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Full paper

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26<sup>th</sup> International Conference on Science and Technology Indicators | STI 2022

## “From Global Indicators to Local Applications”

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#STI22GRX

### The political power of the Italian rectors: An analysis of recruitments in the period 2001-2021

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#### Introduction

All organizations face the important task of allocating scarce resource (Pfeffer & Salancik, 1974). This article examines organizational distribution of human resources to subunits within a specific organization, an issue on which there has been only a limited amount of empirical research (Bleiklie et al., 2015; Lepori et al., 2013).

Organizations have been historically classified according to the bureaucratic model and the political model. The former archetype specifies a well-defined authority structure and clearly explicit objectives for the organization (Ouchi, 1979). On the contrary, in the latter members of the organization have divergent values and objectives and the power is in possess of and exercised by coalitions (Cyert & March, 1963).

The concept of power is an inherent aspect of the political model of higher education institutions (henceforth, HEIs), a model that stresses the role of the individuals within the system (Thomas, 2000), where dominant groups shape the way how organisations are governed. In the case of universities, the rector is typically the subject who exercise a specific political function (Bleiklie et al., 2011; Ferlie et al., 2008). Notwithstanding the institutional role of the rectors, their behaviour may be influenced by personal targets which may differ from the officially prescribed organizational goals, leading to eventual concentration and manipulation of organization critical resource (Pfeffer & Salancik, 1974).

Italian universities represent a convenient setting to address these issues. As other European universities, they are public organizations, subject to regulatory interventions, and they show a high level of resource dependency on the State (Bleiklie et al., 2011; Ferlie et al., 2008). Historically, Italian universities have combined the authority of state bureaucracy and that of faculty guilds, such that Braun & Merrien (1999) defined them as ‘bureaucratic-oligarchic’ organizations, a typical example of the European continental tradition. On the wave of the New Public Management (NPM) rationale, beginning in the 1990s, European universities have been pressured to introduce hierarchical-bureaucratic models of governance (Brunsson & Sahlin-Andersson, 2000). In Italy, the Gelmini reform has been implemented in 2012. One

of its intended effects was the reduction of the rector's political power. While the reform makes the rector more executive, the single mandate and the possibility for the Senate to declare "impeachment" were intended to mitigate the "discretionary" use of power. In this paper, we aim to understand whether the reform, generally aimed at increasing university accountability and performance orientation, has led to a substantial change in the internal resource allocation mechanisms, possibly less dependent on the rector's political power.

The contribution of this article is twofold. First, much of the resource allocation literature has looked at HEIs as coalitions of departments (Salancik & Pfeffer, 1974). However, this assumption needs to be reconsidered in view of the processes of hierarchization and strengthening of the central management which have taken place in the last decades in HEIs (Bleiklie et al., 2015). For this specific reason, we focus on the role of the rector. Second, the empirical evidence so far is largely based on individual case studies (Lepori et al., 2013). Unfortunately, they do not allow the analysis of variations across individual organizations, time, and national systems. On the contrary, we look at the whole population of 68 Italian public universities and investigate the evolution of their 239 leaders' political power, observed over two decades, from 2001 to 2021. To the best of our knowledge, this is the largest existing dataset of university leaders, which allows us to assess the effects of rectors on different aspects of their institutions.

## Methods

### *Data*

We retrieve information about the identity of Italian rectors, time window of their mandates and the scientific area they belong to from different datasources, ranging from university websites to newspapers and CVs.

To estimate the effect of rectors' political power on resource allocation, we exploit an additional dataset composed of the full population of Italian universities' faculty staff. We retrieve the full composition of Italian universities faculties in the period 2001-2021 from MUR (the Italian Minister of University and Research) official data. For each faculty member, university, academic position, disciplinary area (i.e. the Settore Scientifico Disciplinare, henceforth SSD) information is collected. It emerges a full picture of the academic staff as of December, 31st for each year, which consists of nearly fifty-five thousands individuals per year on average. We track yearly changes related to new faculty members, career progressions, transfers from/to other universities, retirements, and quits. Therefore, we are able to measure the (differential) allocation of resources in terms of recruitments basing on a total of 233,955 observations, each identifying a single SSD within a university in each year.

