

Incentives to Local Public Service Provision: An Evaluation of Italy's *Obiettivi di Servizio*[♁]

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Abstract

Set up by the Italian Government, *Obiettivi di Servizio* is a scheme envisaged to stimulate local administrations to reach some pre-determined targets in terms of public service provisions in the areas of education, child and elderly care, waste management, and water sources. This paper provides an econometric evaluation of the effectiveness of the scheme. It finds that the program worked only in a partial way and that the low local institutional quality and a discouragement effect, due to the over-ambitiousness of some of the targets, were the major impediments.

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1. Introduction

The benefits from decentralized governments in the provision of public services are maximized when local jurisdictions are featured by significant heterogeneities. In countries with relevant regional socio-economic disparities a centralized provision of public services (*one-size-fits-all*) is usually seen as a second-best arrangement, as decentralization allows to better matching local idiosyncrasies (Oates, 1972). At the same time, decentralization might carry costs with it: local ownership may magnify the power of local interest group in setting the policy agenda, while the quality of the public services could become highly dependent on the features of the local administrations. One way to manage the above trade-off is to provide local administrations with incentives to reach some pre-determined targets for the locally provided public goods.¹

In this paper we carry out an econometric evaluation of an innovative incentive scheme, named *Obiettivi di Servizio* (ODS), which took place in Italy within the 2007-13 EU programming cycle for cohesion policy. The scheme applies to the administrations of the regions of Southern Italy, the area of the country lagging behind. ODS involves three building blocks: targets, transparency, and money. The *targets* are 11 quantitative indicators set by the Central Government and referring to the quality and quantity of four categories of public services: education, child and elderly care, waste management, and water sources. Transparency is sought through a *public assessment exercise* by which the progress of each region towards the attainment of the targets is monitored and disclosed to the general public. Money refers to the *financial rewards* (€ 3 billions) allocated to remunerate good performing regions.

To estimate the impact of the ODS on the provision of local public services, we employ a diff-in-diffs (DID) approach using as control group the 12 central-northern Italian regions, which did not take part into the program. In particular, we run DID regressions for each indicator and each region separately, obtaining a total of 88 treatment effects. We find that the impact of ODS was highly heterogeneous across regions and indicators. Then, we regress these estimated treatment effects on a number of covariates that are aimed at explaining the heterogeneous impacts. We find that crucial impediments for the effectiveness of the scheme are the local institutional quality and the amount of effort that each region had to put in order to attain the target. On balance, the incentive scheme intended to foster the performance of local stakeholders seems to have done poorly in maximize (minimize) the pros (cons) of a decentralized governance structure.

Our evaluation exercise is mainly linked with the literature on the assessment of incentive schemes for local governments. This literature mainly refers to the UK CPA, the Comprehensive Performance Assessment (Boyne et al., 2009; Revelli 2008 and 2010; and Lockwood and Porcelli, 2013). Also related is Revelli (2006), who analyses the English SSPR, the Social Service Performance Rating. More in general, our study is connected with the literature on incentives in the public sector. Propper and Wilson (2003) provide an overview of the issues involved in using performance management schemes and explicitly refer to transparency-related incentives versus financial rewards. Burgess et al. (2010) analyze, with reference to the education sector (elaborating on the abolition of school league table in Wales), the interplay between dissemination of information and performance. Similarly, Besley et al. (2009) investigate the effect of the hospital star rating regime in

¹ According to Joumard and Kongsrud (2003), an alternative way to lessen the trade-off is to impose stricter norms to lower-level administrations, which however could vanish some of the benefits of decentralizing.

England over 2001-2005 on patient waiting lists. Finally, related papers refer to the US JTPA, the Job Training and Partnership Act evaluated by Heckman et al. (1997 and 2002). Compared to the existing studies, which refer mainly to US and UK, we consider the case of Italy, a country with long-standing local differences in economic development and an established tradition of centralization in the public sector. In this respect, our findings might be useful for countries sharing similar features (for instance, Southern European countries) that are also, like Italy, trying to enhance their performance measures in the public sector. On related grounds, the incentive scheme experimented with the ODS is likely to be replicated in many instances with the EU programming cycle 2014-20 (under the heading of EU conditionality). Therefore, our study might be useful to inform the incoming policy framework.²

The paper is structured as follows. Next section provides the institutional details of the ODS. Section 3 describes some preliminary evidence on the progress made by the regions during the period in which the scheme was in place. Section 4 presents the estimates of the treatment effects. Section 5 documents the findings referring to our attempt to interpret the results of the section 4 in the light of some underlying common explanations. Section 6 discusses some issues related to fact that the financial rewards were not disbursed as envisaged. The last section concludes.

2. The ODS program

The ODS incentive scheme was established in 2007 within the 2007-13 EU framework for cohesion policy.³ It worked as follows. The 8 Southern Italian regions - Abruzzi, Molise, Apulia, Campania, Basilicata, Calabria, Sicily and Sardinia – were involved in the program (in our empirical exercise, they are the treated units). The Central Government (that plays the role of principal) fixed some pre-determined quantitative targets for the treated regions (the agents), related to the quality and quantity of local public services. The Central Government committed itself to monitor and disclose the progress towards the targets and give financial rewards to the agents that were able to attain them. The remaining Italian regions (12 of them, from Central and Northern Italy) were not included in the scheme (they represent the control units for our analysis).

The final deadline for target attainment was set to be the year 2013. There were 11 targets, grouped in 4 different categories: education, child care and elderly assistance, waste management, and water sources. Although the actual set of relevant public services is potentially much wider, the principal decided to narrow the aim of the policy to a small number of targets in order to allow the agents to focus the efforts on few goals. Each target is measured with a (publicly available) variable (for instance, the percentage of separate collection of waste); the choice of each quantitative objective was based on the average value of the same indicator displayed by either the northern-central regions of Italy or other EU or OECD countries. The underlying idea was that the pre-determined quantitative objectives reflect some basic, indispensable, outputs for public service provision. The description of each indicator, along with its respective public service category and the quantitative target

² To the best of our knowledge, the only previous attempt of evaluating the ODS is Antonelli and Grembi (2013). This paper focuses only on one target (out of the 11 envisaged), namely the percentage of municipalities that provide child care facilities. Their findings suggest that the intervention had no significant impact on such indicator.

³ We focus on the aspects of the ODS most relevant for our analysis. For additional details, see the official website: http://www.dps.gov.it/it/politiche_e_attivita/Obiettivi_di_Servizio/.

fixed by the program, is reported in Table 1 (in what follows, we will refer to each indicator using the prefix S. followed by a cardinal number which goes from 1 to 11).

