



RESEARCH ARTICLE

# National policies as drivers of organizational change in universities: A string of reinforcing reforms

Andreas Kjær Stage<sup>iD</sup> and Kaare Aagaard<sup>iD</sup>

Danish Centre for Studies in Research & Research Policy, Department of Political Science & Government, Aarhus University, Bartholins Allé 7, DK-8000 Aarhus C, Denmark

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Corresponding Author:  
Andreas Kjær Stage  
[ak@ps.au.dk](mailto:ak@ps.au.dk)

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## ABSTRACT

Since the turn of the millennium, the Danish university sector has been one of the most intensely reformed in Europe. In parallel, the staff composition of Danish Universities has also changed more than the corresponding compositions in other Western countries. But how direct is the link between the policy reforms and the staff changes? While we expect national policy reforms to have influence on organizational change in universities, we also know that the content and impact of policies are often shaped and modified by global trends as well as local path dependencies. To shed light on this question, this article examines the impact of four major reforms on the staff composition of Danish universities by interpreting long-term staff data at multiple levels. Contrary to the notions of change resistance and path dependency, the empirical analysis suggests that a consistent string of policy reforms has had a profound impact on the Danish universities. However, the analysis also shows that the links between national reforms and actual changes are seldom immediate and straightforward and that the local, national, and global levels interact. In doing so they often appear to reinforce the influence of each other.

## 1. INTRODUCTION

Although it is generally acknowledged that universities in most countries are becoming increasingly hierarchically organized entities with altered staff compositions (e.g., Gornitzka & Larsen, 2004; Krücken, Blümel, & Kloke, 2013; Rhoades & Frye, 2015; Stage & Aagaard, 2019), it is still unclear to what degree these developments are uniform in content and timing across different institutional and national contexts, and how we can understand the underlying drivers of these developments. While evidence regarding the former is starting to emerge (e.g., Baltaru & Soysal, 2018; Seeber, Lepori, et al., 2015; Stage, 2020), we still have limited knowledge regarding the latter. There is a profound lack of systematic investigations into potential explanations (Baltaru, 2018, p. 3) although research early on had already stressed the importance of understanding the factors associated with the observed patterns of change (Gumpert & Pusser, 1995). There are thus compelling reasons to examine some of the potential underlying drivers of the transformation of universities as organizations. This study takes one of the first steps in this direction by analyzing long-term developments in Denmark.

Two theoretical perspectives have so far dominated the scholarly debates of both change and inertia related to the development of universities. On the one hand, it is argued that global

standards push universities towards transnational convergence (Drori, Meyer, et al., 2002). Based on this perspective, national university systems are argued to become more alike over time as “global scripts” gain ground (Meyer, Ramirez, et al., 2007; Ramirez, 2013). On the other hand, it is also underlined that universities are highly institutionalized and change-resistant organizations—and hence that there are clear limits to such convergence due to local path dependencies (Paradeise, Reale, et al., 2009; Whitley, 2008, 2012). From this perspective, national and local differences are expected to be reproduced over time in spite of similar external pressures.

However, in both cases national policies can be perceived as intermediary factors that may either reinforce transnational pressures or leave room for local translation—sometimes even both at the same time. On the one hand, national policies can, at least in principle, be expected to have a direct and coercive influence, as the state can demand a high degree of compliance. On the other hand, this influence may, nonetheless, not always be as linear and immediate, as policy reforms will often leave room for local interpretation. The way in which national policies influence organizational changes can hence be expected to be shaped and modified by both global scripts and local path dependencies.

To shed light on such processes, this article investigates the link between selected national reforms and changes in staff composition in the Danish context. In doing so, the present study builds on two recent studies. The first one provides an in-depth analysis of the content of organizational change at Danish universities from 1999–2017, but it does so without touching much on the underlying drivers of such changes (Stage & Aagaard, 2019). The second study compares the Danish system’s transition toward a new university organizational model with the corresponding developments in the United States, the United Kingdom, Germany, and Norway, and shows that Danish universities have changed the most among this group of countries in terms of staff composition (Stage, 2020). Taken together, these two previous studies raise the question of how this particular development in Denmark has come about.

The article proceeds as follows: Sections 2 and 3 outline the theoretical framework and the method of this article, respectively. Section 4 proceeds by characterizing the general development of Danish university policy. Against this background, Section 5 examines the role of four major policy reforms as potential drivers of the observed developments in staff composition. In Section 6, the four subanalyses are discussed in concert, before the article concludes by reflecting upon the interaction between global, national, and local drivers of both change and inertia.

## 2. POLICY REFORMS, GLOBAL SCRIPTS, AND LOCAL PATH DEPENDENCY

Branches of institutional theory claim that universities as organizations converge on a global model (Drori et al., 2002; Ramirez, 2013). Transnational scripts, visions, or ideas about appropriate organizing are seen to travel across boundaries and affect the actual organization of local universities (Krücken & Meier, 2006; Olsen, 2007). Such spreading of ideas takes place in global fields through international relations, with the OECD and EU as important actors—often in the form of soft law (Amaral, Meek, & Larsen, 2003; Sahlin, Wijkström, et al., 2015). But transnational scripts not only affect national policy agendas but also influence the organizational members of universities (academics, students, managers, administrators, etc.). Hence, while the EU, OECD, and other transnational and intermediary organizations reflect what is happening in a global field, they also shape and disseminate visions of best practices (Sahlin et al., 2015, p. 410) and through normative pressure influence how universities are organized (King, 2009; Sauder & Espeland, 2009). At the same time, universities are also

shaped and pushed toward convergence by their members' hunt for reputation in the stratified global scientific communities, where prestigious centers, departments, or universities function as organizational blueprints for others to follow (Drori et al., 2002; Ramirez, 2013).

Other institutional scholars stress, however, that universities in general only change reluctantly and incrementally. According to this perspective, historical characteristics specific to individual organizations tend to work as buffers against external pressures. While many countries have granted universities increased formal autonomy to accentuate their competitive profiles (de Boer, Enders, & Leisyte, 2007), not all universities "want to nor can imitate the model of the US research university" (Hüther & Krücken, 2018, p. 69). For some, it is more important to be appropriately organized in the eyes of self-selected peer-organizations or national constituencies, or in accordance with traditions linked to scientific disciplines, which have varied preferences (Paradeise & Thoenig, 2013; Schmid & Wilkesmann, 2015). Due to these competing logics in the environment and varied organizational characteristics, the path dependency perspective thus suggests that external policy pressure may have limited impact on individual organizations and that differentiation and diversity tend to be reproduced over time. As organizations often have leeway to strategically select, translate, and edit external pressures, they will seek to implement elements that fit into their local cultures and pathways and decouple the rest from actual work practices (Brunsson, 2009). Hence, in this view, institutionalized organizations are relatively resilient and change less uniformly and far more incrementally than implied by the transnational convergence thesis (e.g., Ramirez, 2013).

However, national policies play an important role in between these levels. On the one hand they can function as a vehicle for the transnational pressures, which via various policies influence organizational structures. On the other, they are also in most cases leaving room for local translation at the organizational level. As such, national policies both set out an overall direction of change and provide sets of possibilities and limitations for individual organizations. Regarding the first: As most universities first and foremost are publicly funded and formally regulated organizations, they are often highly dependent on one focal resource provider in their environment. In such a situation, organizations are expected to have little power to bargain or to act against the state's mandate (Pfeffer & Salancik, 1978). In addition, although universities are granted some autonomy, a substantial part of their organizational setup and activities are explicitly mandated by laws and decrees. Hence, policy reforms can be expected to be effective in generating organizational change, because the state can require a high degree of compliance (Greenwood, Oliver, et al., 2008; Tolbert & Zucker, 1983). As national policies are used to steer public universities, and as different national politico-administrative systems translate transnational pressures differently, policy differences will from this perspective be expected, at least partly, to explain the differences in organizational models across countries (Michelsen & Bleiklie, 2013). While few scholars will claim that there always is a clear and direct link from policies to implementation, most will nonetheless acknowledge that universities are highly resource-dependent organizations and that major policy pressures can be expected to have at least some influence on their organization. This link between the content of policies and the actual organizational changes can, however, in many cases be expected to be indirect, delayed, and somewhat restricted due to policy leeway for local adaption, symbolic implementation, or even blocking of intended changes (Capano, Pritoni, & Vicentini, 2019).

### 3. METHODS AND DATA

As outlined above, different theoretical perspectives highlight coexisting dynamics of change and stability, and when taken together, underline that universities develop in multilevel

governance systems with competing logics. Hence, national policies can be expected to both mediate and be mediated by global scripts and local path-dependencies. By using detailed descriptive statistics to match staffing changes with reforms, this study sheds light on some of these complex interactions. Acknowledging their interconnectedness also implies that modesty is required in terms of drawing simple causal claims. Clear causal relationships between individual reforms and observed staff changes are in most cases difficult to detect. Rather, changes are in most cases the result of parallel, mutually reinforcing developments at different levels.

Hence, by carefully assessing the correspondence between reforms and staffing in both timing and content at different levels of detail, it is possible to improve our understanding of how state-led policies in interaction with transnational pressures impact the organization of universities. This analysis is made possible by combining data from a comprehensive payroll database containing all university employees' job titles, contract types, salary frames, and working hours, with two public databases containing longitudinal funding data at the national and organizational level. These data sources are further complemented with analyses of policy documents and previous studies.

