	65,378	39.5	49.6	100,086	43.5	51.9
Industries energy excluded	36,945	9	24.5	41,677	9.9	25.7	60,756	12.1	25.9

Nevertheless, it is necessary to point out the fact that this boost to public investment has been compromised during 1982/83. In the strategy applied at the end of 1981, a defect appeared almost immediately - an important part of the increased purchasing power went into foreign products (mostly durables). This led to the problem of the external deficit in the first place, and to the inauguration of a deflationary policy. The implementation of an austerity plan, first in June 1982, then in March 1983, led to the revision of the scale of this deflationary policy, directly in the case of government departments' investments, indirectly for the public sector as it would henceforth have more difficulties in obtaining State assistance. But in general the government tried not to change their strategy too much. They expected the stimulation of investment to contribute positively to employment and the trade balance and not to undermine the dampening effect already applied to the economy. It is undeniable that the weakness of the investments in France has reached a significant threshold. Public investment should thus ensure a minimum in this field to avoid a decapitalisation at the worst moment. The official pleadings for the improvement of external competitive strength and full employment go in this direction. Now, the fight for the re-establishment of full employment remains the foundation of the economic strategy of the left.

A significant manifestation of the political will to maintain the flow of investment may be found in the draft budget for 1984 - the funds granted to research would increase by 20% (the funds granted to electronics would rise by 32% over last year). The increase in aids to industry (public or private) will be of round about 20% in 1984 as against 10% last year.

TABLE 3

AIDS TO INDUSTRY

	1982	1983	1984
General aid to investment	23,016	21,443	21,911
Specific aid to public enterprises	5,733	14,986	17,951
Aid to exportations	5,309	3,820	4,895
TOTAL	34,090	37,540	44,757
Relative growth		+ 10.1%	+ 19.2%

1.2 THE DIFFICULTIES IN MAKING THE CONNECTION
INVESTMENT/EMPLOYMENT

The analysis of the relationship between investment and employment is problematic with regard to its foundation, its logical categories and its methods of appraisal. Let us briefly see these three elements.

1.2.1. The Fundamental debate

As an important part of the investment is concentrated on the new technologies and leads towards a high substitution of capital for labour, investment can first bring about a rise in unemployment - numerous intermediate goods necessary for the implementation of these new technologies cannot be provided by the French economy for some time and will have to be imported. This implies a shift of demand towards foreign markets. This is a very acute problem today in the French economy. Our productive structures are more oriented to the production of consumer goods than of capital goods. In other words, our tendency to import capital goods is stronger than our tendency to import consumer goods. Any stimulation of investment, bound to a new distribution in the use of the national income, would involve an increasing external disequilibrium and so, a loss of employment on the national level. A change of outlook will only be possible when the production of capital goods is ensured by the national industries (that was one of the aims of the nationalisation programme).

This risk has been neglected for quite a long time on the basis of extrapolations made on the results of experiments during the growth period⁽¹⁾ but was studied at the time of

(1) J. H. LORENZI, J. PASTRE, F. TOLEDANO, La Crise du XXème siècle, Economie, Paris 1978.

the preparatory work of the 9th Plan.⁽¹⁾

In a first stage, the increase in the investment programme will involve an increase in the external deficit and thus a negative contribution to employment. In a second stage the setting-up of new output capacity will lead to an effective revival of the economy and employment. The "net" effect lets us think there will be two difficult years in 1984 and 1985.

The Table No. 5 clearly breaks down this problem and the relative risks associated with the strategy:-

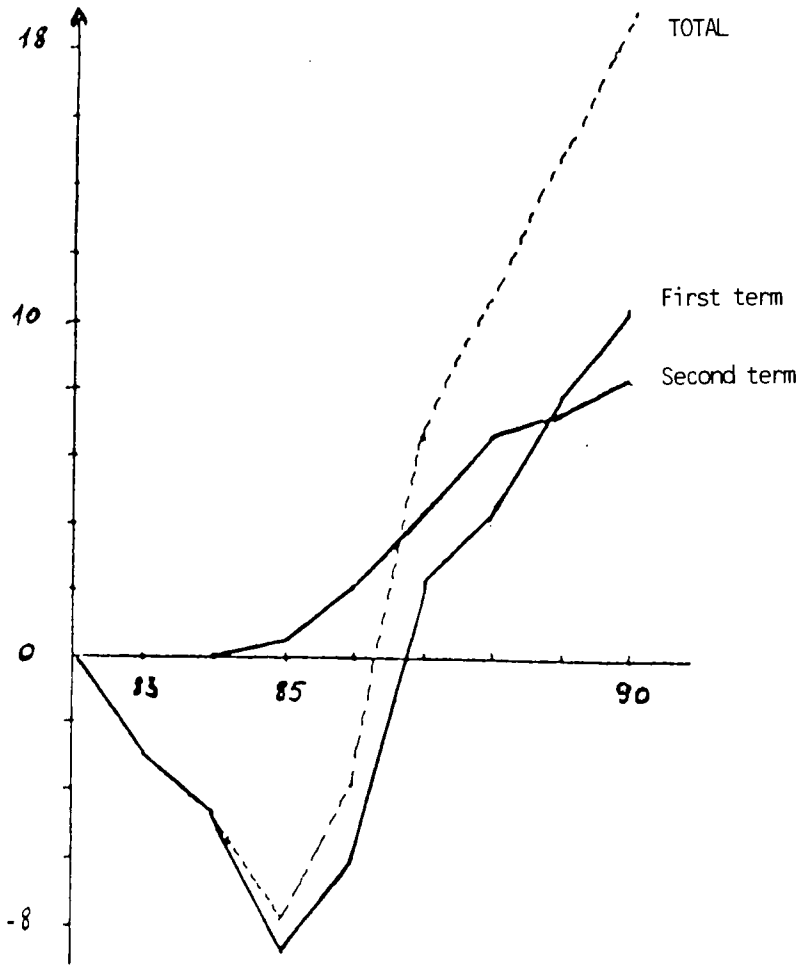
- a simple increased effort of investment without an automatic substitution of new domestic output capacity for imports can only lead to a severe trade deficit during quite a long while;
- an investment effort together with a quick substitution of imports will lead, on the contrary, to a financial recovery as early as 1984;
- at all events and in the absence of any precise hypothesis about the likelihood of any of these suppositions, the waiting period may be rather long (more than four years). It is then necessary to strictly separate the effects of this investment policy on employment according to a short term or medium term point of view.

1.2.2. The conceptual categories debate

The capital expenditure is clearly distinct from consumption expenditure in the national accounts. But the connection between expenditure and employment is more

(1) Report of the working group "Impact du secteur nationalisé", CGP-MIR, March 1983, P. 55-57.

TABLE 4

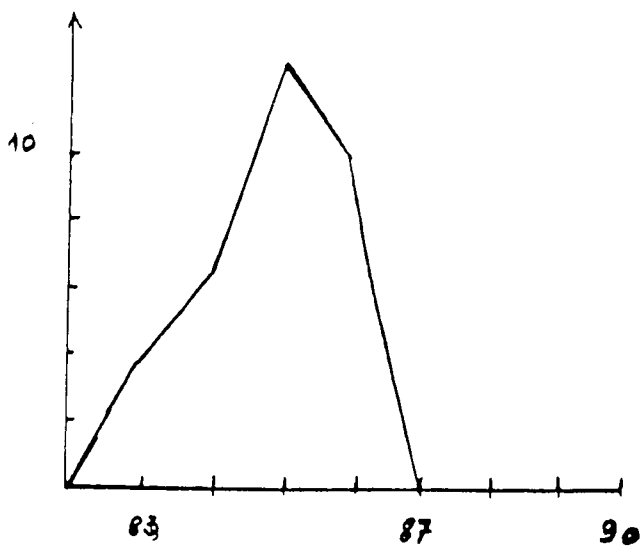


Financing abilities in variation.

First term: Increase of investment.

Second term: Increase of investment and import substitute.

B.F. current



Add in investment.

complex - the forward effect on employment of some public expenditure officially classified under current consumption or operating expenditure is similar or even superior to that of capital expenditure. Let us take two examples:-

- expenditure on a regional job programme. It concerns operating expenditure for the setting-up of jobs in sectors of economic and social activities, which should find new financial props after two years. It is thus a matter of creating lasting jobs with current account expenditure instead of capital account expenditure in the current meaning of the term;
- the unemployment indemnities assigned to the creation of new firms by the unemployed themselves. It is here a matter of parapublic current account expenditure aimed at the development of new production activities and the creation of new jobs.

It is then fitting to tackle this phenomenon with flexibility. But in the present case, it is desirable to extend the definition of expenditure to include its aims - the maintenance or the development of what will eventually be employment (i.e. not exclusively financed by public funds).

1.2.3. The debate concerning the methods of appraisal

The analysis of the connection between capital account expenditure and employment should rely on adequate accounting methods, for instance in terms of "equivalent jobs". This is not available and, furthermore, the connection between activity and employment in France conventionally relies on the econometric evaluation of employment functions. This raises a new difficulty - the "time-scale" must be lengthened and a whole set of hypotheses must be taken into account in

order to open onto a reliable appreciation of the effects studied. Thereby, the variables at issue will be multiplied and it will be more and more difficult to analyse the connection precisely.

This exercise is done in France at the time of the Plans' preparation and has to be done by INSEE by the end of 1982.⁽¹⁾ Seven scenarios have been built up on the crossing of three external scenarios (pivot, continuation of the past, recession and recovery of the American economy) and five internal scenarios (pivot, growth of purchasing power, slowdown in public expenditure, limitation of external dependence, slackened and concerted diminution of the working time). These scenarios do not give us very precise information but enable us to define the risks of each measure. Therefore, we will try to emphasise the central scenario and we will come back to this debate in the third part.

1.3 THE TWO FIELDS OF ANALYSIS CONCERNING THE CONNECTION BETWEEN INVESTMENT AND EMPLOYMENT

Once the main features of the investment policy and the methodological problems of its appraisal are detailed, the point is to improve the analysis by determining which are the privileged or "new" sectors and which measures will be "furthered" or new. In principle, investment will be oriented towards the sectors considered as "leading" sectors as it is a question of preparing the future. It should then be possible to appreciate from the results of the investment how the economy wants to specialise and, in so far as investment and employment are related, move towards job creating sectors.

(1) INSEE, technical note on the Projections up to the 1988 horizon in order to initiate the quantitative debate of the 9th Plan, November 1982.

This analysis contains a qualitative and a quantitative argument - in a period of intense restructuration and protection of output capacity, numerous investments will be protective. Appropriate examples may be found in the iron and steel and in the textile industries - the large investments which are realised there are inevitably accompanied by a strong reduction in employment, especially in the first case. The opinion of the former Minister of the Plan in France - "There are no out-of-date sectors, there are only out-of-date technologies" acts as an official moot, but investments here will probably not guarantee the development of employment.

Apart from this argument, the accurate appraisal of the implemented investments is not evident. In the case of France, the expenditures for parachemistry are much higher than those of sociocultural activities. However, the increase in employment in this latter sector will probably be much more significant in the future than the former.

Two large groups may be distinguished by sector:-

- already traditional sectors whose development should allow the stabilisation of employment;
- newer and perhaps more marginal sectors from a statistical point of view that seem to be potential job reservoirs for the medium and long term, as the components of a new style of development.

It is difficult to reason here in terms of a new style of development. In France, this term is used in very different ways by the different social partners, from meaning a simple stimulation of demand to the socialisation of the economy, to the development of co-operatives etc.

In order to understand this theme, one can say that it is at the interface of three trends:-

- the development of information and communication technologies;
- a non-inflationary distribution of the monetary gains of productivity and so, an increase in free time;
- a large demand in the cultural activities and information sectors and, as a general rule, in the sector of all higher services rendered to households and firms.

These three features are closely connected as they "circumscribe" new fields of activity, the new goods and services that could be put on the market and the emergence of new types of demand. Therefore, there is room for new poles of development that will enable older ones to be redeployed (culture, civic activities, social action etc.) At this point, we again meet themes which are often associated with new styles of development - creativity, autonomy, ecology etc. But let us not go too far and draw exaggerated conclusions from this analysis of the new styles of development. In any case, this enables us to say that there are investments in relatively traditional sectors, on one hand, and investments in new sectors on the other hand.

We will thus keep in mind the above-mentioned differentiation with a view to the specific analysis of the effect of the large investment projects on employment, while being conscious of the resulting artificial distinctions:-

- convention investments;
- new style development investment.

2. ANALYSIS OF THE DIFFERENT RELATIONSHIPS
INVESTMENT/EMPLOYMENT

2.1. CONVENTIONAL INVESTMENT

Among the investments of "conventional" type, we will study electronics, building trade/public works, transport, agro-food, wood, and two activities in difficulties - textiles and toys.

2.1.1. With 300,000 jobs in this sector, a considerable capacity for development and a large trade deficit, the electronics industry is today at the interface between the numerous worries of households, the professional circles and the public authorities. As far as employment is concerned, its development is quite satisfactory. Its share of total industrial employment has increased from 8.5% to 9.8% between 1974 and 1981. This progress should perhaps have been more substantial. An examination of the performance of the whole sector shows widely varying internal performance differences. The performance is quite satisfactory in the field of telecommunication and some software but less so in huge fields such as electronics for the general public, data processing and components in electronic office equipment.

The government have decided to introduce a very important development plan concerning this sector on June 28th 1982, raising investments to 140 billion francs over five years as against 90 million if the present trend had been followed. This implies expenditure for the government of six billion francs more annually, which will be spent in the shape of:-

- research expenditure;
- capital endowment for the public enterprises concerned;
- financial transfers.

The importance of the sector has been reinforced by the decisions taken in September 1983 to leave the management of these funds in the hands of the "P.T.T.". This implies that the large financial resources of the "Postes" will be largely oriented towards the electronics sector.

The public enterprises will unavoidably become the leaders in some sectors (Thomson for components, CGE for electronic office equipment etc.) and will add important financial resources to the aid granted by the State.

The effect on employment should be considerable. This appears clearly in the State's desire to create large training programmes. The objective here would be to quickly reach 12% of total industrial employment, which implies a minimum of 100,000 new jobs.

2.1.2. 1.8 million people work in the construction and civil engineering sector, a sector that has been in difficulties over the last few years. If the implementation of the big infrastructure projects has been made possible by the construction of the High Speed Train, the nuclear power stations and the motorways, the sub-sector of housing has developed clearly less substantially. However, faced with the difficulties experienced by the economy, it is necessary to maintain this sectors' knock-on effects at the same time as adapting it to new challenges.

As a matter of fact, many factors must be taken into account in this sector - conservation of energy, reorganisation of living styles due to the diminution of working time and the development of domestic production, the insertion of electronics in the building trade etc. The objectives of employment cannot only be quantitative but also qualitative in nature - training, retraining of manpower,⁽¹⁾ etc. The

(1) La Politique Industrielle dans le IXème Plan, C.G.P. May, 1983. p. 11.

agreement reached with Algeria for the training of their nationals, numerous in this sector, is the symbol of this reorientation desired by the public authorities.

The government have defined a certain number of priorities:-

- to receive and develop training by using specific finance by way of the vocational training funds;
- to develop research and innovation policies in the field of components, generally on the basis of specific markets;
- to promote the export of technology thanks to international agreements (with Algeria in particular);
- to reinforce the energy standards and help their financing thanks to low cost loans and tax relief.⁽¹⁾

There is here no quantitative objective apart from restricting job losses to a minimum, the size of these losses being compromised by the decline of the housing sector. The preponderance of the qualitative objectives is very clear and reinforces in some ways the idea of a double substitution that will take place in this sector - capital/labour on one hand, skilled labour/unskilled labour on the other hand.

2.1.3. The projects of the public authorities in the machine-tool sector remain difficult to define when we consider the imprecise limits between this sector and others. A sector by sector plan was adopted in 1982, the principal measures of which were a reduction in company social charges in order to promote employment and a certain number of aids to research.

(1) Politiques et actions du Plan intérimaire, July 1982. pp.65-67.

Nevertheless, the figures in this sector remain bad - in 1982, its turnover decreased by 7% as well as the employment rate, to wit a loss of 17,600 jobs. The trade position is bad, too - for the same year, exports decreased by 8.6% and imports increased by 2.3%. It is true that the world market had decreased by 20% at the same time, which puts their negative performances into perspective even if France ranks only ninth. (1)

The large investment programme of the public enterprises should improve the situation thanks to their purchasing programme. For all that it is necessary to orientate demand towards a limited supply capacity, a difficult bet, and, moreover, not openly defended by the government.

2.1.4. The transport sector employs about 870,000 people, to wit 4% of the labour force. Its importance is due to the fact that it is a traditional sector for public investment. But this image must be corrected by the fact that the SNCF represents one third of these jobs and that it is continuing to follow a slow policy of redundancies.

In general, improvements in the foreseeable future are mediocre. A certain number of large investment programmes in aeronautics, motorways and railways have been perceptibly restrained in recent years and, moreover, the progression in value added is negative today (-1%) while it was on average positive (+4%) over the last ten years; (2) this is chiefly due to the fall in growth in goods transport. Other factors seem to be more propitious - the increase in household expenditure, strengthened by the decrease in the number of departures abroad, the restarting of the investment in railways with the construction of the Atlantic-HST and the renewal of public transport in some big towns.

(1) See l'Usine Nouvelle, 16th June, 1983, No. 24. Pp. 69-70.

(2) See Le Secteur des Transports, INSEE, Paris, 1981.

This will perhaps check staff reductions; the increase in private travel will at least at the beginning compensate for the decrease in goods transport. Nevertheless, this implies important redistribution of the staff within the sector.

2.1.5. The State and the public enterprises are not very present in the agro-food field - it is a recent sector and its high profitability has drawn a lot of private investment. But its size is already considerable - it gives about 2 million jobs, 17.5% of French exports, 12.8% of the industrial turnover in 1981. And yet, the Public Authorities consider that the French agricultural activities have still not been developed enough; they intend to accelerate their development by means of a large programme supporting research and innovation. Half the exported products are unprocessed and the research effort is still very inferior to that of rival countries (0.16% of the turnover against 0.50%). This would imply a rationalisation of the sector with job losses.

The principal types of investment are the following:

- creation of skilled jobs and grouped research centres;
- incentives to implement research centres in private enterprises (payment by the State of 55% of the corresponding costs during three years);
- creation of a national research network into industrial foodstuff technology;
- enlargement of the possibilities of amortization.

The minimum cost would be 600 million francs annually but the effect on employment is not foreseeable except a probable reorientation of the work force. This is all the more

probable as a large part of the research must be adapted to the needs of the developing countries and give rise in the future to the passing on of traditional savoir-faire. On a qualitative level, we can say that public investment will first develop job quality and definition while limited quantitative effects will take place, especially for export related jobs.

2.1.6 The case of wood is typical of a sector where both maintenance of the sector's potential and employment protection are desired. Let us remember that it comprises about 640,000 jobs, 550,000 of which are in the processing industries. This figure has slightly decreased since 1974 because of a chronic trade deficit, which is certainly paradoxical in a country that has the highest number of hectares of forest in Western Europe.

The Public Authorities want to defend and improve this sector,⁽¹⁾ chiefly by means of two types of aid:-

- special aids to make clearings and ensure a better management of the forests;
- aids for the modernisation of enterprises.

These aids have experienced a large development in 1982 and are being enlarged by a strengthening of the training programmes in the wood trades. In terms of employment, the objective is to stop the reduction in jobs and increase their present number by more than 50,000 in the 9th Plan. This will be associated as mentioned before, with an effort aimed at their quality and definition.

(1) L'Usine Nouvelle, Nos. 29-30, 28th July, 1983, p. 44 on.

2.1.7. In the Interim Plan, important support programmes have been implemented on behalf of sectors which are today in danger but considered as able to stabilise themselves and even develop employment in the medium term. It concerns chiefly:-

- textiles and clothing;
- toys, leather and furniture.

Sector by sector plans have been adopted for these sectors, which contain three main types of measures:-

- an exceptional reduction in the social charges in favour of the enterprises that enter into positive commitments in the fields of investment and employment;
- the launching of technological programmes in order to develop automation;
- the creation of publicity and activities centres, in France and abroad, that are financed by the State and the organisations representing the profession.

In terms of employment, the stake in the sole textiles sector is first to maintain the existing staff (495,000) as on average 25,000 have been lost annually since 1974.⁽¹⁾ An increase could only be envisaged in a future period.

2.2. NEW STYLE DEVELOPMENT INVESTMENT

Among the investments of "new style development" type let us study five poles - cable communications, energy, bio-technology, culture and civic activities.

(1) M. VINCENT, Vingt ans de textile-habillement, Economie et Statistiques, No. 138, November 1981.

2.2.1. In November 1982, the launching of a capital expenditure programme to cover the whole of France with a cabled telecommunication network was decided. The elements of this programme, that will last at least twenty years, are not fixed yet, which prevents us from estimating their economic effects with certainty. But this decision had to be applied rather quickly in a country where the "public service" influences the organisation of the information and communications sectors and where numerous independent initiatives had been taken - local telecommunications experiments, telematics applications, private telecommunications programmes etc. This "restrained" progressive characteristic may be found again in the technological choices implemented - first the connection of each flat to collective television aerials by satellite and then the bascule on the same cable.

Public investment will progress too - from 1 billion in 1983 to 4 billion francs annually from 1984 on. No effect on employment is clearly mentioned in the government's objectives. The general outline is known but many industrial choices must still be made, the effects of which on employment will chiefly be indirect when felt in sectors like electronics and telecommunications, where the importance that must be granted to imports in this field is evident.

