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WOMEN IN ECONOMICS

Women in economics

For a way too long time, economics has had a shameful reputation when it comes to the role of 'women in economics.' Female staff and female professors have been, and still are, very much underrepresented, even when taking into account their lower enrolment rates in BA, MA and PhD programmes.

A highly competitive academic culture may have deterred females from entering the profession. Economists generally adhere to the idea that competition is a good thing, and is necessary to foster academic progress. Moreover, extreme specialization allows researchers to exploit their comparative advantages. Economists take great pride in publishing in the best economics journals. And good publications are the 'key currency' in making an academic career. However, if competition is too much of a good thing, female scholars may be put off.

Female economists may also experience more difficulties in making their academic careers. Economists might be more prone to rejecting ideas of discrimination of female teachers and researchers. Their natural reaction is to find this plainly inefficient and incompatible with competitive forces that could drive out discriminatory practices from academia (Friedman, 1962). However, if discrimination is present but neglected, the academic labour market will fail, female academic careers will be damaged and their human potential wasted.

Still, times are changing for the better. We now all are familiar with role models with stellar academic records, such as Susan Athey, Marianne Bertrand, Anne Case, Janet Currie, Asli Demirgüç-Kunt, Esther Duflo, Amy



BAS JACOBS

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Finkelstein and Carmen Reinhart. I dare predict that some of them will win a Nobel prize in the future.

Many economics departments are acutely aware of the underrepresentation of females among their staff. In recent years, hiring rates of female assistant and associate professors have risen. Over time, they will be promoted to the ranks of full professor and gender gaps will gradually be reduced.

In the Netherlands, more and more female economists are present in economic policy and the public arena. Think of Barbara Baarsma, Marieke Blom, Laura

van Geest, Sandra Phlippen, Mirjam van Praag, Esther-Mirjam Sent, Sheila Sitalsing, Marike Stellinga, just to name a few.

Only this month, Gita Gopinath, an outstanding professor of international economics from Harvard, has been appointed as the IMF's first female chief economist. She joins Pinelopi Koujianou Goldberg, chief economist of the World Bank and Laurence Boone, chief economist of the OECD.

There is still a long way to go, but I believe that the future of women in economics will be brighter than its rather dark past. This special issue contains many suggestions for improving their position and makes fascinating reading.

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Being a g

There is good and there is bad news. First the good news of course. Explicit discrimination against women in the Netherlands is definitely something of the past. In our project, we did not encounter any rules prohibiting women from taking certain positions or managers stating that certain jobs are unsuitable for women.

In fact, in a survey by Janneke Plantenga in this ESB special issue, all the deans of Dutch economics and business faculties indicate that they are actively trying to hire more female staff members and have the policies in place in order to do so. Moreover, they have provided ESB with the funds to put together this special issue offering insights from recent academic work into causes and solutions and putting it on the discipline's agenda. Also, Jaap Schouten and Stan Gielen write about the many policies that are in place to improve the opportunities for women to receive funding from the Netherlands Organisation for Scientific Research (NWO), the most important public funding institute in the Netherlands.

A CONCERTED EFFORT

The bad news is that the environment in which research into economics and business takes place, is an environment in which women do less well than men. A cohort effect, in which the share of first-year female students or female PhD students a few decades ago is a good proxy for the share of female professors today, seems implausible. It appears that there still is a barrier for women trying to attain a professorial appointment. Van der Heijden (1993) reports that 25–30 years ago the share of female students was 25 percent on average and the share of female PhD students was 18 percent.

The share of female professors in economics is currently 10 percent, as Teunissen and Hogendoorn mention in this issue and as the infographic shows.

This is bad news, and it requires all of us to take a firm stand on the issue. Changing an environment takes a concerted effort by everyone participating in it. Which seems even harder than addressing explicit discrimination.

The environment's unforthcoming nature is hard to pinpoint. In his survey among Dutch economists, Harry van Dalen does not report a lot of significant differences between male and female academics except as to work pressure, while Ivo Arnold shows that female econometric students slightly outperform their male counterparts.

Economics and business stands out as particularly high in features that are generally perceived to be more masculine, like self-confidence and competitiveness, and low in traits that are generally regarded as more feminine, like cooperativeness and modesty. Instances of this have cropped up during the academics' 'the round table', in the interview with Siv Gustafsson – one of the first female professors in economics in the Netherlands – as well as in Esther-Mirjam Sent's column. Belle Derks, Ruth van Veelen and Michel Handgraaf also have ascertained this in their survey of Dutch academic culture. They find that here the biggest discrepancy is between the female economist's self-reported masculinity and the reported masculinity they think is necessary for a successful career.

MAD MEN

That the culture within economics may be an issue might be hard to understand for economists who are trained to think in terms of market forces and the like.

Why is this ESB dossier in English?

The subject matter demands it. English is the main language of the economics and business faculties in the Netherlands, so an ESB dossier about the people who work there should be in English. Most of ESB's publications tend to be in Dutch.

ood sport

Perhaps a discussion of Figure 1 may help. The Rotterdam School of Management (RSM) recently adopted a new corporate branding and issued postcards to alert its staff members to the change.

