

# **An assessment of maternity leaves across UK universities**

**Mariaelisa Epifanio\* and Vera E. Troeger<sup>+1</sup>**

\* University of Liverpool, Department of Politics

<sup>+</sup> University of Warwick, Department of Economics

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## **Abstract**

Statutory parental leave provisions in the UK are amongst the least generous as compared to other EU and OECD countries. That is why most companies and other institutions, such as universities, top these legal provisions up with more generous occupational parental leave packages (OMPs). Yet, they don't do so uniformly. Indeed the generosity of OMPs offered by HEIs across the UK differ greatly. This paper examines both theoretically and empirically why this is the case. We find that income of HEIs doesn't make a difference but size in terms of number of employees as well as the student-to-staff ratio do. Our results also show that more research intense universities with a higher previous share of female professors and female academics at child-bearing age provide more generous maternity pay. We offer a range of explanations for these findings.

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<sup>1</sup> List of authors is alphabetical implying equal authorship

## 1. Introduction

Do UK higher education institutions (HEIs) equip scholars with similar working conditions to perform their research? If you are a woman, you are pregnant and you have kids, the answer depends on the academic institution you are in. Maternity leave provisions for academics in the UK vary widely across universities. For example, the number of weeks for which full salary replacement is granted to women on maternity leave varies from 0 (e.g. Leeds Metropolitan University) to 26 week in HEIs such as Oxford, Manchester, Birkbeck College and the Royal College of Arts. Places as diverse as Warwick, Bristol, Kent or Goldsmith College only grant 8 weeks of fully paid maternity leave compared to the 18 weeks of full salary replacements provided by Keele University or Cambridge University, inter alia. Also, not all women in the academic ranks are entitled to similar maternity leave policies. For example, staff on fixed-term contracts, such as researchers and teaching fellows are frequently excluded from most of the maternity schemes outside the statutory provisions because of an often prolonged period of service required to become eligible for occupational maternity packages<sup>2</sup>. The huge variation in maternity leave arrangements across UK universities can be hardly ascribed to the variation in the financial capacity of the HEIs only. This paper seeks to address this variation by exploring both theoretically and empirically the likely factors affecting the difference in maternity arrangements across 165 higher education institutions in the UK<sup>3</sup>. We argue that the

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<sup>2</sup> Most occupational maternity packages (127) require continuous employment for at least 52 weeks at 15 weeks prior to expected childbirth. This is longer than the typical fixed term contract that lasts for 12 months or just an academic year.

<sup>3</sup> We are focussing on the generosity of occupational maternity pay because the length does not vary and is determined by the statutory provision that a job has to be held for 52 weeks.

generosity of maternity benefits can be explained to a large extent by three factors: 1. Size of the institution in terms of employed personnel in general and women in particular – but not in terms of income; 2. The pre-existence of women in higher ranks such as full professors; and 3. Research intensity of the university; In addition we find that universities try to be selective when granting more generous maternity benefits, however this screening – by means of fixed term contracts – depends on other screening mechanisms that vary with research intensity.

## **2. Variation in Maternity Benefits**

Research on maternity leave provisions has focused mainly on the likely effects of maternity policies on a range of outcomes: from women careers' choices and their trajectories to the effects of maternity leaves on divorce rate, life satisfaction, family building and children's performance, inter alia (REF). However, little research exists on the differences between maternity leaves across similar institutions. The contributions advanced by the literature focus predominantly on organizations such as firms and companies and consider a larger set of policies, ranging from staff turnover rates to sick leaves and flexible working hours apart from maternity provisions. At least to our knowledge, no scholarly work has analyzed the variation in maternity leave arrangements across higher education institutions (HEIs).

This section reviews the main arguments accounting for differences across organizations' work-life balance provisions. We build on these works to advance our own hypotheses on the determinants of HEIs maternity arrangements in the UK.

HEIs in the UK provide a fertile ground for researching within sector variations in occupational maternity packages because in contrast to other European countries, the generosity of maternity benefits across UK HEIs actually varies considerably. This owes to the comparatively meagre benefits granted through statutory maternity pay. Most universities top up the statutory maternity pay significantly. On the other hand the UK university sector is much more homogeneous than for example the US higher education sector because all universities are government financed and are governed by the same rules regarding admission, tuition fees, examination etc.

### ***2.a Why do organizations grant different maternity packages?***

Human resources policies and practices enable firms to acquire a competitive advantage in today's economy (Huselid, Jackson and Schuler, 1995). Alongside the traditional tenets of firms' competition (i.e. financial capital and technology), the conditions granted to employees, in terms of work-life balance policies, are widely ascribed as predictors of firms' performance. While most of the studies on "compensation" practices across firms and multinational corporations focus usually on cross-country comparisons (i.a. Rogovsky, 1996) and provide deep insights into the role played by national cultures in shaping human resource policies adopted by firms (Randall and Rogovsky, 1998), only a smaller set of studies analyses the variation between firms' work-life balance policies within countries. Three main factors are often advanced to explain this latter variation: industry type, organization size and the number of women in executive positions (Yasbek 2004), which we will discuss in turn.

Most of the variance in firms' work-life balance provisions seems to depend on industry types: finance, insurance and real estate sectors in the USA are rather generous in granting family-friendly policies (Galinsky and Bond, 1998). In Australia, Japan, the UK and the USA, favorable arrangements are prevalent in public sector jobs (Evans 2001) whereas retail, construction and wholesale industries are the least generous sectors when it comes to maternity benefits. We speculate that the latter variation is likely to depend on the larger proportion of unskilled workers in retail, construction and wholesale sectors. Indeed, research shows that family-friendly policies are more common in firms with a higher proportion of professional and technical employees (Konrad and Mangel, 2000; Evans 2001, Sprang, Rompf, and Anderson 2000) given the lower supply levels of skilled workers and their higher value in the job market compared to unskilled ones. As for the public sector, work-life balance policies might depend on the relative bargaining power of employees in public jobs, given that public sector employees in many countries tend to be member of trade unions or professional organizations. As for insurance, finance and real estate corporations, favorable provisions might be linked to the higher percentage of women working in these sectors, at least in the USA. Indeed, according to the US Bureau of Labor statistics, in 2016 about 55 percent of women as compared to the total employed population, work in finance and insurance sectors and the percentage is higher for jobs in savings institutions and credit unions, where female employees constitute about 76 percent

of the workforce. The average percentage of female employees in the USA in 2016 was about 47 percent.<sup>4</sup>

Firm size, along with enterprise type, is regarded as the second most likely predictor of family-friendly provisions (Yasbek 2004). In the USA, Australia, Japan, and the UK large firms (with more than 1000 employees) offer generous policies in terms of parental leave, child or eldercare and flexible working hours (Comfort, Johnson and Wallace, 2003). Flexitime arrangements are also likely in very small firms (with less than 10 employees) whereas small and medium enterprises (SMEs) seem both less flexible and less generous in the provision of work-life balance policies. The explanations for these observations are rather intuitive for big firms and “family-run” businesses. While the former benefit from economies of scale and resource availability, the latter are more likely to rely on informal and one-to-one working relations with employees and they are, therefore, more inclined to accommodate workers’ needs in terms of flexitime conditions. It is less obvious why SMEs are associated with less favorable provisions. Some advanced hypotheses link higher levels of job uncertainty in SMEs to their lower levels of financial resources and their higher costs in granting generous policies. Also, while personal relations and one-to-one interactions seems likely for SMEs as well as for very small enterprises, flexible working conditions might be costlier for the former than the latter due to higher level of job specialization in SMEs compared to “family-run” enterprises where employees are more likely to be multi-tasking (Yasbek 2004). The caveat to these conjectures is that they are likely to depend on

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<sup>4</sup> Similar figures can be observed for the year 2001, with about 55 percent of women to total employed population working on real estate sales and the average percentage of women employees in 2001 was about 47 percent.

the definition of SMEs, which varies across countries (from 250-500 employees in the UK to 5-25 employees in New Zealand). Also, most of the inferences within countries are based on case studies given the lack of comprehensive information on SMEs provisions across and within sectors.