[Table 1, here]

The total amount of financial rewards was set equal to € 3 billion (in 2007, it amounted to 0.81% of the GDP of the treated regions). Table 2 shows the distribution of funds across agents and targets. Total funds were allocated uniformly across the 4 categories. ODS rules envisage that the funds attached to each indicator could be received independently from the progresses made in the other indicators. The distribution across regions followed a criteria based on each region's GDP and population level. Sicily and Campania were the two regions displaying the highest level of financial rewards, with respectively 21.9% and 20.9% of the total amount, immediately followed by Apulia (16.6%), Sardinia (11.6%) and Calabria (9.5%). The regions with the lowest amount of allocated rewards were, instead, Basilicata, Abruzzi and Molise with 4.6%, 4.3% and 2.4% respectively.⁴

[Table 2, here]

The scheme envisages an intermediate deadline: a share of the financial rewards was planned to be dispensed in 2009, proportionally to the progresses made by the region in each indicator. Then, the disbursement of the remaining part was entirely contingent on the attainment of the final target in 2013. The incentive scheme was formally put on place in 2007, but only at the end of 2008 the treated regions had finished to prepare all the necessary documentation in order to participate to ODS. This brought about a delay of nearly one year in the actual implementation of the scheme. Note that participation into the program was conditioned on submitting a "strategic plan" in which local authorities had to plan all the actions that would have implemented in order to reach the targets and set aside the corresponding financing (from local, nation-wide, and EU sources).

Money was only part of the incentive package. According to the Central Government the scheme should have enhanced the performance of the local authorities mainly through an accountability channel. Establishing easy-to-measure targets and monitoring the progress of each region towards the attainment of the targets were considered crucial progresses towards transparency, which, in turn, should have spurred citizen participation and local elite's responsibility. The Central Government set up a dedicated website that kept monitoring and disclosing the performances under the scheme. As matter of fact, the program received a lot of media exposure, both at the national and the local level.⁵

The beginning-of-the-period ODS framework underwent a number of changes in the subsequent years as far as the funds earmarked by the Central government were concerned. First, the 2009 intermediate rewards, which were computed according to the progresses made until then and whose overall amount was set equal to 638 million euro, were never actually paid to the regions because of some political frictions.⁶ Second, in 2011 the total amount of

⁴ The scheme appointed also the Ministry of Education as agent because of its crucial role in managing the educational public services jointly with regional governments. Specifically, around the 8% of the total rewards were allocated to this Ministry. In our exercise we do not explicitly consider the role of the Ministry of Education, as its performance is captured by the regional indicators referring to education. In any case, there is no reason to expect that the Ministry of Education performed differently across regions and indicators.

⁵ Googling "Obiettivi di Servizio" gives more than 1,800 results after restricting the search to the news.

⁶ This friction was caused by the change of the central government in 2008; the new cabinet was somehow reluctant to carry on policies implemented by the previous one.

funds was reduced to 1,031.8 billion (without any change in the distribution across regions and indicators) because of the increasing public finance difficulties the Italy experienced at that time (see Table 2). We tackle the issues related to the fact that part of the rewards were postponed and cut down in Section 6.

3. Descriptive analysis

To proceed with our analysis we need to make all the 11 indicators comparable: some of them are related to a public good while others denote a public bad; moreover, they are obviously expressed in different units as they refer to different aspects of public service provision. We make use of a transformed indicator \tilde{y}_{irt} that can be always interpreted as *percentage with respect to the target*. Specifically, for indicators S.04, S.05, S.06, S.08, S.09, S.10 and S.11 (public goods) the transformation we use is given by the following formula:

$$\tilde{y}_{irt} = \frac{y_{irt}}{target_i} \times 100 \quad (1)$$

With y_{irt} the value of the indicator, \tilde{y}_{irt} its transformation, and with subscripts i , r and t indexing respectively the indicator's cardinal number, the region and the year.

As for indicators S.01, S.02 and S.03 (public bads), the transformation formula we employ is

$$\tilde{y}_{irt} = \frac{100 - y_{irt}}{100 - target_i} \times 100 \quad (2)$$

while for indicator S.07 (public bad), that differently from S.01, S.02 and S.03 has not a natural maximum, we use

$$\tilde{y}_{irt} = \frac{W_{max} - y_{irt}}{W_{max} - target_i} \times 100 \quad (3)$$

with $W_{max} = 716$, which represents the highest observed value of per-capita urban solid waste produced among the treated regions between 1996 and 2013 (Tuscany in 2006, in kilograms).

Table 3 displays the initial (2007) and final (2013⁷) values of the non-transformed indicators. As the table shows, some of the regions had already reached some of the targets before 2007. In particular, the target set for indicator S.06 was already achieved by Abruzzo, Molise and Basilicata, the one for indicator S.04 by Campania and Apulia, and the one for indicator S.11 by Molise, Campania and Sardinia.⁸ At the end of period, the total number of attained target increased sharply for some of the regions. The most successful ones were Sardinia and Abruzzo, which attained five and seven targets respectively, followed by Molise, Campania and Apulia with three, Basilicata with two, Sicily with only one, while none of the targets had been reached by Calabria.

[Table 3, here]

⁷ In some cases the final value of the indicator was only available as to 2012 (see: Table 3).

⁸ This feature, which depends on the fact that that targets were set by using centre-northern (or international) comparisons, might have weakened the strength of the incentive mechanism, as some regions were entitled of rewards related to progresses made before the scheme was implemented, and not related to efforts made under the ODS. We also checked the robustness of our findings with respect to the targets already reached at the start of the ODS. We find that the findings described in Section 5 remain undisputed if we disregard these cases.

Although many targets have not been attained yet by the regions in 2013, the final scenario displays an overall reduction of the initial gaps. As shown in Figure 1, for almost all indicators in 2013 the mean distance between the indicator and the respective target has reduced with respect to the initial one. The indicators that recorded the best performances in terms of distance reduction were S.06 and S.09, which displayed a reduction of the initial distance of about the 130% and 150% respectively, and thus rising on average far above the target. Indicators S.02, S.04 and S.07 instead have seen large average improvements as well, with a reduction of the mean initial gap of respectively the 67%, 75% and 84% out of the total initial distance. A good reduction of the mean initial distance has characterized also indicators S.03, S.08 and S.11, which decreased by around 50-60%. Finally, indicators S.01, S.05 and S.10 displayed the worst performances, with the first two showing a reduction of the initial distance of about 20%, and the latter even an increase of the mean distance with respect to 2007 of about 12%.

Another interesting analysis concerns the variability of the distance across regions for each indicator. The whisker plots onto the bars of Figure 1 display the values of the standard deviations of the distances. As we can notice, the initial distances in 2007 were quite heterogeneous across regions, especially for indicators S.04, S.06 and S.11 whose standard deviations were even higher than their means. As regards to the change in the distance variability over time, the scenario after the implementation of ODS describes a situation of general divergence in the level of public services provided across regions. The standard deviations of the transformed indicators S.02, S.03, S.04, S.05, S.07, S.08, S.09 and S.10 have all increased from 2007 to 2013, with percent changes ranging from 23% of the initial value of S.10 to the five-fold increase of the variability of the distance of S.09. The remaining indicators S.01, S.06 and S.11, instead, have experienced a reduction in the variability of the distances which ranged from the 8% reduction of S.01 to the almost 33% reduction of S.11.