I love the Mad Men theme of the postcards and the gleeful anticipation on the faces. I think the contrast in colour between the kitchen apron and the rest of the image works well. And I really think the ‘pun’ on huisstijl (branding) is funny.

It is also possible to regard this postcard as a typical white-male kind of humour that does not demonstrate inclusiveness as to women and/or other minorities. The man wears a tie, he works in an office – perhaps at the RSM – the woman wears an apron, and is probably cooking his meal. He is providing for her; he has his hands on her shoulders.

People who complain about these jokes are easily dismissed as being bad sports. But stereotypes definitely have an effect, just as role models do. They exclude and include respectively. Henriëtte Prast provides evidence pointing out how pervasive these stereotypes are in the economics education offered in high schools, Eline van der Heijden highlights their importance in academic careers, and Mirjam van Praag explains that she is happy to serve as a role model.

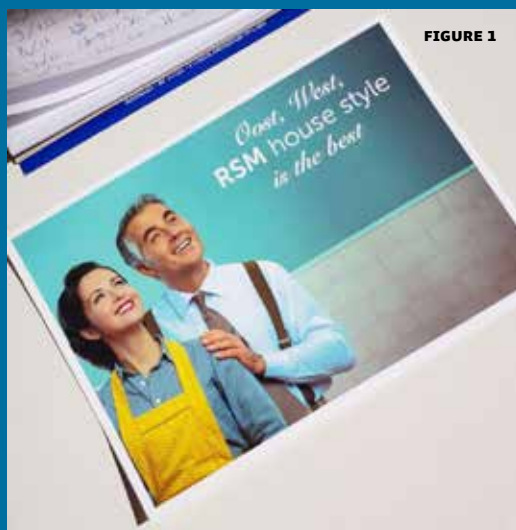


FIGURE 1

NEXT STEP

Much more can be done than merely addressing stereotypes. Anne-Wil Harzing, Claartje Vinkenburg and Marloes van Engen provide a comprehensive resumé of studies – published in peer-reviewed journals over the past two years – into various measures that departments can take. In addition, Anne Boring and Thomas Buser provide a motivation from behavioural economics for taking such measures.

It is possible that both the problem statement and its solutions are ignored, so careful treading is recommended. For example, Hein Schreuder points out that in more gender-equal societies fewer women choose to study science and technology, as women in these societies differ more from men (Stoet and Geary, 2018). And while it might be a good idea to ask women to participate more on search committees and as role models, the women that do so then lack the time to have careers themselves.

However, let's be good sports. We economists have a market failure to fix.

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JASPER LUKKEZEN

Editor-in-chief



Too few women in the economics debate

The natural sciences are frequently said to be a veritable male stronghold. The equally striking underrepresentation of women in the field of economics is a less known fact. Still, this may very well have consequences for socio-economic policy.

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On September the 19th, the economic section of ING published the Economists' compass for public finances (ING, 2017). In this publication, eleven Dutch star economists set out their recommendations for the public budgetary policy. All of the 'stars' were men. In late August, *De Telegraaf* newspaper ran an 'economists survey', in which twenty prominent Dutch economists were asked to list their main policy priorities in light of the formation of the new government. Two of them were women.

These examples seem a fair reflection of female representation at the top of Dutch economic sciences. At Dutch universities, in 2016, 10.4 percent of the full professors in the economics departments were women. Although that is twice as many as in the previous decade, economics has in the meantime been overtaken on this score by the field of engineering, and in 2016 had the lowest number of female full professors of all

scientific fields (see figure 1). Women are less likely to obtain a full professorship in economics than in any other science; see box 1.

When considering the number of citations – another indicator of academic impact – the conclusions regarding female representation in the science of economics are not much more encouraging. The *Polderparade* (Maasland, 2014), a list of the most frequently cited economists in Dutch and Flemish journals, in 2014 only included the name of one woman, to wit Barbara Baarsma, taking the 30th place.

Also in international citation rankings, female economists are conspicuous by their absence. In the academic publications of RePEc/IDEAS, there are two women featuring in the top 100 of the world's most cited economists: Carmen Reinhart (Harvard), ranking 11th, and Asli Demirgüç (World Bank), ranking 60th. There is no sign of any marked convergence – if we just look at the articles published over the last decade, only five women make it to the top 100.