Finally, family-friendly policies may be the result of a higher percentage of women in key executive positions. A study of work-life balance policies across non-profit and for-profits US organizations in 1998, suggests that while the organization's status does not help explaining policies' variation, the number of women in executive position does matter for the provision of family-friendly policies in both non-profit and for-profit sectors (Pitt-Catsouphes et al. 2004).

Interestingly, while non-profit organizations are relatively more generous in terms of time granted for maternity and childcare leaves, they are also less likely than for-profit organizations to pay for these leaves. Moreover, the authors reject their expectation that non-profit sectors grant more generous policies because of both the "caring" nature of these organizations and the higher percentage of women working in them. Rather, in both for-profit and non-profit sectors, the variation is mostly driven by the gender composition of the executive workforce. However, this study does not provide for disaggregate information on organizations' type, and it is not clear which organizations likely to display higher percentages of "executive" women and whether other factors may account for the presence of women at the high-level positions in an organization.

To sum up, maternity provisions are usually analyzed within a larger set of policies aimed at improving the work-life balance of workers in firms. Some factors are likely to explain the variation in the provision of these policies, namely the type of enterprises, their size

and the number of women at executive levels. Starting from these insights, we advance a number of hypotheses, which we apply to the context of occupational maternity provisions across higher education institutions in the UK.

### **3. Variation in maternity provisions across HEIs in the UK**

Albeit with some differences, the university sector in the UK is comparable in terms of income and revenues to the manufacturing and service industry sector.<sup>5</sup> In 2011-12, higher education institutions contributed about £36.4 billion to UK GDP, which, added to the off-campus expenditure of HEIs' international students and visitors, is equivalent to 2.8% of UK GDP. Yet, the purpose of higher education institutions lies outside their economic impact. According to Merton (1942), universities differ from enterprises because of their “universalism, communalism, disinterestedness, and organized skepticism”, which inform the scientific outcomes and working conditions offered by HEIs. These differences in objectives between universities and enterprises should yield divergent policy provisions, with the former providing for more inclusive, favorable and equitable work-life balance policies than the latter. Yet, maternity leaves policies across HEIs in the UK show a high variance, which is unlikely to be driven by budget constraints only or at all. To examine the causes of this variation, we advance and test a set of hypotheses on the determinants of occupational maternity benefits across UK universities, which can be summarized as

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<sup>5</sup> <http://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2014/the-impact-of-universities-on-the-uk-economy.pdf>



follows: universities' characteristics, reward mechanisms, and "peer-effects". We describe each of them in turn.

### *3.a. Variation in maternity provisions according to HEIs characteristics*

One intuitive difference between HEIs rests on their resource availability, which is likely to affect the generosity of their maternity provisions. Some universities are bigger than others in terms of financial capacity and number of employees. As for big enterprises, the financial capacity of big-sized universities should affect the generosity of their maternity provisions, and bigger universities are expected to grant more favorable leave policies to their employees than smaller universities.

However, universities differ not only in absolute terms, namely according to their total number of employees but also in relative terms, namely according to their students-to-staff ratio, that is, the number of students per academic member of staff. In these terms, we expect that the generosity of maternity benefits decreases once the ratio between students and staff increases. A higher ratio entails a higher number of students per member of staff, which in turn, makes each academic member more indispensable for the university, and thus lowers universities' willingness to offer longer leave arrangements. In contrast, a lower student-to-staff ratio means that universities have more academic "reserves" and if one member of staff is on leave, it is easier to rearrange the pastoral, teaching and supervision tasks among the other academics. For example, suppose there are 20 students allocated across 10 members of staff. If one member leaves, the costs, in terms of workload, for each member of staff are negligible compared to a case where 20 students are allocated among 4 members only. In this latter example, it would be more burdensome for the remaining members to carry out the additional workload produced by the member on leave.

In accordance with the discussion above, we would also expect for women in higher positions to be able to influence policies set at the university level. At most HEIs full professors get increasingly involved in university committees that decide on policies and strategies. Since in general women have more of a vested interest in better work-life-balance provisions, we argue that a larger share of female professors getting involved in university level policy making, affects generosity of occupational maternity packages positively.

These speculations lead to three testable hypotheses:

*H1: Large-sized HEIs are likely to provide for more generous policies in terms of maternity benefits than small-sized universities*

*H2: The higher the student-to-staff ratio in a university, the less generous the provision of maternity leave policies.*

*H3: The larger the previous share of female full professors in a university, the more generous the provision of maternity policies.*

Along with size, students-to-staff ratio, and share of female full professors universities in the UK differ also in terms of research intensity, with some institutions performing better than others in terms of research assessment (such as their ranking in the REF – Research Excellence Framework) and some HEIs more likely than others to promote their research activities because of their ties with other universities (such as the Russel Group, University Alliance, 1994 Group, inter alia). These differences allow advancing some further predictions on the variation not only *between* the generosity of maternity leaves across HEIs but also *within* maternity “packages”, which we will analyze in the next subsection.

### *3.b. Variation between and within maternity provisions: reward effects*

There is considerable variation across maternity provisions across universities. In general, most universities provide an extra Occupational Maternity Pay (OMP) that tops up the Statutory Maternity Pay (SMP) <sup>6</sup> in the first 39 weeks of maternity leave.

The eligibility criterion to access the OMP usually depends on the length of service and both the payments and the eligibility criteria may vary across institutions. For example, the University of Liverpool's OMP, regardless of the length of service, allows for full salary replacement for the first 8 weeks, half salary plus the SMP rate for the next 16 weeks and only the SMP for the last 15 weeks of ordinary maternity leave. The London School of Economics and Political Science instead pays full salary replacement for the first 18 weeks and the SMP (at the lowest rate) for the last 21 weeks, if the woman has been employed for at least 26 continuous weeks before the expected date of childbirth. Other universities may offer different OMP payments schemes that either depend on the length of service of the employee (in such cases the employee cannot choose the OMP she prefers), or may not depend on eligibility criteria and the employee is free to choose between different salary replacement schemes. For instance, at the University of Durham women can choose, if they satisfy the unique eligibility criterion, the salary replacement scheme they prefer during the ordinary maternity leave period. There are two types of schemes in cases where universities

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<sup>6</sup> In the UK, women employees are entitled to Statutory Maternity Pay (SMP) if they have worked for the same employer continuously for at least 26 weeks up to the 15th week before the expected week of childbirth and they earn on average at least £109 a week. Women that qualify for the SMP are paid the 90% of the average weekly earnings (before tax) for the first 6 weeks and the lower of £136.78 or 90% of the average weekly earnings for the next 33 weeks (17 July 2017).

offer more than one occupational maternity package. Type one consists of HEIs offering different maternity packages where one is more generous in terms of salary replacement than the other. This is usually dependent on different eligibility criteria, e.g. longer service is required for the more generous package. Type two involves HEIs offering different packages that are roughly similar in terms of monetary value but entail a trade-off between salary and time, namely between a higher level of salary replacement for a shorter period of time and a longer but less paid leave.<sup>7</sup> The choice between the two packages is usually not determined by different eligibility criteria.