[Figure 1, here]

In order to rank the progresses in the indicators made by the regions, we can look at the average (across indicators) percentages of reduction of the initial distance as reported in Figure 2. In particular, the figure confirms the success of Abruzzi and Sardinia in improving the indicators, with an average percentage of reduction with respect to the initial distance of 168% and 219% respectively, followed by Apulia, Basilicata, Campania and Molise which enjoyed a percentage of reduction ranging between 45% and 85%. The remaining regions instead, namely Sicily and Calabria, had poorly performed, with the first two displaying a mean percentage of reduction of only 31% and 12% respectively.

[Figure 2, here]

4. Estimating treatment effects

The descriptive analysis suggests that during the 2007-2013 period the Southern regions of Italy have generally made improvements in the local public services covered under the scheme, even though the magnitude of the progresses were not uniform across regions and indicators. In light of these results, a question that arises is whether these improvements could be directly associated to the adoption of the ODS, or instead they are related to a more general trend detached from this program.

In order to make such assessment, we compare changes of the indicators in the Southern regions with those referring to Central-Northern ones where the ODS has not been adopted. Figure 3 shows the average value of the indicators across southern and central-northern regions in 2007 and in 2013. As the figure shows, the indicators in 2007 were on average equal to the 65% of the value of the target in the southern regions and to 105% in the central-northern ones. In 2013, these two percentages were 91% and 123% respectively, denoting an increase of these values of 26 percentage points in Southern Italy and of 23 percentage points in the Centre-North. That is, southern regions seem to have performed slightly better than the central-northern ones in the 2007-2013 period. It goes without saying, a deeper analysis is needed in order to rigorously disentangle the impact of the ODS from confounding factors.

[Figure 3, here]

We propose a more formal empirical framework to evaluate whether the ODS program had an effect on the outcomes it targeted. We use a DID approach adopting as control group the 12 Central-Northern Italian regions which were not treated. In this way, we are able to control for possible trends which were common to all Italian regions and that were not related to the policy. We consider the years between 2010 and 2013 as the treatment period, because, as stated above, the program was actually effective only since 2009 and any action the agents would have taken will reflect on the outcome variables with some delay. The adoption of this econometric approach relies on the assumption that indicators' trends of the control regions can represent a good counterfactual of the treatment group in the hypothetical scenario where the ODS scheme was not implemented. Indeed, our preliminary analysis shows that this common trend assumption can be considered at least weakly satisfied.⁹

Since for every single treated region we want to assess the ODS impact for each of the 11 indicators, we will perform in total 88 DID regressions. Specifically, in each regression we include only 1 out of the 8 treated regions along with the 12 control ones, and we will then perform a DID evaluation of ODS for each of the eleven indicators. For each treated region and for each indicator $i = 1, \dots, 11$ the estimating equation reads as:

$$\tilde{y}_{rt} = constant + \delta(ODS_r \times D_t) + \lambda_t + \mu_r + \varepsilon_{rt} \quad (4)$$

where $r = 1, \dots, 13$ indicates the region, t the years; \tilde{y}_{rt} is the transformed indicator¹⁰; ODS_r is a dummy variable that takes value 1 for the treated region and 0 otherwise; D_t is a dummy variable that takes value 1 if $t \geq 2010$ and 0 otherwise; λ_t and μ_r are year- and region- fixed effect, respectively; ε_{rt} is a random disturbance. Our parameter of interest is the treatment effect δ . In the end we are left with 88 δ 's.

⁹ In order to formally test for the common trend assumption, for each indicator $i = 1, \dots, 11$ we run the following regression for those indicators whose data are available for at least several (we take 7, but results will be the same by using only 5) periods before 2010 (that is, only for S.01, S.04, S.05, S.06, S.07, S.08 and S.09):

$$y_{rt} = constant + \delta * ods_r + \beta * year_t + \gamma * year_t \times ods_r + \varepsilon_{rt}$$

With ods_r a dummy that switches on for the treated region and $year_t$ the actual year. If the estimated coefficient $\hat{\gamma}$ turns to be statistically different from zero we can claim that the common trend assumption is violated. Our results show that in overwhelming majority of the cases this assumption is not violated. We check the robustness of our findings with respect to the assumption of parallel trend by excluding for the analysis of Section 5 the cases for which it is violated. Results remain very similar.

¹⁰ We also estimate model (4) using non-transformed indicators, as a robustness exercise. The results (not reported but available upon request) mirrors those of the model estimated on transformed data in terms of both statistical significance and signs.

Table 4 reports the 88 estimated treatment effects yielded by the DID regressions. As the table depicts, the estimates vary dramatically in both size and magnitude across both treated regions and indicators. In particular, the results show that there are instances of positive (minimum at 10%; 24 cases out of 88), negative (34 cases) and not statistically significant (20 cases) impacts of ODS on the outcome variables. A common path does not emerge.

However, the econometric findings confirm what emerged in the descriptive analysis. Abruzzi and Sardinia were the regions where the ODS program has been more effective. The performance of Campania, instead, had been a little bit worse, with five positive treatment effects, four negative, and two not statistically significant. Finally, all the remaining treated regions strongly underperformed, especially Calabria and Sicily.

[Table 4, here]

5. Explaining the heterogeneity of the treatment effects

The empirical analysis made so far calls for some further exploration of such heterogeneous impacts of the ODS. We suspect there could be some factors region- or indicator-specific that might be systematically associated with performance. To this end, we look for plausible conditioned correlations by taking the 88 estimated treatment effects and regressing them on a set of covariates:

$$\hat{\delta}_{ir} = \beta_0 + \mathbf{X}_{ir}\boldsymbol{\beta} + v_{ir} \quad (5)$$

where $\hat{\delta}_{ir}$ are the estimated DID effects for treated region r and indicator i ¹¹, and \mathbf{X}_{ir} a set of regressors that may vary at both the regional and at the indicator level; v_{ir} is a random disturbance. The variables whose role in affecting the impact of ODS we test are described below:

