

# At ESE females and non-Dutch are lagging behind in rank and earnings

The ESB-Dossier Women in Economics has put the underrepresentation of female academic staff on the agenda. We investigate whether any differences in rank and salary between female and male as well as between Dutch and non-Dutch staff exist within one of Netherlands' largest economics department, Erasmus School of Economics.

## IN BRIEF

- The rank held by female and non-Dutch academics tend to be lower, even after controlling for age, starting date and publications.
- There were no female full professors with permanent appointments at Erasmus School of Economics between 2014 and 2018.
- Furthermore, females and non-Dutch academic staff are also paid less, controlling for age, starting date and publications.

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Considerable gender differences in salaries have been found at universities in the Netherlands and abroad (Grove, 2016; Havergal, 2016; LNVH, 2016). These are partly explained by academic rank: in 2019, only 23 percent of full professors at Dutch universities were female (LNVH, 2019a). Differences in payment have also been found within ranks.

Economics is a field in which women are even more underrepresented, especially in the Netherlands (Teunissen and Hogendoorn, 2018). And there is increasing evidence of implicit biases and barriers to women's progress (Boring, 2017; Sarsons et al., 2020; Lundberg, 2020).

In this article, we study differences in rank and payment at Erasmus School of Economics (ESE). ESE is a very international school, even more so since its reorganization in 2005. As most of ESE's female employees are not Dutch, our analyses assess both gender and nationality differences.

## Population of interest and definitions

In order to estimate the differences in rank and remuneration between Dutch male, Dutch female, non-Dutch male and non-Dutch female academic staff, we have used employee data from ESE's HR database. We use information on monthly salaries and bonuses from February 2014–2018 (in 2018 euros), and on annual bonuses for

those years. In some extended analyses, we also use data on employees' publication output, based on Article Influence Scores (AIS) in line with ESE promotions criteria and the requirements for Tinbergen Institute Fellows (Tinbergen Institute, 2016).

We do not include female employees hired through a programme aimed at attracting female talent from outside academia, as those employees may still be benefitting from different conditions. We also exclude employees classified as researchers/teachers in HR data, who may have different career prospects within ESE and different conditions. Finally, we exclude full professors, as there were no female full professors with a permanent appointment. This means that we can only assess pay differences between male and female ESE employees up to the rank of endowed professor.

## Large differences in rank

Figure 1 shows the distribution of rank, from lowest to highest, by gender and Dutch vs non-Dutch nationality in our population of interest. Remarkably, there were only three female endowed professors in this period, compared to eighteen male ones. Furthermore, only very few females are observed in the higher assistant and associate professor ranks, and this also seems limited for the non-Dutch males here. This may indicate an unequal access to those higher ranks.

## Conditional differences in rank

The differences in Figure 1 may be partly explained by the fact that the non-Dutch and female groups are younger and were hired more recently. In particular, only one of the fifty female employees and seven percent of the male non-Dutch employees started before 2006, contrasting with 27 percent of their male Dutch colleagues. With an ordered probit model for rank, we estimated differences in the probability of being an associate or endowed professor (as opposed to assistant) for each group, while controlling for age, time since hiring, and calendar year.

For Dutch males the probability of being an associate or endowed professor equals 39 percent on average. Despite the small size of some groups, we observe statistically significant differences between Dutch males and other groups (jointly significant at five percent level). The average probability of being an associate or endowed professor is lower for the other three groups, namely ten percentage points

lower for non-Dutch males (significant at ten percent level), 13.4 percentage points lower for Dutch females, and 15.7 percentage points lower (significant at one percent level) for non-Dutch females compared to Dutch males. The difference for Dutch females is identified from eighteen individuals, and is thus less precisely estimated and not significant. Sizeable differences remain after controlling for publications and department at ESE.

### Salary differences

We find large differences in gross monthly salary per full-time equivalent across both female and male, Dutch and non-Dutch academic staff (Figure 2). In our main analysis, we have excluded employees eligible for the thirty percent tax facility for incoming employees during the study, because their gross salaries are not comparable.