Only 30 out of the 160 HEIs for which data on occupational maternity benefits was available offer more than 1 package - usually 2. Only 8 of the universities with different packages have different eligibility criteria for the different schemes, typically they require a longer period of service to become eligible for more generous maternity pay<sup>8</sup>. In the other 22 cases the two (or more) schemes require the same length of prior employment and have the same monetary value but the maternity pay is split up into different periods with full or partial salary replacement, e.g. 8 weeks of full pay plus 16 weeks of half pay vs. 16 weeks of full pay (as is the case at the university of Warwick).

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<sup>7</sup> Research shows that, high replacement incomes are beneficial to mothers' employment rates and their attachment to the labor market in the short run (Waldfoegel et al. 1999; Winegarden and Bracy 1995; Ruhm 1998) but long leaves depreciate the human-capital of female workers and jeopardize their employment prospects, in the long run (Ruhm 1998; Pylkkaenen and Smith 2003; Stoiber 1990; Beblo and Wolf 2002; Wetzels and Tijdens 2002). Also, women career breaks affect their productivity levels and earning capacity, thus increasing the gender wage gap and the unequal treatment of women in the labour market (Klerman and Leibowitz 1997; Ondrich et al. 1996, Périvier 2004; Fagnani 1996).

<sup>8</sup> Unfortunately we do not have enough variation across eligibility criteria to statistically explore eligibility as a potential screening mechanism but it is usually the case the more generous maternity pay requires a longer employment to become eligible, e.g. 52 weeks vs. 104 weeks of continuous employment before the 15<sup>th</sup> week of expected childbirth.

What explains this variation between maternity “packages”? We argue that, everything else being equal, universities use maternity schemes as a “rewarding” tool for those female researchers passing through an additional hurdle in the academic selection process.<sup>9</sup> Extensive and generous maternity provisions impose a cost on universities and hiring/promotion committees cannot know in advance whether the recipients are generating a return for the department – unless they are able to distinguish among maternity recipients by precisely identifying “research” and “teaching” academic profiles. For example, given the high returns of high REF scores (in terms of funds allocation), research oriented universities have an incentive to invest in research staff rather than teaching and admin personnel, given that the latter are more “replaceable” than the former and are therefore less “profitable” for the hiring institution.

Once universities have hired highly productive researchers, they have an incentive to keep them because an investment into hiring has been made and replacing research staff is costly in terms of time and resources and can be difficult especially in competitive areas. Generous maternity packages would allow rewarding research oriented academic profiles once their research abilities become obvious and female academics prove “profitable” for the research institutions in terms of publication outputs and research activities. Research intense universities usually implement much more rigorous screening mechanisms with respect to research potential and output when hiring academic staff . Academics at all levels have to prove research productivity in terms of publications, impact in terms of citations

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<sup>9</sup> In addition to the requirements that apply to both female and male researchers in their academic career path, namely the completion of a PhDs and the attainment of the first academic position.

and the ability to gain external research funding before they are considered for a position. This screening process requires a lot of resources and once a job has been offered to and accepted by a “worthy” individual the institution has a vested interest in retaining these employees.

Given this these institutions have a) a higher incentive to provide more generous maternity provisions, and b) have less incentives to screen through other mechanisms than the hiring process itself. Once highly productive and promising female researchers have made it into the ranks of a research oriented and highly reputable place, and the department/institute has invested resources into these individuals, retention becomes important and generous maternity provisions can help increasing the job satisfaction of female academics because enables them to stay in touch with research activities during and when returning from maternity. More generous maternity provisions should thus increase the probability of academic mothers to stay and contribute further to the research profile of the university.

On the other hand hiring processes are less rigorous in less research intense HEIs especially with respect to scrutiny of research quality. For this purpose, we expect that these HEIs try to screen in different ways. Since eligibility criteria have to be the same for all employees – academic and administrative – and can only differ across different packages, administering these different schemes might prove costly, more teaching oriented HEIs can use different types of contracts for screening purposes. For example employees on fixed term contracts typically do not become eligible for occupational maternity packages due to the required length of service. Universities with a less rigorous hiring process and lower research intensity could use fixed term contracts as an additional

screening mechanism especially when they are providing more generous maternity packages.

If this holds, we expect to observe first, that

*H4: HEIs that are more research intensive should offer more generous maternity leave provisions.*

And, second:

*H5: Less research intensive HEIs with generous occupational maternity benefits should employ more women on fixed-term contracts.*

### ***3.c. Variation between and within maternity provisions: “peer-effect”***

Universities across the UK have self-selected into formal and informal associations according to their research activities, teaching aims, research grants, contract income and entry requirements, inter alia. The Russell Group, founded in 1994 and based in London, is arguably the most known HEIs association comprising of 24 universities, but many other formal and informal university groupings exist in the UK.<sup>10</sup> The purpose of these affiliations is to represent the interests of member institutions and promote their shared values. For example, the “Golden Triangle” is an unofficial grouping of elite universities located in the English cities of Cambridge, London and Oxford. Golden Triangle universities<sup>11</sup> are similar in terms of their huge financial endowments, obtaining the highest research incomes of all British HEIs and have implemented a high number of joint research

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<sup>10</sup> See Appendix for a detailed list of the universities belonging to different groups, we list the 14 most important groups that are also used in the empirical analysis.

<sup>11</sup> Golden triangle HEIs are Cambridge University, Oxford University, London School of Economics, Imperial College London, King’s College London and University College London (sometimes London Business School and London School of Hygiene and Tropical Medicine are also mentioned as members).

programs. Russell Group members are public high intense research universities which receive approximately two thirds of all university research grant and contract income, award 60% of all doctorates gained in the UK, host over 30% of all overseas (outside the EU) students studying in the UK, and generated 68% 4-star outputs<sup>12</sup> in the 2008 and 2014 research assessment exercise (RAE/REF). Albeit with some differences, group membership signals similarities between affiliated institutions. For example, the Million+ Group<sup>13</sup> specializes in courses on modern subjects and professional qualification while the Russell Group or the 1994 group<sup>14</sup> are more centered on traditional subjects. The “new universities”, also called post-1992 universities or modern universities, is a group of former polytechnics and central institutions that were given university status through the Further and Higher Education Act 1992, as well as institutions that have been granted university status since 1992 without receiving a royal charter. Especially new universities that were not former polytechnics – such as Anglia Ruskin, Birmingham City, Coventry, Oxford Brookes, or Sheffield Hallam University without a royal charter were only granted to power to award taught degrees but not research degrees. These universities are therefore much more teaching oriented and much less research intense.

The classification of universities in groups allows advancing some further predictions on the determinants of maternity schemes. We argue that “peer” universities (i.e. HEIs affiliated to the same group) are likely to offer similar maternity provisions, which is likely

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<sup>12</sup> Publications that were deemed world leading by the REF panel.

<sup>13</sup> The group was founded in 1997 as the Coalition of Modern Universities. It changed its name to the Campaign for Mainstream Universities in 2004 and then again in November 2007, to the Million+ Group.

<sup>14</sup> The 1994 group was formed in 1994 to represent smaller research-intensive universities following the Russell Group foundation. The 1994 dissolved in 2013 and its members merged into the Russell Group.



to lead to convergence *within* groups and divergence of maternity arrangements *between* groups. The logic underlying this prediction rests on the assumption that universities belonging to the same group also compete with each other in terms of staff recruitment, which is essential for achieving the goals set by their respective affiliations. For example, to maintain their leadership in research grants, golden triangle HEIs must keep attracting leading scholars by offering favorable working conditions. Along with contract income, research budgets and teaching workload, generous maternity leaves are one of the instrument HEIs can use to attract highly skilled scholars. All these policies are costly and are very likely to be correlated with universities characteristics (i.e. budget, size, academics/admin and students/academic ratios, and unionization levels). However, peer universities would have an incentive to push up the working conditions offered to existing or potential staff members but not unconditionally (given that these policies are costly). Rather they would adjust the benefits offered by their schemes up to the level guaranteed by similar HEIs, thus reducing the gap between similarly attractive universities for candidate scholars. Given that academic institutions are not identical and the cost of maternity schemes is different across universities, we expect to see similar maternity arrangements within similar academic institutions and dissimilar provisions between different universities while university characteristics would account for the remaining variation. We thus would expect maternity provisions in goal oriented groups and high research intense associations such as the Russell Group and the Golden Triangle to be on average more generous and more similar, i.e. the variance of these maternity benefits is smaller. For less research intense and more diverse groups such as the Million+ and

especially the post-1992 non-polytechnics universities we expect more diverse and less generous maternity pay provisions.