Recruitments and promotion of faculty members represents a substantial percentage ranging from 60% to 90% of the total resource allocation within universities. Recruitments are the result of an outflow of resources to replace, due to retirements (mainly) and quits, as well as an inflow of new resources. The recruitment is a repeated game, where the allocation is achieved step by step through the following process: the rector along with the Administrative Board, which is the main decision-making body responsible for strategic decisions, establish the level of resources to allocate to each organizational unit the sum of which cannot exceed a maximum cap established by the Ministry (the so-called *punti organico*<sup>1</sup>); each organizational unit makes a proposal on how to allocate the resources, i.e. it asks for resources. In case the

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<sup>1</sup> A measure for budgeting promotions and recruitments in state universities based on their size and performance-based indicators.

rector disagrees, s/he can decide to deny recruitments to departments or specific organizational units<sup>2</sup>. It follows that even though the decision is not solely in the hands of the rector, he/she has the power to withhold a specific decision, in other words, he/she is what in finance literature is known as a controlling shareholder. While the organization units are commonly identified by departments and faculties, in Italy resources are allocated according to the SSDs<sup>3</sup> (Pezzoni et al., 2012).

### *Empirical strategy*

The specification we use in the panel regression models is:

$$Y_{i,j,t} = \alpha_1 + \beta_1 \text{rector}_{i,j,t} + \beta_2 \text{rector}_{i,j,t} * \text{Post Gelmini reform}_t + \beta_3 Y \text{ in SSD out UNI}_{i,j,t} + \beta_4 Y \text{ in UNI out SSD}_{i,j,t} + \mu_i + \mu_j + \mu_t + \epsilon_{i,j,t}$$

Where  $i, j$  and  $t$  are the SSD, university, and time index.  $Y_{i,j,t}$  is either:

- $n$ : the number of faculty members
- $w$ : the number of *punti organico*
- $ne$ : the number of new faculty members (including transfer from other universities)
- $fne$ : the number of new faculty members (excluding transfer from other universities)
- $cp$ : the number of career progressions weighted by the *punti organico*.

$\text{rector}_{i,j,t}$  our independent variable, is a dummy equal to 1 whether the rector of the university  $j$  belongs to the specific SSD  $i$ , and 0 otherwise.

$\text{Post Gelmini reform}_t$  is a dummy equal to 1 after the implementation year 2012

$Y \text{ in SSD out UNI}_{i,j,t}$  indicates the resources in the same SSD  $i$  outside the university  $j$  and controls for the size of the SSD at the national level, e.g. the size of the ING-IND/35 SSD in all universities but the Università di Bergamo.

$Y \text{ in UNI out SSD}_{i,j,t}$  shows the resources in the same university  $j$ , outside the SSD  $i$  and controls for the size of the university outside the given SSD, e.g. the dimension of all SSDs within the Università di Bergamo but the ING-IND/35 SSD.

$\mu_i, \mu_j, \mu_t$  are error terms at the SSD, university, and year level, while  $\epsilon_{i,j,t}$  is the idiosyncratic error term.

In all presented models, we use fixed effect at the (joint) SSD and university level<sup>4</sup>, in addition to controlling for year dummies. All variables except dummies are log-transformed.

### **Results**

As shown in Figure 1, the stock of resources peaked in 2007, then declining due to a turnover block (new resources inflow were limited to 20% of the reduction in resources due to retirements). Though the overall evolution is strongly related to external (political) influence, there is some heterogeneity among universities in the dynamics of the level of resources. While some universities (e.g. Federico II) show a trend in line with the overall aggregate

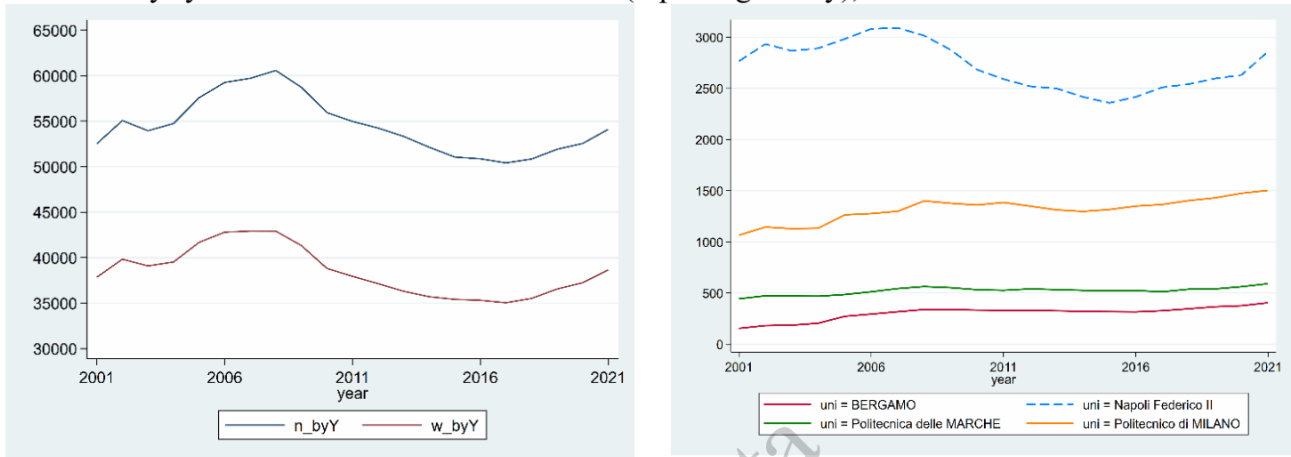
<sup>2</sup> Due to differences in statutes, governance, and rules between state and non-state universities, we focus on the former.