### 3.1. Data on Staffing

The ministry granted temporary access to payroll data for all Danish universities from 1999 through to 2017. In total, it covers 256,320 individuals who received a salary payment from a Danish university at least once. These data provide a fine-grained and consistent picture of universities' staff composition over time. Although only a partial indicator, staffing changes are relevant for studying the consequences of reforms, as human resources are the main means of production at universities (Rhoades & Frye, 2015). We use formal assigned "job titles" to isolate staff within different areas of responsibilities, "collective agreements" to isolate staff holding at least a master's degree, and "salary frames" to isolate staff on formal managerial contracts. As for the latter, the salary frames from 36–41 are with few exceptions<sup>1</sup> devoted to public managers and determines their rank as specified in Table 1. Table 2 lists the most general staff categories applied in this article, as well as in the two it builds upon.

### 3.2. Data on Funding

The available disaggregated data on the funding of Danish universities over time are limited and patchy. We therefore combine data from the two most-used Danish databases, the Statistics Denmark agency and the Universities Denmark association, which are complementary but not entirely consistent. They are, however, sufficiently consistent to highlight the main national and organizational trends. In the analysis, we first distinguish between funding for education and funding for research (see Figure 1). The funding for educational activities in Denmark is almost exclusively activity based, determined by the number and composition of passed exams for each student. As a result, the number of students provides a solid indicator for the otherwise poorly documented educational funding stream.

The funding for research activities is further separated into two streams: one of block grants, which is mainly allocated based on historical criteria, but with a growing performance-based share, and one of external research funding from both public and private, national and international sources (Aagaard, 2017). How to quantify this distinction in the Danish case is not

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<sup>1</sup> Full professors, together with judges, are placed at salary frame 37 as an exception. In line with most other records of public managers, we do not count them as such (e.g., MS, 2019a, 2019b).

**Table 1.** Salary frames for Danish public sector managers (Dansk Magisterforening, 2020)

Salary frame	Rank	Basic salary (Danish krone), 2019 (excluding supplements)
36	Minor manager/team leader	516,132
37	Section/office manager	570,080
38	Division manager or vice director	648,649
39/40	Director	712,191/796,883

straightforward, as detailed disaggregated data are unavailable. In this article, we combine a seasoned estimate from Statistics Denmark (1999–2011) with a new one from Universities Denmark (2012–2017), which with sufficient detail shows the contours of the development during the period in question.

#### 4. THE DANISH DEVELOPMENT IN A COMPARATIVE PERSPECTIVE

As a backdrop to the empirical analysis in Section 5, this section outlines the main staff composition developments of Danish universities from 1999 to 2017 and compares them to the corresponding developments in four other countries. This cross-country comparison enables us to examine the Danish development in a broader context, where both general international trends towards convergence and more specific national developments play a role.

##### 4.1. The Transformation of Danish Universities

A previous study examining the development of Denmark's university system (Stage & Aagaard, 2019) documented a strong overall growth in personnel at all eight Danish universities.

As can be seen in Figure 2, the strong overall staff growth was, however, highly uneven across categories and has over time led to a high degree of intraorganizational change. At the most aggregated level, the result has been a strengthening of the academic side of Danish universities—at least when measured by the sheer number of employees in different categories. This observation stands somewhat in contrast to a popular narrative according to

**Table 2.** Applied staff categories

<b>Academic</b>	<b>Faculty:</b> Permanent academic staff (e.g., Professors, Associate Professors, and Senior Researchers)
	<b>Other academic staff:</b> Predominantly temporary academic staff (e.g., Assistant Professors, Postdocs, PhDs, Academic Assistants, and teaching positions usually not requiring a PhD degree)
<b>Nonacademic</b>	<b>Degree-holding professionals:</b> Administrative staff with a university degree (e.g., Managers, Officers, Coordinators, and Consultants)
	<b>Clerks:</b> Administrative staff usually with vocational education (e.g., Sectaries, Clerical Officers, and Section Managers)
	<b>Technical and manual staff:</b> A diverse set of employees usually with a quite different educational background and competencies than administrative staff. The technical and manual jobs are usually <i>not</i> performed at an office desk (e.g., Janitors, Laboratory Technologists, and Engineers)

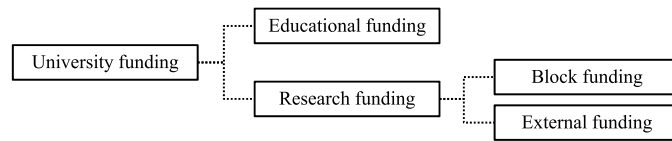


Figure 1. Types of funding streams.

which the administration is outgrowing the academics. But as soon as the aggregated categories are opened up, important nuances surface. Most notably, it is shown that the growth on the academic side is to a large extent the result of substantial growth in the use of junior academics in temporary positions. On the administrative side, the balance has also shifted between different categories, but here the direction has been almost the opposite: The strongest growth has taken place among the higher categories in the internal hierarchy, while nearly all other categories have decreased in relative terms. Overall, we thus observe a weakening of the middle and a strengthening of the bottom layers of the career hierarchy on the academic side of the universities, while the strengthening on the administrative side is found at the middle and top layers. With regard to salaries, these trends reflect the growth of the relatively low-wage academic positions and the growth of the more expensive administrative positions. Further, a detailed examination of job titles on the administrative side shows a proliferation of new, specialized management functions that are added on top of the (now shrinking) traditional administrative support functions.

#### 4.2. The Danish Development in a Comparative Perspective

In order to examine the role of specific national policies and their interaction with more general transnational drivers, it is also necessary to compare the Danish development to corresponding developments in other countries. This aspect is addressed in detail in Stage (2020) and briefly summarized here. Figure 3 shows selected patterns of both variation and similarity between the staff compositions of five different national university systems over time.

In Figure 3, it is noteworthy that the direction of changes overall is similar across countries, and that the academic staff categories have grown more than the categories of nonacademic staff in all the examined countries. Although from quite different starting points and with different intensity, the cross-country academic growth uniformly relates to the “Other academic staff” category rather than to “Faculty.” Likewise the category of “Degree-holding

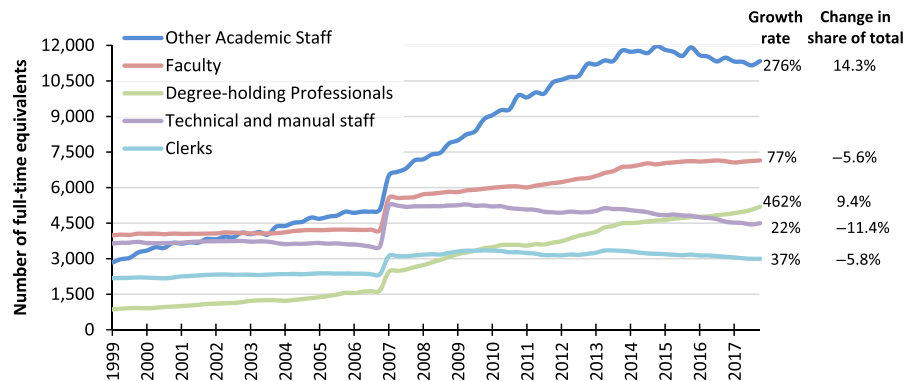
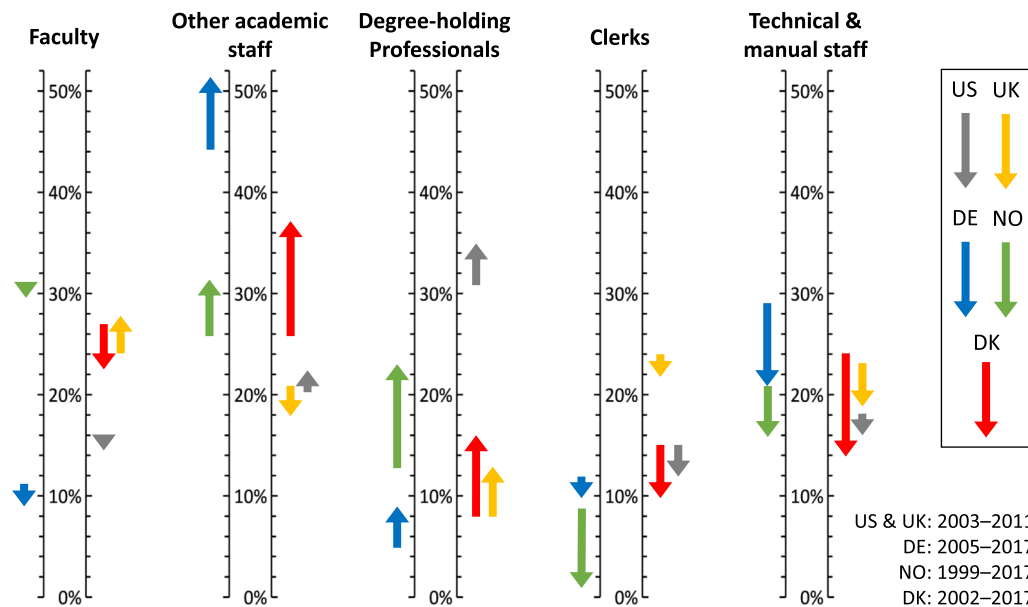


Figure 2. Staff composition across all current Danish universities, 1999–2017. The growth rate is given as a percentage and the change in share of the total is in percentage points, calculated from 1999 to 2017.