If this holds, we should therefore observe that, *ceteris paribus*:

H6: *Maternity provisions are likely to be more similar within peer institution groups that are more homogeneous.*

### ***3.d. Summary of Hypotheses***

There is a huge variation in the generosity of maternity policies provided by higher education institutions in the UK, which is unlikely to depend only on the variation between universities' revenues and budgets. We advanced a battery of potential determinants of maternity provisions, which we test in the next section. We speculate that the variance in leave arrangements might depend on differences between universities' characteristics, their research vs teaching incentives and their membership in universities' groups. We derive six testable hypotheses: first, that maternity schemes depend on universities' size, with larger universities (i.e. HEIs with a higher number of staff members) providing for more generous provisions. Second, we argue that maternity provisions decrease when the student-to-staff ratio increases, so that the higher the ratio the less generous the maternity leaves. Third, we expect that female professors encourage more generous maternity provisions. Fourth, we conjecture that some incentives' mechanisms might be at stake and that HEIs with higher research-intensity levels are also more likely to grant more generous maternity schemes. Fifth, we hypothesized that the lower the intensity of research across universities the stricter the eligibility to generous maternity provisions and therefore the number of academic women on fixed term contracts is higher in these universities than in more research intense HEIs. Finally, we speculate that there is a peer-effect in maternity provisions between

institutions affiliated to the same association of HEIs and we expect to observe convergence in maternity provision within groups of universities and divergence between groups.

## **4. Data and Empirical Analysis**

### ***4.a Data***

Arguably the best indicator for the generosity of maternity benefits is the number of weeks full salary replacement is paid. On the one hand, if women can take more time out of work – without income cuts – they are certainly advantaged in terms of adapting to their motherhood status without being pressured by income concerns or the need to multitask administration, teaching and research tasks. This increases the probability that women return to their research position without having to take a career break and with possibly minor effects on research and publication activity. On the other hand, salary replacement represents the most costly part of maternity packages for universities.

Indeed looking at generosity of maternity pay across British HEIs reveals a large variance across universities which cannot only be explained by different financial constraints faced by the HEI. We collected data on occupational maternity provisions for 214 different packages across 160 different UK HEIs. Table 1 gives a summary of our main measure of generosity – weeks with full salary replacement<sup>15</sup>.

Table 1: Generosity of OMPs across UK HEIs

Weeks full salary replacement	Number of packages	percent
0	15	7.0
4	51	23.8
6	27	12.6

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<sup>15</sup> In Appendix XX we break down all packages by HEIs.

8	38	17.8
9	5	2.3
10	1	0.5
12	3	1.4
13	9	4.2
14	2	0.9
16	14	6.5
17	1	0.5
18	37	17.3
19	1	0.5
20	3	1.4
26	7	3.3
Total	214	100.0

Table 1 shows that there is large variance of generosity across UK universities, with 15 packages that do not top up statutory care, a large number (51) of provisions that grant up to 4 weeks of full pay, and only 7 HEIs that provide mothers with up to 6 months of full salary replacement. It seems surprising that UK HEIs have implemented very different maternity provisions given that more or less generous packages imply a huge variation in costs for universities.

We also collected and calculated slightly different measures of generosity for robustness purposes. First we looked at the number of weeks salary replacement is granted, either fully or partially. Second we calculated an often used measure that allows more easy comparison across benefits, the so called full weeks' equivalent which estimates the full monetary value of the payed maternity benefits.<sup>16</sup> Table 2 shows these different measures.

Table 2: Descriptive Statistics Generosity Measures

	N	Mean	SD	Minimum	Maximum
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<sup>16</sup> This measure sums the weeks with full pay, plus all partial pay, plus weeks of statutory maternity pay. In the UK SMP grants 90% of the average weekly earnings (before tax) for the first 6 weeks and the lower of £136.78 or 90% of the average weekly earnings for the next 33 weeks. We measure average earnings as average female salary per institution.

Weeks with full salary replacement	214	9.7	6.5	0.0	26
Full weeks' equivalent	210	18.4	3.9	7.1	39
Weeks of salary replacement	214	18.7	6.9	0.0	52

We use all three measures as dependent variables in the subsequent analyses. Weeks of full salary replacement and full weeks' equivalent clearly measure the overall generosity of a maternity package and are highly correlated (0.84). The number of weeks for which some salary replacement is granted seems to be a less precise measure of generosity since a package could offer many weeks with very low pay or only a few weeks with full salary replacement. In this case the former case would receive a higher value than the latter. This variable thus covaries to a lesser extent with weeks of full salary replacement (0.3) and full weeks' equivalent (0.5).

To assess hypothesis 5 we look at the share of female academics on fixed term contracts as dependent variable (see table 3). In order to explain generosity of maternity benefits and the need for screening (fixed term contracts) we include the above discussed university characteristics, research intensity, and membership in an association. Most HEIs majorly adjusted their occupational maternity packages between 2008 and 2013 after the last round of modifications in the UK statutory provisions was implemented on 1<sup>st</sup> April 2007 when the flat rate payment period was extended from 20 to 33 weeks<sup>17</sup>. We therefor measure university characteristics that should affect maternity provisions but not vice versa contemporarily in 2013. These variables include staff costs, income from research grants, total

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<sup>17</sup> This was the last major change in statutory maternity pay, in 2009 additional provisions for fathers were implemented and in 2015 shared parental leave was introduced with no changes to the actual monetary value of the parental leave benefits.

income, as well as the student-to-staff ratio. In order to avoid potential endogeneity, particularly reversed causality issues we measure variables that affect generosity but potentially are also determined by generosity before this last round of major changes to university maternity policies in 2006/7. These factors comprise total academic staff, share of female academics, share of female professors, share of female academics at child bearing age (25-40 years), and the research intensity measured as overall RAE score in 2008. Table 3 depicts some descriptive measures for these variables.

Table 3: Descriptive Statistics Other Variables

	N	Mean	SD	Minimum	Maximum
Share of female academics on fixed term contracts (2013)	210	0.14	0.09	0.00	0.50
Total academic staff (2006/7)	213	1141.53	1089.50	0.00	7815.00
Share of female academics (2006/7)	212	0.43	0.08	0.17	0.68
Share of female professors (2006/7)	212	0.02	0.01	0.00	0.08
Share of female academics between the ages of 25 and 40 (2006/7)	212	0.43	0.14	0.00	0.75
Staff costs per income (2013)	209	52.64	6.66	2.22	69.10
Income from research grants in mill. GBP (2013)	213	37.79	75.93	0.00	428.80
Total income in mill GBP (2013)	209	208.27	222.14	6.68	1438.24
Student to staff ratio 2013	210	18.14	5.56	0.20	39.66
RAE Score 2008	213	110.60	36.62	0.00	318.03

#### ***4.b. Empirical Specification and Results***

We test the 6 Hypotheses derived above empirically with data on generosity of maternity provisions collected for 160 UK HEIs. Our main measure of generosity is the number weeks with full salary replacement granted by the occupational maternity package. Since this is a count variable, a Poisson or Negative binomial model potentially represent

adequate estimation choices<sup>18</sup>. However, weeks of full salary replacement is not typically Poisson distributed, which would imply many observations for smaller values decreasing with higher values, e.g. many universities grant 16 or 18 weeks of full salary replacement. We therefore estimate also a Negative binomial model and test whether there is significant over-dispersion (this seems to be the case). In addition, hypothesis 6 implies that dispersion of generosity is not equal across university groups but smaller within more homogeneous associations with clear research goals (e.g. Russell Group and Golden Triangle). We thus also employ a generalized negative binomial model which allows dispersion to be different across groups and directly estimated. Table 4 presents the estimation results.