<sup>3</sup> Therefore, we consider SSDs instead of departments as organizational units.

<sup>4</sup> E.g. the number of faculty members belonging to the SSD ING-IND/35 in the University of Bergamo in 2020, and the composition in terms of Assistant (tenured or not), Associate, and Full Professors.

dynamics, others have a positive trend (e.g. University di Bergamo and Politecnico di Milano) or an almost steady one (e.g. Università Politecnica delle Marche).

Figure 1. Evolution of the stock of resources, *i.e.* the number of faculty member ( $n$ ) and the number of faculty members weighted by the amount of resources ( $w$ ) in the whole Italian university system and in selected universities (reporting  $n$  only), from 2001 to 2021



Looking at SSDs, there are great differences in terms of size (Figure 2). As of the 31<sup>st</sup> of December 2021, the minimum is 1 (CHIM/05) and the maximum is 956 (INF/01) faculty members. Few of them were influenced by (an external) reorganization, but the number of SSDs interested by these restructuring is extremely small (e.g. MED/09). The variation in the number of SSDs is limited as well. In 2021 they are 370 and have been constant in number in the last decade.

Figure 2. Stock of resources (*i.e.* number of faculty members) by SSD in 2021

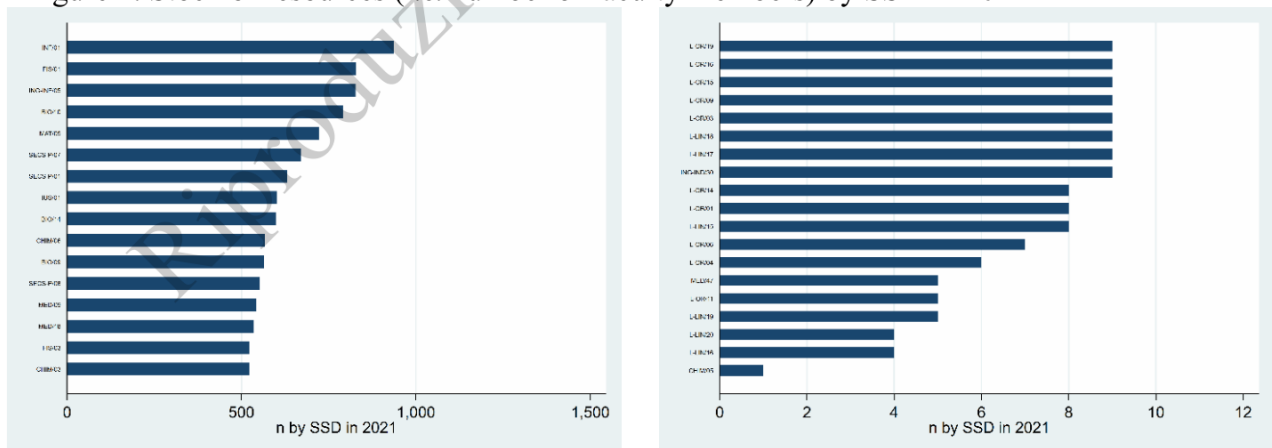


Table 1 shows summary statistics. The median number of faculty members belonging to a single SSD within a single university in a specific year is 3, while the average is 5. The median number of new hiring and career progressions is 0. The dummy rector is equal to one in 0.6% of the observations.

Results in Table 2 show that the rector's SSD grows during the mandate in terms of  $n$ ,  $w$ , and  $cp$ . The positive significant coefficients of the variables  $inSSD\_outUNI$  and  $outSSD\_inUNI$  indicate that the size/growth of an SSD within a university is influenced by the size/growth of the SSD at the national level and of the university itself.