POTENTIAL CONSEQUENCES

Women's meagre representation in the field of economics might very well have negative implications for the quality of economic research. Various papers show that teams with a diverse composition (in regard to both gender and cultural background) perform better (Woolley et al., 2010; Hoogendoorn et al., 2013). There are indications that this conclusion also holds

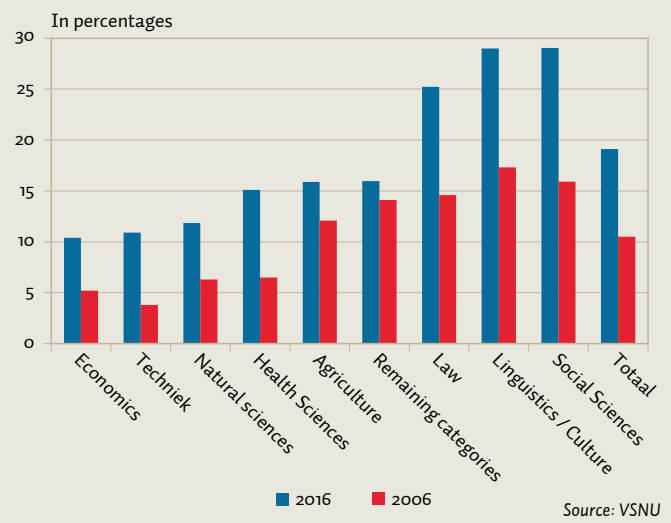


in academia. Campbell et al. (2013) assert that, within the field of Ecology, peers were more likely to favourably rate scientific contributions when these had been written by a mixed team of authors (male/female) than when this was not the case, and that the number of citations would consequently be 34 percent higher. Female underrepresentation among authoritative economists can also have consequences for the manner in which socio-economic policy – pertaining to a range of subjects, such as the labour market, trade policy or the financial sector’s regulation - is nurtured and steered by academic input. This would be the case if women, in comparison to their male colleagues, differ in their perception of economic issues.

May et al. (2013) discovered that male and female members of the American Economic Association (AEA) indeed differed in their opinions on economic policy issues, also after the correction for age differences and work environment. They even established that gender was the only relevant factor that led to statistically

Percentage of female full professors per academic field, 2006 and 2016

FIGURE 1



significant differences with regard to the perception of the desirable degree of government intervention in the functioning of markets.

On average, male AEA members think significantly more often than their female counterparts

that in the United States (US) and Europe government regulation is too extensive. Moreover, they also markedly differ in their opinions on redistribution: women far more frequently support the notion that, in the US, income distribution should be more equal and that a

Box 1: Insufficient career advancement

BOX 1

Of the PhD students in economics, 40 percent are female (see figure 2). This is comparable to the average in the overall fields of science, and it is considerably more than the 28 percent of female PhD students within the various fields of natural sciences and engineering. To gain some insight into the bottlenecks for women in their advancement towards higher academic positions, the VSNU has constructed the 'glass-ceiling index' (GCI). The GCI is computed by dividing the percentage of women in a career-stage category by the percentage of women in the next category in the same year. The

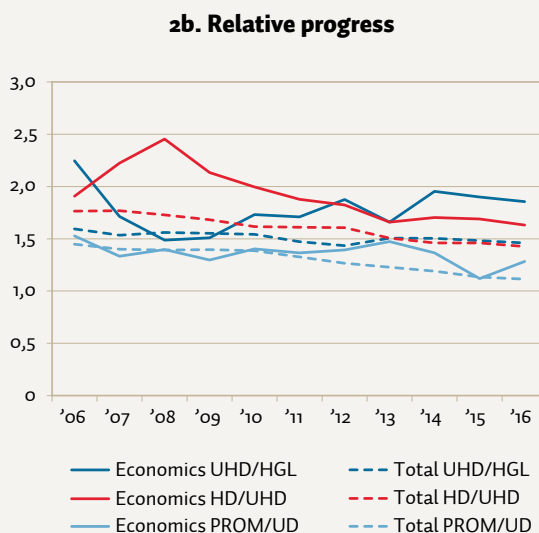
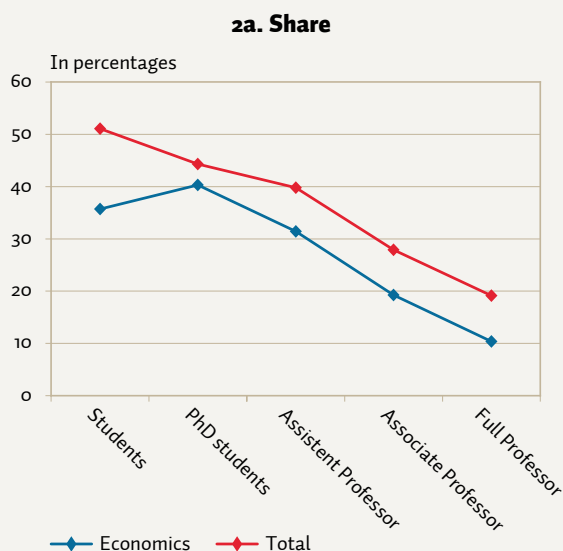
career-stage categories are PhD student (PROM), assistant professor (UD), associate professor (UHD) and full professor (HGL). An index larger than one indicates a relatively limited progress of women into the next category, in comparison to men. Figure 3 shows the GCI for the academic category of Economics, during the period 2006–2016, and the aggregate over the various academic fields.