Table 4: Explaining the Generosity of Maternity Provisions across UK HEIs

<b>DV: WEEKS OF FULL SALARY REPLACEMENT</b>	<b>OLS</b>	<b>POISSON</b>	<b>NEGBIN</b>	<b>GEN NEGBIN</b>
<b>TOTAL ACADEMIC STAFF IN 1000S (2006/7)</b>	2.518*** (0.524)	0.241*** (0.043)	0.251*** (0.059)	0.206*** (0.056)
<b>SHARE OF FEMALE ACADEMICS (2006/7)</b>	-4.193 (4.120)	-0.332 (0.447)	-0.085 (0.602)	0.391 (0.592)
<b>SHARE OF FEMALE PROFESSORS (2006/7)</b>	67.534** (29.083)	7.055** (3.018)	7.735** (3.394)	6.695** (3.272)
<b>SHARE OF FEM. ACADEMICS 25-40 YEARS (2006/7)</b>	12.712*** (3.541)	1.442*** (0.434)	1.506*** (0.451)	1.120*** (0.419)
<b>STAFF COSTS (PER INCOME 2013)</b>	-0.130 (0.096)	-0.012 (0.012)	-0.016 (0.012)	-0.014 (0.012)
<b>INCOME RESEARCH GRANTS (IN MILLIONS GBP 2013)</b>	0.002 (0.013)	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.001)
<b>TOTAL INCOME (IN MILLIONS OF GBP 2013)</b>	-0.006 (0.006)	-0.000 (0.000)	-0.000 (0.001)	-0.001** (0.000)
<b>STUDENT-STAFF RATIO (2013)</b>	-0.141 (0.097)	-0.017 (0.013)	-0.021* (0.012)	-0.016 (0.011)
<b>RAE SCORE 2008</b>	0.032*** (0.010)	0.003*** (0.001)	0.004*** (0.001)	0.004*** (0.001)
<b>DIFFERENT PACKAGES</b>	-4.388*** (0.679)	-0.424*** (0.070)	-0.409*** (0.078)	-0.423*** (0.066)
<b>SCOTLAND</b>	3.712***	0.367***	0.473***	0.243*

<sup>18</sup> We use a (potentially misspecified) OLS model as benchmark, esp. given that the DV is not typically Poisson distributed

	(1.185)	(0.110)	(0.128)	(0.140)
<b>NORTHERN IRELAND</b>	3.718*	0.340*	0.353*	0.447**
	(2.206)	(0.175)	(0.196)	(0.183)
<b>WALES</b>	0.002	0.024	0.067	0.104
	(1.406)	(0.151)	(0.170)	(0.163)
<b>POST 1992 UNIS, NOT POLYTECHNICS</b>				-0.451***
				(0.154)
<b>INTERCEPT</b>	13.729**	2.454***	2.483***	2.470***
	(6.089)	(0.778)	(0.783)	(0.758)
<b>DISPERSION (LN ALPHA)</b>				
<b>RUSSELL GROUP</b>				-2.253*
				(1.164)
<b>GOLDEN TRIANGLE</b>				-15.350***
				(1.090)
<b>INTERCEPT</b>			-1.603***	-1.299***
			(0.194)	(0.206)
<b>N</b>	209	209	209	209
<b>R<sup>2</sup> (PSEUDO)</b>	0.410	0.207	0.072	0.091
<b>ALPHA</b>			0.201	
<b>CHI<sup>2</sup> (ALPHA = 0)</b>			139.228	
ROBUST STANDARD ERRORS IN PARENTHESES, * P≤0.1, ** P≤0.05, *** P≤0.01				

The empirical results lend ample support to several of our derived hypotheses. In terms of size effects (H1), HEIs with a larger number of employees do tend to provide more generous maternity provisions, yet the financial resources available do not affect occupational maternity pay. This is in line with our argument above, that resources in terms of staff size should play a bigger role than income. This also defeats the general belief that richer universities provide better parental leave policies, if anything, they are less generous in their provisions. The question whether the student-to-staff ratio affects the decision on granting more or less generous maternity pay (H2) can be answered tentatively positive. All coefficients point in the right direction and are marginally significant. This supports the argument that when individual staff have to teach and advise more students, replacement is harder and thus fewer weeks of full salary are offered. Our estimation results show that the pure existence of female academics does not affect maternity provisions.



However, as predicted, a previously large share of female professors affects the generosity of maternity benefits positively (H3). This points to the observation that if women are in decision making positions, family policies become more important and support for female employees increases. Interestingly, also the previous share of female academics at child bearing age (25-40 years) increases the generosity of maternity pay. Two interpretations seem likely: first, there might be a lobbying effect and second, university managers might be aware that they could lose a large share of their academic staff if there are many women at child bearing age. We also find strong support that more research intensive (measured as RAE score) universities have stronger incentives to keep productive academics and thus reward them with more generous maternity benefits (H4). More generous benefits should allow female academics to stay in touch with research without the continuous burden of teaching and administrative duties due to the prolonged and more generous maternity pay. The generalized negative binomial model allows us to some extent to evaluate the peer group effects (H6). We find two results that are consistent with our argument. First, the dispersion of the generosity of benefits is significantly smaller for Russell Group members as well for universities that are part of the Golden Triangle. These universities are leading in terms of research intensity and therefore offer more generous maternity pay. They are also relatively more homogeneous in their goals and thus provide very similar packages with high generosity levels<sup>19</sup>. Second, we find that new universities that were founded after 1992 and had not been previously polytechnics in general grant less generous maternity

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<sup>19</sup> These results come from the specification of the dispersion equation in the generalized negbin model.

pay but their packages still vary across group members. This is due to the heterogeneous nature of this association that includes all post-1992 non-polytechnics. In addition, these newly founded universities are mostly teaching institutions since they don't have the permission to award research degrees such as PhDs and are thus much less research oriented.<sup>20</sup>