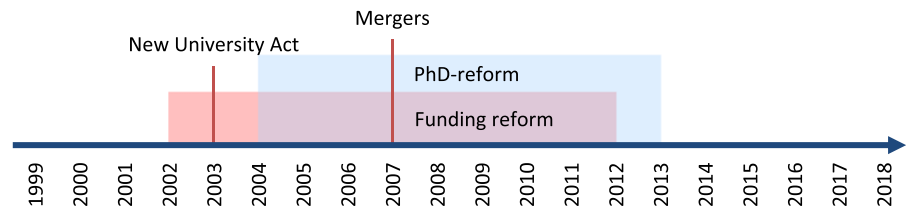
**Figure 3.** Cross-country summary of changes in the relative size of the staff categories over time.

professionals” has everywhere increased at the expense of “Clerks” and “Technical and manual staff.” The timing of these developments has been similar in the continental European countries, where the “Other academic staff” category increased in the years leading up to and after 2008 and decreased again around 2012. In contrast, the three nonacademic categories have developed incrementally across all the countries throughout the period. There are, however, also differences across countries. Overall, Stage (2020) concludes that staff composition seems to change the most in countries where the state reforms the external conditions of universities the most (e.g., regulation, funding, discourse).

Among these, Denmark is the country with the most comprehensive staff changes across the board. During the last two decades, the staff changes in Denmark stand out in comparison with the otherwise similar egalitarian system in Norway and the fellow Humboldtian system in Germany. The restructuring of the academic workforce stagnated in Norwegian universities halfway through the period, but intensified in Denmark alongside the implementation of new policy initiatives. At the same time, the restructuring of the nonacademic workforce clearly lagged behind in German universities although facing reforms and the same transnational pressures as those in Denmark. These variations align with assertions that the Danish university system is one of the most intensively reformed in Europe (Aagaard & de Boer, 2017), making Denmark an interesting case for an examination of the links between transnational pressures, state-led reforms, and local staff changes (Flyvbjerg, 2006).

### 5. DANISH POLICY REFORMS AS DRIVERS OF ORGANIZATIONAL CHANGE

Denmark, previously characterized as a slow and pragmatic adopter of international research policy ideas (Aagaard & Mejlgaard, 2012; Hansen, 2002), has during the latest decade repeatedly been singled out as a trailblazer among the European countries (Aagaard & de Boer, 2017; Bleiklie & Michelsen, 2019; Hansen, Geschwind, et al., 2019; Kallerud, 2006). In particular, the intensity of reform accelerated after a change of government in 2001, which led to a sweeping reform process with the aim of transforming Danish universities into key players in



**Figure 4.** Timeline of the investigated policy reforms.

the global knowledge economy. As a result, several reforms were launched with both direct and indirect implications for the organization of universities (Aagaard & Mejlgaard, 2012; Ejersbo, Greve, & Pihl-Thingvad, 2019). Strengthened steering capacity, increased competition for funding, higher student numbers, large-scale mergers, more comprehensive evaluation activity, and renewed focus on responsiveness and social responsibility were seen by the government as essential means to modernize the universities.

Four elements in this wave of reforms can be seen as particularly important: the University Act (2003), the PhD reform (2004–2013), the changes in the funding system (2002–2012), and the merger process (2007; See Figure 4). The first three of these are presented briefly in their respective subsections, but since the merger reform is discussed within these sections, rather than separately, it is presented briefly here.

The Danish university merger process, launched in 2007, was a far-reaching structural reform that reduced the number of universities from 12 to eight and transferred almost all the existing Government Research Institutes (GRIs) to the eight remaining universities (Aagaard, Hansen, & Rasmussen, 2016). One of the results was a large concentration of resources within the three largest universities (University of Copenhagen, Aarhus University, and the Technical University of Denmark), which today receive close to two-thirds of public research funding. In addition, the reform represented a clear break with the former division of labor between academic research and applied GRI research (Aagaard, 2011).

In the following subsections, the relationships between these reforms and changes in staff compositions are analyzed one by one.

### 5.1. The University Act

In 2003, a new University Act, labeled by the responsible minister as the most fundamental change to the organization of research and education since the establishment of Copenhagen University in 1479, substantially reformed the governance structure of Danish universities (Andersen, 2006). First, the reform removed the universities from the formal state hierarchy and turned them into “self-owned entities” with the power to draft their own statutes. The ministry was still to set policy goals, define budgets, and perform audits, but the universities were given more freedom to decide how to organize and manage their activities (Degn & Sørensen, 2015; Wright & Ørberg, 2008). Second, the reform instilled university boards with an external majority, replaced elected academic leaders with appointed managers, and reduced the power of the collegial senates. Hence, after the reform a clear line management structure was introduced, where the university boards appoint rectors, who appoint deans, who in turn appoint heads of departments (Christensen, 2012). Hence, the new leaders are now appointed downwards and responsible upwards. This new managerial structure was expected to lead to professionalized management, enable strategic decision-making, and to strengthen external accountability (Wright & Ørberg, 2008).



The large-scale impact of this reform on the organization of Danish universities has been highlighted repeatedly (e.g., Aagaard & Mejlgaard, 2012; Christensen, 2012; Degn & Sørensen, 2015; Ejersbo et al., 2019; Paldam, 2015; Wright & Ørberg, 2008), but despite common references to expanded management and increased top-down steering, it remains uncertain how the reform was implemented in practice and how it influenced staff compositions. Based on policy texts and public staff data, Christensen (2012) highlights two ways in which the 2003 reform changed the traditional managerial structure:

1. The Act turned academic “manager roles” into full-time “line manager positions.”
2. The professionalization efforts led to specialized “administrative manager positions.”

The actual scale and pace of these developments is, however, far from evident in the study by Christensen (2012) or any other (e.g., Boden & Wright, 2010; Paldam, 2015). Both the development of the line management (rectors, vice-rectors, deans, vice-deans, department heads, and research directors) and the administrative management structures are examined in the following.

### 5.1.1. Growth of line managers

Prior to the 2003 reform, few departments and faculties had a formal manager position. Instead, most decision-making was carried out by academics placed in temporary “manager roles.” These roles circulated among senior colleagues on the basis of collegial elections and were, as a general rule, only part time and secondary to one’s main position, usually as a professor (Christensen, 2012). Contrary to the former informal management roles, the incumbents of the new line manager positions became employed on formal manager contracts with dedicated job titles. Figure 5 shows this development.

The increases in top line managers (Frame 37 and above) in particular accelerated around the academic year 2006/2007. This timing corroborates previous research showing that the first steps of the implementation of the reform were quite slow. Hence, it took 3–5 years from the formal adoption of the 2003 reform until the appointed line managers had replaced the elected leaders at all levels of the universities (Lind & Aagaard, 2017). Figure 5 reveals, in addition, that a large share of the appointed line managers were employed “outside salary frames” during the first 4–5 years.

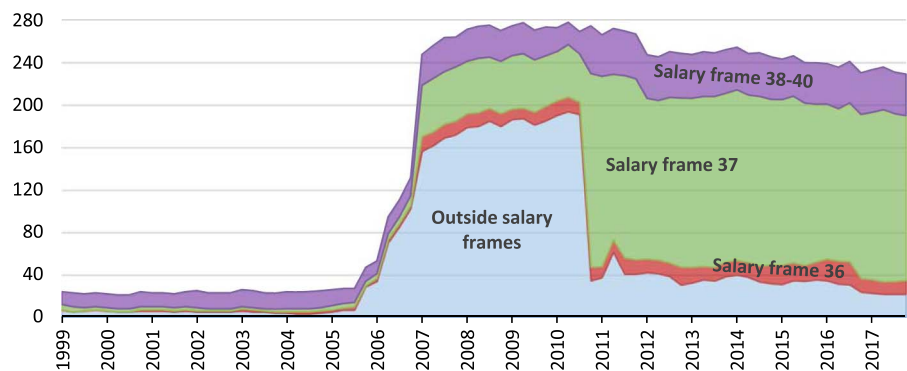


Figure 5. The number of “line managers” (FTEs) at four salary frame levels, 1999–2017.

Table 3 shows the composition of the rising numbers of FTEs (full-time equivalents) in job titles related to the manager roles that today constitute line management. While in 1999 only a few, beyond the rectors, were employed in dedicated manager positions, the situation had become markedly different in 2017. The largest change is found in the number of deans and vice deans and among the heads of department. The number of center/research managers, who are in charge of smaller academic units associated with a department, has also grown. However, the increases shown from 1999 to 2017 are obviously somewhat misleading, as it is unknown how many de facto FTEs were spent in manager roles prior to implementation of the Act. But while the exact figures are uncertain, it is still clear that the overall increase has been substantial. This increase also reflects the broader set of responsibilities introduced with the Act. In comparison with the former manager roles, the new line managers hold considerably stronger decision-making power and have a more explicit and much broader strategic steering responsibility. And to an increasing degree they are not only holding this stronger decision-making power but also using it actively. In other studies this is observed at the central level, where several universities have engaged in large reorganizations championed by rectors, vice-rectors, and deans, and at the department level, where department heads are taking a more active role in strategic steering (Degn, 2015a, 2015b; Hansen, Lind, & Stage, 2020; Lind & Aagaard, 2017).