2.2.2. Taking into account the importance of the nuclear programme in France, the topic of energy is closely connected to this of new style development. Aiming at a reduction of energy dependency, energy policy must find expression in investments to develop domestic employment as domestic energy production must go from 35% in 1983 to 50% in 1990. This must chiefly be done by:-

- subsidies for energies which involve lower expenditure of foreign currency (nuclear);
- exploitation of sources of energy which can be renewed, their development being according to the industrialisation rhythms of each of them (green energy, solar, tidal, air-motor etc.).⁽¹⁾

The overall value of investments - today about 0.5% of GDP - will reach 1.5% in 1985 and stabilise there. The types of investment are the following:-

- financial support as a result of contracts with the public enterprises flowing from the Plan;
- tax relief for the enterprises and households spending money on energy conservation;
- low cost loans for the same kind of investments.

The impact on employment is thus relatively indirect as variations will be felt chiefly in the sector of capital goods, construction/public works and transport industries. The absence of any calculation concerning job creation does not allow an appraisal of the total effect on employment. Although the present level of employment in this sector comes to 268,216, the effects of energy policy on primary employment are likely to be limited:-

- the implementation of a new nuclear power station creates about 3,000 jobs; on the basis of three or four power stations a year, the net flow will be rather limited;
- a reduction of the nuclear programme to below three power stations involves a decrease in gross employment in the sector. It is necessary to note here that the decisions taken by the Cabinet on 20th July, 1983, tend to reduce the figures announced at the time of the

(1) La Politique Industrielle dans le IXème Plan, C.G.P. Paris, May 1983, p.32.

preparation of the 9th Plan. Moreover, the possible reduction in coal production, which employs a great deal of manpower, could largely offset the positive effects of this energy policy on employment.

2.2.3. The interest of France in biotechnology concerning health, agro-food, chemistry and energy activities, has been largely confirmed over the last two years. The objective is ambitious - to go from 7% to 10% of the world market between now and 1990, at the same time as other European countries are also implementing important investment programmes in this field, which will certainly stimulate competition.

Even if public investment is not very high today (100 million francs annually), it will rise quickly and act as a lever for private investment.⁽¹⁾ This investment has three main lines:-

- research credits for public and private laboratories;
- training programme for specialists;
- endowment to the Investment and Modernisation Fund which will also be financed by a special savings scheme where funds go directly to help industrial expansion.

In terms of employment, the impact is limited today (about 20,000 people) but the potential is enormous as this sector concentrates a large number of highly qualified people (engineers, research scientists, skilled technicians). The trebling of employment in this sector for the duration of the 9th Plan seems to be a minimum objective.

2.2.4. In the case of France, the field of culture illustrates very well what the stakes, methods of intervention and limits of a new growth focus may be. As regards

(1) See l'Usine Nouvelle, No. 25, 23rd June, 1983, p.50.

the stakes, it is very clear:-

- there is an obvious political desire - which has been renewed in spite of deflation - to develop the cultural sector and satisfy important needs in this field even if they cannot always be solved without going into debt?
- cultural activities square well with the profile of the new styledevelopment;
- the problem of employment in the cultural sector is complex considering the size of the sector on the one hand and the presence of voluntary work on the other hand. (1)

There are two methods of intervention if we leave out that of permanent subsidy, which is highly questionable - as a matter of fact culture is subsidised to the tune of 70% on average in France and few institutions escape it. These two methods are:-

- the cultural development job creation programme (EDC);
- cultural establishments management aid programme.

The EDC programme (cultural development job creation), which was launched at the end of 1981, concerns new jobs of all categories and of any professional level. Let us describe their main features:-

- these jobs must be permanent and steady and respect the social law and wage levels in force in the sector considered;
- the recipients are the associations and all non-profit bodies (enterprise councils, associations of economic

(1) X. DUPUIS, X. GREFFE and D. SAGOT-DUVAUROUX, "Programme d'évaluation des mesures spécifiques en faveur de l'emploi culturel", Travail et Société et Ministère de la Culture, December 1982, Paris.

interest, expansion or country committees) and the local authorities or the establishments depending on them.

The Ministry of Culture pays the employer a subsidy, the amount of which is calculated according to a percentage of the total wage costs (wages plus charges). Normally, this percentage is about 50%. The subsidy can be renewed for a second year but is only revalued according to the average increase in the cost of living. The rest of the finance and the taking over of the State's aid must be carried out by the employer, whether by self-financing or by subsidies from regional or State authorities, with the exclusion of the other aids to employment:

(a) the employer can be:-

- local authorities - the EDC concern professional cultural jobs of high level, meant to allow experimental activities, to implement new cultural policies or to create original institutions; all other requests for aid for job creation can be directed to the local initiative programme;
- industrial and commercial enterprises in the field of cultural and entertainment industries;
- comparable associations and bodies;

(b) the job to be created must take into account the two following elements:-

- the actual capacity to maintain the job beyond one or two years;
- the proportion between the proposed value of the aid and the wage level that usually prevails in the professional category concerned.

The cultural enterprises management aid programme is the second part of the Ministry's employment policy and is particularly interesting. The basic objective is to make the cultural enterprises aware of how to turn the demand into something profitable so as to ensure their maximum economic stability and job security. This programme is organised by an association being itself largely subsidised by the Ministry. This "Cultural Enterprises Management Aid Association" (AGEC) was created in October 1981. It comprises cultural enterprises of any status, administrators, managers and public relations specialists, specialised services companies, civil servants and research economists.

To reach these objectives, the AGECE is developing a three part policy:-

- the setting up of Technical Assistants for Cultural Enterprises (ATEC) in each region, who must hold the mission of multipurpose advisers to the smaller cultural enterprises, associations, craftsmen and professional groups. The ATEC act as economic advisers. they meet the specific needs of the cultural milieu, they are daily in contact with local politicians, the administration and the other actors in the economic world - in direct collaboration with the civil servants concerned - in order to examine and draw up the applications for aid to employment (appropriateness of the projects, economic reliability). They put "simplified management plans" at the disposal of the cultural associations, which are adapted to the needs of each of them. They stimulate application to the regional network of management assistance, and facilitate, if necessary, the creation of real management centres which are complementary to the existing bodies, as well as the adaptation of "management boutiques" to the cultural needs. Lastly, the ATEC

examine the training applications coming from the administrators and the managers of the cultural associations and organise training courses answering this request or new found need;

- Secondly, the AGECE's task is to study and set up - in collaboration with the ANPE - the necessary structures and to find the means to create a "Cultural Job Market". To this end, diverse actions have been undertaken - the diffusion of a periodical bulletin of cultural job advertisements (entitled "The Cultural Jobs Chronicle"), the appointment and training of cultural delegates from ANPE in each department (reception and counselling for the job-seekers, job insertion, drawing up of professional files, training activities ...), the creation in the "cultural employment areas" of bigger agencies and regional thinking and co-ordination groups.
- Training programmes are the last part of AGECE's task. It has undertaken - in order to support decentralisation - the inventory of the training needs within the scope of the EDC programme and the development of management aid (training of administrators and managers, refresher courses and retraining of the persons to be recruited for the jobs created.

The case of culture is thus interesting even beyond the importance it takes in France's present policy or, more generally, in the approach of a new style development. Seen from a more methodological point of view, it reveals two important points:-

- current account expenditure may result in the creation and long run stabilisation of new jobs - this makes the importance of the capital account expenditure/ current account expenditure split very relative;

- in sectors with new found needs, operating expenditure is fundamental. Its task is to stabilise all the other jobs of the sector and can then have a multiplier effect.

2.2.5. Socio-economic activities and urban modernisation

This is another intervention field for new investments. There are no big differences here with what occurs in other European countries - ageing of the housing, destruction of community life, appearance of areas of poverty etc. A programme of social development for the run-down quarters has now been set up at the time of the Interim Plan (1982-1984) which followed another programme of Housing and Social Life (1976-1981). Its aim is:-

- to associate the main public, private and associative representatives in order to create a "think tank" whose scope would be the reorganisation of life in these quarters;
- to proceed with the modernisation programme;
- to create socio-cultural activities with the help of the above representatives.

The jobs created by the modernisation programme are already posted in the activities of the Construction and Public Works sector. The jobs created by activities projects have not been directly appraised yet. But it is probable that among the 150,000 local initiative jobs, the creation of which was foreseen for 1982/83, a good third was associated with them. But this is only a maximum appraisal and such a figure cannot be upheld without recourse to private expenditure. Moreover, it is logical that for such jobs private expenditure take over from public expenditure after a certain period.

3. AN EX ANTE EVALUATION

It is very difficult to appraise ex ante the effects of investment on employment. In addition to the difficulties of forecasting and the hazards of executing economic policy, the specificity of employment must be considered. There is a great distance between the entry of funds on the Budget and the corresponding impact on employment except when investment is only disguised expenditure on job creation. Subject to such limits which hinder our analysis, four points can be underlined:-

- the large diversity of the measures implemented, which reveals the importance of the "employment objective" for the Public Authorities in contemporary France;
- the multiplicity of the possible individual cases as a result of differing combinations of economic conditions and political reorientations;
- the difficulties of a specific appraisal for the present period;
- the problem of job quality.

3.1. THE DIVERSITY OF THE MEASURES

Table No. 5 reveals the large diversity of the measures. If some of them have been known for a long time - particularly those of aid to financing or the reduction of social charges - some others reveal the desire to fit in better with the enterprises' and institutions' problems. Let us indicate four of them - the aids to training and management, particularly in the shape of "Centres" where public financing generally plays a role of level;

- the setting up of economic infrastructures, such as the technical platforms, aiming either at an initiation to new technologies or at helping to export;

TABLE NO. 5

Measures	Direct Financial Aid				Economic infra- structure	Exoner- ation of social costs	New kind of employment (utility employment)	Aid to Formation and Management	
	Capital	Subven- tion to interest	Subven- tions	Exoner- ations				Supply of Service and Centres	Financial Aids
<u>Type 1</u>									
Electronics	X		X		X			X	X
Housing		X		X	X	X		X	X
Mechanics									
Transportation									
Food Industries									
Woods		X	X						
Sensible Sectors			X		X	X			
<u>Type 2</u>									
Cables			X		X				
Energy		X	X	X					
Biotechnologies									
Culture						X	X		X
Environment and Urban Renewal							X	X	X
Services to Enterprises					X				X

- the reconversion of certain traditional mechanisms of social welfare into a more economic context. For example, the opportunity of using one's unemployment benefits in the context of a productive activity which one would create or join;
- the implementation of "third sector" jobs. This system is already well-known but has been judicially modified last year with regards to job stabilisation.

3.2. The Multiplicity of the Individual Cases

This is the second problem of appraisal. In the present situation one must take into account both the transformation in the nature of world trade and the types of economic policies used in response. As regards employment, simple estimates can undergo important variations in the medium term - both in terms of size and signs.

The preparatory work for the 9th Plan that took place at the end of 1982 - before the implementation of the austerity plan - perfectly illustrates this debate. On the basis of the seven basic scenarios, we have picked out the expected percentage variations in employment in four of the already studied fields, plus the general case of the capital goods industries.

The information does not always correspond to the forecasts outlined above which come under specific public policies while the information for the Plan corresponds to an exercise in general macro-economic forecasting. They are represented in Tables Nos. 6A and 6B. (1)

(1) Technical note accompanying the preparations of the 9th Plan.

Table No. 6A defines the different possible scenarios. The term "pivot" generally refers to the continuation of the present trend. From the "rest of the world" angle, we consider the average trend that followed the two oil crises which is characterised by two elements - the increase in the price of energy and the intensification of financial disequilibria (the dollar's reappreciation of today's level has not been taken into account here). Two other "rest of the world" scenarios have been considered - the possible increasing of deflation bound to the "deflationary-protectionist" strategies of the diverse countries; and the knock-on effect associated with the revival of the American economy. From an internal point of view, the term "pivot" refers to growth which is slightly superior to the '82 trend, i.e. slightly positive. The other possible entries do not pose many problems. Let us simply point out that:-

- the reorientation of public expenditure means a decrease in transfers and an increase in investment;
- the limitation of the external deficits necessitates offensive public investment programmes which should result in a better share of the medium and long term markets;
- the slowdown in work time reductions means that the 35 hours will be reached in 1990 instead of 1985.

We thus have seven basic scenarios. Some of the combinations have not been dealt with, either for logical reasons, or for statistical difficulties.

3.2.1. Table No. 6B can be read horizontally or vertically. Considering it vertically - i.e. the differential effect of the scenarios - four points can be noticed:-

- the bad results of scenario 7 are logically associated with the large slowdown in work time reduction which underlines its important contribution to employment;
- the good results of scenario 4 are associated with the improvement of growth;
- scenarios 5 and 6 show the propitious effect on employment of a redistribution of public expenditure towards investment - in case No. 6, this redistribution is offensive while defensive in case No. 5. This explains the noticeable differences between both;
- scenarios 1, 2 and 3 are exactly in accordance with expectations.

3.2.2. Considering it horizontally - i.e. the different hypotheses for a single sector - one notices:-

- the automatically negative contribution to employment of the agro-food industries which is due to two above mentioned data;
 - the fact that these industries will experience a high degree of substitution of capital for labour and skilled work for unskilled work;
 - the fact that no specific public expenditure has been integrated in the scenarios.
- the contributions of energy are positive and relatively steady except in scenario No. 7. This comes undoubtedly from the fact that the public objectives for energy have exerted for some time and variations would have a quite limited effect on the basic tendency. There is a clear disagreement with the already analysed results here but it is explained by the fact that, above, we were reasoning in a marginal way while here the past policy is taken for granted. Lastly, let us

TABLE 6A - SORT OF SCENARI I

Internal scenario External scenario	Internal Trend	Growth of purchasing power	Slowdown of public finance	limita- tion of external deficit	limita- tion of labour time sharing
External trend	1	+		0	/
Deflationist trend		/	/	/	/
U.S. recovery	3	/	/	/	

TABLE 6B - EXPECTED VARIATIONS OF
EMPLOYMENT LEVELS RELATIVE TO THE
SCENARI I (1983-1986)

External Scenario	1	2	3	4	5	6	7
Agro-food Industries	- 4	-	- 4	- 3	- 3.8	- 4	- 7.2
Energy	+ 6	+ 6	+ 6	+ 7	+ 5.7	+ 7	- 2.9
Housing and Public Works	- 2	- 8	- 5	+ 5	- 9	- 1	- 17
Telecommuni- cation and transportation	+ 4	+ 2	+ 3	+ 6	+ 3	+ 5	- 24.5
Equipment	+ 10	- 1	+ 7	+ 9	+ 8.7	+ 14	-

- note the originality of scenario No. 7 which acts here in a quite paradoxical and difficult to explain way from a logical point of view;
- like the agro-food industries, the Construction/Public Works have a negative contribution that can, here again, be imputed to the modifications in the production functions. Let us underline the importance of the negative contribution in hypothesis No. 5 due to the decrease in the transfer expenditure to households, and thus probably expenditure on housing in hypothesis No. 7, the sharing of work seems to have a large potential in this field. This could mean that the increase in free time would stimulate modernisation or restoration activities - but this interpretation is delicately balanced - telecommunications and transport reveal the expected positive contribution. It is especially strong where the growth of household income and the regaining of the internal market are important. The "total" reversal of the situation in case No. 7 seems to come from the fact that work time reduction is a classic method of staff reduction in France in this field;
 - the contribution of capital goods should be positive in view of the objectives highlighted in the field of machine-tools, electronics etc. Nevertheless, it would be likely to fall in the case of steady stagnation of world markets and it is naturally strengthened in hypothesis No. 6 - that of offensive public investment.

Concerning this horizontal reading, the impact of scenario No. 7 must not be exaggerated even if one can try to find logical explanations. This seems to be the case because we start from the idea that work sharing would have clear but different effects in the different sectors according to

their specific types of organisation and that we automatically draw opposite conclusions because of the slowdown.

These tables are only mental exercises but undoubtedly are the best adjustments available in the field of sector-based expectations of employment in line with the investment projects. The information collected reveals the different options available in terms of employment, the possible contrasts in the different sectors in a context where growth will be at best moderate and where geopolitical uncertainties are numerous, and thus the precautions to be taken in terms of efficiency calculations.

3.3. DIFFICULTIES OF SPECIFIC APPRAISAL

Lastly, let us note that in the present case of France a certain number of appraisal difficulties co-exist.

- If one disposes of a certain number of macro-economic studies that enable the construction of scenarios, one rarely tries to appraise the public service "case by case". No doubt because the notion of public service leads to the prejudging of the beneficial character and the automatic positive effects of any public policy.
- Secondly, there is no direct system to evaluate work time except some data coming from the different sectors but little adapted to an analysis of the alternative choices.
- Thirdly, it is necessary to notice a certain ambiguity in the way of presenting the problem of a return to full-employment - at the end of 1981, it was admitted that we should get back to a full-employment economy

quickly through acceleration of growth, work time reductions and the setting up of direct measures. The problem has changed today. None of these strategies gathers the confidence they had before. On the other hand, it is noticeable - even if not explicit - that the return to full employment would seem to require an adaptation of the French economic system to the needs of competition. The relationship between investment and employment is looser than expected and the essential point is to strengthen and organise the investment capacity of the country. "Employment" should follow but the relationship naturally needs very strict adjustments. Does this policy join that of "competitive deflation" of many other European countries or does it keep the originality it was tried to be given in 1981? Its results are not clear enough yet for a real appreciation, though the quasi maintaining of employment levels is already a very decent performance. The task will certainly be to diversify and refine investment in order to regain a relationship between investment and employment similar to that of the past.

3.4. QUALITY OF THE DEVELOPED JOBS AND THE JOB DISEQUILIBRIUM IN THE LABOUR MARKET

Supposing that the investments - generally public and sometimes private - presented above do have the expected effects, what will their effects on employment be?

Nearly all of the jobs concerned are skilled jobs:

- in relatively classic sectors these jobs chiefly concern research, innovation and savoir-faire functions (electronics, agro-food industries etc.) Even in the sectors in difficulty like textiles, employment will only be defended by adopting high performance

technology (lasers) and thus, by giving the manpower new qualifications;

- in the sectors of new style development, the problem is a little different. It seems that in some cases one can partly rely on partly skilled manpower (conservation of the environment) but this is not a general case. It is a question either of high performance sectors on a technological level or of sectors which render very personalised services. In both cases the manpower must be skilled.

The available statistics show two points:-

- unemployment hits skilled workers above all;
- the skilled jobs earn minimum wages under which the demand for work risks being unsatisfied.

Two disequilibria are thus possible and can even be cumulated: unskilled unemployment is not much likely to decrease; skilled unemployment is likely to decrease less than foreseen considering the low wages in some fields (culture, socio-cultural activities).

INVESTMENT POLICY AND EMPLOYMENT
IN ITALY

Prepared by
Centro Studi di Politica Economica
for
The Commission of the European Community

Raffaele Brancati
Via della Vite, 13
00187 Roma

March 1984

Tel: 67 859 15
67 867 37

LIST OF CONTENTS

1.	INTRODUCTION	133
2.	THE ITALIAN ECONOMY AND PUBLIC INTERVENTION	134
2.1	Growth, Employment and Capital Accumulation	134
2.2	Public Balance and Capital Accumulation	140
2.3	Instruments in Capital Expenditure Orientation: The Fund for Investment and Employment	141
2.4	Instruments in Capital Expenditure Orientation: The Cassa per il Mezzogiorno	142
3.	THE RELEVANCE OF REGIONAL PROBLEMS IN ITALY	146
3.1	A General Perspective	146
3.2	Regional Imbalances and Inflation	147
3.3	Regional Imbalances and International Trade	148
3.4	Regional Imbalances and Constraints on Aggregate Demand Policies	149
4.	INTERVENTION POLICIES	150
4.1	Traditional Instruments	150
4.2	Criticism on the Tools Effectiveness	153
5.	A POSSIBLE STRATEGY	160
5.1	General Terms	160
5.2	Import Substitution	162
5.3	Elimination of Bottlenecks	163
5.4	Economic Integration	163
5.5	Policies for Technological Innovation	164
6.	LABOUR MARKET IMPLICATIONS	165

LIST OF TABLES AND FIGURES

n. 1	Final Public Expenditures by Economic Classification	137
n. 2	Employment and Investment Fund (FIO)	143
n. 3	Financial Resources for Extraordinary Intervention in Southern Italy	144
n. 4	Average Values of the "Cassa per il Mezzogiorno" Expenditures by Sector	145
n. 5	Labour Forces in 1981	169
Fig. 1	Value Added, Employment and Hourly Labour Productivity-Industry	136

'The limits of demand management policies have become clearly visible in recent years. Let us look at issues through the medium of specific problems, say the joint problems of too much unemployment and too much inflation. Policies of demand management alone have appeared to be adequate to deal with one or the other, but not both together. If demand is stimulated enough to bring down the unemployment rate to a full-employment minimum, there is danger of generating undue inflationary pressure as a side effect. Conversely, anti-inflationary policies of demand restriction run the danger of generating excessive unemployment while holding down the inflation rate.'

(L.R.Klein: The Supply Side, AER 1978)

1. INTRODUCTION

After examining one of the most typical and currently relevant trade-offs in economic policy, L.R.Klein went on to describe suppleyside policies, which he saw as a means of reducing bottlenecks in national systems of production, and as being the only way to lessen the constraints existing in the economy and promote a reasonable level of growth.