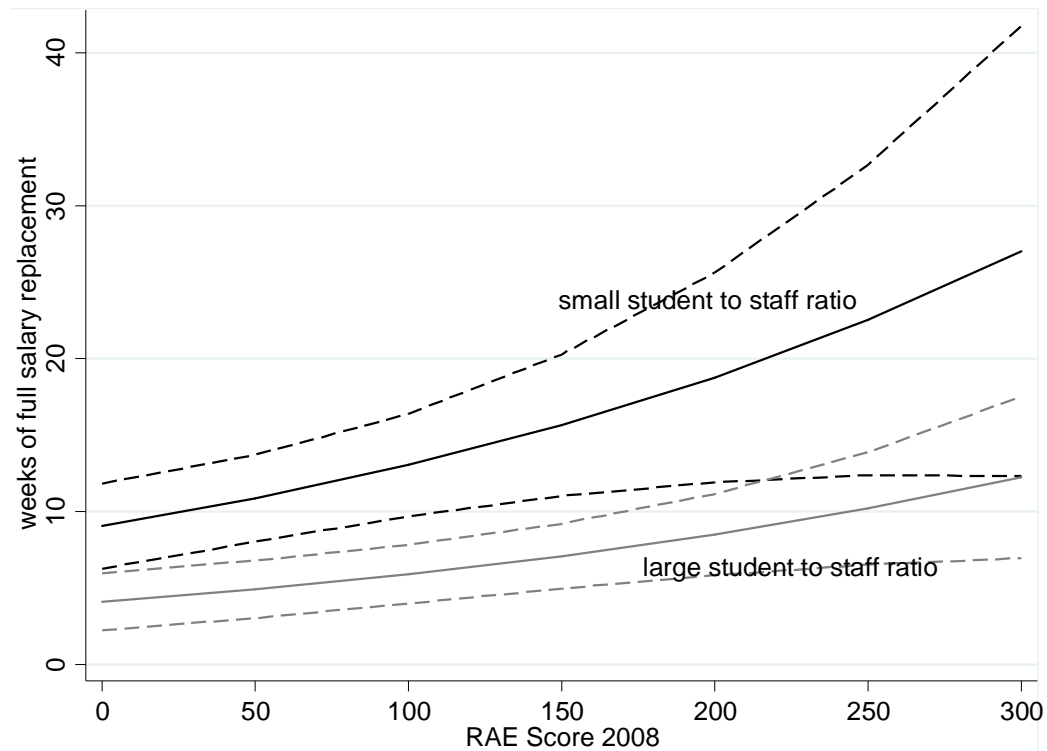
We have established that most of our hypotheses are supported by the evidence, yet in order to understand whether these effects are substantial we need to investigate the size of these effects. We use the estimates of the Negative Binomial model (column 4 in table 4) to assess the economic relevance of these effects. Figure one displays the combined effect of the research intensity of a university (x-axis) and the student to staff ratio (small – black, large – grey)<sup>21</sup>. We can see that that research intense universities with a small student to staff ratio are 5 times as generous in their maternity provisions as compared to teaching oriented HEIs with a large student to staff ratio. Also the positive effect of research strength is much stronger at institutions with a more favorable student to staff ratio.

Figure 1: Predicted Weeks of Full Salary Replacement dependent on Student-Staff Ratio and Research Intensity

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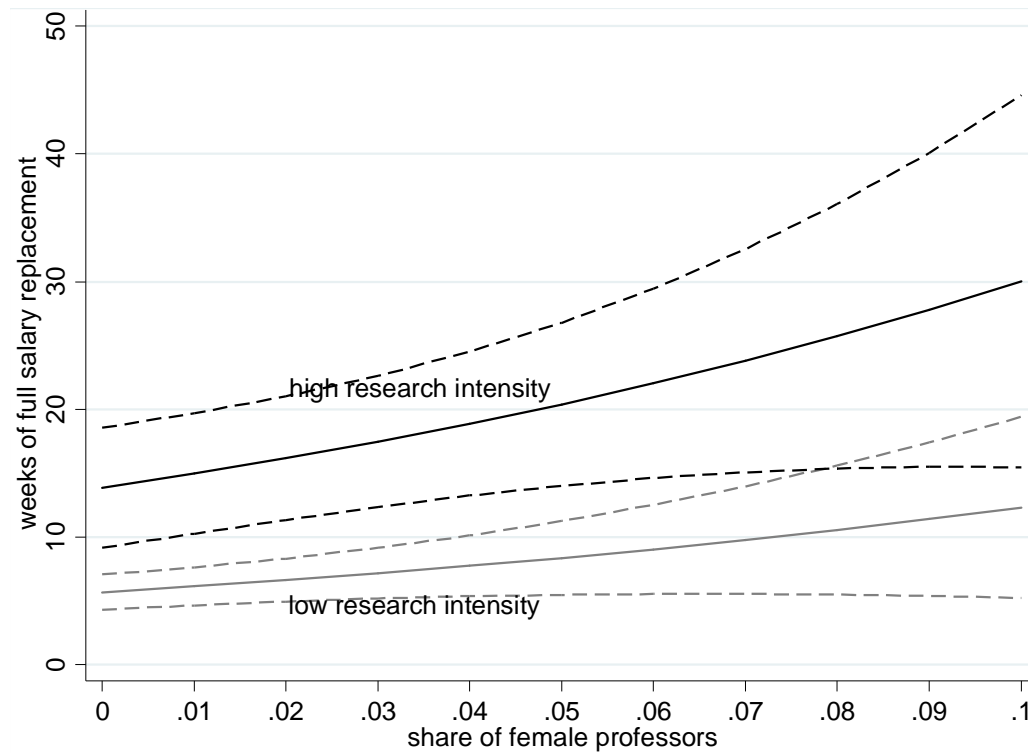
<sup>20</sup> We ran comparative models with different combinations of all other group memberships – see appendix but did not find any additional significant results and thus are not reporting the findings here. However the significant relationships we found are fully consistent with our argument.

<sup>21</sup> Small = 0.5, large=38



We can observe similar effects for the share of female professors (figure 2). Again the effect is much more pronounced for research oriented HEIs where the highest share of female professors almost triples the number of weeks with full salary replacement vs. universities where only a small number of women advanced to professorship. The effect is much smaller in teaching oriented universities. Here a large share of female professors accounts for an increase from 6 to 12 weeks of full salary replacement.

Figure 2: Predicted Weeks of Full Salary Replacement dependent on Research Intensity and Previous Share of Female Professors



We use the other two measures of generosity (full weeks' equivalent and weeks of full and partial salary replacement) as a robustness check. Table 5 presents the estimation results

Table 5: Alternative Measures of Maternity Benefit Generosity

	WEEKS OF SALARY REPLACEMENT (FULL AND PARTIAL)		WEEKS OF SALARY REPLACEMENT: FULL TIME EQUIVALENT	
	OLS	NEGBIN	OLS	NEGBIN
<b>TOTAL ACADEMIC STAFF IN 1000S (2006/7)</b>	0.172 (0.644)	0.007 (0.041)	0.838** (0.357)	0.055*** (0.015)
<b>SHARE OF FEMALE ACADEMICS (2006/7)</b>	15.530** (6.392)	0.970*** (0.370)	2.231 (3.537)	0.060 (0.148)
<b>SHARE OF FEMALE PROFESSORS (2006/7)</b>	-52.962 (37.552)	-3.322 (2.264)	43.708* (23.942)	1.878* (1.009)
<b>SHARE OF FEM. ACADEMICS 25-40 YEARS (2006/7)</b>	12.347*** (4.442)	0.742*** (0.259)	7.982*** (3.049)	0.452*** (0.141)
<b>STAFF COSTS (PER INCOME 2013)</b>	0.106 (0.116)	0.006 (0.009)	0.007 (0.069)	-0.002 (0.003)
<b>INCOME RESEARCH GRANTS (IN MILLIONS GBP 2013)</b>	-0.007 (0.015)	-0.001 (0.001)	-0.006 (0.011)	-0.000 (0.000)
<b>TOTAL INCOME (IN</b>	0.000	0.000	0.000	-0.000