The GCI for all scientific fields is at every transition – from PhD student to assistant professor, from assistant professor to associate professor, and from associate professor to full professor – larger

than one. Since 2006 the GCI has been decreasing in all scientific fields, and to a lesser extent also in economics. This signifies an improvement in the advancement opportunities for women. However, advancement in economics is lower than the average in other fields at any of the career stages, and particularly at the transition to a full professorship. Female associate professors – representing 31 percent of the total of associate professors in Economics – are faced with the fact that it is almost half as likely they will attain a full professorship than it is for their male counterparts.

Women by academic position in 2016

FIGURE 2



Source: VSNU

more progressive tax system would be desirable. Female respondents also notably more often thought that the US should combine a further liberalisation of trade with labour standards aimed at protecting workers. Men more frequently believed that a high minimum wage would lead to more widespread unemployment.

The same authors replicated their research among 1,000 doctoral economists affiliated with eighteen European universities (May et al., 2018). Here, too, women on average had a stronger preference than men for government regulation as to matters like the labour market, migration and international trade. The largest difference in responses between male and female economists was recorded in response to the statement 'Further regulation of the labour market will lead to inferior economic outcomes.' An interesting extension of the American research paper focussed on the perceptions regarding environmental protection. Female economists were on average more likely to agree with the statement that government intervention was necessary, whereas men

overall disagreed. The divergence in responses was statistically very significant.

The authors conclude that female economists are more inclined to accept government intervention as a strategy to mitigate forms of social injustice, whereas men focus on the risks associated with the distortive effects of government intervention. They claim that, as a consequence, in the public debate on economic issues – which is dominated by male economists – a stronger emphasis is placed on the costs of government intervention relative to its benefits.

CONCLUSION

In the Netherlands, male economists dominate the discussions on matters of socio-economic policy. Economic experts, as presented by ING and *De Telegraaf*, among others, are almost exclusively men. This is also true of the economists most frequently cited in popular academic publications and of economics professors.

Research indicates that male and female economists in the US and several European countries distinctly differ in their views as to the desirable role of markets and governments. Notwithstanding the fact that the results of the European research contribution are not specified according to the respondents' country of origin, it seems plausible that these differences also exist among Dutch economists.

Of course, there are several women outside the science of economics – politicians, policymakers, and for instance the director of the CPB (Netherlands Bureau for Economic Policy Analysis) – who wield a great deal of influence over the socio-economic policies pursued. Nonetheless, a shift towards a more equitable representation of men and women in economics may lead to policy issues being viewed from a broader perspective, and the consideration of a more balanced set of arguments in determining the optimal role of markets and regulation in the economy.

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In brief

- ▶ The academic field of economics has the lowest number of female full professors.
- ▶ Women, on average, have a different perspective of the desirable role of markets and governments.

Taking stock

A proper discussion about what causes the low number of female economists in senior positions requires a shared set of facts about how female students fare, what traits economists consider conducive to a successful career, and whether female economists do any better outside of academia.

EMPIRICAL ANALYSIS

Invisible barriers to the top for female economists

In many countries, the academic position of female economists is a very disadvantaged one – and to a far greater degree than is the case in the other social sciences. There seems to be no conclusive answer to the question why this is so, nor is it clear to what extent this also applies to the Netherlands. Is it because of their views on economic matters, because of their values, or has it to do with workplace practices?

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For years now at various levels within government pleas have been made to improve gender diversity within universities. Unfortunately, over all that time progress has remained limited. The percentage of female professors at Dutch universities is among the lowest in Europe, and compared with the various scientific fields in the Netherlands, economics has the lowest score with a mere ten percent (Rathenau, 2017). This is of course an improvement compared to the early nineties, when only two percent of the full professors within the science of economics were female. However the share still remains meagre. This perception is reinforced by looking at the last *Economientop 40* in *ESB* (Lukkezen, 2017), which only included two women of in fact Belgian nationality. And a glance across the border informs us that other countries struggle with exactly the same problems (Jonung and Ståhlberg, 2008). So,

all this raises the question why women in the economic sciences are lagging behind. Is the stance of women on economic subjects so radically different, or is their research quality so below par that there is not much demand for female professors? Or has the working environment in the economic sciences deteriorated to such an extent by the pressure to publish that women are looking for 'healthier' work?

In this article, I will – by means of a survey from 2015 among Dutch economists, jointly conducted with Arjo Klamer and Kees Koedijk – shed some light on these questions. This study will focus on female academics and solely scrutinize economists associated with Dutch universities. The proportion of women in the study is 23 percent (compare: in Van Dalen and Klamer (1996) this was 6 percent). In addition to this group of economists, the survey also included members of the *Koninklijke Vereniging voor de Staatshuishoudkunde* (Royal Society for Political Economy), which has a broader composition of members particularly interested in the relation between policy and economy (Bijlsma and Van Dalen, 2016). All this had already been covered extensively in previous publications (Van Dalen et al., 2015a; 2015b), and this more applied group will be excluded in the current study. However, the gender perspective has as yet not been investigated, although Van Dalen and Klamer (1998) also examined the divergencies between male and female economists in the past. When doing so in 1995, the insights and opinions of the relatively small group of women pre-

sent at the time were not found to be discernibly different. However, since then, a lot has changed at Dutch universities and it is worthwhile to take another closer look at the differences between men and women in the sciences.

