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OLD AND NEW INTERVENTION POLICY: A SURVEY OF EMPIRICAL STUDIES FOR THE *MEZZOGIORNO*

Silvia Loddo

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Silvia Loddo
Università di Cagliari e CRENoS
sloddo@unica.it

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Abstract
The failure of regional development is a well documented fact in explaining the persistence of disparities in the Italian regions. In spite of the length of public (ordinary and extraordinary) intervention, the *Mezzogiorno* is still lagging behind. Moreover, the priority in the European regional planning for the period 2000-2006 is still to fill the gap in terms of infrastructures and human capital. In this context, the present work is aimed to provide a useful empirical background for the evaluation of old and new development policies.

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1. Introduction

The failure of regional development is a well documented fact in explaining the persistence of disparities in the Italian regions. In spite of the length of public (ordinary and extraordinary) intervention and the huge amount of resources involved, the *Mezzogiorno* is still lagging behind.

Apparently, the changes introduced by the European regional planning for the period 2000-2006 do not affect the general structure of the European regional policies: the priority is still to fill the gap in terms of (economic and social) infrastructures and human capital in Objective 1 regions[1]. On the contrary, the new development strategy implied by the CSF 2000-2006 presents important differences with respect to the past experience. After a period of regional policies centred on the compensation of the competitive disadvantages of the Southern regions (mainly by means of centrally administrated incentives to the private sector), European regional policy explicitly adheres to a market logic in order to increase the territorial competitiveness in all *depressed areas*.

The present work is aimed to provide an overview of the existing empirical studies carried out on Italian *Mezzogiorno.* Following the intervention lines defined in the CSF 2000-6, the paper will focus on the role of Incentives, Infrastructures and Human Capital[2]: in this respect, it aims to offer an useful empirical background for the evaluation of old and new development policies.

The paper is organised as follows. In section 2-3 we review some of the empirical studies carried out on the role of old and new

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1 See Naldini (1999) among others.

2 The present work contains a selection taken from a more comprehensive review drawn during the first phase of a project designed to carry out a quantitative mid-term evaluation of CSF 2000-2006 for the *Mezzogiorno* by using a macro-sectoral HERMIN model.

industrialisation policy in the *Mezzogiorno*. In particular, in section 2, firstly, we will compare rationale and effects of financial incentives schemes which characterise extraordinary intervention and the new planning policy for the Southern regions. Secondly, we briefly present some empirical evidence of some specific instruments of negotiation planning, that is: (i) Territorial Pacts, (ii) Planning Contracts, (iii) Area Contracts. Some empirical contributes on the role of Investment in Infrastructures are summarised in section 3. In section 4, we focus on empirical analyses exploring the differentials in Human Capital between North and South. Particular emphasis is given to those economic, social and cultural factors so often called to explain human capital accumulation and allocation in the Southern regions. Some concluding remarks are in Section 5.

2. Incentives and Industrialisation Policy in the *Mezzogiorno*

2.1 From "extraordinary" to "ordinary" Intervention: the industrialisation policy for the *Mezzogiorno* before 1992

The regulation in favour of industrialisation in the *Mezzogiorno* starts in 1957[3]. The distinguishing aspect of this policy is an intervention model built on a centralising approach (both in infrastructure investment and incentives to firms). Since the beginning, financial incentives for industrial investment[4] became one of the main instruments used to promote and develop a modern industrial sector in the Southern regions[5]; this policy's aim

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3 On the extraordinary intervention policy in the *Mezzogiorno* see Graziani (1978), Faini (1983), D'Antone (1996), Barca and Trento (1997), Saraceno (1983), Bodo and Viesti (1997), among others.

4 On rationale and aspects of financial incentives during the extraordinary intervention, see Moro (1989), Siracusano and Tresoldi (1990), among others.

5 During the extraordinary intervention, financial incentives took the form of: (i) *Capital contribution:* unsecured fund contribution calculated according to the amount of the expected productive investment; (ii) *Interest contribution:* representing a sort of discount for the firms calculated as a difference between the market interest rate and the facility on loan. In the presence of imperfect

was to determine such an amount of investment so as to encourage a strong capital accumulation. In a second phase, the progress of industrialisation should have fostered the endogenous growth of private investment. The relevant phases of this intervention policy in the *Mezzogiorno* can be summarised as follows.

In 1968 the financial incentives are strengthened by the introduction of partial exemption of welfare contributions (*defiscalizzazione degli oneri sociali*) in favour of firms located in Southern regions. This measure aims to mitigate the effects of the abolition of the so called "*gabbie salariali*" and to guarantee a labour cost advantage for plants located in the *Mezzogiorno*. In 1969, increasing fiscal and financial incentives stimulate a massive wave of private and public investment. This success triggers a chain reaction: the more Northern plants decide to locate in the Southern regions, the more the fiscal and financial incentives increase. The oil crisis deeply hits high energy intensive sectors which are mostly concentrated in the Southern regions: the subsequent fall of investment affects the whole of the *Mezzogiorno*. After the oil crisis Government priorities changed: the volume of financial incentives in favour of North-Centre is bigger than Southern one. In general, the percentage of financial incentives in favour of Southern industrialisation decreases steadily after 1974; the chain reaction works in the reverse direction now: the more plants decide to locate in the Northern regions, the less are the financial incentives to support location in the South[6]. In order to reduce the subsequent unemployment in the *Mezzogiorno*, the total exemption of welfare contributions for Southern firms passes in

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financial markets -as in the *Mezzogiorno* - this instrument aims not only to boost investment but also to facilitate access to grants. See Malfatti (1981) among others.

[6] On the performance of financial incentives during eighties see Servidio (1992) among others.

1976[7]. Since then, the total amount of public spending in incentives has been increasing over the period 1976-90.

An empirical evaluation of the intensity of policies carried out in favour of the *Mezzogiorno* over the period 1957-93 is provided by Del Monte and Giannola (1997) which use some indices calculated by relating the amount of investment in public works, public consumption and State-owned firms (henceforth PPSS) for the *Mezzogiorno* to the total for Italy. If the aggregate index show a constant trend over the period, with a maximum in 1969-73 and a minimum in 1989-91, from the more desaggregated analysis some important differences emerge: while the percentage of Public Consumption is steadily increasing over time, the percentage of investment in public works and PPSS, after a peak in 1969-73, decreases over the period 1973-93. This result is confirmed also by Malfatti (1994) who studies the impact of public spending in favour of industrial activities in the Southern regions over several sub-periods (from 1968 to 1992): the industrialisation policy in the *Mezzogiorno* slackens after 1976.

These facts confirm the existence of two phases in policy development (already identified in previous analysis, such as Giannola (1990) and Graziani (1987)): while public resources have been used to increase the production in the *Mezzogiorno* over the first period, they are devoted to support household income (also through the exemption of welfare contributions) over the last period. In support of this hypothesis, Wolleb and Wolleb (1990) show that (i) the importance of net transfers is increasing during

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[7] In order to compare the dynamic of incentives to investment between South and North after 1976, Del Monte and Giannola (1997) define some indices related with the intensity of this policy. Their results confirm the above conclusions: while the incentives to investment have been successful in the North Centre industrialisation, in the South the component of exemption of welfare contributions has been largely used as an instrument for unemployment reduction.

the 70s and 80s with respect to the 60s, (ii) the relation between social services (*prestazioni sociali*) and social contributions (*contributi*) is increasing in the South and (iii) the resources devoted to exemption of welfare contributions become - after 1976 - the dynamic component of the transfers to the firms.