However, the new University Act not only resulted in the explicitly required clearer and more expanded line management structure, it also influenced the traditional administrative side of the universities. The next section examines this development.

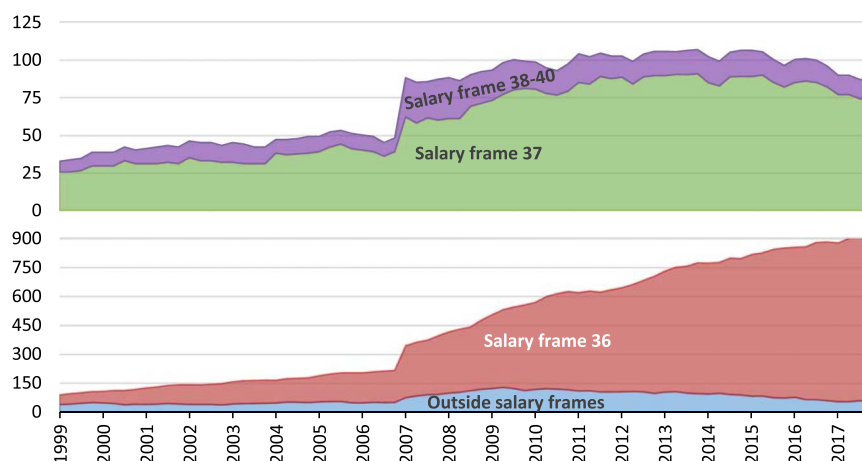
### 5.1.2. Growth in the number of administrative managers

As shown in Stage and Aagaard (2019), it is particularly among the *pure* administrative positions that an increase in the number of new, specialized managers can be detected. Figure 6 shows the development in the number of administrative management positions outside line management.

In addition, Table 4 shows the development of four types of manager positions within the top salary frames from 1999 to 2017. In Danish nomenclature, there is a hierarchical relationship between the job titles of Director (*Direktør*), Manager (*Chef*), leader (*Leder*), and senior consultant (*Chefkonsulent*). Similar to the development of line managers, Figure 6 and Table 4 show that degree-holding managers have developed in the direction of an elaborated pyramid shape with a wider middle and bottom layer. Hence, there has been a substantial increase in the number of lower level managers.

**Table 3.** The number of “line managers” (FTEs) at Danish universities in 1999 and 2017

Type	1999	2017
Rectors	8	8
Vice-rectors	2	8
Deans	6	25
Vice-deans	0	24
Heads of departments	2	143
Center/research managers	5	34



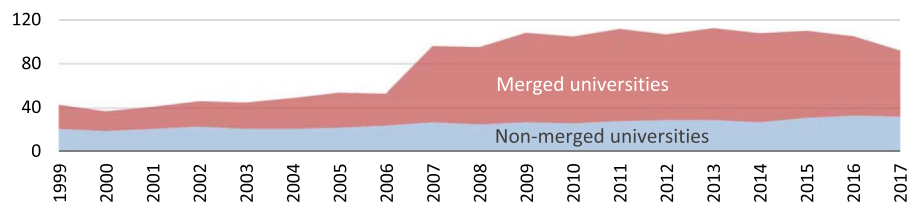
**Figure 6.** The number of “degree-holding administrative managers” (FTEs) at four salary frame levels, 1999–2017.

However, the strong growth in the number of manager positions in the highest salary frames around 2006/2007 was not exclusively linked to the implementation of the University Act. 2007 was also the year of the mergers between universities and GRIs. Initially, half of the new top managers at the universities came from the absorbed units (four small universities and nine GRIs). But while some of these incoming top managers were phased out over a few years (due to redundancy as a result of merging self-contained administrations), the total number of top manager positions did not decrease. Figure 7 shows the different volumes of top managers at merged and nonmerged universities.

Hence, the reduction in the number of top managers that was expected to be achieved by economies of scale due to the mergers did not materialize. Rather, new types of top managers were employed in exchange for the ones that became redundant. Part of the explanation of this pattern is most likely linked to the fact that the number of top managers (salary frame 37

**Table 4.** Types of degree-holding managers (FTEs) at Danish universities in 1999 and 2017

Salary frames	Type	1999	2017
38–40	Directors	8	11
	Managers	1	1
	Leaders	0	1
37	Directors	1	44
	Managers	19	27
	Leaders	4	4
36	Directors	0	10
	Managers	29	133
	Leaders	7	115
	Senior consultants	10	580



**Figure 7.** Top administrative managers (salary frame 37 and above) at merged and non-merged universities, 1999–2017.

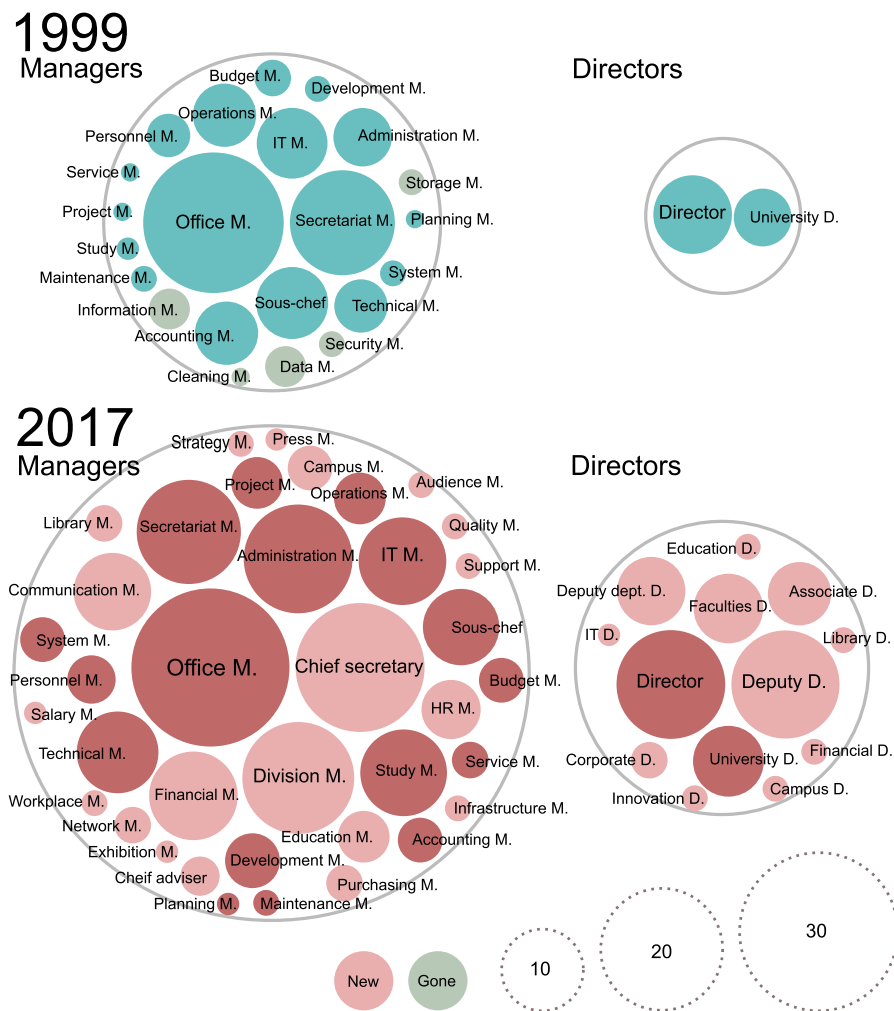
and above) at Danish public institutions is restricted by a quota assigned by the Ministry of Finance (MS, 2019a, 2019b). As a result of the mergers, the three largest universities had their quotas expanded overnight. In the following decade, these universities continued to use the new full quotas, probably because it was available to them, and partly because it was contractually difficult to downgrade redundant top managers. Instead of restricting the number, it appears that the quotas in this particular case actually led to a lasting increase in the number of top university managers.

Contrary to the abrupt development in the management positions with the highest salary frames in the three largest universities, the number of managers in salary frame 36 (which is outside the control of the Ministry of Finance) has steadily increased over the full period at all universities, from fewer than 100 in 1999 to more than 900 in 2017 (Figure 6). The development of this category shows, on the one hand, that the change processes were well under way before the 2003 reform, but also that the move towards a more comprehensive and specialized management system was accelerated after the appointed line managers took office around 2006/2007.

Around 75% of the administrative leaders in salary frame 36 hold the job title of “Senior consultant,” which is formally a minor manager or team leader position and is also increasingly used as a final career advancement step for degree-holding specialists. The remaining 25% generally hold job titles such as “Head of secretariat” or “Head of unit.” Overall, the stark expansion of lower level managers indicates a move towards a university administration composed of an increasingly fine-grained system of specialized offices. The large lowest level of (middle) managers, especially the senior consultants, also reflects a move toward more project- or team-based public administration, with many new leaders of relatively small teams.