DIFFERENT VIEWS

The most basic question is whether women have different views on economics as a science compared to men, which possibly made them feel uncomfortable with this field. Yet in listing the survey results, we do see that the differences here are again marginal. Whether one enquires about the success factors in becoming an economist, or opinions on economic policy and methodological principles, one may roughly speaking say that in the field of economics men and women do not differ substantially from one another.

Table 1 illustrates the comparison of men and women when questioned as to the importance of certain assumptions in understanding our present-day society. Rationality or perfect competition are not considered highly important, although women find this slightly more important. Yet both men and women find financial incentives very important. But the point on which women clearly differ from men (and significantly so), is the notion that governments serve the public interest. Women are far more convinced than men that this is an accurate assumption of how society works.

We have also inquired about the factors that make an academic economist successful, and as to all of these factors both men and women again reacted reasonably

similarly. The only nuance, however, is that women perceive far more strongly than men that, in achieving success, a prominent part is played by both the networking with eminent scholars (72 percent considers this very important, vis-à-vis 56 percent of the men) and the acquiring of research funds (71 percent considers this to play a major part, compared to 57 percent of the men). However, that does not imply that they therefore pursue such success *en masse*. When asked about their ambitions, women appear to be slightly less eager to work their way to the top. The statement “Being cited and respected by other colleagues is the main motivation to my work” is rejected by 47 percent of the women (compared to 33 percent of the men). Only 29 percent of the women strongly agree with this statement (compared to 40 percent of the men). In short, citations or rankings do not have the same stimulating effect on women as they appear to have on men.

When asked about the economists they respect, Kahneman is mentioned most frequently (eight times), followed by Sen, Acemoglu and Krugman (each six times). Among the men, these names – with the exception of Sen – are also frequently mentioned, and although Keynes (41 votes) is the most respected one here, hardly any women mention him. It is also remarkable that women don’t mention any female economists or hardly any, even though a woman – Elinor Ostrom – has been awarded the Nobel Prize in Economics. Apparently, there are still no outstanding female role models.

Obviously, when considering all these differences, it should be noted that gender issues have not been explicitly addressed in this survey. It is fairly obvious that men and women are likely to have widely differing views on these issues. For instance, May et al. (2018) show such differences to exist among European academic economists. However, when they examine economic issues they do show that women are less convinced of the effectiveness of market solutions than men are, and more frequently in favour of government intervention. The latter finding is related to the aforementioned observation that women have more confidence in the notion that governments serve the general interest.

DIFFERENT VALUES

The divergencies between men and women as to the way they perceive their profession can be observed, but these are not so marked that we can rightfully speak of two totally different worlds. The question then arises

The share of respondents deeming the assumption mentioned very important

TABLE 1

Relevance of	Men	Women
Financial incentives	41	51**
Government serving the public interest	19	39***
Behaviour according to conventions, habits	38	38
Rational behaviour	21	23
Perfect competition	12	17

Note: Respondents were asked: “How important are the following assumptions for understanding current society? 1 = not important; 2 = somewhat important, 3 = reasonably important; 4 = very important, don’t know.”

N varies per statement between 332 to 352, the ‘don’t know’ category was left out.

/ Significat at the five and one percent level respectively

Source: survey by Van Dalen et al. (2015ab)

whether female economists have different values in everyday life compared to those of male economists. To establish this, the respondents answered questions – also used by Schwartz et al. (2012) and in the European Social Survey – in order to ascertain what the individuals' personal values were. Figure 1 charts the extent to which male and female economists at Dutch universities differ from each other in this regard.

These differences turn out to be very minute. The only two values that differ statistically significantly from each other are 'creativity (being innovative)' and 'taking risks'. Men consider themselves more creative than women, and women find that taking risks (seeking adventure) fits in with their character more than with that of men. However, upon close scrutiny of the figure we see that even as to these personal values crucial within science – like creativity and taking risks – men and women do not differ greatly from one another.

DIFFERENCE IN WORK PRESSURE

The data thus suggest that men and women do *not* live in totally different worlds. But a different picture emerges if we look at working conditions. In Van Dalen et al. (2015a), workload was briefly referred to as a potential explanation. Here, on a number of points, there are indeed some remarkable differences between men and women. The most striking one is dissatisfaction about work pressure: fifty percent of the female economists working at a university consider leaving academia because of the publication pressure. For men the percentage is considerably lower, to wit 29 percent. Such dissatisfaction is well corroborated: 49 percent of the women describe the publication pressure as extremely high (9 or 10 on a 10-point scale), while among men only 31 percent characterizes it as extreme. Are women then unable to cope with the competitive pressures of academia? This conclusion seems premature. The current cross-sectional data sample does not allow us to track economists over time, but we can explain part of this difference by analyzing the workload in more detail. Table 2 contains an analysis of the perceived workload with respect to publishing, acquiring research funds and teaching.