2.1.1 Industrial incentives over period 1951-92: an empirical evaluation

In the following sections we try to summarise some of the relevant results reported by empirical works which focus on the effects of industrial incentives on: (i) Industrial investment in the *Mezzogiorno*, (ii) Employment levels and added value, (iii) Per capita GDP growth rate. Particular attention will be given to some technical aspects related with this empirical literature. In general, we can roughly distinguish two different approaches used to estimate the effects of regional policy:

1. The traditional approach, based on regression methods, permits one to single out a functional relationship between the dependent variable (that is, the objective of the regional policy) and a series of independent variables (proxies for the intensity of the regional policy)[8].
2. An alternative approach (inspired by Moore and Rhodes, 1973) is based on the estimate of the theoretical dynamics of the variable of interest (employment, investment, new firms location) by assuming no intervention policy. The difference between the theoretical value and the actual one measures the effects of the policy adopted. The main drawback of this approach is to find an adequate/correct estimate for the theoretical behaviour of the object variable[9].

[8] See Kim (1978), Faini (1982) among others.
[9] See Del Monte and Vittoria (1993) among others.

(i) Effects of Industrial Incentives on Industrial Investment in the Mezzogiorno

The real effectiveness of these industrial incentives in attracting such an amount of investment so as to encourage a strong capital accumulation in the Southern area has been object of several analysis and critics by the empirical literature even though the results are somehow mixed. Kim (1978) highlights the role played by incentives to industrial investment in reducing the profitability differentials between investment in South and North Centre. He also finds that the capital stock is statistically significant in determining the investment flows. On the contrary, in other similar studies – for instance, in Faini (1982) among others – the incentives do not seem to have a significant effect on investment in the *Mezzogiorno*.

(ii) Effects of Industrial Incentives on employment level and Added Value

A second stream of recent empirical literature has dealt with the impact of industrialisation policy on employment level. Following the approach proposed by Moore and Rhodes (1973), Del Monte A. – Giannola (1997) [10] calculate the annual rate of change (with reference to 1970) for employment in manufacturing (desaggregated into all the sectoral sub-components) at the national level. This rate is then employed to calculate the "theoretical values" of employment in the South, which give the level of employment that would have occurred in the South – assuming no regional policy – if the change in employment rate were the same as in Italy. The difference between the theoretical and the actual value of employment in manufacturing (henceforth DELTA) is then used to evaluate the effects of regional policy on employment over the period 1951-1987. As regards the results: (i) DELTA exhibits an unexpected positive trend during the 50s (period characterised by absence of regional policy); as a possible

[10] On the effects of industrial incentives see also Cardone and Vinci (1990).

explanation the authors argue that traditional industry (characterised by high labour intensity) is expanding in the Southern regions in these years; (ii) since 1958, during the integration process between the Southern market(s) and national market, the crisis of the traditional industry implies huge reductions in employment (the regional policy is still too weak to compensate for this structural transformation); (iii) in the period 1970–90, the effects of the industrialisation policy on employment become much more evident (even if delayed). But during the 80s a turnabout is observed: even if the industrialisation policy is still relevant, the employment decreases.

In order to evaluate the impact of the industrialisation policy on the Added value, Del Monte and Giannola (1997) repeat the same analysis with reference to the added value. According to their results, the difference between real and theoretical value (DELVAG) calculated for added value exhibits: (i) a negative trend during the period 1951-62 (consistent with the absence of policy); (ii) a positive trend during the period 1962-80 (with the exception for the period 1967-72), related to the growth in investment; (iii) a negative trend since 1980: this is partly due to the slowing down of high capital intensive investments; (iv) finally, after the 1980s, even if the intensity of industrialisation policy is still relevant, its effectiveness is decreasing: it does not seem to have a positive effect neither on manufacturing employment nor on added value.

This “loss of effectiveness” of the industrialisation policy is also evident with regard to the cost of creating an additional job. By using a mixed approach of shift-share and regression analysis, Del Monte and Vittoria (1993) calculate the additional employment created by the industrialisation policy, in the manufacturing sector in the *Mezzogiorno*, over the period 1964-84. According to an index calculated by dividing the total amount of incentives by the increase of additional jobs, they argue that, it turned out to be much more expensive to create new employment during the period 1974-84 than previously. This result has been confirmed in a study carried out by Cambridge Economic Consultants (1991): the Italian Southern regions have received the highest level of support (especially if compared with Northern Ireland and Portugal) and present the highest cost of creating additional jobs. As a possible explanation for this "loss of effectiveness" it has been argued that incentives in the form of exemption from welfare contribution tend to favour not additional projects, but projects that would have been realised in any case. The "loss of effectiveness" of the industrialisation policy is thus mainly due to "inefficiency" in the policy instruments.

Several studies have explored the possible causes of this "loss of effectiveness" of the industrialisation policy. Some relevant factors have been singled out: (i) Structural change in the industrialisation process in Italy, (ii) Incentives become more relevant in the north Centre, (iii) Increasing rigidities in the labour market (Bodo and Sesitito, 1990), (iv) features of the transfer policies. By using the regression method, Del Monte and Giannola (1997) test the relevance of all these factors in explaining the "loss of effectiveness" over the period 1960-90. The dependent variables are the same variables as defined above: the difference between actual and theoretical value with reference to employment and added value in manufacturing. These variables are regressed on: (i) an index of the incentives for investment in the *Mezzogiorno*, (ii) the ratio between incentives in North and South, (iii) a time trend to take into account several structural factors, (iv) the ratio between income by industrial subordinate employment (*reddito da lavoro dipendente nell'industria*) in the North and in the South as a proxy for the existing rigidities in the *Mezzogiorno* labour market, (v) the value of incentives given by the exemption from welfare contributions, (vi) a dummy variable for the period subsequent to 1975 to take into account the role of any structural change in the Italian industrialisation process. They obtain the following results: (i) no long run functional relation between the dependent variable calculated for employment (the difference between the actual and theoretical value) in manufacturing and the absolute value of regional policy has been detected; only short run effects exist; (ii) the structural trend has the negative and significant expected sign: in spite of the incentives policy, adverse structural factors seem to be relevant over the period considered.

(iii) Effects of Industrial Incentives on per capita GDP growth rate

An other important aspect concerns the role of the regional policy in enhancing regional growth. Among others, Paci and Pusceddu (1994) use a panel data approach to estimate whether the growth rate of per capita income observed during the period 1970–1991 for the Southern regions is explained by (i) the financial incentives, (ii) the public consumption, (iii) the capital accumulation process, (iv) a measure of the industrialisation process. The results confirm the positive role played by the public intervention on growth and the importance of the industrialisation process.