<b>MILLIONS OF GBP 2013)</b>	(0.007)	(0.000)	(0.004)	(0.000)
<b>STUDENT-STAFF RATIO (2013)</b>	-0.168	-0.010	-0.120*	-0.006*
	(0.109)	(0.006)	(0.068)	(0.003)
<b>RAE SCORE 2008</b>	0.017	0.001	0.016	0.001*
	(0.016)	(0.001)	(0.010)	(0.000)
<b>DIFFERENT PACKAGES</b>	1.327	0.062	-1.170**	-0.093***
	(1.160)	(0.060)	(0.579)	(0.028)
<b>SCOTLAND</b>	2.359*	0.122*	2.382***	0.121***
	(1.424)	(0.070)	(0.850)	(0.035)
<b>NORTHERN IRELAND</b>	-2.751	-0.169	2.090**	0.044
	(2.663)	(0.160)	(0.820)	(0.048)
<b>WALES</b>	0.881	0.047	2.047	0.086
	(2.742)	(0.141)	(1.662)	(0.064)
<b>INTERCEPT</b>	1.135	1.850***	10.438**	2.803***
	(6.989)	(0.501)	(4.378)	(0.214)
<b>N</b>	209	209	209	209
<b>R<sup>2</sup> (PSEUDO)</b>	0.135	0.019	0.283	0.045
<b>ALPHA</b>		0.094		0.000
<b>ROBUST STANDARD ERRORS IN PARENTHESES, * P≤0.1, ** P≤0.05, *** P≤0.01</b>				

First, if we look at full weeks' equivalent – which is very closely related to weeks with full salary replacement – we find exactly the same results as discussed before, both in size and significance which lends more robust support to our claims. Second, the results differ in interesting but predictable ways for the other measure – full and partial salary replacement. This measure is often used in cross-country analysis because it is usually easy to collect but does not really capture generosity since it gives higher values to schemes that grant very limited amounts of money for a large number of weeks, like the statutory pay in the UK which only offers £136.78 but for 33 weeks. In this case research intensity, student to staff ratio, and the share of female professors fail to significantly predict the outcome while the pure share of female academics turns out to be significant. This goes along with our argument that generosity is important for research oriented universities that want to allow female academics to climb the career ladder to full professorship. In addition, the overall

explanatory power ( $R^2$ ) halved for these models lending further support to the conclusion that other factors predict maternity provisions that are not related to generosity.

Finally, we empirically investigate the validity of hypothesis 5 which states that less research intense universities have higher incentives to screen potential recipients of maternity benefits, particularly when they are providing more generous packages, by employing a larger share of women on fixed term contracts. Table 6 shows the estimation results<sup>22</sup>.

Table 6: Generosity of Maternity Benefits and Share of Female Academics on Fixed-term Contracts

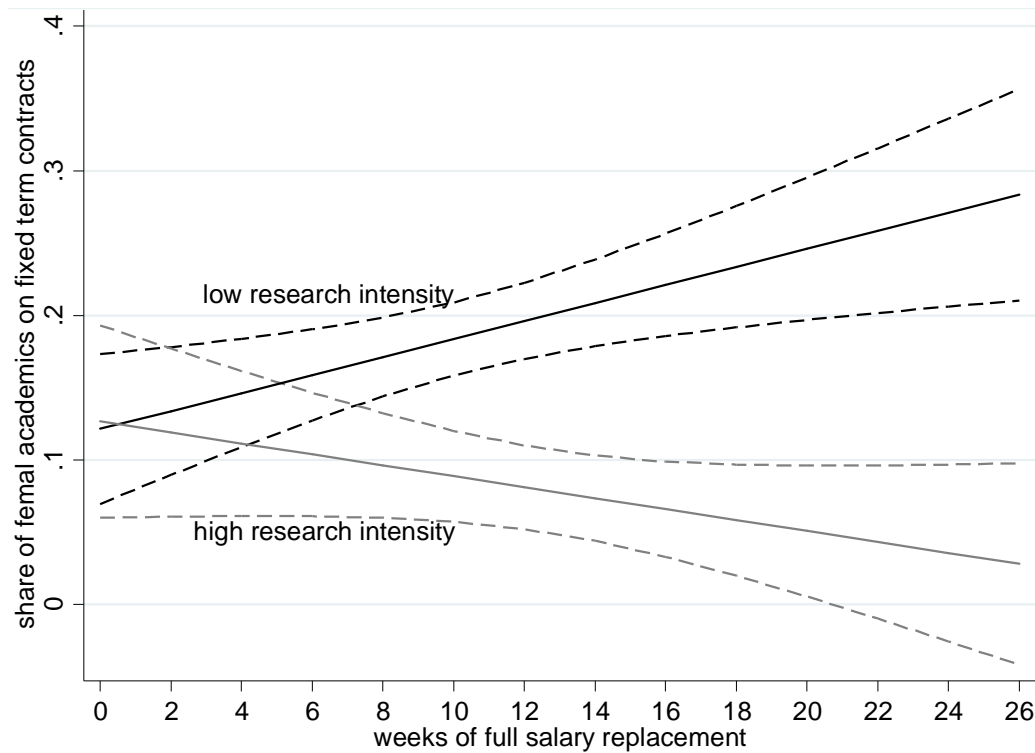
<b>DV: SHARE OF FEMALE ACADEMICS ON FIXED TERM CONTRACTS (2013)</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>FIXED TERM CONTRACTS (2006/7) WEEKS FULL SALARY REPLACEMENT</b>	0.666*** (0.071)	0.674*** (0.067)	0.678*** (0.070)	0.686*** (0.067)	0.661*** (0.071)	0.673*** (0.068)
<b>WEEKS WITH FULL/PART. REPLACEMENT FULL WEEKS EQUIVALENT</b>			0.001 (0.001)	0.004* (0.002)	0.003** (0.001)	0.009 (0.005)
<b>RAE SCORE (2008)</b>	-0.000** (0.000)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.001)
<b>IA WEEKS FULL * RAE SCORE</b>		-0.000* (0.000)				
<b>IA WEEKS FULL +PART. * RAE</b>				-0.000 (0.000)		
<b>IA FULL WEEKS' EQU. * RAE SCORE</b>						-0.000 (0.000)
<b>TOTAL ACAD. STAFF (2013)</b>	0.030* (0.016)	0.028* (0.017)	0.032* (0.017)	0.032* (0.016)	0.030* (0.016)	0.029* (0.016)
<b>TOTAL INCOME (IN MILL. GBP 2013)</b>	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
<b>STUDENT TO STAFF RATIO (2013)</b>	0.000 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
<b>NORTHERN IRELAND</b>	-0.014	-0.011	-0.005	0.002	-0.011	-0.013

<sup>22</sup> Models in table 6 are all estimated with OLS since the DV is continuous and normally distributed

	(0.021)	(0.020)	(0.019)	(0.018)	(0.022)	(0.022)
<b>WALES</b>	0.014	0.011	0.012	0.012	0.009	0.006
	(0.019)	(0.019)	(0.019)	(0.018)	(0.019)	(0.019)
<b>SCOTLAND</b>	-0.021	-0.024*	-0.018	-0.018	-0.023*	-0.024*
	(0.014)	(0.014)	(0.013)	(0.013)	(0.013)	(0.013)
<b>INTERCEPT</b>	0.048*	0.003	0.037	-0.018	0.000	-0.103
	(0.026)	(0.036)	(0.030)	(0.051)	(0.039)	(0.109)
<b>N</b>	209	209	209	209	209	209
<b>R<sup>2</sup></b>	0.504	0.513	0.500	0.508	0.509	0.515
ROBUST STANDARD ERRORS IN PARENTHESES, * P≤0.1, ** P≤0.05, *** P≤0.01						

We test the relationship between generosity, research intensity and the share of women on fixed term contracts through an interaction effect. This interaction effect turns out to be significant for both our measures of generosity (weeks with full salary replacement and full weeks' equivalent) but not for pure length of salary replacement. This is again in line with our expectations. Figure 3 displays the size of this effect based on the estimates in model 2. As formulated in hypothesis 5 there is a strong relationship between the research intensity of a university and the need to screen potential recipients of occupational maternity benefits especially when the package is very generous. The grey lines show that HEIs with a strong research profile do not engage much in screening and this effect does not depend on generosity either (the confidence intervals overlap for high and low generosity). However, universities that don't have a strong research culture (black lines) increase their screening activity significantly by hiring more female academics on fixed term contracts particularly when they grant more generous maternity pay.