Figure 8 shows that the administrative hierarchy has not simply been upscaled from 1999 to 2017 but also expanded with new administrative layers and divisions. While the overall number of staff doubled, the size of the administrative hierarchy tripled, which is a conservative estimate, as many omitted senior consultants also act as managers. Those manager and director categories that were large in 1999 (the red circles, e.g., Office manager, Secretariat Manager, and Director) remained large in 2017, although new, equally large categories had emerged (the pink circles, e.g., Financial Manager, Division Manager, Communication Manager, Deputy Director, Associate Director). The few small manager categories that ceased (the green circles) do not represent discontinued but rather outsourced or merged responsibilities. Above all, the new managerial titles are hyphenated with rank or area, revealing the contours of an extended hierarchy and its increasingly fine-grained system of specialized offices. Hence, the administrative hierarchy has obviously been expanded and elaborated.

Overall, this part of the analysis thus supports the claim that the University Act has contributed to changing Danish universities as organizations. A new and more elaborated hierarchy of both line managers and administrative managers has developed over time. This



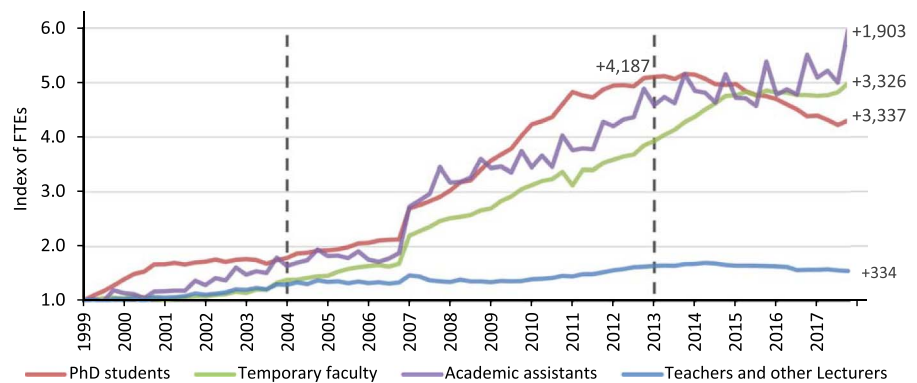
**Figure 8.** The volume and composition of the administrative top manager and director job titles<sup>2</sup> at Danish universities in 1999 and 2017.

development sheds light in particular on the emergence of a changed managerial structure in the form of a large-scale influx of employees working on tasks that previously were not regarded as part of the core administrative and managerial responsibilities. There is a fairly clear correspondence between these positions and the implementation of the policy agenda behind the University Act, but not a one-to-one relationship. First, the development started even before the reform, and secondly other reforms are also likely to have played a role. So while the University Act most likely accelerated the observed development, it does not fully explain it. The following sections examine other important factors.

### 5.2. The PhD Reform

In parallel to the University Act, the Danish PhD system was also reformed. Where the University Act mainly influenced the composition of the nonacademic side of the universities, the PhD reform first and foremost targeted the composition of the academic staff. The first part

<sup>2</sup> Job titles containing either “*Direktør*” or “*Chef*.” The figures do not include senior consultants, although many act as managers.



**Figure 9.** Index of FTEs in academic subcategories at all current Danish universities, 1999–2017. The start and end of the PhD reform are marked by vertical lines.

of the reform was implemented in 2004, when Parliament decided to increase the PhD uptake by an additional 460 students per year. This ambition was subsequently significantly strengthened with the Globalization Strategy of 2006, which (among other goals) aimed to double the entire PhD uptake before 2010. This target was incorporated into the funding allocation and development contracts between universities and the Ministry in the period from 2007 to 2010. One-third of the additional PhD expenditure was granted in block funding, while the remaining two-thirds was to be covered by expected increases in external research funding (Aagaard, 2011, p. 392).

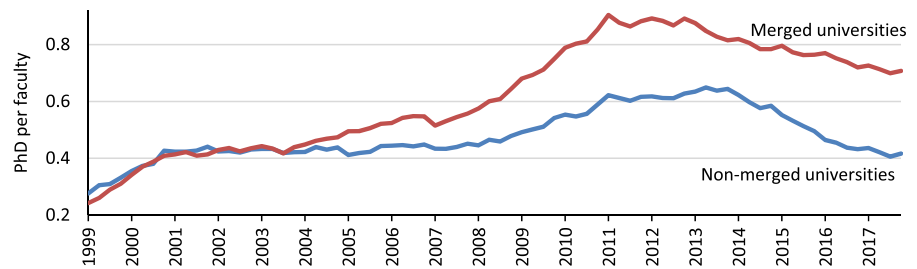
As shown in Figure 9, the number of PhD students did, in fact, grow as fast and as extensively as the reformers demanded. It even outpaced the target. The termination of the PhD reform also had a delayed but clear effect (since a PhD grant lasts 3 years in Denmark). The PhD population peaked in early 2014 with no fewer than 5,200 FTEs. Since then, the number has decreased consistently by around 70 FTEs every quarter.

It is, however, noteworthy that the two categories of “Academic assistants” and “Temporary faculty” (e.g., postdoctoral researchers in particular) grew almost as quickly as the PhD students, even though they were not covered by the PhD reform’s formal instruments. Moreover, these two categories did not start to decrease after the termination of the reform. Although the temporary faculty numbers stagnated for 3 years after 2015, the absolute numbers did not decrease. The spiky<sup>3</sup> line of academic assistants also continued its irregular rise, reaching a new high in 2017. The abrupt increases for most categories in 2007 reflect the mergers, which brought additional staff into the current universities from the absorbed units.

Regardless of whether they were affected by the mergers in 2007, all Danish universities had a similar ratio between PhD students and faculty in the first 5 years of the period, but this ratio began to increase more rapidly at the merged universities towards the end of 2005 (Figure 10). This likely reflects that the merged universities were already, from the outset, more research intensive than the nonmerged ones. The further concentration of research resources at the three biggest Danish universities as a result of the mergers in 2007 further accelerated this trend (Aagaard et al., 2016). In addition, the merged universities also benefitted from field-specific requirements in the PhD reform.

<sup>3</sup> The spikiness reflects that employment of research assistants is concentrated at the end of each year.

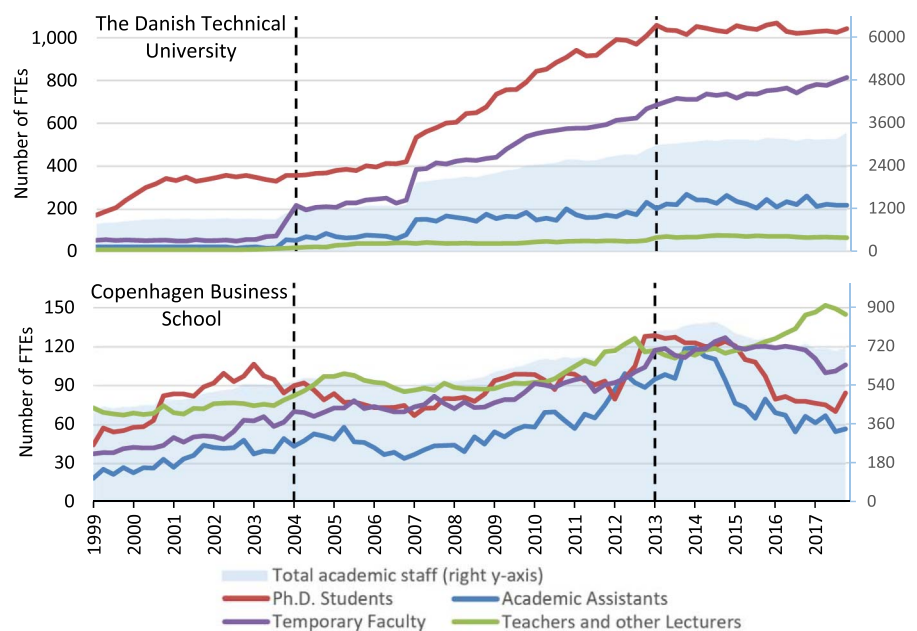




**Figure 10.** PhD students per permanent academic position at merged and nonmerged universities.

A more detailed insight into the effect of the PhD reform can be gained by looking at the developments within two selected universities. Here variation can be expected between universities with different profiles as the PhD reform primarily aimed to increase the uptake within the medical, technical, and natural sciences (90% of the increase was to take place within these fields according to the reform agreement [Pedersen, 2015, p. 21]). Hence by comparing the Danish Technical University (DTU), a Natural Science/Technical Science university, with Copenhagen Business School (CBS), a Social Science/Humanities university, it is possible to see the effects of the reform at a disaggregated level.

As can be seen in Figure 11, the pattern here is in line with the reform’s intention. DTU had a strong increase in PhD students under the reform period, while the pattern at CBS appears to be almost unrelated to the reform. In fact, the strongest fluctuation in the number of PhD students at CBS can be observed after the reform’s termination and as the growth levels off at DTU.