2.2 From centralisation to local development: the new intervention policy in favour of "depressed" areas

During the 1980s the national intervention policy in the *Mezzogiorno* was driven by specific situations of crises. In the absence of a planning phase, these "extraordinary" intervention policies largely implied enormous waste of resources. Since the 1990s, the policies for the Southern regions have been overhauled: not only were the "extraordinary intervention" policies repealed but also the idea of a "top-down" policy has been replaced with a policy based on the participation of local communities in the process of allocation of available resources at the local level[11].

Some important elements contribute to explain this change in strategy: (i) The traditional intervention policies in favour of the *Mezzogiorno*, based on financial incentive to investment, largely failed; (ii) The Treaty of Maastricht not only introduced and

[11] See Aquino (1999), Barca (2000), Del Monte (1998), Giannola (2000), Graziani (1997),Triglia (1999), Acconcia and Del Monte (2000a), among others.

transferred to European Union many tasks linked to the industrial policy sector but also provided important limits to the granting of financial incentives. The larger power conferred to European Union was aimed on the one hand to create some common rules in the unique market, on the other hand to realise some intervention on the optimum scale.

Within this new approach and in line with the EU regional policies, the intervention policy explicitly aims to favour not only the Southern regions but all *depressed areas* of the country. The new strategy for enhancing industrial and social development in the Southern area is articulated according to four intervention lines: (i) the reduction of barriers to capital, labour and firms mobility, (ii) the strengthening of communication systems across areas, (iii) to foster agglomeration for the production of positive externalities among firms, (iii) to make all available mobile, immobile, natural, human resources in the area accessible.

According to the intervention lines for the development defined above, the instruments describing the new development policy for the *Mezzogiorno* can be grouped into three main categories:

(i) incentives to investment
(ii) intervention for the local productive systems development regulated under the negotiation planning
(iii) public investments

In the following sections we try to summarise some relevant empirical contributions which enliven the actual debate on current policy. Due to insufficient data available, we are forced to narrow the analysis to some of the instruments provided by the new development policy (see Appendix 1 for a more detailed exposition)[12].

[12] On the methodologies adopted in evaluating Industrial policies, see Brancati (2001).

2.2.1 The new financial incentives scheme for *depressed areas*: Law 488/92

Law 488/92 - come in force in 1996 - represents the principal instrument to promote private accumulation within the new regulation for less developed areas.

The 488/92 decrees the abandon of the automatic system of facilities grant provided by Law 64/86: the old regulation has been replaced with a mechanism based on resources rationing and a selection procedure. As the debate on regional policies has strongly emphasised, a relevant problem in the implementation of development policies concerns the rents connected to the distribution of subsidies to investment. Law 488/1992 tries to solve this problem by adopting a mechanism of allocation based on 3 indicators: (i) the share of owners' founds on total investment, (ii) the new job creation by unit of investment, (iii) the cut on the maximum possible capital aid accepted by the firms. Scalera and Zazzaro (2000) argue that, if this auction mechanism is able to limit the phenomena of rent seeking, it does not seem all the same able to guarantee the impact maximisation of the development policy. This because: (i) the adoption of a multidimensional bid makes difficult to study the properties in terms of efficient selection of investments to be financed, (ii) some of the variable entering the multidimensional bid seem not to be consistent with the development of subsidised areas.

In order to investigate if this procedure, reducing the amount of incentive by units of investment, is nevertheless efficient in financing additional private capital formation and employment, Pellegrini and Carlucci (2003) try to estimate if employment creation in subsidised firms is additional compared to the non subsidised ones. Their results show a positive, statistically significant and robust impact of the incentive by 488/92 on employment: the subsidised firms present a employment dynamics from 3 to 15% points higher than in non subsidised ones[13].

As above mentioned, Law 488/92 promotes investment carried out by firms located in all *depressed areas*. Many authors have strongly emphasised how this enlarged territorial competence could generate a waste of resources, by underestimating the emergency for important location diseconomies in the Southern regions (Servidio, 1997).

2.2.2 Intervention policies for the local productive systems development: The negotiation planning[14]

The new intervention policy explicitly provides for incentives mechanisms aimed to favour the development of efficient local institutions[15] (see Tab. 1 for a summary of rationale and aspects related to the negotiation planning). The strategy pursued by the negotiation planning aims to duplicate in the South the high territorial specialisation experienced with success in many Northern areas. According to this strategy, the public intervention is subordinated to the commitment by various actors (firms, trade unions, territorial units) to develop - in a Southern area – network relationships similar to those of the industrial districts[16]. The innovative element of the Negotiation Planning consists in the explicit purpose of remove one of the main obstacles to the Southern development: the lack of co-operative mentality. One hand, this prevents small and medium enterprises to form a consortium to realise important scale economies, on the other

[13] On the effectiveness of incentives provided by Law 488/92 see also Cafiero (1998) among others.

[14] See Gallia (1997).

[15] In line with this strategy, the resources allocation for period 1998-2001 awards a growing weight to specific instruments of negotiation planning.

[16] See Bobbio (2000) for a detailed analysis of the actual negotiation process in public choices in Italy.

hand, the lack of co-operative spirit contributes to the inefficiency of public institution in the South.

In the following sections we briefly present some empirical evidence of specific instruments of negotiation planning, that is: (i) Territorial Pacts, (ii) Planning Contracts, (iii) Area Contract.

(i) Territorial Pacts (Patti Territoriali)

The Territorial Pact is an instrument for the local development - operating since 1998 – which integrates: (i) incentives to compensate territorial disadvantages in localisation of new plants, (ii) interventions (social and economic infrastructures) to structurally overcome these advantages.

On the whole, 220 National and 10 European Territorial Pacts have been approved since 1997. The percentage of population and territory interested by this instrument signals a positive bias in favour of the Southern regions (80% against 30% in the Centre-North) (Ministry of Economy and Finance, 2003).

During the past five years Territorial Pacts have been object of several analysis and critics. Unfortunately, the empirical contributes are limited by the poor availability of data. Among the few existing contributes, the analysis promoted by the Ministry for the Development and Cohesion Policies (2003) tries to outline an evaluation of the performance of Territorial Pacts according to their: (i) Financial efficiency and (ii) effectiveness. Their results can be summarised as follows. Available data on financial efficiency parameters – which measures the minimum requirements for this instrument being successful - show that the percentage of industrial initiatives which received grants reveals a strong variability among Pacts: on the one hand we observe a relevant progress for some Pacts, on the other hand we register important delays even in regards to “mature” Pacts. The number of initiatives not covered by grants or with grants below the 30% of the total is still relevant. Besides, the speed in spending public funds remarkably varies: below 20% for national “mature” Pacts, above 30% for European Pacts. Unfortunately, no data on the effects of Territorial Pacts on employment and information about the number of settled initiatives are currently available.