Although another, and quite different, recipe has usurped the name of his 'supply-side' theories, it remains true that the management of the economy, irrespective of the diverse economic policies followed in different countries, has been made increasingly difficult on account of the growing number of constraints, with difficult choices having to be made between diverging objectives.

The low overall growth rate of the last decade and the efforts made to adapt to a situation in which the economic cycle, prices and the availability of technology were all

rapidly changing, has led to a worsening of the structural problems due to differences in capabilities and reaction time between sectors or geographical areas.

Unemployment as against inflation, growth as against balance of payments equilibrium, reduction of interest rates to develop the real economy as against the need to finance a growing public deficit and to compete in international financial markets, are all problems which tie in, to varying degrees, with the structural imbalances with which policy-makers are, and have been, confronted. These are problems which increasingly do not fit into the categories of analysis and associated intervention methods typical of keynesian macro-economics, and which monetarism for its part has not shown itself to be any better equipped to deal with.

The hypothesis underlying this study is that socio-economic changes in society have made it all the more necessary for there to be appropriate intervention methods for use in selective and flexible policy-making, such that suitably specific action can be taken in crucial areas of the system and appropriate adjustments made in rapidly-changing situations.

2. THE ITALIAN ECONOMY AND PUBLIC INTERVENTION

2.1 Growth, Employment and Capital Accumulation

Since the second half of the seventies the dynamic of the italian economy can be explained partly as a forced realignment of the italian cycle towards the international one and partly as the emergence, even dramatic, of some structural bottlenecks not fully evident and not solved till the first oil shock.

The reaction of the economy after the sharp decrease of real GDP that the most industrialized countries have experienced in 1975, has been more emphasized and above all more prolonged in Italy than in the main economic partners. This has caused an asynchrony between the Italian and the international business cycle that has made the balance of payments' constraint very tightening and, together with the necessity to control inflation, induced to adopt deflationary economic policy.

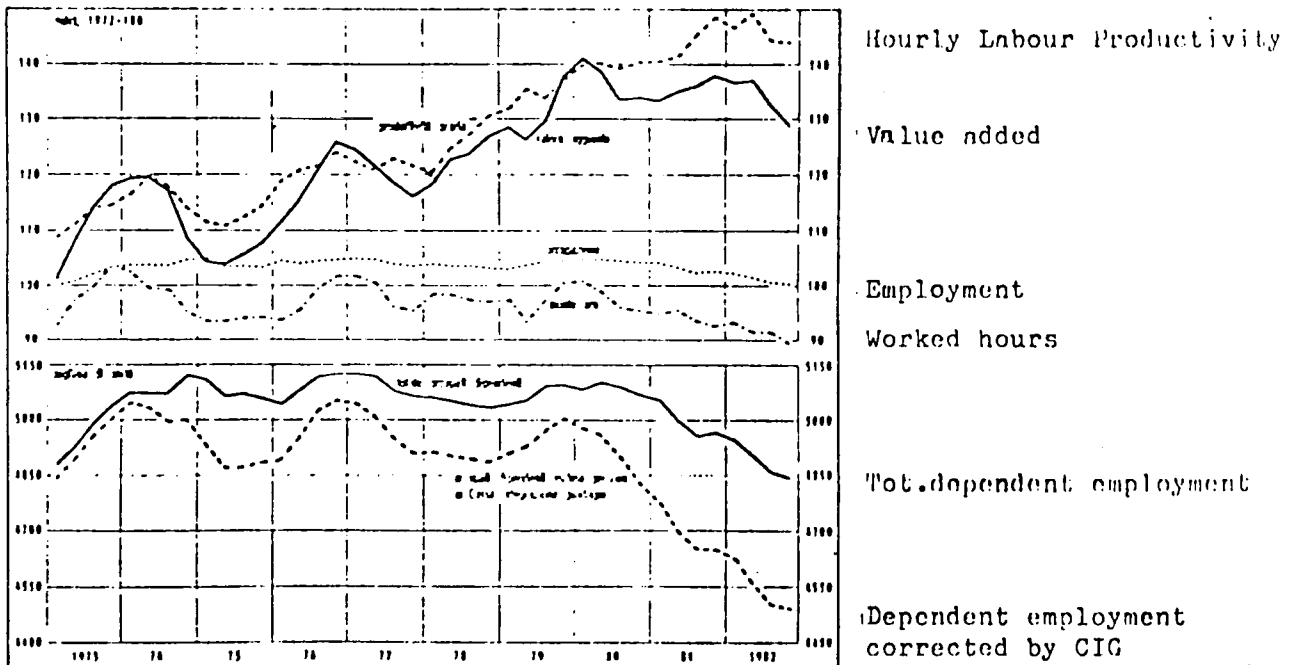
The trend of the GDP has then been forced within a path of depression nearly continuous in 1981, 1982 and (following the provisional data) 1983, as years of zero or even negative growth.

The effects of the depressed, domestic economic activity turned only partly into a slowdown of the dynamic of prices bringing into evidence the structural character of the Italian inflation. Indeed, notwithstanding the slowdown of the dynamic of prices, the inflationary gap with the industrial countries has not diminished at all; on the contrary there have been very important effects on employment and investment.

During 1982 we had, in fact, an absolute decline of the employment even considering as employed the workers in "cassa integrazione"; if we consider the figures corrected by this effect we note a clear declining trend in the last three years against an increase of the labour supply of 400000 units. These divergent trends have emphasized the already known characteristics of the labour market in Italy: the number of people first job searching has increased considerably, the area between employment and unemployment (precarious and occasional workers) has likely widened. Even from the analysis of employment by sector we find, emphasized, already known trends. The considerable decrease of agriculture and the decline of industry (in 1982 the industry "strictly speaking" turned out to be at

the same levels of employment of ten years before), have been no more compensated for the increase in the private and public services. The gross fixed investments, after a jerked trend that has characterized the second half of the seventies, have been decidedly decreasing since 1981. The trends by sector follows, briefly, the evolution of the employment: the increase of the investments in the service sector is not enough to compensate the clear slowdown in agriculture and industry. Expecially evident is the process of industrial desinvestment: in 1982 the figures have decreased, in real terms, of 11 % with respect to the previous year, and the performance 1983 will end up with a similar result. Behind this aggregated definitely negative, a process of transformation, with articulated and contradicting characters, has likely hidden.

Fig. 1



Value added, employment and hourly labour productivity-
industry

Source: Bank of Italy

Table 1: FINAL PUBLIC EXPENDITURES BY ECONOMIC CLASSIFICATION: PERCENTAGE COMPOSITION AND ELASTICITY TO GNP

	Percentage Composition					Elasticity to GNP		
	1965	1970	1975	1980	1981	1965	1970	1975
						1970	1975	1981
CURRENT EXPENDITURES	80.4	81.2	80.0	81.0	85.1	1.13	1.29	1.41
1. - PUBLIC CONSUMPTION	42.6	36.7	30.7	23.7	24.4	0.72	1.03	1.35
- Wages	33.4	28.2	24.3	16.9	19.9	0.67	1.08	1.17
a) employed (cat.II)	28.1	22.9	20.3	15.2	16.0	0.63	1.10	1.14
b) quiescence (cat.III)	5.3	5.3	4.1	3.7	3.9	0.87	0.97	1.30
- General Payments	9.2	8.6	6.4	4.8	4.5	0.86	0.85	1.09
a) Institutions(cat.I)	0.3	0.3	0.4	0.2	0.2	1.02	1.67	0.92
b) Goods and service (cat.IV)	8.9	8.1	5.9	4.5	4.2	0.84	0.81	1.09
c) Pay off(cat.VIII)	0.	0.1	0.1	0.1	0.1	-	0.93	1.15
2. - INCOME TRANSFERS	34.1	19.0	44.5	57.3	57.3	1.48	1.54	1.58
- Current Transfers (cat.V)	30.5	34.3	38.3	44.9	44.3	1.46	1.53	1.57
- Interests(cat.VI)	3.5	4.6	6.2	12.4	13.0	1.66	1.60	1.67
3. - MISCELLANEOUS	3.7	5.5	4.8	3.0	3.4	1.81	0.86	1.31
- Compensatory items (cat.VII)	3.5	5.4	4.7	3.0	3.4	1.86	0.87	1.27
- Others (cat.IX)	0.2	0.1	0.1	0.	0.	0.32	0.62	0.98

Tab. 1 (Follows)

CAPITAL EXPENDITURES	19.6	18.8	20.0	16.0	14.9	1.06	1.33	0.98
1. - INVESTMENTS	17.8	18.8	16.9	14.6	13.3	1.11	1.19	1.11
- Direct investments	2.3	2.4	1.6	1.1	1.1	1.26	0.79	0.96
a) Building ...(cat.X)	2.3	2.3	1.5	1.0	1.0	1.26	0.70	0.94
b) Machinery...(cat.XI)	0.	0.	0.1	0.1	0.1	1.51	2.68	1.24
- Indirect investments (cat.XII)	12.8	10.7	13.2	10.0	9.0	0.79	1.46	1.01
- Financial	2.8	3.8	2.2	3.6	3.2	2.30	0.46	1.54
a) Capital Transfers (to public and private enterprises) (cat.cat.XIII)	1.2	2.8	1.7	3.2	2.9	3.78	0.31	1.09
b) Productive Anticipated Payments (cat.XIV)	1.5	1.0	0.4	0.4	0.4	0.36	0.77	0.63
2. - MISCELLANEOUS	1.8	2.0	3.0	1.4	1.6	1.03	2.42	0.27
- Anticipated Payments non Productive (cat.XV)	1.8	2.0	3.0	1.4	1.6	1.03	2.42	0.77
- Others (cat.XVI)	0.	0.	0.	0.	0.	-	-	-
TOTAL (Billions lit)	7788.9	12911.8	32791.8	12924.1	15457.1	1.11	1.29	1.34

Tab. 1 (Follows)

CAPITAL EXPENDITURES	19.6	18.8	20.0	16.0	14.9	1.06	1.33	0.98
1. - INVESTMENTS	17.8	18.8	16.9	14.6	13.3	1.11	1.19	1.11
- Direct investments	2.3	2.4	1.6	1.1	1.1	1.26	0.79	0.96
a) Building ...(cat.X)	2.3	2.3	1.5	1.0	1.0	1.26	0.70	0.94
b) Machinery...(cat.XI)	0.	0.	0.1	0.1	0.1	1.51	2.68	1.24
- Indirect investments (cat.XII)	12.8	10.7	13.2	10.0	9.0	0.79	1.46	1.01
- Financial	2.8	3.8	2.2	3.6	3.2	2.30	0.46	1.54
a) Capital Transfers (to public and private enterprises) (cat.cat.XIII)	1.2	2.8	1.7	3.2	2.9	3.78	0.31	1.69
b) Productive Anticipated Payments (cat.XIV)	1.5	1.0	0.4	0.4	0.4	0.36	0.77	0.83
2. - MISCELLANEOUS	1.8	2.0	3.0	1.4	1.6	1.03	2.42	0.27
- Anticipated Payments non Productive (cat.XV)	1.8	2.0	3.0	1.4	1.6	1.03	2.42	0.27
- Others (cat.XVI)	0.	0.	0.	0.	0.	-	-	-
TOTAL (Billions lit)	7788.9	12911.8	32791.8	12924.1	15457.1	1.11	1.29	1.34

In particular we registered that the productivity per hour of the industry, after the growth of the expansionary years, has begun a swinging and unstable cycle along a growing trend also during a recession period (since 1981) with good performances for the private firms and a significant reduction of employment.

(Fig. 1)

2.2. Public Balance and Capital Accumulation

The shortening and deepening of the economic cycles that have been characterizing the economy of western countries since the beginning of the seventies, has been accompanied, in Italy as elsewhere, by an increase of the state intervention: using as a rough measure the rate of total public expenditure to gross domestic product, in ten years this index has increased in Italy of almost 15 %, reaching and then exceeding the average value of the EEC countries. Beyond this increase very important changes have been pointed out in the composition of the public expenditure.

Since the second half of the seventies the capital expenditure with respect to the current one has been progressively declining (in 1982 current expenditure reaches 90 % of total payments registered. (Tab.1)

The dynamic of current expenditure is almost totally linked to the growth of the interests on the public debt that, in ten years, increases four times its level as a percentage of GDP.

If we want to consider the role of the public sector in the capital accumulation process we can easily note the progressive change in the capital expenditures' structure less and less comparable to investments. In fact, the most

dynamic item of these accounts is "partecipations and contributions" (that is to say financial aids to public owned firms). From 1975 it doubled its share on the total capital expenditures. If we note that capital transfers were used mainly to finance current deficits of the public (in a broad sense) enterprises it is evident the decrease of the direct public intervention in the national capital accumulation. This aspect is emphasized analysing the investments. The investments of the local administrations, that in 1972 were at the same level of the central administrations's ones, in 1982 are 40 % more. These dynamics, in a complete absence of a strategy of intervention and of any coordination between different government levels, give an idea of the increasing incapacity of the government to influence, in quantitative terms, and to orient the investment process.

As we pointed out before the share of the capital expenditure registered as direct investments is halved in ten years. Its elasticity to GDP is less than unity and is one of the less dynamic component of the public budget.

2.3 Instruments in Capital Expenditure Orientation: The Fund for Investment and Employment

More information about the public intervention into the economy are possible to assume analyzing briefly the budget of two institutions: the "Fund for Investments and Employment (FIO), the institution created in order to orient public expenditure towards the overall development of the economy and the wellknown "Cassa per il Mezzogiorno". The FIO started in 1982 as an instrument for financing new investments, directly by or with the financial contribution of the public administrations, oriented to medium term targets: balance of payments' readjustment, "Mezzogiornos's and employment's growth, restructuring industries in crisis, technological change in the industrial and agricultural sector. (Tab.2)

The global financial resources of the fund were 6.000bill. of Lira in 1982 (1,3 % of GDP and 6,7 % of national gross fixed investments) and 7.730 bill.in 1983 (1,4 % of the estimated GDP and 8 % of the estimated figures of investments. In spite of the fact that the main object of the FIO is evaluation and the orientation of a significant part of public expenditure, the real running of this new institution was quite different. If the total amount of resources doesn't seem negligible, the most part of it suffers of the same problems of the public balance. If we consider the figures relative to 1983, for instance, of 7.730 bill. only 1.210 are really administrated by the FIO (via selection between different projects presented by the various institutions). The 85 % of the expenditures is assigned to finance deficits of private and public forms (items 2-5-9-14 of the table) or to finance expenditures coming from different and not coordinated decisions of the government.

2.4 Instruments in Capital Expenditure orientation: The "Cassa per il Mezzogiorno"

The second institution is the "Cassa per il Mezzogiorno", the organization charged for the extraordinary intervention in the southern regions.

In the last thirty years the role of the Cassa was not declining and passed from 0,66 % in the period 1966/1970 to 1.15 % in 1976/1980; the growth was particularly accentuated in the last ten years with a peak in 1974 and 1975. (Tab.3)

Notwithstanding the relevance of resources and the law 183 of 1976 (this law provided explicitly the organization of the interventions following specific projects of interest for the social and economic growth of the area), the orientation of the financial aids was toward traditional activities

Table 2: EMPLOYMENT AND INVESTMENT FUND BY SECTOR (1982-1983)
(Current Billions Lire)

	1982	1983
1. Investment fund c/o "Cassa Depositi e Prestiti"	1.400	500
2. ENEL (Electricity)	1.000	850
3. Negative VAT for investments	300	300
4. Infrastructures (of General, Territorial and Agricultural relevance)	870	1.210
5. Industrial Sector	1.830	4.190
6. Cooperation	100	
7. Mechanization of Agricultural Sector	50	
8. Agricultural Loans	100	
9. Direct Agricultural Intervention	100	450
10. Agricultural Cooperation	50	
11. Law 119-1982	70	
12. Technological Innovation Fund	100	
13. Medium Term Credit Institutions for Mezzogiorno	30	30
14. Development Aids to Calabria	200	200
Total	6.000	7.730

Source: Ministry of Public Balance

Table 3: Financial Resources for Extraordinary Intervention in
Southern Italy: Percentage to GNP

PERIODS	PERCENTAGE WEIGHT
1950/1955	0.82
1956/1960	0.69
1961/1965	0.64
1966/1970	0.66
1971/1975	1.08
1976/1980	1.15
1971	0.60
1972	0.89
1973	0.86
1974	1.29
1975	1.43
1976	1.22
1977	1.21
1978	1.29
1979	1.16
1980	0.99

Source: Cassa per il Mezzogiorno, Istat

Table 4: AVERAGE VALUE OF THE "CASSA PER IL MEZZOGIORNO" EXPENDITURES BY SECTOR
(Billions Lira)

SECTOR	1966-1970	1971-1975	1976-1980
- General Infrastructures	424 34.5%	866 36.9%	1299 43.6%
- Productive sectors	805 65.5 %	1480 63.1 %	1683 56.4%
-Agriculture	265 21.6%	387 16.5 %	428 14.5 %
-Industry	454 36.9%	999 42.6 %	1171 39.3 %
-Tourism	24 2.0 %	52 2.2 %	59 2.0 %
-Contributions	21 1.7 %	17 0.7 %	25 0.8 %
-Others	41 3.3	25 1.1	- -
- TOTAL	1229 100	2345 100	2982 100

SOURCE: SVIMEZ

(mostly towards general infrastructures or particular aids to crisis areas) disconnected from a development strategy. (Tab.4)

3. THE RELEVANCE OF REGIONAL PROBLEMS IN ITALY

3.1. A General Perspective

Beyond the preceding considerations it is possible to say that the most important instruments for the public intervention with explicit regard to the improvement of economic structure are, in Italy, only flows of money directed to the families and to the firms without a real control on the capacity to induce a qualified growth. The government of the economy lies completely in the macroeconomic field looking exclusively to the dynamic of the aggregate variables as a strategy of development.

It seems very important, in this situation, to connect directly instruments and objectives of structural and macroeconomic policies in order to join the economic problems we are facing with. Regional imbalances, referred to later, are perhaps a good test for this approach. There are a number of reasons for this.

In the first place, it should be remembered that regional imbalances in Italy are the cause of some of the most serious structural problems; indeed, they are the mirror through which all the others can be glimpsed (from those relating to the job market to sectoral and environmental problems).

One might also stress that, within the area of regional policy over the last thirty years the whole range of instruments used in other policy areas (from financial and fiscal intervention to direct state intervention) can be seen in action.

Finally, it should be noted that, if the tendency of society is to become more complex and more inter-dependent, then policies carried out at a decentralised level, within certain overall parameters, have a definite attraction.

At least three types of interface exist between regional and national problems: regional imbalances and inflation, regional imbalances and international trade, and regional imbalances as a constraint bearing on aggregate demand policies.

3.2. Regional Imbalances and Inflation

The existence of separate regional markets without perfect circulation of goods or, more particularly, factors of production, can and in effect does lead to a situation whereby there may be a relative preponderance of capital and entrepreneurial factors and yet a shortage of manpower in some regions whilst the opposite is the case in others.

The existence of such bottlenecks means that aggregate supply is unable to expand as much as it would otherwise do, given the quantity of unused resources available at national level.

The proportionately greater inelasticity of the aggregate supply curve, combined with regional imbalances, results in an increased potential for inflated demand and thus aggravates the inflationary effects of excessive growth in the money supply.

Furthermore, these discrepancies in productivity can set in motion a price spiral mechanism where country-wide wage levels remain uniform. (Such discrepancies in the overall context of economic policy, may limit the efficacy of an incomes policy based on average national wage levels and productivity).

3.3 Regional Imbalances and International Trade

The ways in which the interdependency of regional imbalances and relations with foreign countries manifest themselves are a function both of changes in the quantities traded on the international market by each country and of the situation as it regards the relative terms of trade.

There are at least three areas where there can be shown to be a close relationship between regional imbalances and the balance of payments situation: one relates to the dynamic of domestic prices (in relation to those of trading partners), a second is linked to sector-specialisation in the economy, and a third is connected to productivity differentials.

On the one hand, inflation differences effect export competitiveness (not to mention imports) and/or exchange rate fluctuations (which, in turn, effect the relative terms of trade), and on the other, the way in which the international crisis has developed has highlighted the specific difficulties experienced by some sectors (particularly in industry) which are faced with stagnant demand for their products and a deterioration in the terms of trade. Moreover, in cases where the problems of a particular sector coincide with regional difficulties the deleterious consequences are multiplied.

It has in fact turned out to be particularly difficult to abandon productive activities in areas of high unemployment whilst the chances of restructuring and/or innovating (especially product innovation) in such a way as to stimulate demand and improve relative prices in the sector are reduced by the lack of a healthy and integrated productive infrastructure (and in this connection the concentration of R & D activities and the advanced tertiary sector in certain locations is particularly disturbing).

Finally, growing competition in international markets combined with the increased share in world trade taken up by the NICs makes it indispensable for efforts to be concentrated not only in areas of innovation but also, and especially, on increasing overall productivity in all sectors.

In this connection, the Italian experience underlines the fact that, although they start from a lower level, it is precisely the more backward areas of the economy where relative efficiency continues to decline, marking them out as problem areas in the field of national competitiveness.

3.4. Regional Imbalances and Constraints on Aggregate Demand Policies

Some mention has already been made of how regional imbalances act as constraints on macro-economic policies. Attention was drawn to their importance in determining the level of structural inflation in the economy and on foreign trade.

Further links between regional economic policy and the problems of management of the economy at national level involve budgetary policies and the effectiveness of policies for full employment.