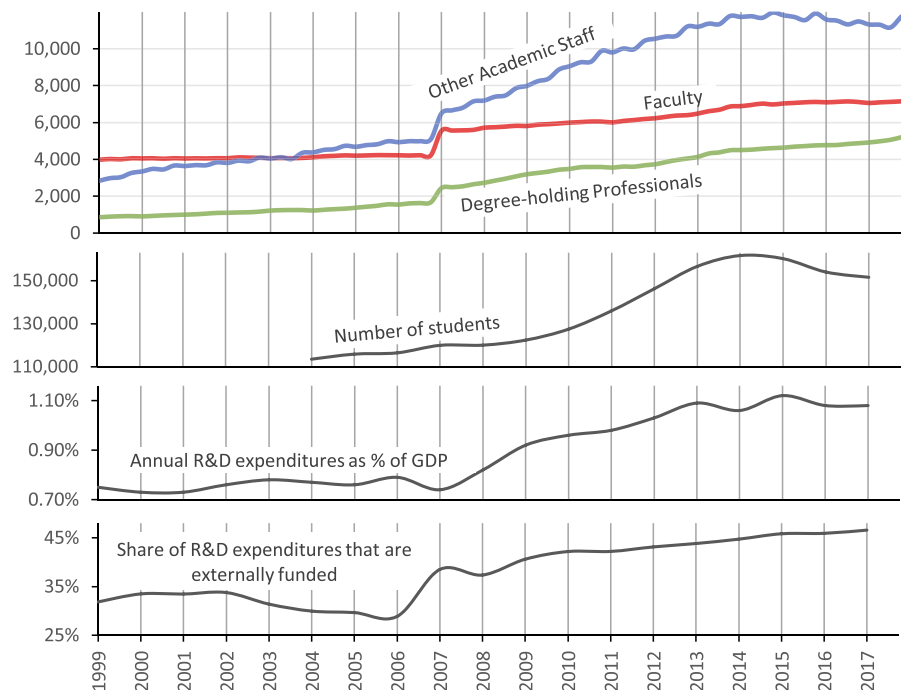
**Figure 11.** The number of FTEs in four subcategories of “Other academic staff” and the total number of academic FTEs at The Danish Technical University and Copenhagen Business School, 1999–2017. The dotted lines mark the start and end of the PhD reform.

Hence, overall the correlation between the PhD reform's content and timing and the actual developments within the PhD category suggests a relatively clear relationship between the two. However, the fact that the number of PhD students outgrew the target and the fact that the two other temporary academic subcategories surged simultaneously shows that also in this case there appears to have been other coinciding, reinforcing factors. Funding is likely to be one of the most important of these. Hence, the role of changed funding streams is examined in the next section.

### 5.3. Changes in the Volume and Composition of Funding

While the University Act, the PhD reform and the mergers influenced staff compositions, it cannot be disregarded that the reforms were implemented in a period characterized by strong overall growth in the funding of universities (see Figure 12). This growth, however, was not evenly distributed across different funding streams or across individual universities. Hence, both the overall growth in itself and the changed funding composition can be expected to have played a role in the restructuring of university staffing.

The general funding changes were initiated in the early 2000s, when a number of new funding organizations were established, but accelerated sharply as a result of the Globalization Strategy, which led to an unparalleled investment in the university sector from 2007 to 2012. The link between changes in specific funding streams and specific staff categories is, nonetheless, far from straightforward. Due to a combination of a high degree of financial autonomy and substantial complementarity between different "university missions" (teaching, research, and outreach), the different funding streams cannot be clearly



**Figure 12.** The development in three selected staff categories, compared to indicators of changes in the three funding streams, at all Danish universities 1999–2017. (Source: Statistics Denmark [1999–2011] and Universities Denmark [2012–2017]).

disentangled within the universities. Hence, organizational changes can rarely be attributed directly to changes in a single funding stream. Still, some funding streams can be expected to be more closely linked to some staff categories than to others. In particular, it is often assumed that increased external research funding gives rise to temporary academic positions (e.g., Milojevic, Radicchi, & Walsh, 2019; Yudkevich, Altbach, & Rumbley, 2015).

First, the funding for educational activities in Denmark is almost exclusively activity-based, determined by the number and composition of passed exams for each student. As a result, there is a close relationship between the number of students and the educational funding stream. As can be seen in Figure 12, there has been a substantial increase in the number of students, which increased by 42 percent from 2004 to 2014. These numbers, however, dropped again over the last 4 years of the period under study due to state-led quotas in certain fields of study.

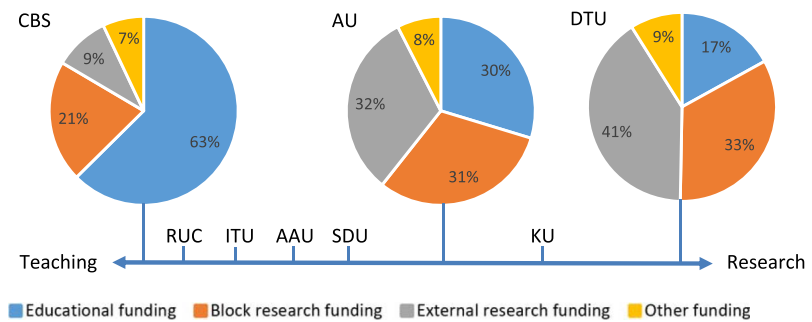
Second, the funding for research activities consists of two streams: one of block grants (which are mainly allocated based on historical criteria, but with a growing performance-based share), and one of external research funding from both public and private national and international sources (Aagaard, 2017). Figure 12 shows these two streams combined as “Annual R&D expenditures as a percentage of GDP,” which increased in particular from 2007 and onwards.

A disproportional part of this increase in R&D expenditures has, however, been allocated through the external stream, and often with special strings attached (Aagaard, 2017). Figure 12 shows the contours of the development during the period in question. The main increase in external funding here again took place in the years after 2007, where its relative size grew from around 30% to 45%.

As shown in Figure 12, we will in the following subanalysis focus on the relationships between these funding streams and three selected staff categories: “Other academic staff,” “Faculty,” and “Degree-holding professionals.”

As stated above, it is generally assumed that there is a close link between external research funding and the number of mainly junior academics in temporary positions. In reality, however, this link is less visible than one could expect—at least at the aggregated sector level. While the share of temporary academic staff obviously grew in the period when the share of external funding increased the most (from 2007–2010), it also grew (although at a slower pace) in the period from 2002–2006, when the share of external funding was decreasing. Likewise, it can be seen that the number of academic staff in temporary positions started to drop from around 2015, although the share of external research funding continued to increase. However, as shown in the previous subanalysis, the drop first and foremost relates to the termination of the PhD reform, which effectively decreased the number of PhD students, but not so much the other temporary staff groups. With regard to the other two staff categories (faculty and degree-holding professionals), the relationship between individual funding streams and changes in size is even less detectable at the aggregated sector level. The developments here appear to be more closely associated with the overall growth in resources than to fluctuations in specific funding streams.

Since the eight Danish universities have rather different compositions of funding, it is possible to further disentangle the relationship between funding types and staff categories by examining selected universities separately. Figure 13 shows just how different the funding compositions of the universities are. The distributions are shown for just 1 year because the major institutional differences have been fairly stable from 2007 to 2017.

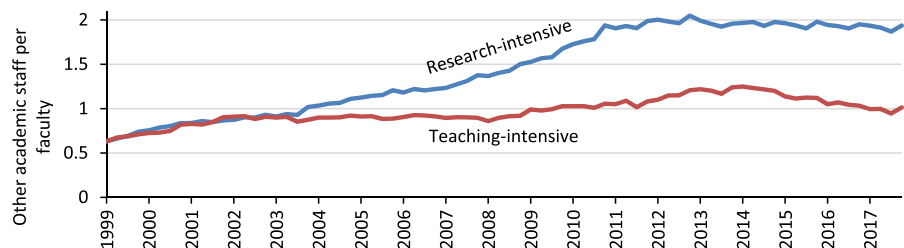


**Figure 13.** Funding composition of Danish universities on a tentative continuum from teaching-intensive to research-intensive, exemplified by three selected universities in 2017 (Source: Universities Denmark).

The research-intensive universities receive significantly more external funding and larger block grants for research activities than the teaching-intensive ones, which rely mostly on the activity-based educational funding stream. These institutional differences in funding compositions are increasingly reflected in the academic staff composition. From around 2003, a divide began to grow in the ratio of temporary to permanent academic positions across the continuum above. All universities had a similar ratio at the beginning of the period, but the size of the temporary academic workforce clearly increased at a faster pace at the research-intensive universities during the period where the share of external research funding increased. Figure 14 shows the contrast between the two universities that are located closest to each end of the continuum.

External research funding accounted for respectively 41% (DTU) and 35% (KU) of the two most research-intensive universities' 2017 budget, and they employed two "Other academic staff" for every "Faculty" member. In contrast, external research funding accounted for only 10% of the two most teaching-intensive universities' 2017 budget, and they employed only one "Other academic staff" for every "Faculty" member. Conversely, the teaching-heavy universities have a relatively larger share of "Faculty"; for instance, RUC had almost twice the share as DTU in 2017 (33% vs. 18%).

Contrary to these developments within the academic workforce, no clear link emerges between specific funding streams and changes in the administrative/managerial workforce from the analysis of separate universities. The category of degree-holding professionals (as well as the categories of line managers and administrative managers examined above) increased with surprisingly uniform intensity and persistence across the rather differently funded universities.



**Figure 14.** "Other academic staff" per permanent academic staff at the two most research-intensive and two most teaching-intensive universities, 1999–2017.

This group of specialized managers and administrators increased no less at RUC than at AAU, even though these universities have had the smallest and largest changes in the level and composition of funding respectively. In the same vein, the degree-holding professionals group grew only slightly more at CBS and DTU than it did at the other universities, even though they have contrasting academic profiles (social science vs. technical science) and funding bases (teaching vs. research funding).