The average Dutch male earns 5,229 euros. Average salaries of Dutch female employees are 167 euros lower than of their male counterparts, controlling for age and time since employment (Figure 2, Panel A). Non-Dutch males earn 323 euros less (about six percent), and non-Dutch females earn 404 euros less (about eight percent) than Dutch males (both differences are statistically significant at five percent level). These differences do not disappear after controlling for the number and quality of publications, as well as for ESE department. In a separate analysis, we find no gender differences among the non-Dutch employees while still covered by the thirty percent tax facility.

Panel B shows salary differences also conditional on the rank differences observed above. While the estimated differences are not significantly different, partly due to the small sample size, we consider the point estimates sizeable. Even conditional on rank, age and time since employment, non-Dutch males (females) earn 135 euros (164 euros) less on average, which is about three percent less than the Dutch male and female employees earn.

### Differences in bonuses

We also find differences in the probability that an employee receives a variable income in the form of a bonus. At ESE, some employees receive a monthly bonus (Dutch: *toelage*) as a temporary complement to their gross salary. Furthermore, employees may receive a one-off bonus as recognition for an achievement discussed in the annual progress evaluation. The latter bonus is largely at the discretion of the department head, in consultation with the supervisor, and is approved by the Dean.

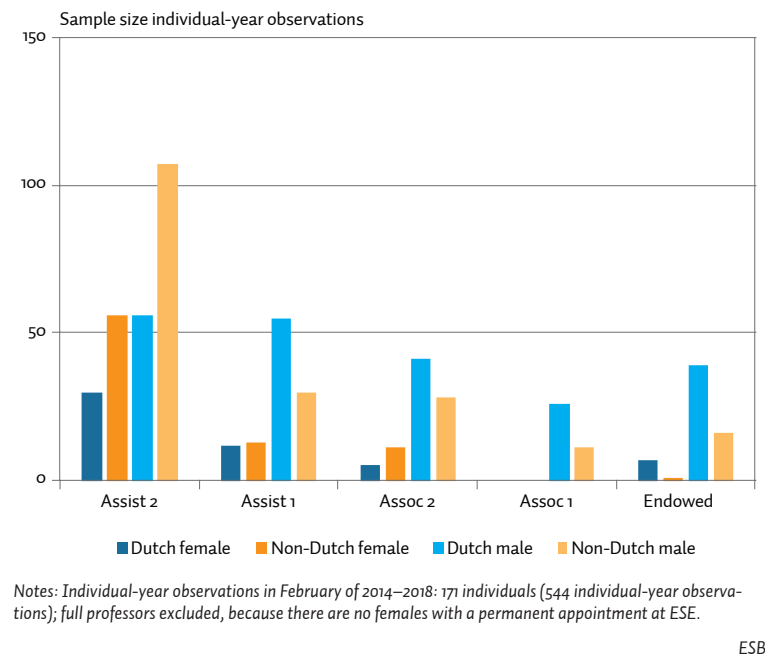
On average, 13 percent of the Dutch males receive a monthly bonus, and 23 percent a one-off bonus. We estimate that the average probability of receiving a monthly bonus is at least six percentage points (46 percent) lower for females, compared to both Dutch and non-Dutch males, while that of receiving a performance bonus is at least twelve percentage points (52 percent) lower for all groups compared to Dutch males. We control for the same factors as in the previous analysis, as well as for departments and publications.