As regards their preliminary results on the effectiveness, for most of the existing Pacts is too early to attempt an evaluation of their performance. The analysis is thus limited to Pacts which have been operative for 3 years at least, characterised by substantial financial efficiency. This sample includes 19 Pacts: 5 activated in the Centre North and 14 in the *Mezzogiorno*. The objective is to evaluate (i) if and in what measure these Pacts have been effective, (ii) which territorial institutional and sectoral features recur in the effective Pacts. The main results of the analysis are somewhat mixed. On average, interventions in Infrastructures take up 18% of total public resources. Up to 42% of interventions concerns the enhancing of value of territorial resources. 22% the mobility. Up to 64% of Infrastructural interventions results integrated with private investment. As regards the potential to improve the local context, they register a notable variability in the performance exhibited by these 19 Pacts. Technical assistance, which is an important component of the activity provided by Pacts, results positively correlated with a powerful political leadership. Finally, the institutional solutions promoted by Pacts vary notable: no correlation seems to emerge between the institutional solution experimented within a Pact and the performance exhibited.

Other relevant empirical studies have been carried out on narrower samples[17]. By analysing the sectoral composition and specialisation of one third of approved territorial pacts for the *Mezzogiorno*, Lodde (2002) reports some important (although preliminary) results: due to an inadequate planning (“*concertazione*”) between local authority and Local Productive System (henceforth

[17] See Riccone (2002) for a comparison carried out on three Territorial Pacts.

LPS), the initiatives linked with territorial pacts reflect more the territorial structure of local authority and its political relationship than the network externalities, interdependence and the labour mobility expressed by LPS[18]. Moreover, the participation by manufacturing districts allocated in the *Mezzogiorno* appears to be “fortuitous”: manufacturing districts are included in the pacts just because pacts cover most of the Southern areas. Finally, Local Productive Systems seem unable to influence the composition of investment financed within the pact.

(ii) Planning Contract (Contratti di Programma)

With this instrument, State and firms draw up a contract to realise industrial investments together with research activities (R&D and training) and to create additional employment with positive and significant effects on both the local and the national economic system[19]. This instrument is exclusive to *depressed areas*.

Among the few empirical studies carried out on this instrument, Florio and Giunta (2002) provide an evaluation of 27 *in progress* Planning Contracts stipulated between 1986 and 2000. Their empirical evidence suggests a progressive removal of this instrument from its original principles. Their results can be summarised as follows:

(a) The object of the contract appears merely finalised to a capital contribution while the obligation in terms of employment, training and R&D, looks like a diluted outline agreement;

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18 For a qualitative evaluation of the role of territorial institutions, see De Vivo (2000).

19 For an *ex ante* evaluation of Planning Contract see Florio and Giunta (1998), among others.

(b) The planning agency has been largely substituted by the Industrial party in formulating the projects. No ex post evaluation is provided;

(c) As regards the results, on the whole, the strategy behind this instrument – which originally aimed to strengthen high tech investment and scale economies in the *Mezzogiorno* – appears greatly scaled down.

(iii) Area Contract (Contratti d'area)

The Area Contract (Law 662/96) is an instrument designed for the implementation of new business initiatives and the development of new jobs in industry, services and tourism, in circumscribed areas, facing employment crisis. Moreover, it aims to promote agreements between public and private, local and external actors to create suitable conditions for the location of SMEs (Small and Medium Enterprises).

An evaluation of the effectiveness of this instrument in attracting foreign investment and enhancing specific competitive potentialities of Southern area is given in Bianchi and Mariotti (2002). Their analysis is carried out on information gathered by (i) questionnaires compiled by firms which have transferred their productive activity from the Centre-North to the Southern area (Crotone, Manfredonia, Ottana) and by (ii) interviews to actors involved in this relocation process. The results are then compared with information gathered by a survey on firms which have located their productive investment in South Eastern European Countries (henceforth SEEC). This comparison allows to test if the two systems compete in the attraction of relocating Italian SMEs. Most recent studies show that the SEEC attract a larger number of business investments from Northern Italian regions than the *Mezzogiorno*. The results reported by Bianchi and Mariotti (2002) show that, in spite of this quantitative evidence these two systems are not in competition. SMEs belonging to north-eastern industrial districts and operating in clothing, textile and engineering industry, tend to relocate low-value added, labour-intensive activities in those countries (the SEEC) where they can find lower labour and production costs. Centre-northern small firms, operating in various manufacturing sectors and not belonging to industrial districts, prefer to relocate medium-high added value activities to the Southern areas (where Area Contract is operative). While the first group mainly adopts industrial and commercial subcontracting relationships, the second tends to make capital-intensive investments by using the Government subsidies. They open new branches or new firms in which the whole production process or a new production line is transferred.

2.2.3 Negotiation Planning: some preliminary conclusions

Though it is too early to attempt a comprehensive empirical evaluation of these new policies effects, the preliminary empirical results are somewhat mixed.

As regards Territorial Pacts, this instrument does not provide unambiguous results of success or failure. Some pacts are effective while other are not able to take off: it is important to note that an high percentage of failure of this instrument would result particular worrying given the high percentage of Pacts approved in the *Mezzogiorno* (70%).

The empirical evidence in favour of Area Contract has shown that the *Mezzogiorno* system needs to become much more qualified in order to attract a larger amount of high added value investment, national as well as foreign, and regional policy can play a crucial role in this scenario (Bianchi, Mariotti, 2002). The analysis of *in progress* planning contracts carried out by Florio and Giunta (2002) highlights that this instrument fails to spur high technology investments in the *Mezzogiorno*, and it limits to stimulate such production as agriculture, light industry and tourism.

Finally, due to the scarce differentiation among Negotiation Planning instruments and incentive regulation, the risk of "resources cannibalisation" among alternative instruments looks almost inevitable (Cersosimo and Wolleb, 2001).

On the whole, the empirical evidence, even if insufficient, does not seem to provide any confirmation that the new negotiation planning instruments are suitable to enhance the co-operative spirit, as declared in the CSF strategy. Due to the high number of involved actors, the complexity of the pursued strategy clashes with the inefficiency of the local government in the South (see Servidio, 1997, among others). It is thus crucial to afford and explore this apparent failure in order to transform the development policy in an instrument able to "launch believable prophecies" (Ciampi, 1998).

3. The role of Infrastructures in the *Mezzogiorno*

Investment in Infrastructure has always been a mainstay of development and regional policies. An adequate endowment of infrastructures enhances the productivity of capital and labour, which, in turn, tend to locate where an high quality level of infrastructure is situated. In order to set this virtuous circle going, the extraordinary intervention policy in the *Mezzogiorno* has started as public investment policy to fill the gap between North and South of the country in terms of infrastructures. The results of this policy have largely failed to meet the expectations. In spite of the vast amount of resources involved, the insufficient infrastructure endowment in the *Mezzogiorno* is still an important item on the agenda. In what follows, we try to review some relevant empirical contributes which may provide useful elements on (i) the extent of the gap between North and South in terms of infrastructures, and (ii) the effects of this policy on productivity in the Southern area. We then present some empirical works which explicitly test the relevance of some factors so often called to explain the failure of the Infrastructures policy in the *Mezzogiorno*. At the end of this section, we will briefly comment some innovative aspects of the policy for Infrastructure implied in the New Planning for the *depressed areas*.