Table 1. Summary statistics

	obs	mean	sd	median	min	max
lnn_bySSDxUNI	224,253	1.515	0.706	1.386	0.693	5.438
lnw_bySSDxUNI	224,253	1.267	0.662	1.163	0.405	4.978
lnne_bySSDxUNI	224,253	0.137	0.314	0.000	0.000	4.290
lnftne_bySSDxUNI	224,253	0.119	0.295	0.000	0.000	4.290
lnncp_bySSDxUNI	224,253	0.118	0.295	0.000	0.000	3.258
lnn_bySSD_outUNI	224,253	5.103	6.433	3.000	1.000	229.000
lnw_bySSD_outUNI	224,253	3.601	4.510	2.200	0.500	144.200
lnne_bySSD_outUNI	224,253	0.222	0.622	0.000	0.000	72.000
lnftne_bySSD_outUNI	224,253	0.193	0.583	0.000	0.000	72.000
lnncp_bySSD_outUNI	224,253	0.190	0.532	0.000	0.000	25.000
d_SSD_rector	224,253	0.006	0.074	0.000	0.000	1.000
lnn_bySSD_outUNI	224,253	4.920	0.866	4.949	0.000	7.051
lnw_bySSD_outUNI	224,253	4.576	0.863	4.607	0.000	6.643
lnne_bySSD_outUNI	224,253	1.801	0.933	1.792	0.000	4.977
lnftne_bySSD_outUNI	224,253	1.667	0.935	1.609	0.000	4.970
lnncp_bySSD_outUNI	224,253	1.584	1.026	1.609	0.000	4.331
lnn_bySSD_outSSDinUNI	224,253	6.782	0.823	6.830	0.000	8.479
lnw_bySSD_outSSDinUNI	224,253	6.434	0.822	6.479	0.000	8.128
lnne_bySSD_outSSDinUNI	224,253	3.391	1.126	3.466	0.000	6.510
lnftne_bySSD_outSSDinUNI	224,253	3.208	1.202	3.332	0.000	6.436
lnncp_bySSD_outSSDinUNI	224,253	2.906	1.571	3.219	0.000	6.087

Table 2. Estimating rector's effects - fe model

	(1) lnn b/se	(2) lnw b/se	(3) lnne b/se	(4) lnftne b/se	(5) lnncp b/se
rector=1	0.070*** (0.016)	0.077*** (0.015)	0.019 (0.017)	0.017 (0.016)	0.037*** (0.013)
(ln) n inSSD outUNI	0.434*** (0.026)				
(ln) n outSSD inUNI	0.561*** (0.033)				
(ln) w inSSD outUNI		0.378*** (0.024)			
(ln) w outSSD inUNI		0.504*** (0.034)			
(ln) ne inSSD outUNI			0.029*** (0.003)		
(ln) ne outSSD inUNI			0.067*** (0.005)		
(ln) ftne inSSD outUNI				0.028*** (0.003)	
(ln) ftne outSSD inUNI				0.059*** (0.004)	
(ln) cp inSSD outUNI					0.038*** (0.003)
(ln) cp outSSD inUNI					0.043*** (0.003)
constant	-4.567*** (0.271)	-3.823*** (0.258)	-0.159*** (0.020)	-0.129*** (0.016)	-0.080*** (0.011)
N. observations	260646	260646	260646	260646	260646
N. universities	68	68	68	68	68
N. SSD#University groups	12495	12495	12495	12495	12495
R2	0.914	0.923	0.241	0.232	0.256
Year FE	Yes	Yes	Yes	Yes	Yes
SSD#University FE	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses  
\*  $p < 0.10$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$

By distinguishing before and after the Gelmini reform in Table 3, we observe a change in rector's effect. Whereas there is no evidence of a significant change in n and w -i.e. the positive effect is stable across the reform), after policy implementation career promotions in the rector's SSD increased by 8.5%.