On the one hand, there is the cost of regional policies whilst on the other there is the considerable burden involved in income-support transfers which, by their nature, do not have a central place in policies aimed at restoring equilibrium in the economy (ie. transfers to families in the form of pensions, unemployment benefits, or preserving overmanning in public administration), and which may lead to distortions in the trend of public spending as well as making its reduction more difficult (excessive burden on the current account and increases in consumer spending with respect to investment).

Finally, as regards the attempt to attain the full employment objective, the increasing ineffectiveness of aggregate demand policies is connected to the existence of regional imbalances. On the one hand, there is a ceiling to growth in demand, usually because of the need to prevent runaway inflation, whilst on the other, variations in demand have a tendency only to affect the conjunctural or keynesian component in unemployment. The existence of regional markets which are, at least partially, distinct, and different unemployment rates, results in an increase in the structural component which cannot be reduced by means of aggregate demand policies.

Given the difficult international context with the prospect of low growth in national economies, the worsening of regional imbalances can only weaken national performance and make the running of the economy even more difficult.

The logical conclusion is, therefore, to put into operation effective policies aimed at restoring the balance within regional economies.

However, a critical analysis needs to be made of past experiences of such policies and the effects of the measures actually employed to restore the equilibrium between the regions.

4. INTERVENTION POLICIES

4.1 Traditional Instruments

The methods currently employed in this area are fairly varied (Allen 1980).

Capital Grants

Directly linked to the creation of new investments in development areas, they are one of the most frequently used incentives. However, despite being widely employed, they have been often criticised on the grounds that such incentives would be put to better use in more 'capital-intensive' activities.

Soft Loans

They are not dissimilar to capital grants in that they reduce the cost of money borrowed to finance new projects. They are most effective in depressed regions with less developed capital markets and where loan interest rates are higher with respect to the rest of the country.

Reduction in or Exemption from Taxation on Profits

This is effective only in cases where sufficiently high profits are made within the time-span envisaged by the policy. If, on account of starting-up difficulties, profits are low or negative in the early years then the incentive fails at precisely the time when it is most necessary, and will only begin to have effect when the need for such an incentive is no longer so pressing.

Accelerated Depreciation (pay off)

This too acts directly on the tax bill. However, much depends on how successful the company is in creating revenue in its first years of operation. Nonetheless, since it represents a deduction from gross revenue and comes into play mainly in the early years, it is still more effective and less distorting in the long-term than exemption from taxation on profits.

Payments per Person Employed and Waiving of Employer Contributions

Employment subsidies can be justified on the grounds of temporary disparity (the cost of each person employed, before incentives, being the same) between the productivity of labour in depressed areas and that in the rest of the country. Because they reward, in relative terms, the more labour-intensive activities, such incentives can be regarded as having a direct effect on reducing unemployment. This is certainly the case as regards payments per person employed, since these put the emphasis on job creating and not on general company administration as in the case of the waiving of employer social security contributions.

Restrictions on Company Location (via Fiscal Disincentives and Administrative Authorisations)

The basic objective of such methods is to discourage as far as possible (without damaging the level of national activity) the setting up of new firms in congested areas, and to redirect them instead towards depressed areas. Such methods are, however, only effective with regard to those new firms which exceed a certain minimum size and whose location it is practicable to change.

Infrastructural Intervention

Given that a region is less 'rich' than others (by 'rich' is meant not only the regional resources themselves, but also their quality and their accessibility), then steps may be taken to reduce inter-regional imbalances by endowing the region with an infrastructure conducive to increasing its prosperity and stimulating the operation of a multiplier effect.

Direct Intervention in Favour of Consumer Units

This is achieved by monetary transfers to families in particular geographical areas. By thus increasing disposable income the demand for consumer goods is also raised. Apart from that of directly increasing the prosperity of the population, the aim is to trigger off a multiplier effect and speed up the area growth rate by putting to use unexploited resources.

4.2 Criticism on the Tools Effectiveness

The effectiveness of the tools described cannot, however, be relied upon and may indeed produce some undesirable side-effects.

Measures aimed at stimulating the creation of new activities, be they capital or labour oriented, have the effect of turning regional structures of production either towards more capital-intensive sectors (often involving mass-production with limited effects on trade between sectors within the region and low manpower levels), or towards labour-intensive ones (often structurally underdeveloped).

On the other hand, management incentives, quite apart from their distorting effects already mentioned, create other problems as well. Whilst it may be true that the first kind of incentive, involving as it does the setting-up of the activity in a depressed area, may hold out a number of advantages for the private operator whose chief concern is maximising savings on his initial capital investment or reducing to a minimum difficulties in raising resources for the initial investment, yet the objective of minimising production costs in the long-term, or the search for promising management or expansion opportunities would seem to indicate a different set of priorities which, however, are unlikely to be met through management incentives. Indeed, these latter

artificially distort the relative prices of the factors employed without giving any guarantee that there will have been any improvement in the prevailing conditions or in the quality and productivity of the factors by the time that such policies cease to have effect. Quite the opposite in fact, since these 'neo-protectionist' measures may well encourage inefficient and unproductive economic structures to be kept alive.

Measures regarding company location are more effective in conditions of rapid national economic growth as reflected in the growth of new enterprises. If, however, economic development is slow and value is added largely through the restructuring and expansion of existing plants, then the effectiveness of this tool is very much reduced.

Criticism can also be levelled at methods directed at raising disposable income in depressed areas. The problem is that increased family income tends to channel end (consumer) demand towards consumer goods whilst in areas where most trade is with the outside and where production structures are to a great extent incomplete (eg. as regards trade between sectors and the capital equipment base), the influence of the multiplier effect on restoring equilibrium in the production structure is likely to be small.

Infrastructural policies can be viewed in different lights. Looked at from one angle, and especially if infrastructure is understood in the broadest possible sense to embrace both traditional concepts (roads, bridges, aqueducts, education etc.) and 'new' ones (research centres, agencies for technology transfer etc.), they do appear to have a very positive role, yet from another angle numerous past experiences as well as some recent research would suggest that some reservations should be made regarding their efficacy (Infrastructure Study Group, 1982).

Generally, such policies can be said to be a necessary condition for development though not sufficient in themselves: if infrastructures are absent or inadequate, growth may be held back, but the existence of an adequate infrastructure is not a guarantee that the economy will take off unless other important factors are also present.

In short, therefore, the role of incentives would seem to be that of modifying private agents' profit criteria, allowing them to overlook the shortage of 'location factors' in an area.

Some of these factors are linked to physical characteristics (eg. distance, geography), others have more to do with the way in which local resources have developed over the years (level of education, existence of entrepreneurial factors, communications network etc.) whilst a third group depends directly on the presence of an integrated and highly-developed economic system (a simplified connection might be made here with so-called 'agglomeration factors').

It can therefore be suggested that there is a regional production function which rests on three factors: capital, labour and environment.

(Arrow et al, 1961)

Consequently, on the basis of a CES function the environmental factor can be likened to the efficiency parameter. Within this factor there are three interdependent elements which together determine capital - and labour-productivity in the different areas.

The first element represents the technological component in the existing production systems, a second element concerns the concentration of local resources and natural factors, whilst the third element is determined by the scope for interaction with a well-balanced and prosperous economic system (Input-Output exchanges, personal contacts, high demand etc.)

Variations in these factors' productivity as between areas at different levels of development and, assuming relatively uniform wages and price levels, profit-generating capacity, will both be strictly dependent on the value of the three parameters considered.

The best type of intervention is that which allows each one of these parameters to be acted upon selectively, and in an effective manner.

Given a certain level of technological knowledge the effectiveness of its application, and, in general, the productivity of the primary factors, can be increased in two ways:

- a) through infrastructural methods as regards the 'environmental' element (acting on traditional infrastructures in the case of relative disadvantages connected to physical causes or, in other cases, involving interventions linked to training, research or technology transfer), and
- b) through incentives to private agents, though only to the extent that the new activities can contribute to expansion in trade between sectors at local level and bring about external economies in such a way as to obviate the need for such incentives after a reasonable period has elapsed.

This last intervention category, in particular, should be geared selectively to improving and completing the existing production structure.

A good basis for deciding which important activities to select is an analysis of the 'industrial complex' (Czamanski, 1979). With existing structures as a starting point, the 'economic complex' (not just industrial) can be consolidated through concentrating efforts on activities which are lacking in the area (chosen on the basis of the available input-output tables) and which have at least one of the following three characteristics in relation to firms already in

existence: similar input structure, similar output structure, and a high level of trade between sectors.

There have however been a number of difficulties in the application of regional policies. Mention has already been made of the objections which can be levelled against the majority of incentives, and it might be added that the structural transformations currently in process have highlighted even further such negative aspects.

Given that incentives are supposed to compensate for temporary regional differences in the productivity of the three factors of production referred to above, any non-distorting policy ought to match the incentive given to each factor to the size of the productivity gap, in an appropriate manner. In a low growth situation however, there is a tendency for certain mechanisms, dubbed 'incentive auctions', to come into play. What happens is that grants to operators are progressively increased in the hope that positive results will eventually be obtained. However, these results may not be forthcoming in periods of general recession.

Such a process obviously increases the danger of neo-protectionist policies distorting competition, whilst it does nothing to guarantee development prospects in depressed areas in the medium- or long-term.

The tendency for firms to be more outward-looking (growing sector interdependence, increased use of information and multiplication of contacts with other agents) do however seem to point to the increasingly crucial role played by infrastructures.

Despite this, the policies actually implemented do not always appear to have taken this role into account.

For although infrastructural policies are intended to improve the economic environment, they do have certain characteristics which tend to limit their efficacy. For example, one can envisage a situation where intervention centred on the construction of major road or dock facilities has immediately visible effects on public spending in the region (increased income and employment in the sector). Now admittedly this is an excellent way of raising income in the short-term, yet it does not really face up to the problem of developing already existing structures which may require the creation of communications networks, research centres or agencies for technology transfers. Thus by linking intervention to a specific development strategies, eg. 'growth poles' (often only single plants) specific infrastructures may be created which are geared to only one type of activity and are unable as a result to play a part in any comprehensive development process (A.Kuklinski, 1972).

These distortions mean that a quantitative appreciation of the contribution made by infrastructures to regional development should be viewed with caution. Thus, although an evaluation of the infrastructures existing in areas at different stages of development may well reveal that structures in depressed areas are relatively plentiful and underutilised, indicating that the use of such an economic policy tool would be out of place, an examination into the real accessibility of the infrastructures and an analyses of just how efficient and integrated they are within the economic system in which they are situated may require the conclusions of the initial examination to be radically revised (Infrastructure Study Group, EEC, 1982).

It is furthermore necessary to stress that most infrastructures are, directly or indirectly, means of communication or channels for information, either in a 'hard'sense (ports, airports, railways, communications networks) or in a 'soft'

sense (education, cultural centres, research etc.) and they therefore have a central role (different in many respects however from that of the 1950s) in a modern process of development.

Whatever the tool, however, it must be realised that the economic context in which it is used will be totally different from that prevailing at the time when regional policy strategies were first formulated.

There are three aspects in particular which need to be underlined as being crucial to appropriate intervention. The first is closely linked to the general economic outlook: in a climate in which there is deep uncertainty about the future and about the quantity and prices of the goods and services which will be demanded as well as about input prices, all factors which tend to reduce the costs of such uncertainty are of vital importance in the business decision-making process. (Such factors include communications networks, and channels for providing prompt market information, technical developments and new opportunities for managerial and capital resources).

The second aspect concerns the evolution of the production process. The increasing importance of multi-regional and multinational companies, as well as the new forms of organisation which characterise them, has resulted in an ever more marked division between the various stages of production; a state of affairs which, whilst it may be of primarily administrative importance, can equally involve a geographical division of the companies' activities. This means that a firm will have to consider not only a number of location factors, but also different policies according to whether the decisions to be made concern management and control, routine administration or the production apparatus itself (Goddard, 1973). Now, if incentives are not carefully balanced, then there is a risk of distortion creeping into the structure of production, and this risk is multiplied when it is no longer just the

dividing line between sectors that is concerned, but each individual activity in all sectors of production (concentration of plants, which are more responsive to traditional incentives, in depressed areas, and concentration of headquarters operations in central areas).

The third important aspect concerns the increasing place taken up by the tertiary sector: from 1974/75 onwards it accounted for all new jobs created in the major European countries (a partial exception being Italy, though only as regards the South).

Given a situation where industry's primary concern is investing in restructuring and modernisation with limited job creation possibilities, regional policies will have now to take into account the various needs of the tertiary sector. Consequently the important location factors are no longer the same, whilst the types of incentive likely to influence business-making have also changed radically.

5. A POSSIBLE STRATEGY

5.1. General Terms

In planning terms, the Italian situation does not look particularly promising. Indeed, only two types of policy appear to respond to the exigencies of the situation, involving some (unquantified) proposals which both fall outside the scope of so-called stabilisation policies and go beyond regional policies (themselves on the decrease): these are policies aimed at promoting technological innovation, and employment policies (with particular reference to direct intervention aimed at youth employment and at the management and rationalisation of access to the labour market and mobility of labour).

Despite their importance they are not however given sufficient weight on account of their not being integrated in an overall intervention framework. As a result, the policy maker draws up a hierarchical scale where monetary and fiscal controls occupy pride of place, leaving little room for intervention of a structural kind.

In such a context, the importance of these policies remains considerable though, paradoxically, it is determined by conjunctural factors. The role which policies for innovation play is far greater when the crisis in particular sectors renders restructuring an urgent priority, whilst employment policies are not infrequently used as a carrot in negotiations with the trade unions. Needless to say, most of the time the consequence of this is for the objectives previously established to be distorted or made meaningless and all that remains is a policy aimed at employing unused resources within a pre-determined macro-economic framework.

It is suggested here however that what is needed is an integrated vision which attempts to take into account, in a logical manner, economic and social needs, intermediate objectives and the means of achieving them.

Starting from the assumption, discussed above, that structural imbalances represent factors which determine the existence and the extent of the constraints operating within an economic system, it will therefore be these latter which will determine which selective policies are necessary and will provide the criteria for evaluating the efficacy of such policies. Following on from what was said in the preceding paragraphs, this will also involve coordinations of all the initiatives to be undertaken throughout the territory.

Given these premises, the intermediate objectives to be fixed and the criteria according to which a specific intervention is judged necessary (leaving aside the specification of which major sectors to intervene in as being too imprecise) are four in number: substitution of a proportion of imports in so far as the available resources and technology allow, reduction in socio-economic bottlenecks, economic integration and technological innovation.

5.2. Import Substitution Policies

This is a term which can be interpreted in a number of different ways; these run from the drastic (and anachronistic) elimination of all imported goods, through strong protectionist methods, to measures aimed at reducing the dependence of certain sectors on foreign sources. On the international level, such measures have always been viewed with a certain amount of suspicion since their widespread use would be a serious thread to world trade.

In the present context however, what is intended is to pinpoint the sectors for development with the aim of reducing the constraints on growth which arise from the objective of balancing the foreign trade account. Looked at in this way therefore, an import substitution policy may be made to coincide with a stable level of imports at a higher level of growth.

There are two criteria for identification of intervention areas: firstly, sectors where income elasticity with respect to imports is comparatively high, and secondly, those sectors which are adjacent to other crisis-hit sectors which need restructuring (eg. chemicals), in the light of constraints given by the existence of material and human resources.

5.3 Elimination of Bottlenecks

Bottlenecks appear in the Italian productive system during periods of expansion and can generally be said to characterise its growth process. However, a number of initiatives relating to different areas of intervention can be undertaken. Since these have already come in for mention elsewhere, more space is given here to establishing the criteria behind them than to quantifying costs and benefits in terms of increased employment of greater overall development.

There are three main areas of intervention. The first concerns employment, with direct policies in this area including vocational training, policies aimed at improving information/organisation in managing access to jobs and mobility of labour (ISFOL, 1982), interventions in the field of work study and greater flexibility in hours worked, and degree of employment protection (involving reforms in the social security and job placement system). (Chiesi, 1980).

Alongside these policies can be put

- a) social infrastructure policies involving (regional) adaptation planning and measures for urban renewal in an attempt to reduce the growing costs of exploitation and congestion, and
- b) economic infrastructure policies which run from measures to improve information networks to the creation of centres for the dissemination of innovations.

5.4. Economic Integration

The experience of Italian development in recent years clearly shows the success (in terms of increase in productivity, of employment, of the introduction of new technology, of adaptability to cyclical variations etc.) of those geographical areas with an integrated productive fabric based on a large number of forms with different functions and often

belonging to different sectors (industrial and services). If, then, the degree of economic integration is one of the factors in success, then it becomes necessary to orientate policies, and particularly those with a regional bias, in this direction, by complementing (on the basis of Input-Output analysis or, better still, of a varied information base concerning productive functions) those economic activities already in the area with others hitherto lacking, and thereby stimulating the growth of external economies.

5.5. Policies for Technological Innovation

This is an area where the recent debate has opened up some particularly interesting possibilities, very different from those that have hitherto been followed.

In the first place, the concept of innovation is extended to embrace those organisational innovations which firms are successful in introducing, and involves an integrated 'package' of intervention tools. These fall into three main categories:

- a) financial and tax concessions for innovatory firms;
- b) encouragement of 'major projects' of social importance and which bring together both public and private operators;
- c) creating the conditions for a fertile 'humus' that will aid growth and the spread of innovations. This ties in with the interventions already mentioned, the aim being to improve the invironment through infrastructural works to aid dissemination of information, intervening directly through centres for new technology information, or indirectly by facilitating trading operations between firms and speeding up the spread of innovations between sectors.

If the criteria for intervention can be identified along these lines, the ways and means to implement the appropriate policies need, on the basis of past experience in Italy, to be fairly varied.

It has already been noted how each form of incentive intervention can be criticised and shown to be inadequate in certain respects. There is a need for integrated packages of incentives to private operators as well as various forms of direct public intervention, administered through decentralised government bodies on the basis of detailed criteria of efficiency.

In general, where some entrepreneurial potential already exists, some form of indirect incentive policy may be preferable, based on capital and labour incentives of a financial/fiscal nature, and making extensive use of state purchase guarantees; on the other hand, where such potential is lacking, (eg. in the most depressed areas), there is no alternative to direct state intervention.

State intervention in any case plays an indispensable role in most direct employment policies and in social and economic infrastructure policies.

6 LABOUR MARKET IMPLICATIONS

If the problems of employment and unemployment today are to be looked at in their true perspective, then the view according to which every job corresponds to a permanent post, and every type of activity involves full-time work, must be discarded.

Consequently, it is first necessary to look at every job in terms of the two continua in which it is situated. These are: firstly its duration, and secondly, its degree of integration within employment legislation. Now, duration cannot be restricted simply to contract hours and to continuous activity, but should also take into account deviations above and below such norms. When discussing the matter therefore, one must be prepared to do not consider one a working day of eight hours or a working week of forty hours.

Similarly, the period spent working in one year, or in a whole life, has to be considered.

The degree of integration within employment legislations cannot just be restricted to the standard laid down by law and in employment contracts. There are many jobs and many workers to which and to whom different kinds of guarantee, regulations and accounting systems apply. Often, this is through the wishes of the employer, but on other occasions it may suit the employee, who may even request a different treatment himself.

Hours of work and employment protection then are two factors which allow a vast number of occupations, professions and jobs to be distinguished.

The main tendencies operating within the temporal and legal structure of the job market can be summed up as follows:

- a) a tendency for the period spent working to diminish and for it to become increasingly regulated;
- b) a tendency for the employment structure to become less rigid with the result that, whilst the duration of work remains normal, there is an increasing amount of casual or hidden, employment;
- c) there is likewise a tendency for both the duration of work and employment protection to diminish and this gives rise to temporary or irregular employment;
- d) and finally there is a tendency for part-time or short-term employment to increase; where although fewer hours are worked the degree of employment protection is more or less unaffected.

To help understand this more complex picture of the employment market three observations might be made. First and foremost, both demand and supply need to be considered - it would be a mistake to attribute the whole process to

deliberate choices by firms, entrepreneurs, or 'the market', and to neglect the individuals themselves, their families and their own relationship to the market. Indeed, the model described here is the only one which allows these tendencies to be identified and, perhaps, to be influenced; tendencies whose effect is to place many jobs and many workers (though maybe only for a limited period of their working life, but for themselves and for the economy no less important for all that) in a grey area somewhere between full-time employment and full-time activity, between the fully legal and the totally illegal. Finally, this model has to provide an explanation for how changes in demand may or may not influence the supply of labour and vice-versa; when considering these processes, attention needs to be paid to points of convergence as well as to points of conflict.

The labour market is traditionally seen as consisting of two pools. The first pool is made up of employed persons who collectively contribute to keeping it inelastic, whilst the second pool consists of the unemployed whose number remains involuntarily steady or else rises. Taking this a stage further, the pool of employed persons grows during the (increasingly short) periods of expansion with only slight contraction in periods of recession when the main methods used to combat the situation are ones of economic compensation (welfare payments). This pool is seen as being inelastic and immobile: the image presented by employment is thus similar to a 'fortress' which one never leaves and into which it becomes increasingly difficult to penetrate, since for the most part when recovery does come it does little more than reabsorb manpower temporarily laid off. And since the numbers of those retiring or taking up employment in other sectors does not leave enough room for newcomers onto the job market, 'entry barriers' are created, and a pool of structural unemployment results, which is composed largely of young people (who these days may have diplomas and degrees), obliged to wait years before finding employment.