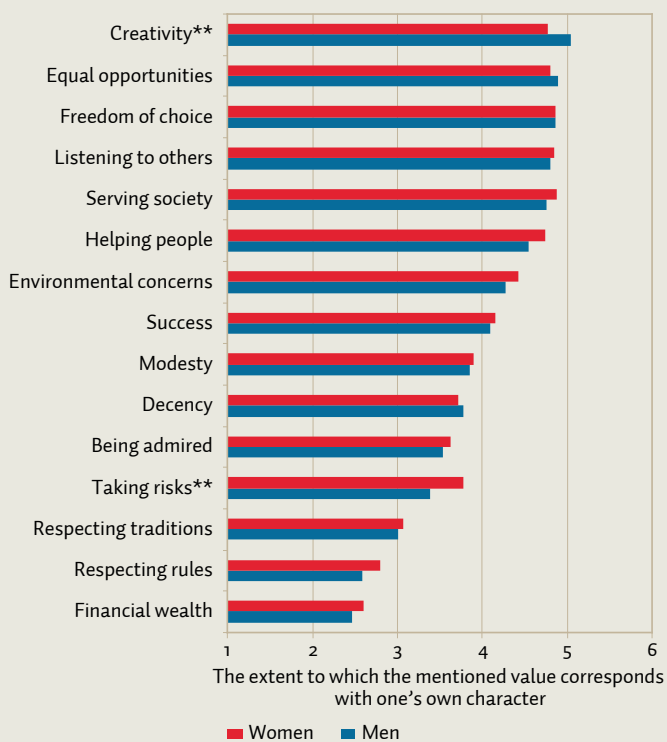
Publication pressure has a distinct age profile, with the pressure at its peak during an academic's mid-30s – corresponding with the fact that the pressure is mainly felt at an assistant professor and associate professor level. The latter is probably related to the phenomenon of *tenure-track* jobs. Employees are *de facto* only

eligible for a permanent position once they have met certain requirements, particularly regarding publications in high-quality journals. It is an *up or out*-system. And so this pressure actually applies to everyone close to obtaining a full professorship. However, it should be noted that being female (see the estimates' first column) does not exert any influence on publication pressure.

Foreigners experience additional pressure in the publish-or-perish culture of universities, and it should be noted that 35 percent of the women in the sample were born abroad (compared to 15 percent of the men). It remains somewhat of a puzzle why publication pressure among foreigners is perceived to be higher. It is possible that in the Netherlands the pressure is higher than elsewhere in Europe or the world. Or it may sim-

Self-reported values of economists associated with Dutch universities

FIGURE 1



** Difference significant at the five percent level, N=330.
1 = 'does not resemble me at all' to 6 = 'resembles me closely'

Source: survey by Van Dalen et al. (2015ab)

ply have to do with the fact that foreign staff members who do not succeed in academia, have few fallback options to resort to in the Dutch labour market. Or perhaps foreigners are more ambitious to work at top universities in the US or UK, and realize that those who do not publish at a certain level will not reach the Ivy League. Finally, it is remarkable that the publication track record does not really leave its mark on the workload perceived – whether you publish a lot or little, the pressure to publish remains the same. In the economic sciences, you are only as good as your last publication, and there is no time for slacking.

The only gender effect on work pressure is to be found in teaching. However, it also remains unclear why women perceive this pressure as higher than men do. It may be that women impose more stringent standards upon themselves when teaching, or feel that they need to exert more effort regarding this point than men would. In itself, this is not a strange assumption. Research shows, for example, that women spend more time than men on making their papers ‘readable’, and that at tenure decisions women get insufficient recog-

nition for jointly written papers. In fact, when women write together with men, the credit mainly goes to the man (Sarsons, 2017). This is one of the invisible factors seeing to it that, as a woman, one has to make an extra effort in order to be acknowledged in academia.

CONCLUSIONS

In the Netherlands, women in economics are no longer as rare as twenty or thirty years ago. Nevertheless, among the current staff women are still clearly a minority, and certainly among full professors a woman is an exception. As far as the survey data among Dutch economists show, there are no huge differences between men and women. This suggests that in everyday practice, forces are at play that are harder to measure.