3.1 The role of Infrastructures: brief survey of recent empirical studies

The theory of "regional development potential" maintains that, the growth of a region depends on the available stock of public infrastructure in the region. The source of economic dualism between the Centre-North and the South can be thus partly explained by differences in the stock of infrastructures, or more generally, by differences in the "environment conditions". The existing empirical literature on infrastructure can be grouped into several methodological strands[20]:

1. studies on the efficient level of infrastructure endowment
2. studies relating public capital accumulation to the growth rate of TFP (total factor productivity), computed as a residual from growth accounting
3. studies in which public capital has been included as an input in the production function, and its marginal returns have been estimated
4. studies where the contribution of infrastructure investment to reducing production costs has been assessed
5. studies on the role of differences in the infrastructures endowment in explaining (the absence of) regional convergence

As we will see, the empirical results differ not only across methodologies, but also within the same approach. In the following sections we will briefly present some interesting results[21] with particular emphasis on technical aspects.

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[20] See La Ferrara (1999) and La Ferrara and Marcellino (2000) for a similar classification carried out on international empirical literature.
[21] See tab. 1 for a summary of main technical aspects and results.

3.1.1 The efficient level of Infrastructure endowment

Several studies have try to quantify the level of Infrastructure in the Southern regions. Brancalente and Di Palma (1982), using a matrix of infrastructures endowment, economic and development indexes, show that infrastructure endowment and level of development are still strongly correlated in the *Mezzogiorno*[22]. By comparing the endowment in terms of infrastructure among Italian regions during the period 1970-1991 , Lopes (1996) points out that, in spite of the huge amount of resources devoted to it, the Southern regions still present indexes of infrastructure lower than the national average; in more detail, his results show that, the Southern endowment appears particularly weak in terms of "economic relevant" infrastructure (such as energy and water) while the differences are less marked with respects to "social" infrastructure (such as schools and hospitals). Additionally, for each region, Lopes (1996) compares the variation in the infrastructure endowment with the variation in the public capital stock over the period 1970-91. The results show that while most of the Northern regions exhibit positive differentials between the increase in endowment and the increase in spending, all the Southern regions show negative differentials.

In order to verify if the infrastructure supply has been driven by market forces or has been overestimated (or underestimated) with respects to the real demand by Italian regions, Barbieri and Causi (1996) carry out a multivariate analysis for the period 1987-92 using a factorial and a cluster analysis. As a proxy for the demand of infrastructures, they use an index based on (i) per capita income level, (ii) industrialisation level, (iii) level of specialisation in service industries, (iv) density in the productivity use of territory, (v) credit supply, (vi) standard of living, among others. As a proxy for the supply of infrastructure they use the expenditure in public works

22 See also Brancalente, Di Palma, Mazziotta (1993), Di Palma, Mazziotta (1998), Di Palma, Mazziotta, Rosa (1999).

surveyed by ISTAT. The results show that the expenditure in public works has not been able to balance the regional differentials in infrastructure endowment. On the contrary, important factors of "inertia" seem to have played a role in the territorial distribution of the public expenditure[23]: the huge amount of investment in Infrastructure recorded since the 80s appears to be independent from the corresponding demand.

Finally, a recent survey by ISTAT (2000) provides a measure of the gap between the South and the Centre North in terms of infrastructure endowment: from 1987 to 1997 the Southern infrastructure endowment reached only fifty per cent of the level of the rest of Italy; Moreover, the regional differences in terms of infrastructure are even higher than the economic differences between North and South.

3.1.2 The Total Factor Productivity (TFP) approach

This approach deals with the question whether Total Factor Productivity (TFP) can be at least in part explained by changes in the pattern of infrastructure investment. Among others, Picci (1997, 1999) explores the effect of public capital – aggregated at a national level – on total factor productivity for the years 1890-1992. All the public works related with new infrastructure, renovation, etc. enter in the analysis. The results show that, a positive and significant relation exists between labour productivity and public capital stock (with the only exception of period 1919–1938).

La Ferrara and Marcellino (2000) apply the TFP approach to Italian regional data for the period 1970-94. In their results the overall elasticity of output with respect to public capital is positive, rather high (0.47) and significant at 5%, while the coefficient on

[23] See Brosio and Piperno (1989) for an empirical analysis of the role played by the development policy in determining the territorial distribution of public spending.

private capital growth is negative, suggesting that the returns to private capital may be decreasing. By estimating the regression separately for the periods 1970-79, 1980-89, and 1990-94 they observe that, the maximum impact obtains in the eighties, with a elasticity of TFP to Public Capital of 0.82, the lowest one in the seventies, with an elasticity of 0.24, while the estimated value for the first half of the nineties is 0.53. Finally, by desaggregating over macro regions, the coefficient of public capital growth is positive (but not significant at conventional levels) for the North West and the Centre, positive and significant for the South, negative and not significant for the North East. The estimated elasticity is particularly high for the South (0.62).

3.1.3 The Production Function approach

According to this approach, services from public capital are considered as a direct factor input, usually proxy by the available stock of infrastructure: the main question is whether the elasticity of output with respect to this input is positive and significant. Within this approach, Picci (1999), using regional data for Italy, reports an elasticity of production to public capital of 0.43 and 0.35 with fixed and random effects, respectively.

To evaluate the effects on private sector's productivity of infrastructures provided by public sector, Lopes (1996) estimates the production function for the period 1970-1991. His results show that, infrastructure has a positive effect on industrial factors productivity while the effects related to current spending are not significant. With regard to this, the author argues that: " even if the current spending increases the demand, it does not help to develop productivity activities, on the contrary, it damages the rising industry because it encourages imports from developed areas ".

La Ferrara and Marcellino (2000) obtain estimated coefficient for a Cobb Douglas specification for Italian regions over period 1970-94, using fixed effects and time dummies. According their results, the elasticity of output with respect to public capital is negative for Italy, while that to private capital is positive and significant. Repeating the analysis over different sub-periods, the negative impact of public capital on output only holds for the Seventies, while in the Eighties and Nineties such impact is significantly positive and increasing (the estimated coefficient for these periods is, respectively, 0.17 and 0.56). Further useful information can be gained from regional desaggregation. It turns out that public capital is mostly productive in the South, followed by the Centre, and not productive in the North.

Paci and Saddi (2002)[24], using a annual panel with fixed effects over the period 1970-1995, estimate a production function in which the regional infrastructure stock enters as a measure of public capital. Their results can be summarised as follows: (i) the estimated elasticity of output with respect to aggregated public capital is positive and statistically significant for the whole country (0.16 for Italy) and also for the macro regions (0.14 for Northern regions and 0.20 for Southern regions), with the exception of the Centre[25] (-0.06, not significant); (ii) the desaggregation of public capital into functional categories emphasises the important role played by infrastructure directly related to the economic production such as transport networks, telecommunications, airports: the estimated elasticity of output with respect to these categories is about 0.13 for Italy (0.16 for Northern and Southern regions and –0.22 for the Centre) followed by social infrastructure (0.09 for Italy, 0.17 for the North, 0.08 for the South and –0.15 for the Centre). On the contrary, the results report a negative and statistically significant elasticity of output with respect to the housing infrastructure (-0.05 for Italy, -0.13 for Northern and Southern Regions, 0.19 for the Centre).