But whilst this picture of the structure and dynamics of the employment market contains some general truths, it is nonetheless too simplistic.

Not that the basic economic policy problems posed by this model is at issue here (eg. the necessity for the labour pool to expand if wages are not to soar and inflation with them) - but to consider it only in the above terms is to ignore those structural transformations that have occurred in the employment market, both on the demand and on the supply sides. When, in Italy, more than two million unemployed co-exist with an equivalent number of 'moonlighters', and when society seems to be able to tolerate an unemployment rate which, ten years ago would have been considered potentially explosive, then one can only conclude that behind those words 'employment' and 'unemployment' something has changed with regard to the past and therefore the traditional concepts are in need of some revision.

No longer can the line between employment and unemployment be strictly defined. A continuum now exists, a continuum made up of different levels and also different ways of being employed. For over and above employment itself, overemployment (a second job, whether declared or not) is now part of the picture, affecting as it does some two million persons. There is also underemployment. Only a few figures are needed to show its importance. On average, of those who every quarter declare themselves to be employed, around 900.000 (Table 5) claim to be working only on a casual basis, and 300.000 class themselves as seasonal workers. A further 800.000 claim that they are not employed although they did some work in the week previous to being interviewed. We are therefore talking about two million temporary jobs, to which should be added at least 700.000 persons who work from home, another 500.000 foreign workers and as many child workers, all of which are either ignored or not fully taken into consideration in the

Table 5 : Labour Force in 1981 (Thousands)

	Males	Females	M/F
Regular workers	13.241	5.586	13.827
Occasional Workers	488	390	578
Seasonal Workers	133	168	301
Not Declared Workers ^o	345	401	746
<u>Total Employment</u>	<u>14.208</u>	<u>6.544</u>	<u>20.751</u>
Job Searching People	808	1.104	1.931
Unemployed	122	96	217
First Job searching People	458	530	998
Others ^{oo}	219	479	697
<u>Total Labour Force</u>	<u>15.016</u>	<u>7.648</u>	<u>22.664</u>
Not Labour Force but interested to work in particular conditions	181	550	730

^o) People that declared not to be employed but worked during the reference week

^{oo}) People not in professional condition (student, pensionets...) disposable to work

official statistics. The demand for jobs, consequently, cannot be defined simply as the demand for no permanent full-time employees, but rather as the demand for employment services which may vary according to their duration, level, wage, hours worked and degree of protection.

Of course, overemployment is nothing new, though its extent used to be partly hidden, partly restricted by a longer working week and systematic overtime. However, compared to the past, there do seem to be fewer cases of people having two jobs. Underemployment too is not a recent phenomenon - witness the Mezzogiorno (South of Italy) - but it always used to be looked at as something temporary which would either disappear with development, or was attributable to the recession and therefore would eventually be reabsorbed by policies to sustain demand. Nowadays however, underemployment has become one of the structural elements in job-demand and supply and as a consequence is largely independent of the economic cycle.

The developments referred to above are a reflection of almost symmetrical changes in employment demand on the part of the production structure, and in supply on the part of society.

Economic cycles and lack of stability in the level of employment activity as well as the uncertainties provoked by the situation regarding relative prices and market structures allied to technological and organisational developments on the one hand, and the social changes which have resulted from the ever more important role played by women and higher levels of education, combined with an increase in income-earning capacity (particularly marked within eg. family units) on the other, have brought about an increasing **differentiation** which is manifested in changes both in the quantity and the quality of employment demanded (and offered).

Thus although, in quantitative terms the employment situation remains as serious as ever, or more so, this differentiation represents an added problem for economic policy making unreliable policies based mainly on aggregate measures. Indeed on the qualitative level, employment demand (and supply) can no longer be viewed as demand for (and supply of) services of an homogeneous nature, but rather as demand for (and supply of) services which differ from one another with respect to continuity, hours, degree of employment protection, wage levels and qualifications.

Bibliografy

- Allen-Dyuill, K., "Gli incentivi regionali nei paesi della
comunita europea", Giuffrè ed., Roma, 1980
- Arrow, K.J., Chenery, H.G., Minhas, B.S., Solow, R.M.,
"Capital-labour substitution and economic efficiency"
Review of economics and statistics, n.43, 1961
- Chiesa, A.M., "Il sistema degli orari", Franco Angeli,
Milano, 1980
- Czamanski, S., De Abblas, L.A., "Idenfication of industrial
clusters and findings", Urban Studies, n. 16, 1979
- Commissione delle Comunità Europee, "I nuovi orientamenti
e le nuove priorità della politica regionale"
Luglio, 1981
- Commissione delle comunità europee, "The mobilitation of
indegenuous potential, Sept. 1981
- Goddard, J., "Office linkages and location, Pergamon press,
Oxford, 1973
- Infrastructure study group, "The contribution of infrastruc-
ture to regional development", Commissione CEE, 1982
- Isfol, "Rapporto Isfol sulla formazione professionale in
Italia" Franco Angeli, Milano, 1983
- Kuklinkski, A., "Growth poles and growth centres in regional
planning, Mouton ed., Paris 1972
- Monigliano, "Criteri ispiratori dei sistemi di orientamento
delle localizzazioni industriali "in F. Marzano
"Incentivi e sviluppo del mezzogiorno", Guiffre ed.,
Roma, 1979

**INVESTMENT POLICY AND EMPLOYMENT
IN THE UNITED KINGDOM**

**Prepared by
The Policy Studies Institute**

for

The Commission of the European Community

**1/2 Castle Lane
London SW1E 6DR**

Tel: 01-828 7055

April 1984

CONTENTS

	<u>PAGE</u>
1 INTRODUCTION	175
1.1 The watershed years 1968-73	175
1.2 Investment trends	176
2 GROWING ACCEPTANCE OF THE NEED FOR MORE PUBLIC INVESTMENT	178
2.1 Change in thinking of UK government	179
2.2 Possible changes required in the system of public finance	180
2.3 Removing the bias against capital expenditure	181
3 ALTERNATIVE CRITERIA FOR ASSESSING PUBLIC SECTOR INVESTMENT PROJECTS	182
4 PUBLIC INVESTMENT AND THE MARKET ECONOMY	185
4.1 Research and Development	185
4.2 Support for advanced information technology	186
4.3 Cable Television	187
5 A COMPARATIVE EVALUATION OF SELECTED PUBLIC INVESTMENT PROJECTS	188
5.1 Housing and urban renewal	189
5.2 Energy conservation	191
5.3 Labour intensiveness of energy conservation	191
5.4 Environmental services	194
5.5 Transport	194
5.6 A channel link	195
5.7 EuroRoute	196
5.8 Severn Barrage	196
5.9 Socially desirable job-creation	197
5.10 The balance between public and private involvement in expenditure	198

LIST OF TABLES

No.1 UK Total Government Expenditure and Transfer Payments as % of GDP	176
No.2 Gross Domestic Fixed Capital Formation at 1975 prices	177
No.3 Spending on Major Items of Industry Support	185
No.4 Government R&D Financing by Objective	186
No.5 Comparison of Effects of Selected Public Investment Projects	188
No.6 Number of Local Authority Dwellings Insulated, England,	191
No.7 Value of Housing Savings of Insulation Programme	193
No.8 Summary of Investment Programme Linked to Job Creation	200

1 INTRODUCTION

The post war years of 1950-72 witnessed a period of unparalleled growth in employment and investment in the industrialised countries. The UK shared in the full employment which characterised the greater part of the period although its economic growth rate was relatively slower. In a widely quoted lecture given in 1968, Professor RCO Matthews sought to answer the question 'Why has Britain had full employment since the war?' As a recent House of Lords Select Committee Report on Unemployment(1) has pointed out the lecture was published on almost the last date at which such a title would not have jarred, for by the late 1960's unemployment and inflation rates had started to turn up in the UK. However Professor Matthews analysis remains interesting and relevant to our current situation.

Matthews(1) principal explanation of full employment was that the 1950s and 1960s had experienced 'an investment boom of unusual proportions'. A secondary factor was the impact on export markets of the unprecedented growth of world trade. The third element was the role of government policy. While accepting that this had affected employment levels both directly through demand management policies and indirectly, he challenged the conventional view that this had been the major explanation of full employment. On the other hand he considered that the investment boom's origins lay partly in government policy. Increasingly large fiscal incentives had been provided. Further encouragement had been derived from the expectation that government would intervene to prevent a recurrence of the depressed conditions of the inter-war period. Matthews also noted that despite high levels of investment, profit rates had not fallen by 1968, suggesting that the investment boom had occurred primarily because of a plentiful supply of investment opportunities.

1.1 The watershed years 1968-73

The final five years of the post-war boom in the UK could be said to represent a watershed in which some key trends began to deviate, thereby presenting possible early warning of the prolonged recession of the late 1970s and early 1980s. In particular the share of investment in the national income started to flatten out at 18.9 per cent of GNP in 1968 having risen from 10.3 per cent in 1973 to 15.6 per cent in 1955. Secondly manufacturing industry, while maintaining a high level of investment began to shed labour suggesting that the post-war boom industries had reached a mature phase characterised by increased competition and greater concentration in search of economies of scale(2). Finally the government response to these trends in the early 1970's was a 'dash for growth'. Taxes were reduced and reforms in the banking system permitted a very rapid growth in the money supply. There was a major increase in public services as well as support for industry with the result that public expenditure's share of GDP rose from 39.6 per cent in 1968 to 45.2 per cent in 1974. There was some temporary relief to the rising unemployment. However the collapse of the world export boom accompanied by the quadrupling of oil prices and a banking crisis brought about by over speculation in property, heralded a decade of recession in which the UK unemployment rate soared to levels not experienced since the slump of the 1930s.

Government policy formation since 1974 has been dominated by the excesses of the watershed years which were blamed for high unemployment and inflation of the

-
- (1) Report from the Select Committee of the House of Lords on Unemployment, Vol. 1, p.38, HMSO, 1982.
 - (2) Freeman, Christopher; Clark, John; Soete, Luc., Unemployment and Technical Innovation, London, Francis Pinter, 1982.

rest of the decade. In particular there has been a drive to curb the rising trend of public expenditure which has been identified with inflationary pressures through a rising Public Sector Borrowing Requirement (PSBR). In fact as we have noted, the structural problems of the UK economy were already apparent by 1968, reflecting the maturity of the growth industries of the post-war boom. The pump-priming by government in the early 1970s was as much a response to the trend upwards of unemployment as it was a contributing factor to the end of the boom. Furthermore the demand for improved welfare services and benefits reflected longer-term social change which was also becoming evident in the late 1960s, leading writers such as Shonfield(3) to note that:

'Day-to-day insistence to take a job which yields a living wage are less insistent. That is one of the consequences of the advanced welfare state in which not merely the right to work but the right to choose a job according with our individual taste and views of his own ability has been in the process of being established'.

There had been a tendency for total government expenditure to rise in the 1950s and 1960s but this trend can largely be attributed to transfer payments.

Table 1 UK Total Government Expenditure and Transfer Payments as % of GDP

	1950-60	1961-72	1973-78
Total Government Expenditure	33.5	37.2	44.6
Transfer Payments	37.1	41.4	44.6

Source: NEDO.

1.2 Investment trends

The attempts to curb public expenditure in the late 1970s and early 1980s have been frustrated by the rising trend of unemployment. The result has been that total public expenditure as a percentage of GDP has remained high but public investment has collapsed. General government fixed capital formation has dropped in fixed prices from a peak of £5,793 million in 1973 to £2,147 million by 1981 - a decline of 63 per cent. Investment by the public corporations, principally the nationalised industries have held constant reflecting the preponderance of the energy industries in the same period. The private sector gross domestic fixed capital formation has increased by 9.7 per cent in fixed prices during the period 1973-81 but the total figure disguises a significant shift in composition. The most significant growth has been in the energy producing industries, particularly North Sea Oil. At the same time the growth of indigenous oil output and the accompanying appreciation of sterling created great pressures on the other tradeable sectors of the UK economy, squeezing both exporting and import competing industries (see Table 2).

The structural changes in investment were adverse to employment in two ways. They tended to involve shifts from more to less labour intensive activities, as the investment goods which were created in what Professor Meade has termed 'chips and robots'(4) were increasingly of a kind which displaced labour rather than

(3) Shonfield, Andrew. The Use of Public Power, Oxford University Press, 1982.

(4) Meade, James. 'New Keynesian Approach to Full Employment', Lloyds Bank Review, October 1983.

offering new job opportunities. This situation contrasted with the post-war boom which Matthews noted was characterised by high levels of new capital equipment which itself tended to be of a kind which promoted employment opportunities. Moreover the absolute cuts in government investment, particularly labour intensive housebuilding and public works compounded this effect. The result is that there is little optimism that any sustained investment boom can be achieved in the UK until the structural problems associated with a high propensity to import have been solved. Meanwhile the national infrastructure falls into an increasing state of disrepair and large resources both human and equipment remain underutilised.

Table 2 Gross Domestic Fixed Capital Formation at 1975 prices

	Private		General Govt.		Public Corporations	
	£million	%	£million	%	£million	%
1967	9,132	49.2	5,340	28.8	4,094	22.0
1970	10,869	54.6	5,599	28.1	3,428	17.3
1973	12,267	57.9	5,793	27.3	3,135	14.8
1977	12,419	61.7	4,018	19.9	3,702	18.4
1981	13,460	71.7	2,147	11.4	3,167	16.9

Source: National Income and Expenditure.

2 GROWING ACCEPTANCE OF THE NEED FOR MORE PUBLIC INVESTMENT

It has become more widely accepted in Britain in the last twelve months that public investment has fallen too low. For some time a wide range of interest groups and political parties outside the government have been calling for an increase in selective public investment programmes. For example this view was expressed by the Confederation of British Industry (CBI) which, in a Report dated September 1981(5) argued that the cuts had fallen too heavily on public investment as opposed to current spending.

It is also important to see what has been happening to capital as opposed to current spending. We believe that in the search for economies over the last few years too much has been found by cutting public investment while too little has been saved by genuine economies in the cost of administration and other current expenditure ... Government current spending is about 15 times bigger than capital spending, so that a small percentage economy in current spending would give scope for a very substantial improvement in investment.

The Trade Union Congress (TUC) has also been emphasising the need for substantial increases in the level of public investment. In its 1983 Economic Review(6) the TUC points out:

A major public investment programme is at the heart of the TUC's five year plan ... The TUC's five year programme for public investment will gear expenditure on construction and other public projects towards renovating the structure of the economy and creating jobs. The programme would reverse the collapse of capital investment which has occurred over the last three years.

Similarly the Labour Party has placed great importance on the role of a larger public investment programme. In the strategy document Labour's Programme 1982(7) which formed the basis of the 1983 Labour Manifesto, it was stated:

Public investment projects make a direct contribution to creating jobs as well as providing a long term benefit to society.

The SDP/Liberal Alliance have also given a pivotal role to public investment although their spending plans are considerably more moderate than the Labour Party or the TUC. In a Budget statement published in February 1983 the Alliance called for additional public capital expenditure of £850 million compared with the TUC's public investment programme for 1983-84 of £4,200 million. Moreover, the Alliance programme would not be accompanied by substantial increases in public current expenditure such as the Labour Party has envisaged.

Broadly speaking the attitude of the government has been that the overriding objective was to achieve a low level of inflation and a better use of resources which implied a significant reduction in public spending. Public spending fell between the financial years 1976/77 and 1981/82 by 6.9 per cent. In fact there was no reduction achieved in current expenditure in that period. Indeed between 1976/77 and 1982/3 current expenditure increased by 5 per cent in real terms. The overall fall in public expenditure was achieved through a reduction in capital expenditure of no less than 40 per cent.

(5) Report of the CBI Working Party on Government Expenditure, September 1981.

(6) Battle for Jobs: TUC Economic Review 1983.

(7) Labour's Programme 1982.

Between 1976/77 and 1981/82, capital programmes for central government fell by 24 per cent, those of local government fell by 40 percent and those of public corporation fell by 12 per cent. More recently the government has been suggesting that the fault lies in the underspending of planned investment, especially of the local authorities. By contrast, in the years from 1976/77 to 1981/82 the planned general government current expenditure was expected to fall by only 4 per cent.

One might have expected, given the government's policy aim of reducing the growth of public expenditure and re-allocating back to the private sector those activities that are most efficiently carried out by it, that there would have been a shifting of certain types of service from public to private provision, such as health and education. Professor Alan Budd in a recent paper has pointed out:

In practice almost no major shifts of this kind have occurred at all. Instead, as already indicated, the most savage cuts have been experienced by public sector investment even though much of public investment is in those areas - roads, water supply, sewerage etc., where one would expect provision to remain a public responsibility ... However one must suspect that the rapid cuts in fixed capital expenditure have at least partly reflected their political convenience. Much of public sector fixed capital formation is in practice undertaken by the private sector; it is far easier to cut such expenditure than it is to cut direct public sector employment. In general it is easier to cut procurements than public sector staffing; but capital expenditure is particularly vulnerable since it is always easy (administratively) to postpone capital projects. As an indication of the types of pressures on the private sector compared with those of the public sector, from 1978 to 1982 employment in manufacturing fell by over 20 per cent whereas employment in public administration and defence fell by only 4 per cent(8).

2.1 Change in thinking of UK government

In the last twelve months there have been indications of a change in the British government's attitude to the sharp decline in public investment. When it became clear that there would be a considerable capital underspend in 1982/83 official policy began to change. Controls on local authority capital spending were relaxed and new measures were introduced for 1983/84 in order to encourage authorities to make the most of the high level of capital receipts that many had been enjoying from the sales of land and housing.

The Prime Minister, said in the House of Commons on 3rd November, 1982:

We need more capital spending by local government and in the public sector generally. I agree that it is vital to maintain the nation's infrastructure, its roads, its buildings, its water supply and its drains ... Indeed we are so much in agreement with these propositions that we ear-marked last year and this year very large sums for precisely that purpose, all within our total public expenditure limits. What happened was that actual expenditure on water, housing, local authority capital and nationalised industry investment fell short of our allocation by a staggering £1,600 m. It is a sorry catalogue: housing underspend £500m; local authority capital other than housing £200m; water £70m; nationalised industry investment £900m.

In the same month, November, 1982, the Chief Secretary of the Treasury made a speech at the Policy Studies Institute in which he said:

(8) Alan Budd, 'Capital Underspending in the Public Sector', The Federation of Civil Engineering Contractors, London.

Once the Government has taken a view as to the proper level of spending, it is reasonable and indeed right that it should follow policies designed to ensure not only that the level of spending is not exceeded, but also that it is broadly attained. That is why we have taken steps to correct the underspending that looks probable in certain programmes in 1982/83.

The result of this changing attitude by the government in the second half of 1982/83 led to some small increases being registered in that financial year in the volume of fixed investment by central government and the nationalised industries. Investment by local authorities, excluding council house sales (which count as negative investment) was little changed. Moreover, in the projections in the current year public sector capital expenditure is planned to increase in money terms by 3.7 per cent over 1983/84 but fall marginally by 1.2 per cent in cost terms(9).

2.2 Possible Changes Required in the System of Public Finance

There are various dilemmas posed for government in reconciling the recent statements made on public investment with the present system of cash limits and the importance given to holding down the Public Sector Borrowing Requirement (PSBR) in money terms. These dilemmas have been highlighted in an article in the journal *Public Money*(10). The authors Lewis and Hamilton point out that the essence of the system of cash planning, as the Chancellor of the Exchequer explained to the House of Commons Treasury & Civil Service Committee, was that limits had to be adhered to, no matter how many or how few chocolate soldiers a given amount of money actually bought. But the statements by the Prime Minister and Treasury ministers, expressing regret about the level of public investment, run contrary to this cash limit approach which requires freedom for those suffering from them, to adapt to them as best as they see fit.

The authors suggest that in large measure, the reasons for the underspend lie within the Government itself. Public expenditure plans for local authorities show separate amounts for current and capital spending - what was termed before the Treasury and Civil Service Committee, the two cocoa tin principle. But to the individual local authority there is only one cocoa tin. Current and capital spending must be met from the same rate fund. It is hardly surprising that striving to meet the target they have been set on revenue account, the authorities turn to capital spending as one possible way of meeting them. They list a variety of influences which have encouraged the local authorities to do so. Most capital works are actually carried out by the private sector; interest rates have been high so the immediate impact of cutting back capital expenditure is considerable; most capital expenditure requires planning expenditure beforehand and operating costs when built, so postponement brings an immediate saving on current account.

To these influences could be added that the Treasury in its rigorous application of financial control welcomes underspending. As Budd has pointed out the system of penalties is directed to this end(11). Capital spending suffers from such a system because by comparison with current expenditure it is far more difficult to forecast. Direct expenditure on wages and current procurement should, by contrast, be fairly predictable.

(9) Public Expenditure White Paper 1984, Cmnd 9143-I, February 1984.

(10) Stephen Lewis and Anthony Harrison, 'Capital Spending in the Public Sector - Four Paradoxes', *Public Money*, Vol. 3, No.1, June 1983.

(11) Budd, Alan. op.cit.

2.3 Removing the bias against capital expenditure

In its report on the Budget the House of Commons Treasury and Civil Service Committee gave a lead as to what practical steps might be taken to remove the bias against capital expenditure that is built into the present UK system.

We continue to believe that the overall balance between expenditure on current consumption and investment - which provides benefits for the future - is wrong.

To the extent that this adverse balance reflects an inability to achieve planned investment expenditure, we urge that more attention be paid by the Treasury to the practical management of capital projects and to the allocation of borrowing permission to public authorities.