### Conclusion and implications

Our analyses show substantial pay and rank differences

**Distribution of rank by gender and Dutch/non-Dutch**

FIGURE 1

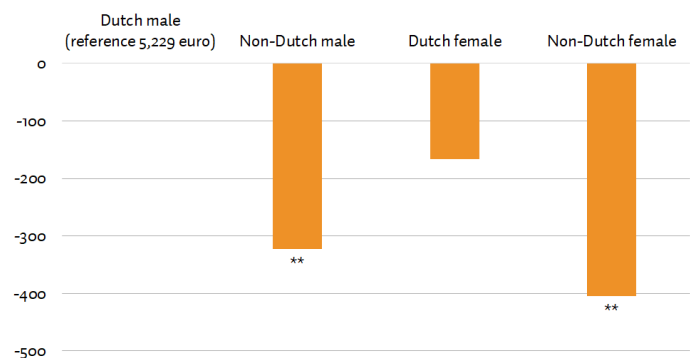


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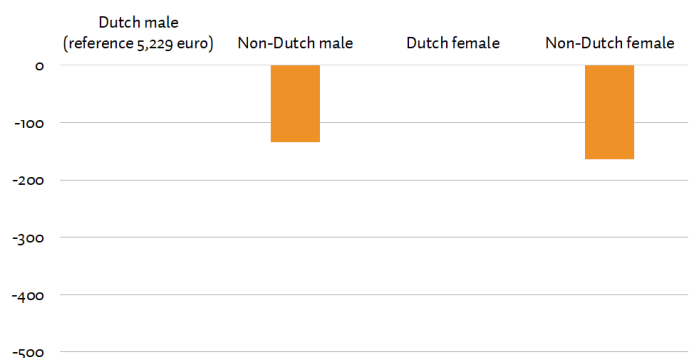
**Estimated average differences in monthly gross salaries**

FIGURE 2

**2a: Total differences**



**2b: Corrected for academic rank**



\*\* Significant at five percent level

Notes: Linear regression models, controlling for age, how long they've been employed and the calendar year; only including non-Dutch employees that were not (or no longer) eligible for the thirty percent tax facility (150 individuals; 446 individual-year observations).

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between male and female and between Dutch and non-Dutch ESE employees. Controlling for age and time since employment, Dutch females, non-Dutch males and non-Dutch females have a gross monthly salary that is, respectively, around 170, 320 and 400 euros lower on average than that of their Dutch male colleagues. Our results suggest that these are mostly explained by large differences in rank, even after controlling for age and time since employment.

A back-of-the-envelope calculation illustrates that these differences in monthly salaries represent nonnegligible differences in life-time earnings. For example, the 400 euros difference for non-Dutch females compared to Dutch males translates into 56,000 euros ( $400 \times 14$  monthly payments  $\times 10$  years) over a ten-year period, and up to 196,000 euros over a full career of 35 years at ESE. On top of that, males – and even more so the Dutch ones – are also more likely to receive bonuses.

Why does female and non-Dutch staff lag behind when it comes to rank and salary? There is evidence that females face important barriers contributing to a lower likelihood to study, start a career in economics, and also to differences in progress (Lundberg, 2020). For example, differential treatment when it comes to the evaluation of research for acceptance at conferences and for publications. There is also evidence of gender differences in the recognition for joint work (Sarsons et al., 2020) and of implicit biases in teaching evaluations, with direct and indirect impact on the promotion chances (Boring, 2017). On the other hand, the roles of limited access to mentoring, lack of role models and hostile environment for females and other minorities have also been recognized (Lundberg, 2020). LNVH (2019b) has found that, in Dutch universities, female academic staff spend less time on research and more on education, and give lower ratings to the availability of research resources and assistance (and also are less likely to report having an individual office).

Other possible mechanisms driving our results could be differences in starting salaries, possibly carrying biases due to previous salaries, and cultural and gender-related differences in negotiations, potentially important for the timing of promotions and for receiving bonuses. The non-Dutch staff might also be affected by the costs of adapting to a new country and university, information gaps, as well as the limited access to the broad network of (Dutch male) managers and collaborators.

We believe that our results, together with the existing evidence of barriers, call for immediate policy attention. Policies that could be considered to prevent pay differences include monitoring the new employees' starting salaries, including prevention of any unintended consequences of the thirty-percent rule for long-term salaries of non-Dutch employees' and calibration of bonuses. Salary corrections are also a possibility, following the example of the University of Essex (Grove, 2016), the London School of Economics (Haverгал, 2016) and the APG Pension Fund (APG, 2019).