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24 Data set used in this study is presented in Paci and Pusceddu (2000).

25 The anomalous values for the Centre are partly due to not regionalised spending attributed to Rome.

3.1.4 The Cost Function approach

In general this kind of approach deals with the following dual problem: are there substantial cost savings in the presence of public infrastructure?

La Ferrara and Marcellino (2000) estimate the total cost function with respect to the public capital stock for Italian regions over period 1970-94: a significant cost reduction seems to be related with public investment in the Southern regions. When they take into account the opportunity cost of public capital, the investment in infrastructure does not seem to have been efficient: the cost saving has not been such as to balance the social cost of the investment in infrastructure. Rossi and Toniolo (1993), using a century long dataset (1880-1980) [26], find that public and private capital are substitutes in the short run but become complements in the long run for most of the sample period.

3.1.5 The role of infrastructure in explaining regional convergence

An other stream of recent literature explicitly focuses on the role of differences in the regional endowment of infrastructures as a possible explanation for the absence of absolute convergence across Italian regions (Acconcia and Del Monte, 2000b, Paci and Pigliaru, 1995, Viviani and Vulpes, 1995, among others). All these empirical works use the "augmented" growth model, where infrastructure enters as a production factor. This empirical literature shows very similar and consistent results, regardless the different proxies used to measure infrastructures. Not only does the general endowment of infrastructure positively affects economic growth but so also do some specific infrastructure, such as transport and infrastructure for sanitation, energy and reclamation (Viviani and Vulpes, 1995). Moreover, Sicca (1999)

[26] See Rossi, Sorgato, Toniolo (1993) for an exhaustive presentation of the data set used in this study.

suggests that, in order to attract investment, regions need to ensure that, in addition to the "core" infrastructure, knowledge-based infrastructure (such as Universities, research activities and, more generally, all the agglomeration factors that might support the attractiveness of a certain location) be made available to the business community.

3.2 Indirect effects of the policy for the Infrastructures

On the whole, the empirical studies find evidence in favour of the fact that, not only the policy for Infrastructures has been largely inefficient in filling the gap between North and South, but it has also required an higher realisation cost per unit in the Southern regions than in the Northern area. Besides, Southern regions offer several examples of infrastructures projects never completed or even not in public interest projects involving huge amount of resources (see Brosio and Piperno (1988), Del Monte (1996) among others). As a possible explanation of such as inefficiency, the literature has often emphasised the role played by corruption in influencing the policy for the Infrastructure in the *Mezzogiorno*. In particular, corruption could distort the composition of government expenditure as corrupt politicians may be expected to invest in large, non productive projects from which it is easier than in productive activities to exact large bribes. A very recent stream of empirical literature has explicitly tried to estimate the effect of corruption on the productivity of expenditure on public investment. Among the others, Del Monte and Papagni (1998), by using a dynamic panel data approach, maintain that corruption has strong effects on economic growth because it lowers the amount and quality of public infrastructure and services supplied to the private sector[27].

[27] See also Acconcia and Del Monte (2000b).

3.3 Policy for Infrastructure in the New Planning for depressed areas

A recent study performed by IGI shows that, on 321 public works authorised in 1994, only 17 have been successfully completed before the end of 1998. Among the more recurring causes of delay in carrying out designed works, the survey singles out: (i) inefficient planning implying variants and consequent postponements (32%), dispossess due to competence overlapping and contentious (27%), financial problems (11%), others (30%).

The new intervention policy proposes two mechanisms to overcome the inefficiency which characterises the planning phase in the Southern regions: (i) the centralised selection of proposals made by regions, according to a national list, (ii) the decentralised carrying out of works: if a region is not able to carry out the planning works, resources will then be assigned to the following project. This strategy aims to foster competition and speed up the decisional process, but the risk is that, if all public administrations are inefficient in the South, this would imply a relevant lost of crucial resources for the *Mezzogiorno*.

4. Human capital and Southern development

The empirical evidence has highlighted some important aspects of human capital in the *Mezzogiorno*: the population - and more crucially the labour supply - exhibits very low education rates if compared with other developed countries (Rossi, 1997). Besides, the low percentage of graduates shows a strong preference for humanistic studies: the choice for an education which does not favour productivity growth has been greatly driven by the opportunity of a public employment in the South (Paganetto and Scandizzo, 1996).

The presentation of empirical studies is articulated as follows. In the first part we gather the results obtained in studies carried out on the role of human capital accumulation and location in influencing regional productivity growth (and convergence). The analyses presented in the second part, in order to explain why human capital seems to be unable to foster growth in the South, try to identify specific social and economic components related with the human capital accumulation.

4.1 The role of human capital in explaining Italian regional growth

According to the endogenous growth theory (Lucas 1988, Romer, 1990), human capital accumulation should lead to an augmenting rate of growth of production and, consequently, of the whole economy. Therefore, geographical areas endowed with a greater stock or better-qualified human capital should grow faster than others.

Several empirical works analyse the effect of human capital – proxy by education - on Italian regional growth (and convergence). Following the general approach, the investment in human capital enters as an input in the GDP growth rate. The results of this empirical literature are quite puzzling, mainly due to the specification of the estimated models as well as to the different proxies used for human capital (main aspects and results are reported in table 2).

If in general human capital (proxy by education level) does not appear to have a clear-cut role in explaining the Italian regional disparities, however some interesting results emerge.

By decomposing total schooling into its constituent parts (primary, secondary and tertiary education), Di Liberto (2001) finds that only primary education in the South seems to contribute to growth. This result suggests that the Italian growth benefited from the elimination of illiteracy in the South, mainly in the 60's, but not from the substantial increases in education at the other levels.

In general, controlling for the allocation effect reinforces the effects of education on output growth: tertiary education which does seem to promote growth in the aggregate becomes a significant growth enhancing factor if its allocation among sectors is taken into account (Lodde, 2000). Moreover, all the measurements of human capital allocated to the public sector are negatively related to economic growth (Di Liberto, 2001). In the absence of a strong industrial sector, public administration has absorbed an abnormally large share of highly educated labour force in the South.

The choice of education studies strongly influences the GDP per capita growth. The analysis carried out by Maiolo (2001) finds evidence in favour of a well known aspect: the *Mezzogiorno* is characterised by a predominant investment in “not productive” human capital (that is, education in humanistic studies) and by a scarce investment in “productive” human capital (that is, technical and scientific studies). This “unproductive” investment – and the consequent waste of resources – has negatively influenced the Southern regional growth. This results confirm the hypothesis described by Paganetto e Scandizzo (1996): investment in humanistic studies do not contribute to develop new productive resources but implies just a redistribution of existing resources (*rent seeking*).

Moreover, Carmeci and Mauro (2002) find that when the unemployment rate is included as a further explanatory variable the traditional human capital proxy, the high school enrolment rate, turns out to positively and significantly affect regional growth in Italy. Mauro (2002) obtain similar results using several different empirical approaches and time frequencies. In order to account for these results, Mauro (2002) proposes a growth model with an imperfect labour market in which the accumulation of human capital is the output of a learning-by-doing process where scholastic knowledge must be combined with working experience. Labour market imperfections and the resulting unemployment rate lower the efficiency of the transformation of scholastic knowledge into productive human capital with negative implications on long run growth.