The two main improvements that could be made to reduce underspending in all three major parts of the public sector are, first, to improve the accuracy and timeliness of the information used to control public expenditure, and secondly to increase flexibility. This means allowing carry forward of over- or under-spend from year to year as well as allowing greater vire of allocation between votes in the case of government and between corporations in the case of nationalised industries. It is often contended that capital allocations cannot be switched because schemes cannot be started at short notice. This need not be the case as the Department of Transport has demonstrated. The Government could encourage organisations to keep on a selective basis a small shelf of desirable schemes which could be brought forward at short notice. While it is not feasible to do this with large capital intensive projects such as power stations, it should be possible to provide a shelf for roads, sewer-work and council house modernisation.

In order to reduce underspending by local authorities the government could, first, eliminate debt charges incurred from additional capital expenditure from the Rate Support Grant penalty calculations. Secondly it could limit even further the discretion local authorities have to spend their capital receipts, while increasing the allowance made for capital receipts in the basic capital allocations. For their part local authorities could speed up their procedures for procuring work.

In view of the objectives of the British government expressed late in 1982, it is worthwhile examining the criteria which could be applied to alternative investment opportunities in a period of high unemployment.

3 ALTERNATIVE CRITERIA FOR ASSESSING PUBLIC SECTOR INVESTMENT PROJECTS

In an attempt to establish the principles that should determine public investment the British Treasury has set up a hypothetical yardstick which attempts to ensure that the resources invested by the nationalised industries produce a return comparable to that which would have been achieved had the resources been used by the private sector. By these means, a measure of the opportunity cost of the capital employed in the industries is arrived at of 5 per cent in real terms before tax. However, as stated by a 1982 NEDC working party on Nationalised Industries' Investment chaired by Sir William Rylie, then a senior Treasury official:⁽¹²⁾

It is difficult to assess subsequently whether investment programmes which have been undertaken have actually achieved the expected rate of return. In principle nationalised industries' overall performance in relation to their financial targets, which are their principal medium term performance criteria, should indicate the results of investment programmes. However, for a number of years during the 1970s no financial targets were set for many of the nationalised industries. Where they existed, in most cases the targets were not achieved. The industries' financial performance has been affected by Government intervention on pricing and other matters. Hence no clear assessment can be made of the industries' recent track record.

Instead of producing hypothetical market criteria there is a strong case for encouraging the nationalised industries to have recourse to the private capital market. Indeed one of the main arguments in favour of allowing public investment to be financed by private capital is that this approach could provide a way of getting round External Financing Limits (EFLs) and the Public Sector Borrowing Requirements (PSBR) within which the British Treasury is able to circumscribe and control the projects undertaken. Unfortunately the Treasury has been reluctant to encourage even the profitable nationalised industries to have recourse to the London capital market. In June 1981, Sir George Jefferson, Chairman of British Telecom gave evidence to the House of Commons Treasury and Civil Service Committee and pleaded for greater financial leeway. He said that BT needed to invest annually at least £2 billion (at 1980/81 prices) over the next five years and consequently had to be allowed greater flexibility in the manner and timing of the Corporation's borrowing. However, the Treasury at the time blocked the request to raise funds in the City and instead increased British Telecom's EFL by £200m, on the grounds that it would be necessary to insure that the return to investors could not be unduly influenced by monopoly pricing. In fact the private financing route could be used by Whitehall to encourage a reduction in the more undesirable monopolistic arrangements of the public corporations. The basic objection is that the Treasury wishes to have the ultimate say in deciding the level of investment activity in the nationalised industries.

However, the UK is the exception in including public investment expenditure in the PSBR. Financial prudence is satisfied provided that the properly defined current account budget is in balance or surplus. Economically worthwhile capital expenditure can quite properly be financed by borrowing. Financial prudence is therefore consistent with a substantial programme of public sector investment.

The basic problem is that we are interested both in increasing output and in providing more jobs. In July 1976 a group of independent experts produced a report

(12) NEDC: Report of a Working Party on Nationalised Industries' Investment, 1982.

for the Social Affairs Directorate of the European Commission which warned of the danger that EEC countries might settle for 'an economic equilibrium of under-employment'(13). They recommended the elimination of obstacles to geographic and occupational mobility and measures to improve the quality of labour, including training. They advocated effective placement services and vocational guidance. Moreover they looked at ways in which the demand for labour might be improved and concluded, 'The time now seems ripe to question the general preference given to investment aids at the expense of employment subsidies'.

Some projects tend to produce many jobs and not much output (for a given expenditure), while others produce few jobs but lots of output. Both dimensions are important. The need is to combine them in a more rational way than in the past which has witnessed in the UK exceptionally cost-ineffective attempts to create jobs in white elephant schemes such as the De Lorean car plant in Northern Ireland or the Invergordon aluminium smelter in the North of Scotland. One suggestion has been that, in general, more weight should be given than in the past to the value of providing jobs by requiring those who evaluate public sector projects to cost labour in their calculations at less than its market price, so long as unemployment remains unacceptably high(14). This approach would mean that projects which absorbed large numbers of people who would otherwise be unemployed would have a low social cost imputed to them. Such projects would therefore get selected provided they could also produce something useful, like safe sewers or renovated houses. Equally many telecommunications projects would be selected even though the PSBR cost per job created is high - because their output is the infrastructure of the information revolution, and as such promises a high rate of return. Labour intensive projects which promise high returns, like accelerated training of computer operations, would be doubly encouraged. By contrast capital-intensive prestige-projects like Concorde, which absorb large quantities of scarce skills and resources to produce output of little real worth at a very large PSBR cost per job would not stand a chance of passing the test.

The TUC has pointed out that the present system of planning public spending - known as the PESC system after the Public Expenditure Survey Committee which co-ordinates it, has a number of weaknesses. In particular it is closed and consequently restricted to departmental officials. Furthermore it is dominated by the Treasury views on short-term monetary considerations and the need to restrain public expenditure. The TUC believes that a return to medium term planning in real resources is urgently needed. There have been echoes of this point, albeit in a different context in a NEDO report which highlighted the absence in the UK of any concentration of governmental effort on mutually reinforcing packages of measures(15).

According to NEDO there are four factors which hinder British policy in this area. First the departmental structure of the civil service is such that officials are primarily involved in providing information and advice upwards towards a functional responsibility rather than managing horizontally and downward in relation to particular areas of industry. Second attempts to offset this and achieve greater co-ordination requires resources that often are not readily available, and can easily though not inevitably become unduly bureaucratic. Third, it is difficult and perhaps impossible for any group within government to take a comprehensive look

(13) Luty, Meriaux, Mukherjee and Rehn: Outlook for Employment in the European Community to 1980, EEC, July 1976.

(14) Back to Work: Interim report of the Liberal/SDP Alliance Commission on Employment and Industrial Recovery, August 1982.

(15) Industrial Policies in Europe: A study of policies pursued in European countries and the EEC and their implications for the U.K., NEDC, 1981.

at global government spending in order to examine its impact on individual sectors. Fourth, some decisions effectively lie outside the ability of government departments to control despite major matters of policy and large sums of money being involved.

The Treasury & Civil Service Committee of the House of Commons has also been critical of cash planning(16).

Cash planning may have benefits to the Treasury in terms of its control of public expenditure 'clearly it may make planning more difficult for the departments and - in the way now' presented without price forecasts - it has led to some important information about public expenditure no longer being presented to Parliament or the public. Estimates of past public expenditure and future plans should be presented in cash and cost terms with, where possible volume and related price components.

In Section IV we investigate the role of public investment in the market economy and in Section V we examine growth points which have been suggested by different groups and estimate the projected costs and employment consequences of the proposed action.

(16) Sixth Report from the Treasury & Civil Service Commission: Budgets: House of Commons 24 May 1982.

4 PUBLIC INVESTMENT AND THE MARKET ECONOMY

Industrial policy in the United Kingdom has undergone a number of major changes since 1979 directed towards restoring and reinforcing the role of the market and reducing public intervention. Given the structural weaknesses in British industry, however, it is recognised that there is still a role for government in the following areas of the market economy:

- 1) selective increases to support and encourage the high growth sectors particularly in the field of research and development;
- 2) special assistance to important undertakings which have found themselves in difficulties but which are capable of viability with a reasonable amount of assistance;
- 3) selective financial help and encouragement for small enterprises;
- 4) expansion of youth training schemes linked to unemployment-oriented assistance to the private sector.

Table 3 Spending on major items of industry support

	1969/70	1975/76	1980/81
Regional	29.4%	31.8%	16.1%
R & D	17.0	10.3	9.1
Employment	11.4	13.8	33.0
Selective	24.9	27.6	17.5
Trade	2.6	8.2	12.8
Redundancy	14.7	8.3	11.5
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
£m (1980 prices)	1,427	3,247	3,882

Source: NEDO.

As the table indicates, the composition of the support by the UK government for industry has changed considerably. Regional spending has been greatly reduced by the Conservative government since 1979 and future plans suggest that this trend will continue. R&D spending has remained static in 1980 prices but has fallen as a proportion of the total. However in spite of the intention to cut overall support the total has increased reflecting a steep rise in employment training and redundancy reflecting the high level of unemployment.

4.1 Research and Development

Innovation and high technology have been a focus of support for both Conservative and Labour governments although the specific approach varies considerably. A very high proportion of R&D government financing under both governments has gone on defence which in 1979/80 took 54.6 per cent of the total budget. As a recent study by Sir Charles Carter and John Pinder of the Policy Studies Institute suggested:(17)

'In no way, however, can the pattern of government aid to research and development which has emerged be regarded as a rational response to need.

(17) Carter, Sir Charles and Pinder, John. Policies for a Constrained Economy, Policy Studies Institute, London, Heinemann, 1982.

It is heavily distorted by the special needs of defence, aerospace and nuclear energy, as well as by the accidents of past history. Our first proposal, therefore, is that there should be a careful review of present total expenditure. 'Cost effective', in this context, implies making a larger contribution to the strengthening of productive industry. We think that methods of assessment could be developed which might also throw light on the potential productivity of additional expenditure on research and development'.

Table 4 Government R&D Financing by objective

	1975/6	1977/8	1979/80
Human and social	6.2%	5.9%	5.0%
<u>Technological</u>			
earth & atmosphere	0.7	1.0	0.8
energy	6.6	6.8	6.1
industrial product- ivity	10.4	5.4	7.0
space	2.3	2.6	2.0
Agricultural	4.5	4.6	4.0
Defence	49.0	52.5	54.6
General promotion of knowledge	<u>20.3</u>	<u>21.2</u>	<u>20.5</u>
Total	100.0	100.0	100.0
Value £M	1,363	1,660	2,403

4.2 Support for advanced information technology

In general the present government is opposed to 'picking winners'. For example the activities of the British Technology Group (which has absorbed the National Enterprise Board and National Research and Development Corporation) have been severely curtailed and its budget halved. On the other hand the March 1982 Budget announced a £130 million innovation package would be made available for space, engineering and electronic development. More recently the government has accepted the need for a £350 million support for a national programme of Advanced Information Technology spread over five years. Government will provide £200 million of the direct cost of the programme and industry will provide the remainder.

It is interesting to note that the UK governments commitment to an ambitious IT programme was based on an Alvey Report produced by a group of experts impressed by Japan's Fifth Generation Computer Programme. They decided that the UK had to achieve a national programme based on collaboration rather than market forces. Their report states:

'Collaboration is essential for several reasons. First, as stated, the technology is intrinsically difficult and complex. No single organisation has the know-how to make sufficient progress on its own. Secondly, no one

organisation has sufficient spare resources either in money or in particular skilled manpower to tackle independently the high risk and long lead time type of projects which are involved. Thirdly, there are sufficient technical strengths collectively in the UK to pursue these technologies successfully. However these strengths are scattered in industry, the academic sector and research organisations ... This form of co-specialist working depends on the sharing of information and results, and the existence of confidence and trust between the rival teams. This is possible only within a collaborative framework'(18).

But the UK governments commitment to the Alvey Report reflects the enormous potential growth of the world IT market with recent forecasts predicting that our current trends it is heading for £150 billion by 1990 when again on existing trends the UK's adverse balance of trade on IT products could reach £1 billion. It is estimated that there are already 900,000 jobs in the British IT industry broadly defined, including some 150,000 in the computer, telecommunications manufacturing and office equipment sectors.

4.3 Cable Television

A recent White Paper in the United Kingdom gave the go-ahead for a £3.5 billion investment in cabling half of the country for TV. A Financial Times editorial of 23 March 1982 argued as follows:

The Western world stands on the threshold of a revolution that is going to affect every aspect of our daily lives - how we work, how we spend our leisure time, how we buy and sell things, how we communicate with each other. In 20 years time society will have changed as much and as radically by information technology as it was in the last century by the railways and in this one by the telephone and by air travel.

Cable TV could be an important part of the move towards an information society. The key is the non-entertainment two-way services - home banking, home shopping, home security and so on. Unfortunately, although cable TV will provide a giant step in the new technology it is unlikely to create many new jobs in relation to the investment.

The White Paper may have underestimated the job creation effect. It suggests there will possibly be 3,000 jobs in operating, 2,000 in construction and a few hundred created in cable manufacture. Programme making might be the most significant long-term job provider as will new companies offering cable services such as tele-banking or shopping.

There are more optimistic assessments circulating in Whitehall of the possible job creation effects of cable TV which look for 20,000 extra jobs from the operational companies: 5,000 new jobs in cable construction and another 1,000 in Research and Development and manufacturing cable. Add to this total up to 10,000 new jobs from programming and the impact begins to build up to 36,000 new jobs from an investment of £3.5 billion and the investment per job is £97,222. Clearly the ratio of jobs created to the investment required is very high in the case of cable TV which cannot be considered as an important agent in tackling unemployment however great it may be in helping to create the infrastructure for an information society.

(18) Alvey Committee Report (Chairman John Alvey), A Programme for Advanced Information Technology, Department of Industry, HMSO, 1982.

5 A COMPARATIVE EVALUATION OF SELECTED PUBLIC INVESTMENT PROJECTS

Once the objective of pursuing the most effective investment programme in terms of both job creation and relatively low cost of extra PSBR is chosen, there is a need to try and quantify the various possibilities. Unfortunately the large econometric models such as the Treasury model are not much help for this purpose as they do not disaggregate the capital expenditure items in the public sector. An interesting study has been made by Cambridge Econometrics Ltd entitled Policies for Recovery which was jointly commissioned by five leading construction industry organisations(19). The model used consists of a forty industry dynamic input-output structure and shows how each industry depends on other industries as well as economic events and government policies. This report examines the effects of increasing expenditure by £500m (at 1981 prices) from 1982 through to 1984 in five different programmes of government expenditure.

- a) Higher government current spending.
- b) Increased public sector housebuilding and rehabilitation.
- c) Increased capital spending on civil works - road networks, water and sewerage.
- d) Income tax cuts through higher personal allowances.
- e) Average employment subsidies.

Table 5 Comparison of Effects

	Government Current	Houses	Civil Works	Tax Cuts	Employment Subsidies
1) GDP % difference	0.13	<u>0.15</u>	<u>0.17</u>	0.09	0.06
2) Primary/Manf. Industry %	-0.02	<u>0.06</u>	<u>0.10</u>	0.04	0.01
3) Investment %	0.03	<u>1.16</u>	<u>1.60</u>	0.09	0.04
4) Employment					
Direct	35,000	<u>48,000</u>	42,000	-	<u>101,000</u>
Indirect	10,000	16,000	<u>20,000</u>	10,000	<u>36,000</u>
5) Output per head (% difference)	<u>-0.06</u>	-0.11	-0.11	<u>+0.03</u>	-.53
6) PSBR (1981 prices £ m)	<u>198</u>	221	<u>144</u>	390	429
7) PSBR per job (£)	4,200	3,400	<u>2,300</u>	38,000	<u>3,100</u>
8) PSBR per 'permanent' job (£)	4,200	<u>3,400</u>	<u>2,300</u>	38,000	8,400
9) Balance of Payments (£m 1981)	<u>-159</u>	-256	-375	<u>-238</u>	-255
10) Prices (%pa)	<u>0.12</u>	0.19	0.30	0.18	<u>0.17</u>
11) GDP per £ of PSBR	1.7	<u>2.2</u>	<u>2.9</u>	0.6	0.3

Source: Cambridge Econometrics Limited.

(19) Policies for Recovery: Cambridge Econometrics Limited, December 1981.

In Table 5 the best programme in the Cambridge Econometrics Study is doubly underlined and the second best singly underlined. The housebuilding measure would create an additional 64,000 jobs at a relatively low cost of £3,400 per job. The civil works alternative would produce a similar level of new jobs, namely 62,000 at a low level of £2,300 per job.

On the other hand the civil works programme results in the highest extra deficit in the balance of payments of £375 million which is rather surprising. The report concluded that,

The two construction options do not offer the perfect solution to the difficulties facing Britain in recession. However, on balance, they are the most attractive ones in that they increase employment most for the least cost to the PSBR and without causing a severe drop in productivity. These options are politically feasible without being damaging to any major sector of the economy.

It should be pointed out that the programme of income tax reductions was a modest one enabling personal allowances to catch up one quarter of the ground lost through lack of indexation. They were assumed to have little employment effects and no significant reduction in unemployment benefits. Income tax revenues would fall, offset only slightly by taxation of the few extra employed and by higher corporate taxation. The result is that the estimated PSBR per extra job created is substantially higher than the other programmes at £38,000. However this finding reflects the assumption that there would be no direct employment benefits since the increased personal earnings would be largely retained by people who already have income.

The employment subsidy affect also creates a relative high PSBR per job of £8,400 on the basis of a subsidy being paid to employers equal to the average wage in each industry affected. The job creation effect is substantial with over 100,000 direct jobs created and 36,000 indirect jobs. But most of the jobs have a make-work character in that they provide little extra output. A case could be made for a lower subsidy, between the level of current unemployment benefits and the lower end of the wage scale in each industry. This approach is considered in a later section of this report.

5.1 Housing and Urban Renewal

Public housebuilding has been a relatively low priority for the present British government. From a peak of almost 200,000 in the late 1960s public housebuilding starts fell to only 31,000 in 1981. However, an increase of £500 million to the public housebuilding would be equivalent to only 45 per cent of the planned reduction for 1981 and as such does not imply a change in the present policy objective of reducing expenditure on public housebuilding.

The package that Cambridge Econometrics considered was for two-thirds of the increased expenditure to go to new housing and the remaining one third to the rehabilitation of old dwellings. In the latter case employment costs amount to over 50 per cent of total input costs and it is therefore relatively labour intensive. In the 1982 budget, the present government substantially increased cash available for major repair grants from 75 per cent of eligible costs to 90 per cent of cost in order to boost the building industry and improve the quality of the country's housing stock. Spending on home improvement grants more than doubled in 1982/83 to around £430 million helped by the extra resources made available in the 1982 Budget and by £65 million of retrospective allocations for grants. However, since the 1983 General Election improvement grants cash has been cut back and VAT applied to all alterations of buildings.

Consequently in this report it is assumed that half of the package goes on new housing and half on the rehabilitation of old dwellings and that the programme builds up to extra spending of £500 million (in 1981 prices) in the third year with an injection of £400 million in the first year. Actually the Public Expenditure White Paper has budgeted for a decline of £365 million in constant prices (1982-83) in housing expenditure in the current financial year following a steep decline of £3,600 million in the previous four years. So the proposed increase of £900 million spread over three years represents a restoration of only a quarter of the reduced expenditure.

It is possible that in the late 1980s there will be a renewed housing shortage resulting from the baby boom of the late 1950s and early 1960s 30 years later as the age bulge moves up into the household formation groups of 25-35. The result is that the number of households will be rising throughout the 1980s from the 18.3 million at present to 19.3 million in 1991. A further increase is also expected in single person households through divorces or choice. For example, it is estimated that by 1997, 27 per cent of all households may be occupied by only one person.

In the late 1960s an official view was expressed that Britain was moving towards a crude housing surplus - an excess of units of accommodation over households. There may have been a small numerical overall surplus on the horizon but even then this view did not take account of regional imbalances and inadequate housing. The cuts in the planned housing programme initially reflected the government's view that public expenditure should be cut and in particular that housebuilding activity should be switched from the public to the private sector as far as possible.

By October 1982, the underspend by the local authorities had become considerable, prompting the Secretary of State for the Environment to make the following remarks:

Virtually every housing authority could benefit its area by a programme of new housebuilding or improvement work. Virtually every urban authority must have some need for investment in infrastructure works to attract and retain industry and thereby promote the economic regeneration of its area. There are many authorities with derelict land which needs to be reclaimed for industrial development or environmental improvement: without additional investment that land will continue to go to waste.

By this time the Secretary of State had also been given special responsibility for Liverpool, following the Toxteth riots in July 1981, where 41.9 per cent of unemployed males were under 25. It is notable, too, that Lord Scarman's Report on the Brixton Disorders commented that unemployment and poor housing bore very heavily on ethnic minorities and that racial disadvantage was a significant factor in the causation of the Brixton disorders(20). Apart from the problem of racial minorities there remains the fact that unemployment is likely to continue at around the current level until possibly the end of the 1980s according to a projection made by the Warwick University Institute for Employment Research(21). The unemployed and their families with below average incomes will have to be housed in subsidised housing. In those circumstances it will be very difficult to defend a position where spending on housing continues to run at the levels planned for 1984-85 which in cost terms are projected in the latest Government Expenditure Plan to be 36 per cent of 1979-80.

(20) Scarman Report on the Brixton Disorders, Cmnd 8427 para 2.35, 9.1.