Competitiveness

For instance, Van Damme (2014) states that women are less competitive, and in the literature (Bertrand, 2011) this is also presented as a reasonably robust finding. One could regard getting one’s work published in top journals as being ‘all in the academic game’ – yet

Explaining the workload in Dutch universities

TABLE 2

(on a scale of 1 = very low to 10 = extremely high)

	Estimated pressure of		
	publishing	getting funding	teaching
Age (in years)	0.18**	0.04	-0.03
Age squared ($\times 10^{-2}$)	-0.23**	-0.10	0.05
Gender (man = 0)	0.32	0.19	0.56**
Country of birth (NL = 0)	0.68***	0.55*	-0.14
Publication level last 3 years	-0.06	-0.02	-0.00
Position (PhD student = 0)			
Temporary researcher / assistant professor	0.36	1.89***	0.36
Assistant professor	0.98***	2.45***	1.27***
Associate professor	0.92**	2.32***	1.32***
Full professor	0.67	3.45***	1.09**
Special appointment professor	0.38	3.35***	0.11
Other	-0.01	2.98***	0.10
Constant	3.15*	3.70	5.41***
Adj. R ²	0.12	0.15	0.09
RMSE	1.71	2.37	1.92

*/**/** Significant at the ten, five and one percent level respectively

N = 326, estimated with OLS; the three equations were estimated simultaneously

Source: survey by Van Dalen et al. (2015ab)

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according to the pertaining studies women find the pressure of this far too high and also a lot higher than men do. In addition, women are less susceptible to the buzz of being cited. And the fact that they engage less in this ‘struggle’ is not a finding reserved to the economic sciences. The pressure to publish, and the associated competitive pressure in the academic world, can create an unhealthy working environment in which the danger of a burnout lurks just around the corner (Levecque et al., 2017; Tijdink et al., 2013). Still, the fact that, within the spectrum of the sciences, economics scores lowest in terms of appointing women does demand additional explanation.

Customs

In a recent interview, the Princeton economist Anne Case points out a number of factors, but also refers to the tacit codes of conduct among economists collaborating in the workplace. The culture is, in comparison with other social sciences, more aggressive and characterised by a strong urge to prove oneself – which necessitates a fiercer jockeying for your position. For example, as to economics seminars she comments: “Presenting your latest findings can feel more like a testimony in front of a firing squad than a collaborative space where other experts help you sharpen your research” (Quartz, 2017). And competition at the expense of others is something that goes down badly with women and really puts them off. Whatever the case may be, there is something the matter with the world of economics. And the fact that half of the women wish to leave academia due to the publication pressure should be taken as ‘the writing on the wall’.

In brief

- ▶ Half of the women employed at Dutch universities wish to leave academia.
- ▶ Women are often in positions where work and publication pressure are perceived to be highest.
- ▶ Female economists do not hold professional attitudes that are notably different than those held by men.

Successful economists are highly masculine

Compared to other scientific disciplines, academics in economics and business stress the importance of stereotypical masculine traits like self-confidence and competitiveness for career success. Feminine traits like cooperativeness and modesty are deemed less important. Could this explain the low number of female academics in economics and business?

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RUTH

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MICHEL

HANDGRAAF

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Although it is well-known that women are vastly underrepresented in natural sciences and technology, the representation of women in the economics and business departments at Dutch universities is even lower, with 10.4 percent female professors in 2016. As argued by Teunissen and Hogendoorn (2018) the scarcity of women, and the lack of inclusion of the female-scholar perspective has negative consequences for the quality of economic research, as well as for the socio-economic policy based on this research. We here argue that, in economics, one important obstacle to female academics' career progression is the very masculine stereotype as to what it means to be successful within this discipline.

Research shows that people associate divergent roles and characteristics with men and with women (Eagly and Karau, 2002). Women are stereotypically associated with communal roles (for instance, mother, nurse) and with traits like being modest, cooperative and caring. Men, on the other hand, are associated more

explicitly with *agentic* roles (for instance leaders, managers) and characteristics like self-interest, self-confidence and competitiveness. People's perceptions of the characteristics necessary to be successful in certain occupations are strongly influenced by how men and women within that occupation are represented. As regards occupations that are dominated by men, people are likely to assume that there stereotypically male traits are necessary to be successful, while stereotypically feminine traits are seen as irrelevant or even counterproductive (Heilman and Caleo, 2018). Given the overrepresentation of men in economics and business departments, particularly at the associate and fullprofessor level, we expect that the occupational stereotype will be a distinctly masculine one, compared to the scientific disciplines in which women are more abundantly represented, such as the humanities and behavioural sciences.

Another indication that the occupational stereotype in economics and business is dominated by masculine rather than feminine traits, is that students tend to score particularly high on stereotypically masculine traits and low on stereotypically feminine ones. Economics and business students behave more selfishly, competitively and less prosocially than psychology students do (Van Lange et al., 2011), are less charitable and generous than arts and sciences majors (Bauman and Rose, 2011), and more likely than other students to favour efficiency and profit-maximizing over fairness and social considerations (Cipriani et al., 2009). Furthermore, they are less likely to show trust and trustworthy behaviour than for instance law students (Haucap and Müller, 2014). These differ-

ences between economics and business students and students from other disciplines are thought to be due to both effects of selection and of learning. Exposure to concepts like Rational Economic Man, the Invisible Hand and Standard Economics' assumptions of selfishness and rationality may have changed their behaviour and created cynicism about the prosocial motivations of others (Gerlach, 2017).