- 1) The initial distance from the target (measured as 100 minus the value of the transformed indicator in 2007). Under the ODS setting, different targets may be rewarded by the same amount of money, even though the efforts needed for their attainment could be actually different. Moreover, the funds attached to a single target can be received independently from the progress made under the others (see Section 2). These features of the scheme might bring about potential substitution effects: the regional government might concentrate its efforts to the closest, and thus easiest to reach, targets, while leaving aside the most difficult ones. This implies that a higher initial distance might be linked to a lower impact of ODS on the indicator. Hence, the expected sign is negative.
- 2) The financial reward set (initially) by the ODS scheme, which represents the direct financial incentive for the region to attain the target. In particular, in this analysis we use alternatively as regressors either the reward per-capita or the ratio between the reward and regional GDP, rather than the raw monetary reward in order to take into account regional size heterogeneity. The expected sign of its coefficient is positive.
- 3) The local institutional quality. Areas displaying lower quality of governance are generally linked to a misuse and dissipation of public resources, which, in turn, may worsen both

¹¹As a robustness exercise, we also employ an alternative specification to the one described by (5), where the dependent variable is a binary outcome, which takes value one if the estimated DID effect for the pair “region-indicator” is positive and statistically significant, and zero otherwise. The results (not reported but available upon request) are consistent with those documented in the text.

the effectiveness and the efficiency of public spending (Rajkumar and Swaroop, 2008; Gupta et al., 2002). Hence, such regions might be less able to use resources in order to improve public services. For this reason, we expect the local institutional quality to be positively correlated to the estimated treatment effects. We use two proxies: (i) the European QoG Index (EQI) developed by the Quality of Governance Institute, which is constructed through a large survey dataset on the level of perceived corruption of the institutions in 2010¹², and (ii) the absorption rate of the EU Structural Funds recorded by the region, i.e. the percentage out of the total amount of available Structural Funds that the region was able to spend by the end of the 2007-2013 programming cycle. This measure represents an additional proxy of local government efficiency.

- 4) The political alignment with the Central Government during the period in which ODS was in place. We measure it as the fraction of the 2007-2013 period in which the regional government was politically aligned with the central one.¹³ Political alignment is relevant as long as the regional level financially depends on the central level, as this is the case in Italy. The main implication of this dependency is that the Central government is able to channel more resources (over and beyond those referring to ODS) to political aligned sub-national governments in order to maintain political power, as documented also by Kang (2014), Rumi (2014), and Lema and Streb (2013). Since these financial resources are fundamental for public expenditure in local public services, politically aligned regional governments could have had some advantage to reach the ODS targets. On the other hand, aligned regional governments might receive extra money irrespective of their performance under the scheme. Therefore, the expected sign is ambiguous.
- 5) The grip regional governments have on each indicator. As stated in Section 2, local authorities had to outline, in their “strategic plans”, the financial needs implied in the attainment of the targets. We proxy the regional grip on each outcome using the regional share of the total public spending on that outcome.¹⁴ The higher the budget for the indicator, the greater the effort envisaged by the local administrators. Our expectation is that a higher share leads to a higher treatment effect.

Table 5 shows the summary statistics of the dependent variable and of the regressors. Treatment effects are negative on average (-4.2% of the value of the target) but with a very high dispersion: its value ranges from -111 to +182 percentage points, and the standard deviation is more than 8 times the value of the mean. The absorption rate is on average about 50%, and ranges between 35% (lowest spending skills) and 63% (highest spending skills). The initial distance, computed using the normalized indicators, is on average equal to the 36% of the value of the target, and it ranges between 0 (target already achieved) and 100%.

As regards to financial rewards, their values are on average 33 million euro and range between 5 and 89 million, while the reward-to-GDP ratio is on average 0.092% with a standard deviation of about 0.04% and reward per capita 15.6 euro per person with a standard

¹² The European Quality of Governance Index (EQI) is constructed through a survey dataset consisting in individuals’ evaluation on the quality of governance of about 34,000 respondents. The questions included in the survey were mainly focused on the level of perceived corruption in the public sector of the individual’s area of living, and encompassed four different “concepts” of the quality of governance: corruption, rule of law, bureaucratic/government effectiveness, and strength of democratic and electoral institutions. A particularly appealing feature of this index for our analysis is that survey questions were mainly focused on the education and health public sectors, which are both included among the ODS indicators. For a more detailed description of EQI see Charron *et al.* (2013, 2014).

¹³ Variable computed through an elaboration of the Italian Ministry of Interior data (<http://elezionistorico.interno.it/>).

¹⁴ Variable computed through an elaboration of the Italian Ministry of Economic Development data (<http://www.agenziacoesione.gov.it/it/cpt/index.html>).

deviation of 6.8 euro. The measure of the grip, instead, shows that on average the regional share of public spending on an indicator is 16%, but with peaks of 0% in some regions for waste management services (which are mainly financed by municipalities) and of 99% for public services related to healthcare. Political alignment during the ODS period is also quite variable across regions. On average, regional governments were politically aligned with the central one for about the 68% of the total 2007-2013 time, with a minimum and maximum values of 44% and 89% respectively. Finally, the quality of governance index takes only negative values since it is expressed as difference from the Italian EQI average, which is always higher than all southern regions. Besides, this index displays variability across southern regions as well, with a standard deviation equal to about one third of the absolute value of the mean.

[Table 5, here]

Results are displayed in Table 6. In the first column, we start with a parsimonious specification in which we control for the initial distance and the financial incentive. The former regressor turns out to be negative and statistically significant, as expected, while the latter is negative but imprecisely measured. In the second column, we add the quality of governance index that is positively correlated with the outcome, as expected; the parameters of distance and financial incentive remain stable. The political alignment and the regional grip on the outcome enter the specification in the third column: none of them significantly contribute to explain the variability of the ODS effects. The sign and the significance of the other variables remain unchanged. Substituting Reward/GDP with Reward per capita (Column 4) does not change the picture. In Column 5 we proxy the quality of governance with the absorption rate, rather than the EQI Index, and find that its point estimate is positive but imprecisely measured.¹⁵

The magnitude of the estimated effect is non-negligible. Increasing the initial distance by 1 standard deviation entails a reduction in the treatment effect that ranges from 27% to 29% of its standard deviation (according to estimates in column 3 and 5, respectively. The corresponding estimate for the quality of governance, measured with the EQI, is instead +15,2.

[Table 6, here]

Overall, our estimates suggest that the local institutional quality of local governance exerted a positive effect on the effectiveness of the ODS. In this context, however, the absorption rate is not statistically associated with ODS effectiveness (see, for a similar finding in the context of EU structural funds, Ciani and de Blasio, 2015). Also, there exists a discouragement effect: a higher initial distance tends to negatively affect impact of the policy. The agents have tended to concentrate their effort towards those targets that are easier to reach (and are often equally rewarded). Hence, an unintended consequence of such move might have been an increase in the variance of the performance across the targets. The reward did not matter. Analogously,

¹⁵ The results are qualitatively similar if we replace the not statistically significant estimates with zero in the vector of treatment effects.

the grip that the region has on each indicator, which implies its power it has to influence its value, seems to be not relevant for the impact of ODS. These last two findings have to be interpreted in the light of the documented discouragement effect, which might have overwhelmed the role of the reward and the local budget. Finally, the political alignment played no role in the impact of the policy.