Table 3. Estimating rector's effects - fe model pre - post Gelmini reform

	(1)	(2)	(3)	(4)	(5)
	lnn	lnw	lnne	lnftne	lncp
	b/se	b/se	b/se	b/se	b/se
rector=1	0.075** (0.029)	0.079*** (0.028)	0.017 (0.024)	0.015 (0.025)	-0.010 (0.019)
rector=1 # postG=1	-0.009 (0.036)	-0.005 (0.034)	0.004 (0.024)	0.005 (0.024)	0.085*** (0.023)
(ln) n inSSD outUNI	0.434*** (0.026)				
(ln) n outSSD inUNI	0.561*** (0.033)				
(ln) w inSSD outUNI		0.378*** (0.024)			
(ln) w outSSD inUNI		0.504*** (0.034)			
(ln) ne inSSD outUNI			0.029*** (0.003)		
(ln) ne outSSD inUNI			0.067*** (0.005)		
(ln) ftne inSSD outUNI				0.028*** (0.003)	
(ln) ftne outSSD inUNI				0.059*** (0.004)	
(ln) cp inSSD outUNI					0.038*** (0.003)
(ln) cp outSSD inUNI					0.043*** (0.003)
constant	-4.568*** (0.271)	-3.824*** (0.258)	-0.159*** (0.020)	-0.129*** (0.016)	-0.080*** (0.011)
N. observations	260646	260646	260646	260646	260646
N. universities	68	68	68	68	68
N. SSD#University	12495	12495	12495	12495	12495
groups					
R2	0.914	0.923	0.241	0.232	0.256
Year FE	Yes	Yes	Yes	Yes	Yes
SSD#University FE	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses  
\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Discussion

We find evidence of a persistence of political models in universities, which are among those organizations considered increasingly hierarchical (Diefenbach & Sillince, 2011). Our empirical evidence provides support for the argument that the political power concentration and distribution determine how resources are allocated, an assertion that is often only implicitly assumed in studies of control in such organizations (Musselin, 2007).

Since the rectors after the Gelmini reform can be elected for a non-renewable 6-year term, their executive role has been strengthened, and the universities have changed their statutes gaining greater autonomy. Moreover, according to Donina et al. (2015), the Gelmini reform attempted to address inefficiencies in institutional governance by including external members on governing councils to limit academic self-governance. Yet, their role is to ensure an economic and financial equilibrium and they have no power in terms of faculty recruitment. Academic self-governance and rectors' political power persist. Hence, academics retain a strong voice in the recruitment of scientific staff and the selection procedure remains discipline based.

Nonetheless, while the positive rectors' effect on the size of their SSD is present in the whole period, we find a significant differential effect after the Gelmini reform only in terms of career promotion. A sound explanation of a limited increase of rectors' political power may be due to an increase in monitoring and disciplining devices. The reform thus allows the Academic Senate to propose a motion of no confidence in the rector, with a two-thirds

majority. If the motion is approved by the rector's electorate, composed of three university estates, s/he is dismissed (Donina et al., 2015). Concurrently, the period has been characterized by a decrease in resources available to the universities, which may prevent rectors to exert their political power by limiting their room for maneuver. Moreover, following the rationales of NPM, in parallel with the Gelmini reform a new evaluating system was implemented. Academics are now increasingly assessed and promoted on the basis on their scientific activities, and universities receive a significant part of their funds according to different parameters, most of which based on performance. The use of objective and explicit measures of performance at different level of the organization may have modified the internal resource allocation processes reducing, but not annulling, some of the discretion on which some of the exercise of power hinges.

### Conclusions

Universities belong to a wider and increasingly important category of knowledge-based professional organizations (Hinings & Leblebici, 2003) such as hospitals or professional service firms, operating as public or private organizations within highly regulated orders. Notwithstanding, organizational literature has rarely been employed to understand variations in intra-organizational mechanisms of resource allocation, especially in the university context (Bleiklie et al., 2011; Ferlie et al., 2008). We show that, even in an increasingly hierarchical-bureaucratic organizations like Italian state universities, a combination of different organizational models is likely to be at work at the same time. Hence, individual actors -in this case rectors- can influence resource allocation by exerting a political power, which is typical of a traditional political model even when public policies push for hierarchization. Specifically, our significant empirical endeavor, which Lepori et al. (2013) claimed for, allows to quantify to what extent the rectors' political power favour their own disciplinary area, after having controlled for the intrinsic quality of the SSD and its growth thanks to the empirical strategy based on fixed-effects. High-quality SSDs can thus be characterised by a greater amount of resource. Nonetheless, not all rectors are the same and there exist a certain amount of heterogeneity which can be due to both individual and institutional characteristics. An interesting way for exploring specific variability within the Italian institutional context may range from including rectors' previous career and education background, to considering organizational dimensions like university reputation and ownership, by extending the analysis to non-state universities. In addition, considering European countries other than Italy where the institutional pressure to centralization is lower would give the opportunity to understand the conditions for stability of control regimes, as a venue for future research. Nonetheless, we must consider that there are multiple concerns for cross-country comparability and objective difficulties in replicating the unique data collection in this paper.

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