Concerning career progression, we recommend organizing information sessions on tenure criteria, as well as mentorships for new employees and different networking

activities in order to foster collaboration and exchange of experiences. It also seems important that departments ensure that all employees are aware of further career steps after tenure (and their respective criteria). Furthermore, it is particularly important to ensure that motherhood does not form an impediment to getting tenure nor to becoming professor. More generally, it is crucial that supervisors, managers and committee members are aware of the differences documented here, as well as of the evidence on biases and barriers summarized above.

Finally, we recommend defining a set of indicators related to the analyses shown here and monitoring their evolution over time. This might help to assess whether policies are effective in tackling both the gender and nationality differences at ESE. The role of such monitoring and policies is also crucial to prevent that the current COVID-19 crisis widens the observed pay and rank gaps further – especially given that international and female employees seem to have been hit harder (Hoger Onderwijs Persbureau, 2020; Ficheroux, 2020; Andrew et al., 2020; Zamarro et al., 2020).

## References

- Andrew, A., S. Cattan, M. Costa Dias et al. (2020) *How are mothers and fathers balancing work and family under lockdown?* IFS Briefing Note, BN290.
- APG (2019) *APG will reward female employees equally*, 22 May. Available at [www.apg.nl](http://www.apg.nl).
- Boring, A. (2017) *Gender biases in student evaluations of teaching*. *Journal of Public Economics*, 145, 27–41.
- Ficheroux, T. (2020) *'We want to remove the sources of stress wherever possible'*. Article at [www.erasmusmagazine.nl](http://www.erasmusmagazine.nl), 18 May.
- Grove, J. (2016) *University of Essex hikes salaries for female professors to eliminate pay gap*. *Times Higher Education*, 2 June. Available at [www.timeshighereducation.com](http://www.timeshighereducation.com).
- Haverгал, C. (2016) *LSE to give female academics pay rises to close gap with men*. *Times Higher Education*, 10 September. Available at [www.timeshighereducation.com](http://www.timeshighereducation.com).
- Hoger Onderwijs Persbureau (2020) *Dutch Research Council and the lockdown: 'Women harder hit than men'*. Article at [www.erasmusmagazine.nl](http://www.erasmusmagazine.nl), 22 May.
- LNVH (2016) *Financiële beloning van mannen en vrouwen in de wetenschap*, 26 August. Landelijk Netwerk Vrouwelijke Hoogleraren, available at [www.lnvh.nl](http://www.lnvh.nl).
- LNVH (2019a) *Monitor Vrouwelijke Hoogleraren 2019*. Landelijk Netwerk Vrouwelijke Hoogleraren, available at [www.lnvh.nl](http://www.lnvh.nl).
- LNVH (2019b) *Verborgen verschillen in werktaken, hulpbronnen en onderhandelingen over arbeidsvoorwaarden tussen vrouwelijke en mannelijke wetenschappers in Nederland*, March. Landelijk Netwerk Vrouwelijke Hoogleraren, available at [www.lnvh.nl](http://www.lnvh.nl).
- Lundberg, S. (ed.) (2020) *Women in Economics*. London: CEPR Press.
- Sarsons, H., K. Gërkhani, E. Reuben and A. Schram (2020) *Gender differences in recognition for group work*. *Journal of Political Economy*, forthcoming.
- Teunissen, S. and C. Hogendoorn (2018) *Too few women in the economics debate*. *ESB*, 103(4767S), 6–9.
- Tinbergen Institute (2016) *Tinbergen Institute Fellowship Charter 2017–2021*, August. Available at [www.tinbergen.nl](http://www.tinbergen.nl).
- Zamarro, G., F. Perez-Arce and M.J. Prados (2020) *Gender differences in the impact of COVID-19*. USC Dornsife Center for Economic and Social Research.