Finally, most of the empirical studies on convergence across Italian regions neglect the role of human capital content of migration flows. In a neoclassical growth model with human capital, if the migrants bring some human capital, the effects on convergence could be different. In particular, migration flows could increase divergence if migrants are endowed with a level of human capital higher than the average level in the source regions and lower than the average level in the destination economy (*brain drain*). As regards Italian regions, Goria and Ichino (1994) show that, migration appears to favour regional convergence between 1962 and 1975: in fact, in this period population movements seem to be mainly characterised by flows of unskilled labour from southern regions towards north-central regions. After 1975 the intensity of migration flows decreases and the nature of these flows changes: population movements are constituted by less intense flows of more skilled labour out of the north and towards the south. Descriptive evidence based on individual micro data suggests that, these more recent flows are largely constituted by white collar workers looking for public administration jobs in the southern bureaucracy. Consequently, these movements, far from being factors enhancing productivity, may have contributed to generate the per capita income divergence across regions observed in Italy after 1975[28].

4.2 Human capital in the Mezzogiorno: Social and economic factors

The main empirical (and theoretical) contributes can be distinguished according to two different approaches. While the tradition approach has dealt with factors influencing the individual

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[28] See also Piras (1995).

choice to accumulate human capital, the more recent approach explicitly considers the role played by the market.

4.2.1 Factors influencing the human capital supply

The traditional approach focuses on the social and economic variables which influence the individual choice to accumulate human capital. The empirical evidence reported in Checchi (1997) [29]shows that the education system appears largely inefficient, mostly in secondary and tertiary education. Consequently, the familiar background plays a crucial role in determining success or failure of individual education (Ichino, Rustichini, Checchi, 1997): the human capital in the *Mezzogiorno* is strongly distributed according the income distribution and the social position. Moreover, this correlation has been confirmed over the past 40 years (Goffredo, 1995). Among others, Papagni (2001) argues that, in presence of an imperfect credit market, the income distribution determines the amount of resources devoted to education. The credit system in the Southern regions is thus responsible for the scarce support given to households during the human capital accumulation phase.

In general, barriers to entry in some professional activities influence the employment allocation of human resources and reduce the effectiveness of education as instrument of social improvement (Fabbri and Rossi, 1997). Finally, the analysis carried out by Checchi (2001) shows how the convergence in terms of education levels has not been able to significantly engrave on Individual earnings. This is perhaps due to the low social mobility which characterises the Southern society.

[29] See also Gattei (1995).

4.2.2 Factors which determine the human capital demand: complementarities between market and education

The precedent approach seems to exclude that an insufficient accumulation of human capital could depend by a productive structure unable to exploit the available human resources. Consequently, the proposed intervention policy should limit to remove barriers to education by guaranteeing a more efficient education system. This approach can be partly misleading with regards to the *Mezzogiorno*. As we have previously mentioned, not only the Southern economy is characterised by an inelastic demand for some kind of human capital but, it also complains the lack of skilled labour. Besides, labour demand in the *Mezzogiorno* may require low skilled people, due to the low quality of the industrial structure.

According to a second approach, a policy should thus work to increase the complementarities between educational choice and productive activities (Carillo, 2001). More crucially for the *Mezzogiorno* development, Graziani (2001) concludes that, education and human capital accumulation can yield the expected effect only if the are matched with productive investment in high tech sectors. Otherwise, it will be difficult for the Southern regions to keep the skilled labour force and stimulate further investment in human capital. The empirical evidence reported by Jahnke (2001) confirms that the massive *brain drain* from South to North has not been compensated neither in minimum part, by a reverse *brain exchange*. The analysis carried out on the inter universities mobility over the period 1989-1998 (Goffredo, 1995, Jahnke, 2001) confirms the strong attractiveness of Centre-North universities for southern students.

4.3 Human Capital as development factor in the Mezzogiorno: Conclusions

The accumulation of human capital is a complex process involving economic, cultural, social and institutional factors. The common view largely identifies the origin of the Southern underdevelopment in the inefficiency of local and national institutions as well as social practices, which keep the Southern society and economy in a general underemployment equilibrium of material, natural and human resources, by making of rent-seeking the most profitable activities. All these factors still restrain in the *Mezzogiorno* the accumulation of human capital by pushing it towards inefficient allocations. As inevitable consequence, unproductive sectors have been excessively grown.

The empirical evidence does not offer unambiguous confirmation that human capital is correlated to economic growth in the Southern regions. In general, this correlation might not be found because education attainment, which is used in most of the empirical works reviewed earlier, may not be the right explanatory variable. Education attainment does not take into account skills and competence, which are the results of learning processes and which are more likely to have a positive influence on economic growth. With this respect, the empirical results show that unemployment and allocation effects could have a crucial role in the accumulation of human capital and, in turn, that labour market functioning is crucial to define the effectiveness of future policies aimed to foster the long run growth of the Italian Southern regions.

5. Conclusions

The present collection of empirical contributes, far from being exhaustive, has tried to provide an useful background for the evaluation of old and new development policies. As regards the extraordinary intervention policy, the empirical evidence reported in section 2 confirms the existence of two different phases: while financial incentives and investment in Infrastructure have been successful in increasing productivity in the *Mezzogiorno* over the period 1957-76, after the oil shock, the industrialisation policy has dramatically slackened in favour of a larger use of public spending mainly devoted to support employment levels and household income. This change in strategy together with the corresponding waste of resources, has contributed not only to a general loss of effectiveness of development policy, but also to feed unproductive sectors and inefficient institutions. Since 1992, the policy for the Southern regions has been overhauled. After a period of centrally administrated regional policies, the new development programme for the Mezzogiorno, defined within the European regional policy framework, has been steered at increasing the territorial competitiveness and the attraction of the international capitals, progressively mobile in the Southern area, by privileging the interventions in the field of infrastructures, of human capital and of the research and development, pressing for integrated interventions of local development, introducing the priorities of environment and of equal opportunities. Though it is too early to attempt a comprehensive empirical evaluation of the effectiveness of this strategy and its instruments, the few existing empirical contributes highlight that, the success of this strategy must involve a general process of reform and modernisation of the public administration capable to increase productivity and private investment.

In order to provide a more detailed picture of the impact of development policies, future researches will enlarge empirical analysis to other relevant aspects of the Southern economy such as consumption and labour market.