However, the number of technical and manual staff for every academic staff member has developed unevenly across the continuum of differently funded universities. The research-intensive universities have gone from 0.71 to 0.26, compared to 0.23 to 0.13 at the teaching-intensive universities. Obviously, CBS and RUC, with their predominantly Social Science profiles, employ considerably fewer craftspeople and technicians for performing experiments. The high reduction at the research-intensive universities signals a link between these research-supporting technicians and the stark increase in temporary junior academics, and hence also a link to the increases in external research funding. “Technical and manual staff” is, however, a many-sided category that is also influenced by the other reforms examined above. The move to larger, more professionally managed and “self-owned” entities were explicitly intended to lead to economies of scale and to outsourcing of manual tasks, of which these reductions may also be a weak indication.

## 6. DISCUSSION AND CONCLUDING REMARKS

There is little doubt that the major national policy reforms of recent decades have had a profound influence on the staff composition of Danish universities. Overall, there is a relatively clear correspondence between the scope, direction, and content of the reforms on the one side, and the type and magnitude of organizational changes observed on the other. Hence, instead of change resistance and path dependency, the general development has been characterized by a comprehensive change in Danish universities as organizations—at least seen through the lens of the relative growth and decline of different staff categories. It is, however, equally evident from the analysis that the relationships between most of the individual reform elements and the observed changes in staff developments seldom have been immediate, direct, and straightforward.

Only in a few instances do we observe a relatively clear correspondence between the individual reform elements and the changes in staff composition. Elements of the University Act and the PhD reform are examples of such elements with an almost one-to-one relationship between reform content and staff changes (although with time lags), but these relationships are rather exceptions than the rule. Notably, these two reforms had strong coercive elements and left limited room for local adaptation. But even here it is highly plausible that at least parts of the observed developments in staff composition would have occurred anyway. For the rest of the reform elements, the opposite has typically been the case. Most of the reform elements examined in this article provided substantial leeway for the universities regarding how to implement them. As a result, the direct effects of these reform elements in isolation are much more difficult to disentangle.

For two decades now, the staff composition of Danish universities has nonetheless consistently moved in the same overall direction. It thus makes sense to think of the national policies in question, together with other minor reforms not covered in this article, as a “string of reforms” with a relatively coherent vision of how to organize Danish universities. Moreover, these different reform elements have, in general, interacted and reinforced one another’s effects. This finding also corresponds to previous policy studies (Degn & Sørensen, 2015; Greve

& Ejersbo, 2019; Lind & Aagaard, 2017), which highlight that reforms “tend to come in packages or in strings” (Brunsson, 2009, p. 54). Our empirical analysis accordingly shows that the substantial staff changes eventually took place in correspondence with the content of the reform package as a whole, but that the changes in most cases only manifested themselves slowly over time and often with considerable time lags. A related and important fact was that most of the reforms came without additional funding. The University Act and the mergers were expected to be budget-neutral in the long run, and the PhD reform was only partially funded through increased institutional funding. However, the reforms were implemented in a period of general growth, and the university leaders were under the impression that compliance with the unfunded reforms would increase the chances of getting a good share of the additional resources that were simultaneously allocated through other strings in the funding system (Aagaard, 2011).

The national development can, however, not be fully understood without also taking the global and local levels into account. On the one side, the consistency in the direction of the string of reforms suggests that the vision of change has been strongly inspired by the transnational discourse on the organization, role, and missions of universities, which flourished during the period under examination (Paradeise et al., 2009). Developments with similar direction have thus been observed in many other countries during the same period. Stage (2020), for instance, shows that transformations similar to those observed in Denmark also happened in the United States, the United Kingdom, Germany, and Norway. This convergence shows how perceptions of legitimate practices within the global field of universities have opened room for new types of strategic decision-making about recruitment and division of labor. As a result, a bottom-heavy academic workforce and top-heavy administration appear to have become the “new normal” across countries. This appears to be both the result of national policies shaped by transnational pressures and local implementation influenced by normative pressure from the organizational field of universities.

Hence, the reform’s high impact on Danish universities has also to some degree been reinforced by the universities themselves. The apparently close congruence between the overall policy-vision and the “models” that are either in place or being praised in countries where “world-class” universities are based (e.g., the United States, the United Kingdom) have also created a normative pressure at the local level, urging the Danish universities to implement and translate the reforms in certain ways. In the opposite scenario, if the reforms had contradicted transnational trends in the global field of universities, the Danish universities would have been more likely to resist or modify the policy demands—and given the flexibility related to most of the reform elements, other paths could have been possible to pursue. At the same time, it should also be noticed that, while the different Danish universities have all changed in a similar direction, they have also maintained some of their initial differences. Most importantly, it should be noted that the string of reforms appears to have led to increased homogenization on the administrative side of the universities but to increased differentiation on the academic side. Where the administrative hierarchy has developed in uniform ways across all universities, the differences in staff composition between teaching- and research-intensive universities, respectively, appear to have widened on the academic side.

But as Stage (2020) also shows, the transformation of the organizational model of universities has gone further in Denmark than in any of the other examined countries. Hence, the transnational pressure and local adaption outlined above cannot fully explain the Danish case. As the present analysis has shown, the more far-reaching Danish staff changes appear to have been driven by specific national policies and actor constellations. This observation is opposite to what Hüther and Krücken (2018) observe in neighboring Germany, where policy reforms



have apparently played a minor role in university change. They argue that their federal system has led to many disconnected and contradictory university reforms and their constitution has curbed reforms by protecting full professors' autonomy. Our Danish case, therefore, raises a second-order question: How were Danish policymakers successful in bringing about changes that have been difficult to carry through in other countries? While a thorough analysis of such questions is beyond the scope of this article, Aagaard (2011) and Aagaard and Mejlgaard (2012) suggest a number of possible explanations.

First, the Danish reform agenda has since the turn of the millennium been characterized by a high degree of consensus among policymakers and central stakeholders. Hence, there has been limited opposition to the development outside of the universities. Second, the Danish universities have at the same time had difficulties finding consensus among themselves and have therefore had limited veto power. Third, the reformation of the Danish university system has been a long, relatively unitary, and gradual process with many layers of reinforcing reforms. Hence, through different layering and displacement processes taking place over a prolonged time period, Danish policymakers have succeeded in bringing about change that would otherwise be difficult to implement in fewer steps over a shorter time period. As Streeck and Thelen (2005, p. 23) argue, when institutions defy radical change, differential growth of selected elements can eventually lead to the desired changes. Hence, the Danish string of reinforcing reforms seems to have circumvented parts of the change-resistant nature of universities. And fourthly, but not least, it is important to highlight that the period as a whole has been characterized by strong financial growth. Generally, it is easier to implement layering and displacement strategies when additional money is allocated to the system (Aagaard, 2017).

Hence, policies do matter, and national political-administrative systems can not only be seen as mediators of transnational ideas, but also as systems that continue to translate, modify, or even amplify general trends into policies with distinct national colors (Gornitzka & Maassen, 2014; Michelsen & Bleiklie, 2013). In the case of Danish universities, global pressures quite clearly shaped and empowered the impact of policy reforms, which again empowered hierarchical structures, which in turn further empowered the impact of policy reforms and global pressures. Hence, the empirical evidence supports the notion that global pressures, the state authority, and the university management have all simultaneously had a substantial impact on the trajectory of Danish universities, but also that the string of reinforcing reforms has been the key catalyst.

#### **AUTHOR CONTRIBUTIONS**

This article has been developed collaboratively with both authors, Andreas Kjær Stage and Kaare Aagaard, contributing equally. Andreas Kjær Stage: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Software, Validation, Visualization, Writing—original draft, Writing—review & editing. Kaare Aagaard: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Validation, Visualization, Writing—original draft, Writing—review & editing.

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The authors have no competing interests.

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The data on funding used in this manuscript are publicly available from the Statistics Denmark agency and the Universities Denmark association. The data on staffing cannot be made publicly available in a data repository due to social data protection requirements.

REFERENCES

Aagaard, K. (2011). *Kampen om basismidlerne*. The Danish Centre for Studies in Research and Research Policy, Aarhus University.

Aagaard, K. (2017). The evolution of a national research funding system: Transformative change through layering and displacement. *Minerva*, 55, 279–297.

Aagaard, K., & de Boer, H. (2017). The Danish UNIK initiative: An NPM-inspired mechanism to steer higher education. In *Policy Analysis of Structural Reforms in Higher Education*. Dordrecht: Springer.

Aagaard, K., Hansen, H. F., & Rasmussen, J. G. (2016). Mergers between governmental research institutes and universities in the Danish HE sector. *European Journal of Higher Education*, 6(1), 41–55.

Aagaard, K., & Mejlgaard, N. (2012). *Dansk forskningspolitik efter årtusindskiftet*. Aarhus Universitetsforlag.

Amaral, A., Meek, V. L., & Larsen, I. M. (Eds.) (2003). *The Higher Education Managerial Revolution?* Dordrecht: Springer.

Andersen, H. (2006). Universitetsreform: Topstyring og ensretning. *Dansk Sociologi*, 13(4), 78–88.

Baltaru, R.-D. (2018). Universities' pursuit of inclusion and its effects on professional staff: The case of the United Kingdom. *Higher Education*, 77, 641–656.