Figure 3: Predicted Share of Female Academics on Fixed Term Contracts depending on Generosity of Maternity Benefits and Research Intensity



## 5. Discussion

UH higher education institutions vary greatly in the generosity of the occupational maternity pay they grant to their employees. We find that much of this variation can be explained with differences in the structural characteristics of these institutions comparable to other areas like corporations and companies in the manufacturing or service sectors. The sheer size in terms of employees but also structural factors such as the student-to-staff ratio help to account for differences in generosity because these features describe how potential costs of mothers taking time out can be redistributed across other staff members. Interestingly, size in terms of overall income does not help to explain maternity benefits. Thus it seems that decisions on maternity benefits are much more intentional and depend on structural characteristics of universities but also on the strategic goals universities



pursue. One of the driving factors behind the design of maternity pay is the research orientation of the HEI in question. Highly research intense institutions have a vested interest in keeping productive mothers in whom they have invested resources both at the hiring stage as well as during their employment at the university. Better maternity provisions are seen as a reward and a means to keep mothers productive and satisfied with a work environment that allows them to dedicate time to their research. The rigorous hiring process serves as screening device at research intense HEIs. If more teaching oriented universities grant more generous maternity pay, they have an incentive to screen more thoroughly by means of fixed term contracts because hiring processes are somewhat less focused on research productivity.

## **6. Conclusion**

With this research we attempt explaining the large variance we observe across maternity benefits granted at UK higher education institutions. We find that both structural characteristics but also strategic goals of universities help to explain the generosity of maternity pay. This is interesting because maternity benefits should not be considered to be an objective but they are a means to an end. Maternity policies are costly and their costs and benefits are widely debated beyond the normative aspect of allowing mothers to concentrate on their newborns without having to worry about financial implications. Maternity benefits are considered important for women's attachment to the labor market (REF) and can help to keep female talent in the labor market, close the gender pay gap, and women to climb up the career ladder.

Understanding how and why institutions decide to implement certain levels of maternity pay generosity may help to unpack these potential costs and benefits of maternity pay.

Without being cynical, our research shows that highly research intensive universities have much stronger incentives to implement generous maternity pay provisions. From this follows that the potential benefits of maternity benefits might be stronger for such institutions.

This paper provides a first step in unpacking the causes and consequences of generous maternity benefits. In companion research we investigate how differences in maternity benefits affect productivity, career paths, pay, and job satisfaction of female academics. From our perspective, the UK higher education sector provides fertile ground for such investigations because a) as shown generosity of maternity benefits varies widely, and b) productivity and career paths can be measured straightforwardly at the individual level.

We believe that inferences can be drawn from this research to sectors beyond higher education. Moreover, given that the generosity of UK maternity pay is one of the lowest across EU countries, our research can help inform policy reform in this area.

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## Appendix

Table A1: Generosity of Occupational Maternity Pay across UK HEIs

Weeks with full salary replacement	Number of packages	HEI
0	15	Anglia Ruskin University, Conservatoire for Dance and Drama, Edge Hill University, Falmouth University, Guildhall School of Music and Drama, Leeds College of Music, Leeds Metropolitan University, Norwich University of the Arts, Queen Margaret University (Edinburgh), Ravensbourne, Royal Agricultural University, The University of Bolton
4	51	Bath Spa University, Bishop Grosseteste University, Buckinghamshire New University, Canterbury Christ Church University, Cardiff Metropolitan University, Central School of Speech and Drama, Coventry University, Falmouth University, Harper Adams University, Leeds Trinity University, Liverpool Hope University, Liverpool John Moores University, London Metropolitan University, London South Bank University, Rose, Bruford College, Royal Academy of Music, Royal College of Music, Royal Northern College of Music, St Mary's University College, St Mary's University College (Twickenham), Stranmillis University College, Teesside University, The Liverpool Institute for Performing Arts, The University of Chichester, The University of Huddersfield, The University of Lincoln, The University of Northumbria at Newcastle, The University of Plymouth, The University of Portsmouth, The University of Wales (Newport), The University of West London, The University of Wolverhampton, The University of Worcester, Trinity Laban Conservatoire of Music and Dance, University for the Creative Arts, University of Bedfordshire, University of Chester, University of Glamorgan, University of Gloucestershire, University of Hertfordshire, University of St Mark and St John, University of the Arts (London)
6	27	Anglia Ruskin University, Bournemouth University, De Montfort University, Falmouth University, Newman University, Roehampton University, Royal Conservatoire of Scotland, Southampton Solent University, Staffordshire University, Swansea Metropolitan University, The Arts University Bournemouth, The Arts University Bournemouth, The City University, The Manchester Metropolitan University, The Nottingham Trent University, The University

		of Bradford, The University of Brighton, The University of Northampton, The University of Westminster, The University of Winchester, University of Cumbria, University of Derby, University of the West of England (Bristol), Writtle College, York St John University
8	38	Aberystwyth University, Bangor University, Birmingham City University, Brunel University, Cranfield University, Goldsmiths College, Heriot-Watt University, Imperial College of Science Technology and Medicine, St George's Hospital Medical School, Swansea University, The Royal Veterinary College, The University of Bath, The University of Bristol, The University of Dundee, The University of East Anglia, The University of Edinburgh, The University of Essex, The University of Exeter, The University of Glasgow, The University of Hull, The University of Kent, The University of Leeds, The University of Leicester, The University of Liverpool, The University of Nottingham, The University of Stirling, The University of Strathclyde, The University of Surrey, The University of Sussex, The University of Warwick, The University of the West of Scotland, University Campus Suffolk, University of Durham, University of London
9	5	Courtauld Institute of Art, London School of Hygiene and Tropical Medicine, The University of Aberdeen, University College London
10	1	The University of East London
12	3	Aston University, Sheffield Hallam University, The University of Sheffield
13	9	Edinburgh Napier University, Glyndŵr University, Oxford Brookes University, The Manchester Metropolitan University, The Robert Gordon University, The University of Central Lancashire, The University of Surrey, University of Abertay Dundee
14	2	The Institute of Cancer Research, The University of Sunderland
16	14	Glasgow School of Art, Imperial College of Science, Technology and Medicine, Institute of Education, The University of Bristol, The University of Edinburgh, The University of Glasgow, The University of Kent, The University of Leeds, The University of St Andrews, The University of Stirling, The University of Strathclyde, The University of Warwick, The University of the West of Scotland, University of Durham
17	1	Heriot-Watt University
18	37	Brunel University, Cardiff University, Courtauld Institute of Art, Edinburgh College of Art, Heythrop College, Imperial

		<p>College of Science, Technology and Medicine, King's College London, Liverpool Hope University, London Business School, London School of Economics and Political Science, London School of Hygiene and Tropical Medicine, Loughborough University, Middlesex University, Queen Mary University of London, Royal Holloway and Bedford New College, The Open University, The Queen's University of Belfast, The School of Oriental and African Studies, The University of Aberdeen, The University of Birmingham, The University of Cambridge, The University of East London, The University of Hull</p> <p>The University of Keele, The University of Lancaster, The University of Newcastle-upon-Tyne, The University of Reading, The University of Salford, The University of Sheffield, The University of Sussex, The University of York, University College London, University of Ulster, University of the Highlands and Islands</p>
19	1	Glasgow Caledonian University
20	3	Kingston University, The University of Greenwich
26	7	Aston University, Birkbeck College, Royal College of Art, Scottish Agricultural College, The University of Manchester, The University of Oxford, The University of Southampton