(21) The Observer, 22 May 1983.

5.2 Energy Conservation

Britain has fallen behind other major European countries in the field of conservation of energy. That may have resulted from the UK's energy self sufficiency. For example in 1979, the total budget for the UK residential sector was £35 million when the West German and French equivalent were £217 million and £130 million respectively. Since then the situation has deteriorated considerably. The number of local authority dwellings insulated dropped by 53 per cent between 1979-80 and 1980-81 and has remained at that low level.

Table 6 Number of local authority dwellings insulated. England (000s)

1978-79	245.4
1979-80	548.6
1980-81	235.1
1981-82	237.1

Source: Hansard, January 17, 1983

The existing housing stock in Great Britain is around 20 million of which only one fifth was built after 1964 when thermal insulation was first specified in the Building Regulations. A recent Electricity Council Survey estimated that 38 per cent of households have taken no energy saving measures at all(22). Furthermore according to market research audits there are still five million homes with no insulation at all including two million council houses. Trade sources estimate that in an average medium sized detached house the area of air leakage, gaps from windows and doors is equivalent to a hole in the wall of one square metre. The existing penetration of draught proofing is estimated to be just over five million houses. It has also been estimated by the Economists Advisory Group (EAG) that of the 10.3 million centrally heated homes in Great Britain only 400,000 have full controls, 5.6 million have partial controls and 4.3 million have virtually no controls(23). The scope for energy saving is therefore very considerable particularly in the latter category through the additions of simple controls such as dual on/off time switches, two-room thermostats or radiator valves. EAG estimated returns of between 14-31 per cent for the installation of full control systems.

5.3 Labour Intensiveness of Energy Conservation

The major advantage of a programme of energy conservation with regard to job creation is its labour intensiveness. This point comes out strongly in a recent report for the Association for the Conservation of Energy and published in February 1983(24). This report examines and quantifies two possible programmes in a base case and a maximum case.

The base case would generate annual average extra employment of 50,000 jobs (building up to 68,000) and the maximum case 124,000 (building up to 155,000) in both instances over a ten year period. An overriding feature of both programmes is the installation work which accounts for almost two-thirds of the additional employment in the base case and around one half in the maximum programme. The difference reflects the fact that the bigger programme would employ all purpose installation teams which would operate on a house-to-house basis tackling a building in terms of its total energy consumption and improving all aspects of its

(22) Electricity Users Survey: Electricity Consumers' Council, 1980.

(23) Domestic Energy Conservation and the UK Economy, Prepared for Assoc. for the Conservation of Energy by EAG, 1981.

(24) Jobs and Energy Conservation, Environmental Resources Ltd.

thermal properties at the same time. The large programme would therefore be less labour intensive and require expansion of the manufacturing end of the energy conservation sector which tends to be more capital intensive.

The second advantage of an energy conservation programme in terms of job generation is that apart from the electrically based operations such as heat controls and lighting in the installation and insulation measures require either no particular skills or only limited skills available after a short period of training. So the major benefits of an expanded energy conservation programme would accrue to unskilled workers who tend to form the highest proportion of the long term unemployed. The manufacture and fitting of electronic control systems is also relatively labour intensive (especially when compared with electricity generating or nuclear power) employing mainly semi-skilled labour (about 70 per cent) with skilled (only 5 per cent) and unskilled making up the remaining one quarter.

Furthermore most of the UK's housing and industrial building stock, where the greatest scope for energy conservation exists, is located in the depressed industrial and urban centres which tend to have exceptionally high levels of unemployment. Employment through an energy saving programme would tend therefore to be generated in locations where it is needed.

The third advantage of energy saving programmes is, as the consultancy report indicates, that the internal rate of return on expenditure, allowing for the savings achieved could be as high as 15 per cent for the base programme and 11 per cent for the maximum case. This compares very favourably with the 5 per cent discount rate used by the Treasury for assessing public sector capital investment projects. The consultants calculated that the total value of energy savings could be around £1.4 billion in the tenth year of the base programme (or £6.7 billion for the total period) compared with a total investment expenditure over the ten year period of £10 billion. The internal rate of return is calculated taking account of the energy savings over twenty years - as the loft and cavity wall insulations would last for the life of the building. Usually a 30 year life span is assumed for older houses for discretionary renovation grants and 25 years is normally adopted for assessing new power station project. However, as the heat controls and draught proofing is considered to have a shorter life, an average 20 year analysis period has been adopted.

The 20 year analysis period, nevertheless, conflicts with the claim that is often made for energy conservation schemes that they have a shorter lead time than power stations and consequently do not require such a substantial financial commitment. Indeed it must be pointed out that even the base case requires investment of £1 bill average annual gross expenditure in order to generate 67,800 estimated jobs at the end of the period. The expenditure levels seem high in relation to the jobs generated with a total public expenditure per job created of £15,000. However, it should be pointed out that the consultants did not attempt to calculate the off-setting costs and extra revenue which would be generated from the following effects:

- 1) a reduction in transfer payments to the unemployed;
- 2) increased tax revenue/national insurance contributions from workers and companies involved in the programme;
- 3) a possible reduction in fuel subsidies to low income groups (the 1982-83 estimated cost to the government of such subsidies is £300 million);
- 4) net revenue in terms of fuel bill savings in government/local government buildings where payback times can often be 3-7 years.

The consultants point out that in a study commissioned by the DoI it was estimated that the net present value cost of development and job creation taking account of factors 1) and 2) above was 78 per cent of the gross direct exchequer cost(25). This gave a net cost per annual job of £8,300-8,800 expressed in 1978/79 prices which in 1983 prices they calculated to be around £12,000.

The consultants conclude that:

For a year by year energy conservation scheme, with a higher proportion of immediate construction jobs created from unemployed workers, the net cost to government of job creation would not be more than two-third of the gross cost. This implies a cost of around £10,000.

At 1981 prices the net cost to the public sector is estimated to be around £8,500 per job created in energy conservation. This figure is substantially higher than the figures arrived at in the Cambridge Econometrics Study for both housebuilding and civil works in terms of PSBR per job(26). Nevertheless the consultants were unable to arrive at a figure which took account of the complicated cross-calculations in this kind of calculation which requires an econometric model. Furthermore an important aspect of the contribution which can be made from energy conservation is the increased comfort that can be achieved. Environment Resources assumed that 25 per cent gross energy savings would be taken in the form of increased comfort level. They point out that it is a reasonable assumption that a high proportion of the fuel bill savings would accrue to lower to middle income groups who live in public and private rented housing and to other groups less likely to have previously spent their own money on energy conservation. The consultants assume that of the remaining 75 per cent of savings one fifth is set side in personal savings and four-fifths is spent on consumption. This latter sum would have a multiplier effect which would become increasingly important.

Table 7 £ million: Value of Cumulative Housing Savings for Respond

Year	1	2	3	4	5	6	7	8	9	10
Base Case			13	28	50	75	100	127	151	179
Maximum Case			25	58	99	147	202	261	321	382

While accepting the assumption that 25 per cent of the gross savings might be taken in the form of increased comfort levels, it is important the more comparative evidence should be used from other European countries which have already carried out energy conservation programmes.

Accordingly it is noted that the Policy Study Institute with the help of a grant from the EEC is making a case study which will examine *inter alia*: 'the cost effectiveness, job creating potential and techniques and skills required for a major works programme to increase the stock of low-energy consuming structures by improving the standard of insulation of housing and commercial and public building'.

(25) Marquand, Judith: 'Measuring the Effects and Costs of Regional Incentives', Government Economic Services Working Paper No. 32, Department of Industry, February 1980.

(26) Cambridge Econometrics Limited, *op.cit.*

5.4 Environmental Services

Successive cuts in the capital programmes of the water supply and sewerage disposal system are, 'endangering levels of service', to quote the 1982 Water Industry Review of the National Water Council. Investment in water supply and sewerage and sewage disposal has been cut to less than half that authorised in real terms by the Government for 1973-74. The National Water Council has suggested that over the next five years annual investment in renovation and renewal of water mains and sewers needs to be increased by at least £100 million in real terms to make a start on tackling the backlog of renovation and to avoid deteriorating standards of service. In fact, more resources than the minimum £100 million could be justified. Although there is a natural reluctance on the part of the water authorities to increase substantially their labour force which could lead once again to an escalation of water rates as occurred after 1972/3. On the other hand the improvement in terms of both savings and purer water supply could be very considerable. For example it is estimated that leakage from the water mains network stand at around 25 per cent but ranges as high as 50 per cent of water pumped out in some areas.

The greater scope for water economy in fittings lies in the flushings of WCs which accounts for about one fifth of the total water put into supply. Yet conversion of all London's lavatory cisterns to a variable flush system could save as much water as a new reservoir would hold and could be carried out for the same cost as a new reservoir, while employing considerably more labour(27).

A large part of the UK's sewerage system was constructed over a hundred years ago with the result that there are several thousand sewer collapses in England and Wales each year and the number is expected to increase. There is a need for a national survey especially as the Standing Technical Committee of Sewers and Water Mains a suggested few years ago that only 30 to 40 per cent of local authorities had reasonably satisfactory standards of records and that 15 to 30 per cent of all public sewers were not recorded at all(28).

There would seem to be scope for a substantially larger programme of capital expenditure and related current expenditure than the minimum £100 million increase in real terms suggested by the National Water Council. A major public works programme for water and sewerage in the opinion of the Cambridge Econometrics Study could absorb £250 million of expenditure providing for renewing city sewerage and industrial treatment networks as well as tackling the waste of water resources through leakage and inefficient use of cisterns(29). The scale of the task can be judged from the length of pipes involved with 500,000 kilometres in England and Wales alone.

The scale of programme more likely to be acceptable in present circumstances, however, would entail capital expenditure of £200 within the first year rising over the next two years to £400 million which would include a provision for the associated current expenditure outlined above in terms of survey work and cistern adjustments. We estimate that the extra number of jobs created from such a labour intensive programme would average 40,000 over the five years.

5.5 Transport

It is widely suggested in Britain that the underutilized resources in British industry, particularly construction, provide a major opportunity to improve our infra-

(27) Report from the Select Committee of the House of Lords on Unemployment, Vol. I, pp.72-73.

(28) Water Industry Review, National Water Council, 1982.

(29) Cambridge Econometrics Ltd, op.cit.

structure which will be very important for any long term economic recovery. The Department of Transport estimates that all freight transport activities cost over £17 billion in 1980 with 96 per cent spent on road transport. A study by the Centre for Physical Distribution Management estimates that transport accounts for an estimated 34.4 per cent of the total cost of distributing goods and could rise to 44 per cent by 1990. There is wide agreement that British industry is already suffering a competitive disadvantage as a result of the run-down state of our transport system. For example, Sir Terence Beckett, the Director-General of the CBI concluded in 1981 'that the infrastructure in Britain is beginning to suffer very badly. We don't have enough rolling stock on the railways: the roads are falling into disrepair'.

An improved road system would help to reduce congestion, contain transport costs through saving of fuel and time and help to improve the quality of life. On paper, Britain has an ambitious programme for building new trunk roads and motorways. These would cost nearly £3.5 billion and would involve nearly 400 new schemes if all were built according to the 1980 White Paper, Policy for Roads. In practice, there have been considerable cuts in spending on the road programme as can be seen from the following figures. Planned expenditure on trunk roads and motorways fell 45 per cent between 1976/77 and 1982/83 and the outturn on local road construction fell by 50 per cent in the same period. In the last two years the planned capital expenditure has been increased in view of the extensive need for motorway reconstruction and considerable surplus capacity in the construction industry. However, the planned increase between 1981/82 and 1983/84 of £250 million has not been achieved owing to a substantial underspend of £176 million.

There seems a great deal of sense in the construction industry's argument for a more flexible housekeeping system which would avoid the stops and starts in the projects and which would take account of the long lead times. There is considerable scope for stepping up the road programme which could be done by bringing forward several trunk road schemes already at a late stage of development which have either been given a post 1984 start date or on which work is now suspended. There is also a strong case for increased local authority road construction enabling much needed by-passes and relief roads which have already received planning permission to be accelerated. Incidentally this step would help to improve the quality of life in our countryside by an increased by-pass programme to provide early relief to the 500 or more communities which according to the County Surveyor's Society justify such relief. Otherwise only 30 or so will be built this year.

A phased increase in the roadbuilding programme rising to £300 million extra capital expenditure over a three year period would increase employment by 35-40,000 according to the Cambridge Econometrics study. According to the Federation of Civil Engineering Contractors the average labour cost of current programme is 38 per cent of the total ensuring that extra expenditure would be relatively labour intensive expenditure.

5.6 A Channel Link

Various proposals have been mooted for a Channel link. The British and French railways scheme was submitted in February 1979 and calls for the construction of a single track rail-only tunnel at an estimated cost of £848 million (1980 prices). A key issue is the ability of British Rail to guarantee a minimum level of traffic through the tunnel. Professor Gwilliam, a specialist advisor to the House of Commons Transport Committee has said that he has difficulty in accepting the traffic forecasts made by BR because the assumptions on which the forecasts are based depend on factors which are beyond BR's control. Apparently the promoters want BR to guarantee at least 90 per cent of the forecast traffic which would effectively transfer the tunnel risk to the Treasury who stand behind any shortfall

by BR. Although the least expensive scheme, the railway-only tunnel has the drawback of providing a tunnel with a diameter too small for road vehicles and would therefore limit its attractiveness.

The House of Commons Select Committee on Transport, after hearings in March 1981, recommended that a tunnel large enough for a road vehicle shuttle should be built but in the initial phase the traffic should be confined to railway use. The extra £100 million cost of the larger diameter unused at first would be recouped from second stage operators who should be allowed to operate a road vehicle shuttle service if BR failed to secure a viable level of traffic.

5.7 EuroRoute

The most ambitious scheme which would cost an estimated £3.8 billion has been promoted by Mr. Ian MacGregor when he was Chairman of British Steel(30). This imaginative scheme provides two two-lane carriageways and two rail tracks. The railway is carried in a submerged tube tunnel throughout the crossing. The road carriageways are carried on twin viaducts across the inshore shipping zones of the Channel and in a common submerged tube tunnel with the railway beneath the main shipping lanes. The transition for road traffic from viaduct to tunnel takes place within offshore artificial islands constructed at the boundary of the main shipping lanes. It is estimated that the first roadway would be opened to traffic six years after an enabling Act is passed in Parliament.

Mr MacGregor considers that his scheme could be financed through a Eurobond issue. The proposal is bigger but simpler than its competitors. It can be built more quickly and, as the fabrication would be spread over many locations, is both more attractive politically and financially. Total employment in the construction, shipbuilding and related industries is estimated to be over 260,000 man years in both Britain and France creating an average 50,000 new jobs at an average cost of £38,000. The combined workforce on the sites is estimated to be no greater than 12,000 per annum leaving the great bulk of the new jobs to be allocated to steel (6.0 per cent), shipbuilding (5.4 per cent) construction plant (4.4 per cent), quarrying (10.6 per cent), pre-cast concrete (28.2 per cent), marine works (13.12 per cent), electrical/mechanical plant (4.2 per cent), management (8.9 per cent) and on-site (19.2 per cent).

Although the proposal is considerably more expensive than its competitors, it can be built more quickly using techniques already proven in the North Sea of submerging concrete elements, cast individually in special bases which are then floated on completion and towed to the site of the tunnel by sea. A conventional tunnel, by contrast could run into considerable delays which would upset the cash flow requirements of a Eurobond issue. Finally the combined road and rail approach seems better adapted to growing and changing traffic patterns which should help to ensure the cash/flow required. So although the project has a high ratio of expenditure to jobs generated it is worth considering especially if it can be financed without increasing the PSBR.

5.8 Severn Barrage

Another large project of national importance which has been proposed is the Severn Barrage assessed in a report chaired by Sir Herman Bondi, the former chief scientist at the Energy Department(31). The report pointed out that the barrage is likely to be an economic investment in the sense that it would meet the Treasury's minimum requirement of a 5 per cent real rate of return and enable total system

(30) EuroRoute: Road and Rail Channel Crossing, May 1981.

(31) Tidal Power from the Severn Estuary. Vol. I, Energy Paper Number 46, Department of Energy.

costs of electricity generation to be reduced through the saving of 5-8 million tons of coal equivalent per annum of the amount of fuel burnt in other power stations. It accepts that nuclear power is cheaper on official estimates but queries whether a large scale nuclear programme will be possible or acceptable.

The report found in favour of an Inner Barrage costing about £5,600 m and producing about 6 per cent of present electricity generated. A preliminary assessment of labour requirements suggest that a total work force of about 21,000 would be required directly for up to 10 years of construction. However, 12,000 of these jobs would be concrete caisson construction work which could be towed to the site and therefore could take place outside the region. A further 5-6,000 jobs could be created by the multiplier effect caused by the boost to the local economy. The net cost in terms of the PSBR would be high at around £6,280 per job on the optimistic assumption that only one third of the expenditure would be attributable to the PSBR. The justification of the Severn Barrage scheme must therefore be found in terms of alternative energy resources rather than job creation.

5.9 Socially Desirable Job-Creation

Finally there is a case for examining the extent to which the expansion of socially desirable jobs such as home helps and probation officers would be more effective than segregating the handicapped and the old in institutions and the young in borstals or prisons which can be extremely expensive to operate. The objection is made that the promotion of socially desirable jobs would represent an increase in current expenditure at a time when governments are attempting to cut back current spending. Furthermore it is often suggested that the public welfare services are already over-manned and have a cumbersome bureaucracy which blunts their awareness of local needs.

However, as the House of Lords Select Committee on Unemployment has pointed out, a programme of long-term low cost job creation could be created at a low net cost to public funds (when account is taken of the lost revenue and high level of unemployment benefits) amounting to around £2,500 per extra person out of work(32). Furthermore in their opinion the voluntary agencies could play a much more important role in creating socially desirable jobs for the unemployed in the field of welfare and community services which they estimate could provide 100,000 extra jobs. The Lords Report makes the point that home helps would be more cost effective than building new institutions but more research is required into the whole question. Indeed the moves towards an information society through the provision of two-way interactive cable TV should make it possible for voluntary agencies to play a much more important role insofar as they could gain access to the information data banks which have hitherto been a monopoly of the public sector proper.

A recent report on Urban Revitalisation suggested the setting up of neighbourhood INFO Centres which would have a Prestel setup which would be designed to facilitate people help themselves about benefits, job vacancies, grants and other community information at a local level(33). Through an intelligent use of small desk top computers or even word processors a library of services could be used by young and old, companies and individuals. Unemployed young people could be trained to man the terminal in a small office - or even the corner of a retail establishment. This concept is an example of the ways that information technology could be used to bring voluntary agencies into the area of job creation.

(32) Report from the Select Committee of the House of Lords on Unemployment, Vol. I, para 14.65-14.66.

(33) Urban Revitalisation: Appropriate Options for Today by Clara Richardson, Work & Society, September 1982.

5.10 The balance between public and private involvement in expenditure

In general the British government is opposed to increasing the public sector relative to the economy as a whole. Nevertheless as we have seen in the above paragraphs there is scope for any extensive use of voluntary agencies in the area of socially desirable job creation. Similarly there is no reason why a large part of public investment programmes examined in this report such as housing rehabilitation, energy conservation and road building should not generally be managed by private contractors. There would have to be an administrative framework which assessed bids for grants and public subventions for the kind of job creation programmes we have been discussing. Obviously the sponsoring departments would be involved but there could also be a case for an agency, perhaps the Manpower Services Commission which co-ordinated the programmes to ensure the maximum impact in terms of job creation. As has already been mentioned in the section on Alternative Criteria for Assessing Public Sector projects there is a need for a systematic way of costing labour at less than its market price, so long as unemployment remains unacceptably high. Such a subsidy towards the labour costs involved in capital projects should be related to the cost to the Exchequer of paying unemployment and related benefits and lost tax revenue in the initial years of the project but reduced to zero over a period of years in order to ensure that the schemes are profitable without a subsidy when they become operational.

The House of Lords Select Committee on Unemployment recommended that a condition for grants in the public sector should be that the private sector contractors can be used in all suitable cases. The City of Glasgow has evolved a system whereby householders choose from an approved list of private contractors to carry out improvements which have been agreed by and ultimately are paid for by the local authorities. Householders are able to pay for more extensive improvements by contributing from their own funds. In larger projects job creation grants can be made available virtually for a fixed qualifying period of say three years. Alternatively a 100 per cent grant in approved schemes could be made available in the first year of the project and reduced by 20 per cent per annum over a five year period.

Finally both the studies carried out by Cambridge Econometrics and the Economist Intelligence Unit⁽³⁴⁾ into a comparative evaluation of extra current public spending and extra public investment found that the former generates a larger number of jobs but they are mainly in the non-productive public sector. Extra capital spending in the public sector by contrast feeds through substantially into the private manufacturing sector. The EIU found, for example that under the increased capital spending scenario of £2 billion per annum from 1981-84 that by 1985 total output is increased by 4.5 per cent above the base forecast and total employment by only 2.5 per cent, so that overall productivity rises by a full 2 per cent. With increased current expenditure, output increases by 2.2 per cent, as does employment so there is no gain in productivity. They estimate that almost one half of the jobs generated in the manufacturing sector would be in the construction industry.