6. The role of delaying and cutting the disbursements

As explained in Section 2, the Central Government did not live up with the 2007 agreement in two respects: the intermediate-target rewards, envisaged for 2009, were never disbursed; in 2011 the total amount of financial resources for the program were cut down to 1/3 of the money originally budgeted.¹⁶ This failure to comply with the initial agreements could have had negative repercussion on the credibility of the principal and, thereby, could have somehow jeopardized the functioning of the incentive scheme.

To begin with, it is important to note that financial incentives were only part of the story. The program received a lot of media exposure and it likely increased both transparency and the accountability of the local authorities. Therefore, it seems to be plausible to assume that there were also other motivations that spur local governments to improve public services outside financial rewards: e.g. maximizing social welfare, or increasing the incumbent's probability of reelection.

An aspect to consider is that the actions made by the local authorities required a lot of initial efforts aimed at preparing the strategic plans and at setting up the budget necessary for public spending (see: Section 2). Since the aforementioned spending cuts occurred some years after the implementation of the program, it is likely that, until that moment, regions had already started carrying out their ODS public spending plans. As long as disinvesting is costly, it is hard to think of a complete dismantling of the entire plan thereafter. In other words, the expectation of future financial rewards could have given an initial "big push" to improve local public services, and even though the facts fell short of the expectation, local authorities might have found convenient to continue carrying on their initial plans nonetheless.

Still, the argument made so far implicitly assumes that the spending cuts were largely unexpected by the agents at the beginning of the plan.¹⁷ Indeed, if these cuts were already known to occur, the regional governments would have promptly updated their beliefs and put less initial efforts on the ODS strategic plans. In practice, it seems that the problem with the receipt of the transfers were truly not expected. The lack of intermediate-target disbursement was due to a change in government (and was particularly surprising as with previous changes cohesion programs were never disputed). The 2011 reduction of the rewards was driven by the necessity to cut the public deficit just after the 2011 debt crisis, which was indeed hard to anticipate, as shown by data on past forecasts of economic aggregates.¹⁸

¹⁶ This noncompliance did not translate into a total denial of the initial agreement. Indeed, as also reported by the last Economic and Financial Document, the negotiations between the regional government and the Ministry of Economic Development with regard to the rewards allotment have kept going on, and now a new agreement has just been set.

¹⁷ See, for instance, the following article, reporting on the complaints raised by the Regions when the spending cuts were decided, in 2011:
http://www.sassiland.com/notizie_matera/notizia.asp?id=16127&t=obiettivi_di_servizio_fondi_non_nuovi_ma_prima_cancellati

¹⁸ In particular, the 10-years BTP-Bund spread ranged between 100 and 150 basis points from January 2007 to May 2011, and then suddenly increased reaching nearly 400 basis points at the end of 2011. Moreover, the

A possible consequence of the failure of the Central Government to comply with the 2007 agreement is that local authorities, also pressed by tighter local budget following the crisis, responded to the 2011 cuts by focusing on the targets more at reach in order to alleviate their financial strain. In this vein, the discouragement effect document in Section 5 might have something to do with time-inconsistency. To check for this possibility we also estimated treatment effects by including only 2010 (and 2010-11) performances obtaining, however, results very much in line with those referring to the overall treatment period (2010-13).

Overall, it seems that the problems with actual disbursement are not what drives our findings.

7. Conclusions

In this paper we provide an econometric evaluation of the incentive scheme *Obiettivi di servizio*, which was aimed at improving the provision of public services in Southern Italy. In the first step of our analysis, we employ a DID method in order to estimate the impact of ODS on each indicator of each treated region. Our results suggest that the effect of ODS on the indicators was generally low and highly variable across regions and indicators. Then, in the second step we regress the resulting 88 estimated treatment effects on a bunch of covariates which can be able to explain the heterogeneity of the impact across space and type of public service. We find that the heterogeneity of the impact turns to be associated with the regional quality of governance and with the level of efforts needed to attain the target.

From this analysis, several implications arise.

First, the negative relation between the impact of ODS and the local institutional quality sheds light on one of the biggest problem related to the involvement of local stakeholders within a decentralization framework. Unfortunately, in the short run Central Governments cannot do much to improve local governance and fight corruption, as these aspects are generally deeply-rooted in the territory and difficult to eradicate with immediate effect. However, a possible solution, when the quality of the local institutions is low, could be enforcing a stronger and continuous control on the actions of local governments throughout the whole program, with the potential benefits of reduced dissipation of resources and less susceptibility to local interest groups. In short: the extent of ownership should be made contingent on the local institutional quality.

A second consideration concerns a more technical aspect of the mechanism. Specifically, our analysis suggests that when the magnitude of the incentive is not proportionate to the amount of effort the agent has to put to achieve it, substitution effects might arise. In our case, the indicators which were initially more distant from the targets were also those with the worst performances, which might imply that regions put more efforts in those targets which were easier to achieve, while leaving aside the most difficult ones. In light of this result, future incentive schemes should try to attach higher financial rewards to more distant targets, so that the substitution effect will be offset by a higher monetary incentive.

Finally, the failure of the Central Government to comply with the initial agreement seems had no role for our results, since it is plausible that regions had other incentives to keep carrying out their plans. In any case, the real concern related to this non-compliance is given by its

projections on the debt-GDP ratio just before the spread crisis showed that the former would have steadily decreased in the coming years. This is confirmed also by the data on Credit Default Swaps rate on Italian debt, which proxies the level of its systemic risk, whose value was slowly increasing before June 2011 and then unexpectedly sky-rocketed thereafter

long-run effects on future similar policies. In fact, the loss of credibility experienced by the Central Government is likely to jeopardize the coming incentive schemes as long as the regional governments could be reluctant to trust new commitments. As a result, similar policies could have even lower impacts in the future unless policymakers are able to restore this loss of trust.