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Appendix 1. The Negotiation planning: a descriptive summary of main normative reference

Normative references	Rationale and contents
"Ordinary intervention regulation for depressed areas" (Law 488/92)	This regulation promotes investment carried out by firms located in all depressed areas. The eligible investment are those related to (i) new productive facilities, (ii) extension, and restructuring works of a plant, (ii) plant transfer to a new location. A new mechanism of applications' selection is introduced. The aim of these instruments is to favour those entrepreneurs who invest an amount of their own private resources higher than the value of investment.
"Urgent measures of public finance rationalisation" (Law 662/96 art. 2, commas 203-209) **"Regulation of negotiation planning" (CIPE Deliberation 21/3/97)**	The main element is the agreement among several public and private social parts (the so called "*concertazione*"). The objective is to stimulate the development of network and agglomeration externalities in the Southern regions, in order to favour (i) firms agglomerations, (ii) relations based on trust, (iii) knowledge exchange and public administration efficiency. The final objective is to increase the productivity, employment and welfare levels in the Southern regions. Though this planning method is extended to all the national territory, the public funds are reserved to depressed areas. Special instruments of negotiation planning are:
	1. Institutional planning agreements (*Intese istituzionali di programma*). The Government and the regions together detect the objectives and define the sectors in which an institutional initiative is needed.
	2. Planning framework agreements (*Accordi di Programma Quadro*). Local authorities, public and private entities define a mutual interest plan. The formal agreement defines the activities and the interventions to be carried out, along with the ways and the schedule of accomplishment; moreover, the agreement identifies a person in charge of the carrying out of each activity and the responsible agents for monitoring.
(Law 64/86)	3. Planning Contracts (*Contratti di Programma*). The state and firms design a contract to realise new plants and to create additional employment with positive and significant effects on both the local and the national economic system. This instrument is exclusive to depressed areas.

Appendix 1. The Negotiation planning: a descriptive summary of main normative reference (cont.)

Normative references	Rationale and contents
(Law 341/95)	4. Territorial Pacts (*Patti Territoriali*). Local authorities, public and private entities, local firms, define an intervention planning to promote a local development process. These pacts are funded by means of local, regional as well as state resources and the share of private resources in the company activities cannot be below the 30%.
(Law 662/96)	5. Area Contracts (*Contratti d'area*). These instruments are used to promote new company activities and create employment in sectors such as tourism, industry, services and agro-industry. They can be promoted by trade unions and employers in areas featuring very low employment rates.
Fiscal acts to promote the balanced development: the tax credit (Law 388/2000, financial act, 2001)	Firm owners located in depressed areas of the Southern regions can take advantage of tax credit ("*credito d'imposta*"). These tax reliefs refer to: (i) Investments undertaken to buy new material and immaterial instrumental goods assigned to productive structures located in depressed areas. Such a credit can be used as offset for direct tax payments, (ii) New open ended (employment) contracts; moreover, the law contains provisions in favour of "territorial continuity" for Sardinia and Sicilian minor isles: the aim is to reduce the incidence of transport costs on finished and semi-finished products exported by the region.
"Proxy to the Government for infrastructure and strategic productive settlings" (Law 443/2001)	In order to reduce the gap among several Italian areas in terms of infrastructure, this law provides for public works planning for the development of the Country. The protection of the environment is explicitly taken into account. In particular, against drought and desertification, the law provides interventions linked to (i) water recovery, (ii) management of water supply, and (iii) water recycling for agriculture.

Tab.1 The role of Infrastructures: : an overview of empirical literature

Sources	Period	Sample	Approach	Explanatory variables	Results
Acconcia, Del Monte (2000)	1963-93	Regions	Panel Data	Real government spending for Infrastructure investment	Positive and Significant
				Index of Infrastructures capital	Positive but not significant
				Endowment of building infrastructures	Not Significant
La Ferrara, Marcellino (2000)	1970-94	Regions	Panel Data	Real government spending for Infrastructure investment	Positive and Significant
Paci, Pigliaru (1995)	1970-89	Regions	Cross Sections	Endowment of Infrastructures	Positive and Significant
Paci, Saddi (2002)	1970-95	Regions	Panel Data	Endowment of Economic Infrastructures	Positive and Significant
				Housing Infrastructures	Negative and Significant
Picci (1999)	1970-95	Regions	Panel Data	Index of *core* infrastructures	Positive and Significant
				Index of non-core Infrastructures	Negative and Significant
Viviani, Vulpes (1999)	1987	Regions	Panel Data	Endowment of transport Infrastructures	Positive and Significant (especially for the South)
				Endowment of SER Infrastructures	Positive and Significant (especially for the South)

Notes
Core Infrastructures: Roads, airports, railroads, subways, ports, energy, water, telecommunications
Non-core Infrastructures: Hospital, Public buildings, others not elsewhere included
SER: Infrastructures in Sanitation, Energy, Reclamation

Tab.2 The role of Education in Italian regional growth: an overview of empirical literature

<table>
<tr><th>Sources</th><th>Period</th><th>Sample</th><th>Approach</th><th>Explanatory variables for HK</th><th>Results</th></tr>
<tr><td rowspan="2">Di Liberto (2001)</td><td rowspan="2">1963-94</td><td rowspan="2">Regions</td><td rowspan="2">Panel Data</td><td>Average years of total schooling of the active population</td><td>Positive and significant when controlling for the extension of the public sector</td></tr>
<tr><td>Tertiary education</td><td>Negative and significant</td></tr>
<tr><td rowspan="3">Lodde (2000)</td><td rowspan="3">1971-91</td><td rowspan="3">Regions</td><td rowspan="3">Pooled Cross Section</td><td>Total years of schooling for different education levels allocated to the public sector</td><td>Negative and significant</td></tr>
<tr><td>Total years of Schooling in Tertiary education</td><td>Positive and significant when controlling for the public sector</td></tr>
<tr><td>Average values of the total years of education (for different education levels)</td><td>Positive and significant when controlling for the catching up effect</td></tr>
<tr><td rowspan="2">Maiolo (2001)</td><td rowspan="2">1951-93</td><td rowspan="2">Macro Area</td><td rowspan="2">Time Series</td><td>Students enrolled in non productive studies</td><td>Negative and Significant</td></tr>
<tr><td>Students enrolled in productive studies</td><td>Positive and Significant</td></tr>
</table>

Notes

Primary education: 5 years of primary level + 3 years of lower secondary education (*scuola elementare + scuola media*)

Secondary education: 5 years of upper secondary education (*istituto superiore*)

Tertiary education: university and post university degrees

The catching up effect is measured by the ratio between the GDP per worker of the leading region and that of the region into consideration

Tab.2 The role of Education in Italian regional growth: an overview of empirical literature (cont.)

Sources	Period	Sample	Approach	Explanatory variables for HK	Results
Mauro, Carmeci (2002) **Mauro (2003)**	1963-95	Regions	Cross sections Panel Data	High school enrolment rate	Positive and significant when controlling for the unemployment rate dimension
Mauro, Podrecca (1994)	1963-89	Regions	Cross Section	High school enrolment rate	Ambiguous
Paci, Pigliaru (1995)	1970-89	Regions	Cross Section	High school enrolment rate High school diploma and laurea	Negative and not significant
Coppola, De Blasio, Gallo (1998)	1961-91	Regions	Cross Section	Total years of schooling	Not Significant
				Total years of non mandatory education	
				Average years of schooling	Positive and Significant
				Average years of non mandatory education	
Piras (1996)	1970-92	Regions	Cross Section	Share of population above 6 with different education levels	Positive and Significant
Goria, Ichino (1994)	1962-89	Regions	Cross Section Panel Data	Total years of schooling	Ambiguous