Furthermore regard would have to be paid to the extent to which unemployed resources were available to meet the programmes. The main emphasis of the proposals in this report would fall on the construction industry which is currently well placed to meet an increase in orders. The last official figures published in May 1982 showed that around 389,000 of construction workers were unemployed. The industry estimate is that currently around 400-500,000, or 25 per cent are unemployed although it is suggested by the employers' federations that a signif-

(34) Capital Spending and the UK Economy: A computer study by the Economist Intelligence Unit, 1981.

icant proportion of the work force has gone to the black economy and is unlikely to return in the absence of a significant recovery. The industry view is that construction could initially cope with an injection of around £1 billion split equally between building and civil engineering. In fact the programme outlined in this report suggests that around £1 billion could be injected into the construction schemes examined in this study in the first year rising to £1.75 billion in the fifth year of a public investment programme.

Table 8 Summary of Investment Programme linked to Job Creation (1981 prices) £million

	Year 1		Year 2		Year 3		Year 4		Year 5	
	Gross Expenditure	Job Creation	Gross Expenditure	Job Creation	Gross Expenditure	Job Creation	Gross Expenditure	Job Creation	Gross Expenditure	Job Creation
Housing and Urban renewal	400	54	500	64	500	60	500	58	500	57
Energy Conservation	290	22	400	32	550	42	600	46	630	50
Environmental Services	200	26	300	37	400	47	400	45	400	44
Transport Services	200	24	300	33	300	42	300	40	300	40
Major Capital Projects	325	22	350	40	400	42	350	20	300	15
Community Services	520	80	650	100	715	110	780	120	845	130
Total	1,935	228	2,500	306	2,865	343	2,930	329	2,975	336

P o l i c y C o n c l u s i o n s

by: Michael Bolle

Report on
Investment Policy and Employment in the Federal Republic of
Germany, France, Italy and The United Kingdom:

Policy Conclusions

1. This report was produced by a group of experts from the Federal Republic of Germany, France, Italy and the United Kingdom.

The experts were asked by the Commission of the European Community to investigate investment policies for the corresponding economies aimed to stimulate growth and employment.

The starting point for the work was the recognition that investment has fallen too low in the four economies. Remarkable enough the decline of investment was not only due to the pattern of private investment . Given tight financial constraints to the public budgets, public investment was also reduced from desired levels in recent years and in line with initiatives of the Commission of the European Communities there is, however, a growing understanding that reductions in investment are harmful for the future growth and employment.

There is a growing demand for policies to stimulate private investment and to increase public investment with particular emphasis on the move of the public budget towards capital expenditures. There is no easy way how the task to promote investment has to be done. In terms of strict economic philosophies, both, the traditional keynesian approach as well as the newly established supply-side approach fall short of an appropriate policy design facing the economic problems of the eighties. Given the needs for consolidating the public budgets and the unavoidable adaptation of the existing capital stock to new modes of production and technologies, the simple return to orthodox demand management proves to be ineffective. On the other hand, the short-comings of a supply-side approach are

evident, too: The reduction of costs and the demolition of investment barriers may be effective from the point of view of the individual firm but will not bring about the necessary stimulus for profitable future investment. Higher profits on the existing capital stock do not increase the rate of profit for the future investment unless demand is growing. Thus, a policy mix, which stimulate both, the supply side and the demand side, should be the basis for an appropriate future recovery of the economies. This approach has to concentrate on

- the improvement of private investment via appropriate forms of state intervention as well as
- an increase of public investment by the way of restructuring public budgets.

Policies aimed to increase private and public investment in specific sectors of the economy have to make clear what economic and social needs they intend to match. We did not, however, present here a concise system of economic and social indicators appropriates to define in any detail what is need and what should be done. Instead and from a more pragmatic point of view, we do analyze growth poles which habe been suggested by different groups in the corresponding economies. With regard to the specifics of each economy , details can be found in the country reports. In this joint report, some light will be thrown on comparable and public expenditures.

- i) Technological changes in all four economies require an adequate adaption of the existing capital stock via new investment. There are common features with regard to the kind of adaption required: The economies have to specialize on new products and sophisticated technological processes which are to be defined by a high share of research and development. These high technology sectors are similar in each country, for

examples in France electronics, biotechnology, in the United Kingdom space, engineering and electronic development and communication technologies, electronics, chip and robot manufacturing. The introduction of technological transfer agencies, the stimulation of research and development via financial funds, joint ventures and the financing of risk capital are important instruments to achieve the goals. Encouragement of investment in the sectors of growth mentioned should be aimed especially towards small and medium-size firms.

- ii) There are specific needs for public investment especially aimed to improve the infrastructure. This is true in all four economies for transport. The case of the United Kingdom proves, that new truck roads and motorways als well as road building programs are badly needed given the quality of the existing capital stock in transport. With regard to the Federal Republic of Germany and France structural changes are perhaps more important. In France, the project of the Atlantic train à grand vitesse proves to be useful and should be developed further. In the FRG, public investment is needed for computer trains and railroads.
- iii) The problem of producing and saving energy plays an important role in all four economies. Public investment should be aimed towards the use of more efficient production of energy via new technologies as well as towards a more efficient way to conserve energy. With regard to France, programs for nuclear energy are probably more important than in the FRG. In the FRG, new technologies especially based on medium-distance-heating systems are widely discussed and seem to be efficient. With regard to the conservation of energy, there are similar issues in the United Kingdom, France and FRG: insulation of private and public buildings will bring about savings of energy, are labour intensive and will involve considerable employment effects.

iv) The deterioration of the quality of life in terms of the natural, economic and social environment put a heavy burden on all four economies and societies. The pollution of water and air, the increasing threat to the biological balance of the woods and the destruction of community life require adequate economic and ecological policies. Especially in France, the United Kingdom and the FRG programs for housing and urban renewal are unevitabele to cope with the aging of housing and the apperance of areas of poverty. With special regard to the United Kingdom, capital programs of the water supply and the sewerage systems in the UK, constructed over a hundred years ago, have to be improved with regard to renewing cities sewerages and industrial treatment networks as well as tackling the waste of water ressources trough leakage and inefficient use of system. In the FRG a further move to a more effective sewerage system has to concentrate on new technologies. Waste recycling and waste disposal play important role as well as air clearing. With regard to air clearing, the emission of sulphur dioxid has to be controlled via appropriate technologies, the disposal of chemical waste requires further efforts. The search for, transportation and treatment of chemical warfare agents are important fields for public investments in a considerable range.

v) In the case of the United Kingdom and the FRG, public investment is needed for socially desirable job creation. Socially desirable jobs such as homehelps, probation offices, neighbourhood centres etc. will bring down social costs and increase social benefits. Programs should, however, not carried out with a cumbersome bureaucracy which blunts their awareness of local needs. If more decentralized programs are implemented, a longterm low cost job creation with low costs for public funds is possible when account is taken of the savings because of decreasing unemployment benefits. With regard to France, there is an obvious political desire to develop the cultural sector and satisfy important needs in this field. The further development of already existing programs is most reasonable for the cultural development as well als job creation.

To summarize: in all four countries there is a need for the improvement of the implementation of high technologies in specific growth areas and advanced information technologies. With special regard to public investment programs, in the UK fields of action are to be identified for housing and urban renewal, energy conservation, environmental service, transport and socially desirable job creation. Very similar to the United Kingdom, public investment in FRG should concentrate on energy conservation and the production of energy, housing and urban renewal, environment protection, transport, chemical waste and waste recycling, social service and air clearing. In France, areas of public investment are identified for conventional investment in sectors like electronics, construction in public works, machine tools, transport, agrar food industries and wood. Energy and energy substitution, town environment, cultur and social activities are important areas of investment which are to be developed. In the case of Italy and besides of the importance of promoting technological innovation, public investment is needed to reduce social and economic bottlenecks as well as to improve the necessary degree of economic integration.

2. The report assessed the investment projects propose with regard too. There are employment impacts as well as there are internal rates of return.

a) With regard to employment effects of the proposed investment program , the outcomes of the evaluation are clear. The intensity of labour of specific investment programmes is well known in most cases and allows for a precise calculation of direct job creation effects. In most cases, investment program proposed above are labour intensive. This is especially true with regard to thwo types of investments:

i) Investment program aimed to improve the use of sophisticated technologies are labour intensive because of the skilled manpower involved. The share of labour used to develop blue prints and the share of research and development work to be done is above

average in high technologies such as biotechnology, space, robot and chip production, technology transfer agencies and advanced information technologies like computer and tele-communications manufacturing. In these areas, there is a double advantage of investment programs: investment is labour intensive as well as highly productive. Jobs created in these areas are to be regarded as highly stable with regard to future patterns in the economy.

- (ii) The direct job creating effect of investment programs is high in those areas, which are linked to environmental protection, energy conservation, housing and urban renewal as well as socially desirable job creation. The work to be done requires unskilled, semi-skilled and, to a lesser extent, skilled labour with a special bias towards construction work.

Exact quantitative figures are given in country reports. The overall effects of specific program differ from country to country, but, to summarize, positive employment effects are most likely in almost all cases. The overall employment impact of investment program then depend on the size and magnitude of investment program actually carried out. With regard to public investment and given the calculated stimuli for private investment and on the basis of some realistic assumptions on financial constraints of the public budget, one ends up with a considerably high increase of employment in all four economies. The decrease of unemployment may be lower because of reactions of the labour supply, but a remarkable relief for the labour market is most likely. According to the economic performance of the individual economies as well as the size and magnitude of investment projects to be carried out, figures vary, but range around additional jobs of about one million within the next five years.

We also asked ourselves, whether there will be barriers on the labour market given the calculated additional demand for specific qualifications. First of all one has to remember, that unemployment in all four countries is at a level which makes shortages of labour unlikely even if employment will increase at a considerable range. The exact effect

depends on the dispersion of skills linked to additional demand for labour. The proposed investment projects involve a variety of skills. The additional demand for labour is linked to skilled labour for investment projects which are aimed towards high technologies. On the other hand, there is a bias in favour of semi-skilled labour linked to investment projects in the area of environmental protection, energy conservation and housing and urban renewal. There even will be an additional demand for unskilled and limited skilled labour. For example: projects in energy conservation require, apart from some operations such as heat control and lighting in installation and insulation, either no particular skills or only limited skills available after a short period of training. This is also true for housing and urban renewal program and environmental protection with the further advantage, that these program can be concentrated on depressed industrial and urban centres which tend to have exceptionally high levels of unemployment.

In all of the four economies analyzed here, unemployment is unequally distributed. The share of unskilled or low skilled people being unemployed is above average. Thus, the additional demand for unskilled labour related to proposed investment projects will not be constrained by shortage on the labour market. As far as academic qualifications are concerned, no shortages are likely with regard to socially desirably job creation as well as cultural activities. As far as skilled labour in specific high technology industries is concerned, scarcities on the labour market are likely if additional demand linked to investment projects is exceptionally high. We do think, that flanking measures, to improve the dynamics of labour market, are badly needed. These flanking measures should be related to improve mobility and flexibility of labour and should concentrate on programs which are aimed to improve qualifications in engineering, data processing, policies aimed at improving information/organization and managing access to jobs as well as reforms in the job placement system. They should systematically introduce new technologies in internal and vocational training.

b) Besides of the employment impacts of selective investment programs, the second important issue of this report is related to costs and revenue. We tried to deal with several aspects of the problems simultaneously. Firstly internal rates of return of programs are calculated on a micro-economic basis, secondly the financial burden for the public budget is made clear, and thirdly regard is paid to opportunity costs.

Starting with some cases broad ideas on internal rates of return, investment program should achieve at least a minimum rate of return. Some calculations of investment program in the United Kingdom, suggesting a minimum rate of return of 5 per cent, may serve as an average figure. Using this as an indicator for rates of return to be achieved at a minimum by investment projects, one may distinguish between three types of investments:

- i) Investment projects aimed to the modernization of the existing capital stock with special emphasize on high technologies and new products will have an internal rate of return above average. This is true in the medium and long run. In the short run, investment in high technologies like space, advanced information technologies, biotechnology etc. will have a high impact on costs. At the same time risk is above average, too. Especially small and medium-sized firms find themselves in the position not being able to take the risk and to finance the projects. Thus, economic policy has to encourage these types of investment with special regard to small and medium-sized firms by the way of tax relieves, subsidies, financing risk capital and improving technology transfer by appropriate transfer agencies. In some cases, direct public investment proves to be useful, too.
- ii) With regard to areas like conservation of energy and energy saving, environmental protection, housing and urban renewal as well as inner-city traffic control, internal rates of return of expenditure are above average. Assuming a life span of investment varying between 20 and 30 years, savings achieved are high enough to ensure an econo-

mically adequate internal rate of return.

iii) Somewhat lower internal rates of return are likely in the areas of socially desirable job creation and cultural activities. The problem involved in an evaluation of expenditures in these areas are mostly due to the definition of what is meant by costs and revenues. In most cases (for example United Kingdom, FRG) , a social cost-benefit-analysis shows, that on the basis of an appropriate definition of social costs and social benefits rates of return are high with regard to socially desirable job creation as well as on cultural activities (France).

3) With regard to the financial burden for the public budget the splitting of costs and revenues of investment projects heavily depend on the type of investment and the form of financing it. Given the differences of the four countries, it is somewhat hard to make general statements. But there are at least two points worth to be mentioned. We do think, that a) large part of public investment projects examined in this report such as housing, urban renewal, energy conservation and even socially desirable job creation or cultural activities can and should be managed by private contractors. Given an administrative framework which assessed bids for grants and public subsidies for the kind of job creation program we have been discussing, there will be a long lasting stimulus for the private economy. We do think, too, that b) in many cases like the ones mentioned, investment program can be financed by using private as well as public funds. For example: Householders and firms are often enough well able to pay for more extensive improvements by contributing by their own funds. Different schemes are developed in more detail in the country reports as well as some quantitative calculations.

The most important dilemma posed for government in deciding on the size and quality of public investment is linked to the present system of cash and public expenditure planning. Public expenditure plans are built up

by separating current spending from capital spending as well as splitting current spending between payments to employed and to unemployed. It does seem to us, that this system is ineffective for the medium term recovery program because it does not take into account the links between the financially separated and isolated budgets. This is true with regard to spending for transfer payments to the unemployed as compared with expenditures aimed towards job creation program. It is also true for the balance between current spending and capital spending. Given the importance of holding down the public sector borrowing requirements in money terms, the present system of cash planning in all countries is adverse to a medium term orientated investment expenditures program. Because of the fact, that direct expenditures on wages and current consumption should be fairly predictable, most countries cut back capital spending in the past. Thus, it does seem to be important to remove the bias against capital expenditures prevailing in the current system of cash planning. This can be done by a) improving the accuracy and timeliness of the information to control public expenditure and, b) by increasing budget flexibility.

There is another point to be mentioned. The evaluation of investment projects heavily depend on the calculation of offsetting costs and extra revenues which would be generated from the employment effects. First of all, one has to take into account reductions in transfer payments to the unemployed and the increase of tax revenues and national insurance contributions from workers and companies involved in the programs. As it was mentioned above, the costs of unemployment put a heavy burden on the public budget. Given the employment effects linked to different investment projects, offsetting costs and extra revenues are remarkable high. Evidently, different investment programs involve also different cost-revenue-impacts because of their characteristic impulses on employment and growth. But there is no doubt, that, in general, there is a clear advantage of investment programs compared to transfer payments to the unemployed even with regard to the financial burden for the state.

4. The conclusion to be drawn from this report seem to be clear: in all of the four countries, there are a variety of investment projects with high employment effects and considerable rates of return. Most of these investment projects can be carried out by governments of each of the four countries. But it should be evident, too, that in quite some cases joint efforts are more effective. This is not only true for European ventures like the Channel link, Ariane, Airbus, an European railroadsystem or joint energy production and environmental protection, but also for advanced informaiton technologies and other areas of futures growth like biotechnology. Joint ventures should be approached by bilateral politics as well as on an European level.

Private and public investment is today as it was before an important prerequisite for growth and welfare. The report clearly states, that the investment programmes proposed here will have a considerable impact on both, growth and employment. Given tight financial constraints to the public budget it should be pointed out, too, that the investment programmes proposed here can be financed without putting a heavy burden on public budget and still match growing economic and social needs of the economies.

Programme of research and actions on the development of the labour market

Comparative follow-up and evaluation of current employment measures

by: Centre de Recherche 'Travail et société', Paris, France; Centro Studi di Politica Economica, Rome, Italy; Forschungsstelle Sozialökonomik der Arbeit, Berlin, Federal Republic of Germany; Policy Studies Institute, London, United Kingdom.

Document

Luxembourg: Office for Official Publications of the European Communities

1985 – 242 pp. – 21.0 x 29.7 cm

EN

ISBN 92-825-5542-9

Catalogue number: CB-44-85-040-EN-C

Price (excluding VAT) in Luxembourg:

ECU 17.69 BFR 800 IRL 12.70 UKL 10.10 USD 14

**Salg og abonnement · Verkauf und Abonnement · Πωλήσεις και συνδρομές · Sales and subscriptions
Vente et abonnements · Vendita e abbonamenti · Verkoop en abonnementen**

BELGIQUE / BELGIË

Moniteur belge / Belgisch Staatsblad
Rue de Louvain 40-42 / Leuvensestraat 40-42
1000 Bruxelles / 1000 Brussel
Tél. 512 00 26
CCP/Postrekening 000-2005502-27

Sous-dépôts / Agentschappen:

**Librairie européenne /
Europese Boekhandel**

Rue de la Loi 244 / Wetstraat 244
1040 Bruxelles / 1040 Brussel

CREDOC

Rue de la Montagne 34 / Bergstraat 34
Bte 11 / Bus 11
1000 Bruxelles / 1000 Brussel

DANMARK

Schultz Forlag

Møntergade 21
1116 København K
Tlf: (01) 12 11 95
Girokonto 200 11 95

BR DEUTSCHLAND

Verlag Bundesanzeiger

Breite Straße
Postfach 10 80 06
5000 Köln 1
Tel. (02 21) 20 29-0
Fernschreiber:
ANZEIGER BONN 8 882 595

GREECE

G. C. Eleftheroudakis SA

International Bookstore
4 Nikis Street
Athens (126)
Tel. 322 63 23
Telex 219410 ELEF

Sub-agent for Northern Greece:

Molho's Bookstore

The Business Bookshop
10 Tsimiski Street
Thessaloniki
Tel. 275 271
Telex 412885 LIMO

FRANCE

**Service de vente en France des publications
des Communautés européennes**

Journal officiel
26, rue Desaix
75732 Paris Cedex 15
Tél. (1) 578 61 39

IRELAND

Government Publications Sales Office

Sun Alliance House
Molesworth Street
Dublin 2
Tel. 71 03 09

or by post

Stationery Office

St Martin's House
Waterloo Road
Dublin 4
Tel. 68 90 66

ITALIA

Licosa Spa

Via Lamarmora, 45
Casella postale 552
50 121 Firenze
Tel. 57 97 51
Telex 570466 LICOSA I
CCP 343 509

Subagente:

Libreria scientifica Lucio de Biasio - AEIOU

Via Meravigli, 16
20 123 Milano
Tel. 80 76 79

GRAND-DUCHÉ DE LUXEMBOURG

**Office des publications officielles
des Communautés européennes**

5, rue du Commerce
L-2985 Luxembourg
Tél. 49 00 81 - 49 01 91
Télex PUBOF - Lu 1322
CCP 19190-81
CC bancaire BIL 8-109/6003/200

Messageries Paul Kraus

11, rue Christophe Plantin
L-2339 Luxembourg
Tél. 48 21 31
Télex 2515
CCP 49242-63

NEDERLAND

Staatsdrukkerij- en uitgeverijbedrijf

Christoffel Plantijnstraat
Postbus 20014
2500 EA 's-Gravenhage
Tel. (070) 78 99 11

UNITED KINGDOM

HM Stationery Office

HMSO Publications Centre
51 Nine Elms Lane
London SWB 5DR
Tel. 01-211 3935

Sub-agent:

Alan Armstrong & Associates Ltd

72 Park Road
London NW1 4SH
Tel. 01-723 3902
Telex 297635 AAALTD G

ESPAÑA

Mundi-Premsa Libros, S.A.

Castello 37
E-28001 Madrid
Tel. (91) 276 02 53 - 275 46 55
Telex 49370-MPLI-E

PORTUGAL

Livraria Bertrand, s.a.r.l.

Rua João de Deus
Venda Nova
Amadora
Tél. 97 45 71
Telex 12709-LITRAN-P

SCHWEIZ / SUISSE / SVIZZERA

Librairie Payot

6, rue Grenus
1211 Genève
Tél. 31 89 50
CCP 12-236

UNITED STATES OF AMERICA

**European Community Information
Service**

2100 M Street, NW
Suite 707
Washington, DC 20037
Tel. (202) 862 9500

CANADA

Renouf Publishing Co., Ltd

61 Sparks Street (Mall)
Ottawa
Ontario K1P 5A6
Tel. Toll Free 1 (800) 267 4164
Ottawa Region (613) 238 8985-6

JAPAN

Kinokuniya Company Ltd

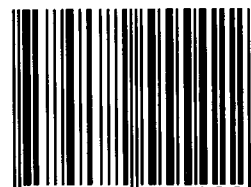
17-7 Shinjuku 3-Chome
Shinjuku-ku
Tokyo 160-91
Tel. (03) 354 0131

Price (excluding VAT) in Luxembourg:
ECU 17.69 BFR 800 IRL 12.70 UKL 10.10 USD 14

 OFFICE FOR OFFICIAL PUBLICATIONS
OF THE EUROPEAN COMMUNITIES

L - 2985 Luxembourg

ISBN 92-825-5542-9



9 789282 555422