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Tables and graphs

Table 1

ODS: Categories, indicators e targets			
CATEGORY		INDICATOR	Target
Education	S.01	<i>Percentage of young (18-24) without a high school diploma</i>	10%
	S.02	<i>Percentage of young with low reading skills</i>	20%
	S.03	<i>Percentage of young with low math skills</i>	21%
Child and elderly care	S.04	<i>Percentage of municipalities with child care facilities</i>	35%
	S.05	<i>Percentage of babies (0-3) availing of childcare facilities</i>	12%
	S.06	<i>Percentage of elderlies availing of in-home eldercare</i>	3,5 %
Waste management	S.07	<i>Kilograms per capita of urban solid waste disposed of in landfills</i>	230 kg
	S.08	<i>Percentage of separate collection of waste</i>	40%
	S.09	<i>Percentage of organic waste treated in composting plants</i>	20%
Water sources	S.10	<i>Percentage of water delivered out of total water inputted in distribution facilities</i>	75%
	S.11	<i>Percentage of people served by wastewater treatment plants</i>	70%

Table 2

ODS: Rewards allocation before (2007) and after (2011) the funds reduction													
<i>(millions of euro)</i>													
<i>CATEGORY</i>	Education						Child and elderly care						
<i>Indicator:</i>	S.01		S.02		S.03		S.04		S.05		S.06		
<i>Year:</i>	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011	
Abruzzo	10,85	3,73	10,85	3,73	10,85	3,73	8,87	3,05	8,87	3,05	17,74	6,10	
Molise	6,05	2,08	6,05	2,08	6,05	2,08	4,95	1,70	4,95	1,70	9,90	3,40	
Campania	52,15	17,94	52,15	17,94	52,15	17,94	42,60	14,65	42,60	14,65	85,20	29,30	
Apulia	41,58	14,30	41,58	14,30	41,58	14,30	33,96	11,68	33,96	11,68	67,91	23,36	
Basilicata	11,45	3,94	11,45	3,94	11,45	3,94	9,34	3,21	9,34	3,21	18,68	6,42	
Calabria	23,75	8,17	23,75	8,17	23,75	8,17	19,39	6,67	19,39	6,67	38,78	13,34	
Sicily	54,80	18,85	54,80	18,85	54,80	18,85	44,76	15,39	44,76	15,39	89,51	30,79	
Sardinia	28,95	9,96	28,95	9,96	28,95	9,96	23,64	8,13	23,64	8,13	47,29	16,26	
Min. of education	20,43	7,02	20,43	7,02	20,43	7,02	-	-	-	-	-	-	
Total	250	86	250	86	250	86	187,5	64,5	187,5	64,5	375	129	
<i>% out of total</i>	8,33%		8,33%		8,33%		6,25%		6,25%		12,5%		

<i>CATEGORY</i>	Waste management				Water sources				Total rewards by region		% out of total		
<i>Indicator:</i>	S.07		S.08		S.09		S.10		S.11		2007	2011	
<i>Year:</i>	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011	
Abruzzo	13,30	4,58	4,58	4,58	3,05	3,05	17,74	6,10	17,74	6,10	138,98	47,80	4,34%
Molise	7,43	2,55	2,55	2,55	1,70	1,70	9,90	3,40	9,90	3,40	77,55	26,67	2,42%
Campania	63,90	21,98	21,98	21,98	14,65	14,65	85,20	29,30	85,20	29,30	667,65	229,63	20,86%
Apulia	50,93	17,52	17,52	17,52	11,68	11,68	67,91	23,36	67,91	23,36	532,20	183,04	16,63%
Basilicata	14,01	4,82	4,82	4,82	3,21	3,21	18,68	6,42	18,68	6,42	146,40	50,35	4,58%
Calabria	29,08	10,00	10,00	10,00	6,67	6,67	38,78	13,34	38,78	13,34	303,90	104,52	9,5%
Sicily	67,13	23,09	23,09	23,09	15,39	15,39	89,51	30,79	89,51	30,79	701,48	241,26	21,92%
Sardinia	35,47	12,20	12,20	12,20	8,13	8,13	47,29	16,26	47,29	16,26	370,58	127,45	11,58%
Min. of education	-	-	-	-	-	-	-	-	-	-	61,28	21,07	8,17%
Total	281,3	96,7	281,3	96,7	187,5	64,5	375	129	375	129	3000	1031,8	100%
<i>% out of total</i>	9,38%		9,38%		6,25%		12,5%		12,5%		100%		

Table 3

ODS: Initial and final values of the indicators												
<i>Category</i>	Education						Child and elderly care					
<i>Indicator:</i>	S.01	S.02		S.03		S.04		S.05		S.06		
<i>Year:</i>	2007	2013	2006	2012	2006	2012	2007	2012	2007	2012	2007	2012
Abruzzo	15	11,4	-	22,4	-	26,7	32,5	60,0*	8,7	9,8	3,7*	4,9*
Molise	16,4	15,4	-	21,7	-	29,9	6,6	22,8	4,8	10,4	3,8*	3,9*
Campania	29	22,2	36,1	28,2	44,3	35,8	38,7*	33,2	1,9	2,7	1,6	2,8
Apulia	25,1	19,9	36,3	16,7*	43	26,3	36,4*	38,0*	4,6	4,4	1,6	2,2
Basilicata	14,1	15,4	34	20,8	38,4	30,5	25,2	32,1	6,9	7,0	4,3*	5,4*
Calabria	21,2	16,4	-	37,4	-	45,8	14,2	8,8	2	2,1	2,8	3,1
Sicily	26,1	25,8	40,8	29,6	48,9	37,3	34,4	33,8	5,5	5,6	1	3,6*
Sardinia	21,8	24,7	37,2	27,3	45,3	33,3	20,7	33,7	8,9	12,9*	1,2	4,6*
South	24,9	14,1	37	26,5	45,7	34,4	28,1	32,5	4,3	5	1,8	3,3
Center-Nor	15,7	21,4	18,2	15,1	22,9	18,6	58,3	65,0	16,3	17,9	3,9	4,7
Italy	19,7	17,0	26,4	19,5	32,8	24,7	48,6	54,6	12	13,5	3,3	4,3
<i>target</i>	10		20		21		35		12		3,5	
<i>Category</i>	Waste management						Water sources					
<i>Indicator:</i>	S.07		S.08		S.09		S.10		S.11			
<i>Year:</i>	2007	2013	2007	2013	2007	2013	2005	2012	2005	2012		
Abruzzo	427,3	70,7*	18,6	42,9*	14,3	36,7*	55,4	57,7	51,4	65,9		
Molise	400,9	449,0	4,9	19,9	0,9	39,9*	54,9	52,8	84,8*	80,4*		
Campania	362,6	85,5*	13,5	44,0*	1,0	8,5	59,8	54,2	85,5*	72,2		
Apulia	484,9	316,9	8,9	22,0	4,8	25,1*	52,7	65,4	58,5	68,2		
Basilicata	303,6	205,7*	8,1	25,8	0,0	0,0	65,2	61,5	61,1	66,1		
Calabria	261,6	301,9	9,1	14,7	8,1	9,6	65,5	64,6	43,5	54,1		
Sicily	501,3	445,5	6,2	13,4	7,9	12,4	64,4	54,4	43,4	45,9		
Sardinia	306,7	155,6*	27,8	51,0*	11,8	85,3*	53,6	45,2	87,4*	84,7*		
South	409,0	252,3	11,6	28,9	6,0	20,6	59,4	56,6	62,5	63,7		
Center-North	251,0	146,4	35,2	48,5	36,4	53,2	71,5	65,9	77,6	75,7		
Italy	306,6	183,0	27,5	42,3	25,2	42,5	67,4	62,6	72,3	71,5		
<i>target</i>	230		40		20		75		70			