Baltaru, R.-D., & Soysal, Y. N. (2018). Administrators in higher education: Organizational expansion in a transforming institution. *Higher Education*, 76, 213–229.

Bleiklie, I., & Michelsen, S. (2019). Scandinavian higher education governance—Pursuing similar goals through different organizational arrangements. *European Policy Analysis*, 5(2), 190–209.

Boden, R., & Wright, S. (2010). Follow the money. An interim report on Danish University funding prepared for Dansk Magisterforening. *Working Papers on University Reform*, 16.

Brunsson, N. (2009). *Reform as Routine: Organizational Change and Stability in the Modern World*. Oxford: Oxford University Press.

Capano, G., Pritoni, A., & Vicentini, G. (2019). Do policy instruments matter? Governments' choice of policy mix and higher education performance in Western Europe. *Journal of Public Policy*, 1–27.

Christensen, J. G. (2012). Magt og management på universiteterne. In J. Faye & D. B. Pedersen (Eds.), *Hvordan Styres Videnssamfundet? Nyt fra Samfundsvidenskaberne*.

Dansk Magisterforening. (2020). Løn i staten. Retrieved January 29, 2020, from <https://dm.dk/din-loen/leder/loen-i-staten>

de Boer, H., Enders, J., & Leisyte, L. (2007). Public sector reform in Dutch higher education: The organizational transformation of the university. *Public Administration*, 85(1), 27–46.

Degn, L. (2015a). Identity constructions and sensemaking in higher education—A case study of Danish higher education department heads. *Studies in Higher Education*, 40(7), 1179–1193.

Degn, L. (2015b). Sensemaking, sensegiving and strategic management in Danish higher education. *Higher Education*, 69(6), 901–913.

Degn, L., & Sørensen, M. P. (2015). From collegial governance to conduct of conduct: Danish universities set free in the service of the state. *Higher Education*, 69(6), 931–946.

Drori, G. S., Meyer, J. W., Ramirez, F. O., & Schofer, E. (2002). *Science in the modern world polity: Institutionalization and globalization*. Stanford: Stanford University Press.

Ejersbo, N., Greve, C., & Pihl-Thingvad, S. (Eds.). (2019). *Governing the reformed university*. New York: Routledge.

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2), 219–245.

Gornitzka, Å., & Larsen, I. M. (2004). Towards professionalisation? Restructuring of administrative work force in universities. *Higher Education*, 47(4), 455–471.

Gornitzka, Å., & Maassen, P. (2014). Dynamics of convergence and divergence: Exploring accounts of higher education policy change. In P. Mattei (Ed.) *University Adaptation in Difficult Economic Times*. Oxford: Oxford University Press.

Greenwood, R., Oliver, C., Suddaby, R., & Sahlin-Andersson, K. (2008). *The SAGE handbook of organizational institutionalism*. Thousand Oaks, CA: SAGE Publications Ltd.

Greve, C., & Ejersbo, N. (2019). University reforms in context—The relationship between university reforms and general reforms in the public sector. In C. Greve & N. Ejersbo (Eds.), *Governing the reformed university* (pp. 27–39). New York: Routledge.

Gumport, P. J., & Pusser, B. (1995). A case of bureaucratic accretion: Context and consequences. *The Journal of Higher Education*, 66(5), 493–520.

Hansen, H. F. (2002). Hvilken slags politik er forskningspolitik? *Økonomi og Politik*, 75(3), 41–56.

Hansen, H. F., Geschwind, L., Kivistö, J., Pekkola, E., Pinheiro, R., & Pulkkinen, K. (2019). Balancing accountability and trust: University reforms in the Nordic countries. *Higher Education*, 78(3), 557–573.

Hansen, H. F., Lind, J. K., & Stage, A. K. (2020). Changing managerial roles in Danish universities. *Science & Public Policy*.

Hüther, O., & Krücken, G. (Eds.) (2018). *Higher education in Germany—Recent developments in an international perspective*. Dordrecht: Springer.

Kallerud, E. (2006). Den nordiske modellen-redefinert og ettertraktet. *Forskningspolitikk*, 4, 8–9.

King, R. (2009). *Governing universities globally—Organizations, regulation and rankings*. Cheltenham: Edward Elgar.

Krücken, G., Blümel, A., & Kloke, K. (2013). The managerial turn in higher education? On the interplay of organizational and occupational change in German academia. *Minerva*, 51(4), 417–442.

Krücken, G., & Meier, F. (2006). Turning the university into an organizational actor. In G. S. Drori, J. W. Meyer, & H. Hwang (Eds.), *Globalization and organization: World society and organizational change* (pp. 241–257). Oxford: Oxford University Press.

Lind, J. K., & Aagaard, K. (2017). Danske universiteter efter reformbølgen: fra makro-reformer til intra-organisatorisk forandring. In E. M. Kristiansen, C. H. Grøn, & M. Kristiansen (Eds.), *Styring og evaluering i den offentlige sektor: Festskrift til Hanne Foss Hansen*. Copenhagen: Hans Reitzels Forlag.

Meyer, J. W., Ramirez, F. O., Frank, D. J., & Schofer, E. (2007). Higher education as an institution. In P. J. Gumport (Ed.), *Sociology of*

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- Higher Education: Contributions and their Contexts*. Baltimore, MD: Johns Hopkins University.
- Michelsen, S., & Bleiklie, I. (2013). Comparing HE policies in Europe: Structures and reform outputs in eight countries. *Higher Education*, 65(1), 113–133.
- Milojevic, S., Radicchi, F., & Walsh, J. P. (2019). Changing demographics of scientific careers: The rise of the temporary workforce. *Proceedings of the National Academy of Sciences*, 116(4), 12616–12623.
- MS. (2019a). *Personale Administrative Vejledning (PAV)*. Copenhagen: Moderniseringstyrelsen.
- MS. (2019b). *Flere kvinder bliver ledere i staten*. Retrieved from <https://modst.dk/nyheder/nyhedsarkiv/2019/januar/flere-kvinder-bliver-ledere-i-staten/>
- Olsen, J. P. (2007). The institutional dynamics of the European university. In P. Maassen & J. P. Olsen (Eds.), *University Dynamics and European Integration* (pp. 25–54). Dordrecht: Springer.
- Paldam, M. (2015). The public choice of university organization: a stylized story of a constitutional reform. *Constitutional Political Economy*, 26(2), 137–158.
- Paradeise, C., Reale, E., Bleiklie, I., & Ferlie, E. (2009). *University governance—Western European comparative perspectives*. Dordrecht: Springer.
- Paradeise, C., & Thoenig, J.-C. (2013). Academic institutions in search of quality: Local orders and global standards. *Organization Studies*, 34(2), 189–218.
- Pedersen, H. S. (2015). *Empirical essays on the labor market outcomes of PhD graduates*. Forlaget Politica.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. Stanford, CA: Stanford University Press.
- Ramirez, F. O. (2013). World society and the university as formal organization. *Sisyphus—Journal of Education*, 1(1), 124–154.
- Rhoades, G., & Frye, J. (2015). *College tuition increases and faculty labor costs: A counterintuitive disconnect*. Tucson: Working paper series on labor in academe, Center for the Study of Higher Education, University of Arizona.
- Sahlin, K., Wijkström, F., Dellmuth, L. M., Einarsson, T., Oberg, A., & Wijkström, F. (2015). The “Milky Way” of intermediary organizations: A transnational field of university governance. *Policy & Politics*, 43(3), 407–424.
- Sauder, M., & Espeland, W. N. (2009). The discipline of rankings: Tight coupling and organizational change. *American Sociological Review*, 74(1), 63–82.
- Schmid, C. J., & Wilkesmann, U. (2015). Ansichtssache Managerialismus an deutschen Hochschulen—ein empirisches Stimmungsbild und Erklärungen. *Beiträge Zur Hochschulforschung*, 37(2), 56–87.
- Seeber, M., Lepori, B., Montauti, M., Enders, J., de Boer, H., Weyer, E., ... Reale, E. (2015). European universities as complete organizations? Understanding identity, hierarchy and rationality in public organizations. *Public Management Review*, 17(10), 1444–1474.
- Stage, A. K. (2020). Are national university systems becoming more alike? Long-term developments in staff composition across five countries. *Policy Reviews in Higher Education*, 4(1), 68–104.
- Stage, A. K., & Agaard, K. (2019). Danish universities under transformation: Developments in staff categories as indicator of organizational change. *Higher Education*, 78, 629–652.
- Streeck, W., & Thelen, K. A. (2005). *Beyond continuity: Institutional change in advanced political economies*. Oxford: Oxford University Press.
- Tolbert, P. S., & Zucker, L. G. (1983). Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880–1935. *Administrative Science Quarterly*, 28(1), 22–39.
- Whitley, R. (2008). Universities as strategic actors: Limitations and variations. In L. Engwall & D. Weaire (Eds.), *The University in the Market*. London: Portland Press.
- Whitley, R. (2012). Transforming universities: National conditions of their varied organisational actorhood. *Minerva*, 50(4), 493–510.
- Wright, S., & Ørberg, J. W. (2008). Autonomy and control: Danish university reform in the context of modern governance. *Learning and Teaching*, 1(1), 27–57.
- Yudkevich, M., Altbach, P. G., & Rumbley, L. E. (2015). *Young faculty in the twenty-first century: International perspectives*. New York: SUNY Press.