Table 4

Estimated treatment effects									
<i>(robust standard errors in parenthesis)</i>									
	All regions	Abruzzo	Basilicata	Calabria	Campania	Molise	Apulia	Sardinia	Sicily
S.01	1.391**	1.331***	-1.586*	0.822	3.396***	1.47	4.868***	-0.0301	0.859
	(0.539)	(0.441)	(0.885)	(0.968)	(0.887)	(1.570)	(1.095)	(1.660)	(0.751)
	Obs: 200	Obs: 130	Obs: 130	Obs: 130	Obs: 130	Obs: 130	Obs: 130	Obs: 130	Obs: 130
S.02	3.47	-2.886**	8.182*	-6.511***	5.028**	0.364	10.42	2.223	6.009
	(2.227)	(1.048)	(4.611)	(1.048)	(2.037)	(1.048)	(9.156)	(6.045)	(4.357)
	Obs: 53	Obs: 34	Obs: 35	Obs: 34	Obs: 35	Obs: 34	Obs: 35	Obs: 35	Obs: 35
S.03	1.489	-1.312	0.341	-8.400***	4.417*	-1.438	5.378	4.602	4.295
	(2.033)	(0.913)	(4.801)	(0.913)	(2.275)	(0.913)	(9.635)	(5.531)	(5.374)
	Obs: 53	Obs: 34	Obs: 35	Obs: 34	Obs: 35	Obs: 34	Obs: 35	Obs: 35	Obs: 35
S.04	3.262	40.38***	-6.952	-15.90**	-14.81	21.00*	-4.476	16.76**	-9.905
	(7.237)	(15.310)	(12.550)	(7.841)	(12.830)	(11.180)	(7.896)	(7.734)	(9.790)
	Obs: 171	Obs: 108	Obs: 108	Obs: 108	Obs: 108	Obs: 108	Obs: 108	Obs: 108	Obs: 108
S.05	-4.85	-4.641	-7.975	-18.11***	-10.89*	21.05	-18.95***	20.78**	-20.06***
	(5.956)	(5.737)	(5.457)	(5.690)	(5.946)	(15.460)	(6.132)	(10.240)	(6.979)
	Obs: 180	Obs: 117	Obs: 117	Obs: 117	Obs: 117	Obs: 117	Obs: 117	Obs: 117	Obs: 117
S.06	-3.23	23.92*	8.721	3.322	-1.405	-86.09***	-21.40**	36.68**	10.35
	(10.860)	(12.500)	(11.260)	(9.912)	(10.340)	(25.810)	(9.467)	(18.020)	(18.170)
	Obs: 238	Obs: 154	Obs: 154	Obs: 154	Obs: 154	Obs: 154	Obs: 154	Obs: 154	Obs: 154
S.07	-4.814	21.91**	-18.98***	-27.34***	26.98***	-30.71***	-0.237	9.601***	-19.74***
	(4.006)	(8.900)	(4.776)	(6.913)	(5.622)	(7.760)	(4.278)	(3.686)	(4.242)
	Obs: 360	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234
S.08	-9.629**	5.429	-19.26***	-35.61***	20.62***	-23.17***	-26.77***	37.09***	-35.37***
	(4.554)	(4.289)	(5.593)	(4.938)	(3.852)	(5.833)	(4.866)	(5.279)	(5.648)
	Obs: 360	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234	Obs: 234
S.09	-35.43*	-34.57**	-111.1***	-79.89***	-101.1***	-16.06	-48.64**	182.4***	-74.48***
	(18.970)	(17.410)	(22.940)	(23.470)	(23.520)	(25.700)	(21.810)	(27.960)	(18.090)
	Obs: 260	Obs: 169	Obs: 169	Obs: 169	Obs: 169	Obs: 169	Obs: 169	Obs: 169	Obs: 169
S.10	0	5.792**	-0.542	0.825	-6.808**	1.025	19.19***	-12.61**	-6.875***
	(3.735)	(2.376)	(2.646)	(2.505)	(3.198)	(2.557)	(5.748)	(5.468)	(2.229)
	Obs: 100	Obs: 65	Obs: 65	Obs: 65	Obs: 65	Obs: 65	Obs: 65	Obs: 65	Obs: 65
S.11	3.563	21.70***	7.696***	13.27***	-18.52***	-7.732**	14.84***	-6.232*	3.482
	(4.724)	(2.496)	(2.489)	(3.320)	(2.493)	(3.091)	(2.496)	(3.616)	(2.577)
	Obs: 60	Obs: 39	Obs: 39	Obs: 39	Obs: 39	Obs: 39	Obs: 39	Obs: 39	Obs: 39
All indicators	-10.03*	5.108	-25.86**	-27.50***	-13.51	-19.15*	-14.48*	36.59**	-21.08***
	(5.783)	(8.255)	(10.610)	(8.081)	(9.342)	(10.240)	(7.716)	(18.300)	(7.679)
	Obs: 2035	Obs: 1318	Obs: 1320	Obs: 1318	Obs: 1320	Obs: 1318	Obs: 1320	Obs: 1320	Obs: 1320

Table 5

Summary statistics of the explanatory variables					
Variable	Obs.	Mean	Std. Dev.	Min	Max
Treatment effect	88	-4.173	33.47	-111.1	182.4
Absorption rate (%)	88	52.21	10.02	34.79	62.9
Grip (%)	88	15.77	29.94	0	99.49
Quality of governance index (EQI 2010)	88	-1.469	0.549	-2.284	-0.776
Initial distance (%)	82	35.82	27.63	0	100
Reward (millions of euro)	88	33.39	23.53	4.95	89.52
Reward /GDP (%)	88	0.0923	0.0374	0.0346	0.189
Reward per capita (thousands of euro per person)	88	0.0156	0.00677	0.00683	0.0319
Share of political alignment	88	68.04	17.61	43.6	89.04

Table 6

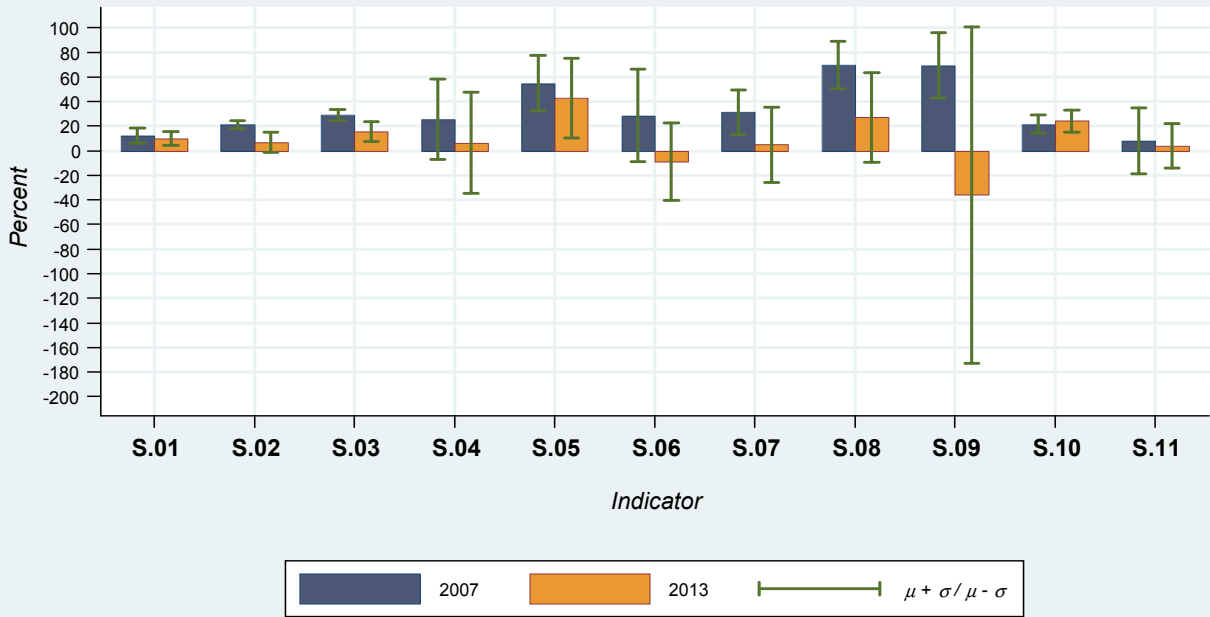
Treatment effects analysis: OLS estimates					
<i>Dependent variable:</i> Estimated treatment effect	(1)	(2)	(3)	(4)	(5)
Initial distance	-0.372** (0.148)	-0.335** (0.150)	-0.333** (0.150)	-0.336** (0.150)	-0.353** (0.145)
Reward/GDP	-29.35 (85.66)	-75.88 (89.48)	-92.05 (77.00)		-100.8 (78.85)
Reward per capita				-728.1 (502.4)	
Quality of governance index (EQI 2010)		15.47* (7.936)	15.19* (8.318)	17.19* (8.989)	
Absorption rate					0.651 (0.419)
Share of political alignment			0.0543 (0.184)	0.0587 (0.183)	0.212 (0.185)
Grip			0.0463 (0.122)	0.0643 (0.111)	0.0523 (0.131)
Constant	11.84 (9.588)	37.73** (17.48)	34.29 (22.24)	39.62 (24.27)	-31.28 (25.61)
Observations	82	82	82	82	82
R-squared	0.085	0.140	0.142	0.148	0.126

Notes: Robust standard errors in parentheses (***) $p < 0.01$, ** $p < 0.05$, * $p < 0.1$). Observations are 82 instead of 88 because six observations of *initial distance* are missing. Specifically, the initial distance of S.02 and S.03 is missing for Abruzzo, Calabria and Molise since PISA data were not disposable for these regions in 2006.

Figure 1

Mean distance from the target and variability across regions before and after ODS

(Distance = 100 - transformed indicator)



Note : The distances are expressed in percentages with respect to the target

Source : Italian Ministry of Economic Development

Figure 2

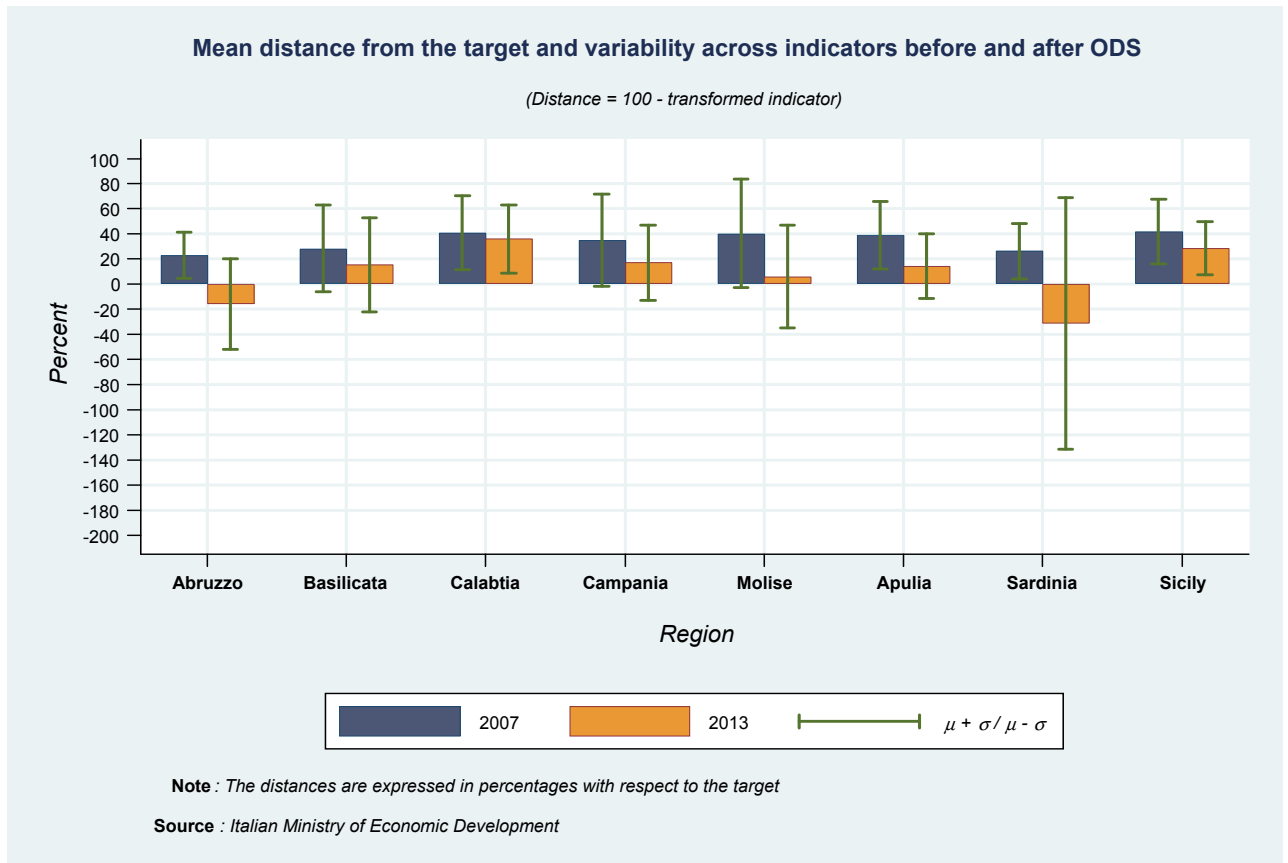


Figure 3