ECONOMICS AS A MASCULINE FIELD

In order to answer the question whether economics is a particularly masculine field, we compared the occupational stereotype in economics and business with that in other disciplines. We used data from an online questionnaire that was administered during the 2017/2018 academic year among 2,256 academics who worked as assistant (50.7 percent), associate (22.2 percent) or full professors (27.1 percent) at the fourteen Dutch universities. We focused on scholars working in economics and business (N = 440; 26 percent women), and compared their perceptions of occupational stereotypes with those of scholars in natural sciences and technology, where women are underrepresented to a similar degree (N = 949; 22 percent women), and also with two disciplines in which there is a more equal represen-

tation of men and women, that is the humanities (N = 685; 46 percent women) and behavioural and educational sciences (N = 482; 64 percent women).

Occupational stereotypes were measured by having respondents rate their image of the successful academic within their own discipline as to stereotypically masculine and feminine traits (Bem, 1974). Masculinity was assessed according to the following characteristics: being performance-oriented, focusing on one's own scientific output, wanting to be the best, being a good networker, being assertive and being self-confident. Femininity was assessed as to being a good collaborator, a nice colleague, helpful, loyal, modest, spending a lot of time on teaching, contributing to a good working atmosphere and being concerned with other colleagues. In addition, respondents were asked to also rate themselves on these masculine and feminine traits.

Academics across the scientific disciplines reported that the prototypical successful scientist was more explicitly masculine than feminine (Figure 1). Data also showed that, across disciplines, women reported an even more masculine prototype than men (4.32 for women versus 4.19 for men). Interesting was that the discipline showing the most masculine and least feminine occupational stereotype was economics and

Male occupational stereotypes limit women's opportunities

BOX 1

When occupational stereotypes emphasize masculinity rather than femininity, this lowers the possibilities for women to succeed in at least three ways:

1. Highly masculine occupational stereotypes trigger *bias in the evaluation of women's competence* (Eagly and Karau, 2002). We simply do not expect women to have what it takes in order to be as successful as men in masculine occupations. Therefore masculine stereotypes create a systematic bias when perceiving the competence of women. On top of this, even if women disconfirm gender stereotypes by showing determination and irrefutable competence in masculine spheres, they experience a backlash in the form of social and economic penalties. Agentive women face a 'dominance penalty' (Rudman and Phelan, 2008): People – men and women alike – tend to dislike women who transgress the norm that a woman

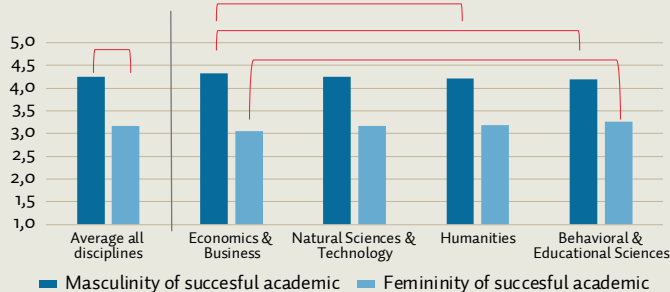
should be nice and sociable, and so they are less likely to hire agentive women who are comparable to agentive men. As a result, in masculine occupations, ambitious women have to walk a tightrope between being too masculine and therefore disliked, and being too feminine and therefore perceived as not competent enough.

2. Related to the first point, masculine occupational stereotypes create lack of fit between the general expectations we have of women, and the stereotypically masculine requirements for occupational success. This lack of fit works as a self-fulfilling prophecy, so that women *themselves* tend to expect that they will not succeed (Heilman, 2012). When women sense that they are not masculine enough to be successful, this lowers their occupational identification and increases turnover intentions (Peters et al., 2012).

3. When organizations have a strong focus on masculinity, this may undermine the solidarity among the women working there. We tend to assume that women who are successful in masculine organizations will help other women to achieve the same as they do and are motivated to actively disconfirm gender stereotypes. However, research on the '*queen-bee phenomenon*' shows that highly masculine work settings motivate some women to try to fit in with this culture by stressing how different they are to other women (for example more competent and committed than other women) and that they show high masculinity themselves (Derks et al., 2016). As a result, the few women breaking through the glass ceiling are often just as unwilling as their male colleagues are to promote opportunities for junior women (Faniko et al., 2017).

Perceived masculinity and femininity of the successful academic

FIGURE 1

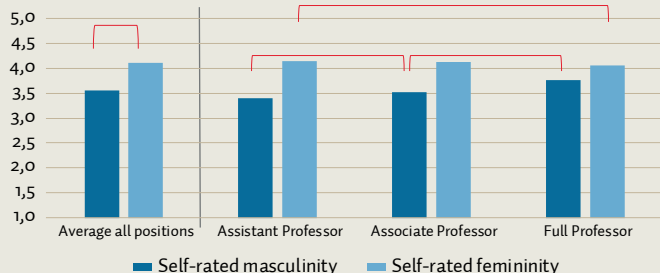


Note: Means reported in this figure have been corrected for effects of gender and age; differences significant at the 5 percent level are indicated by connecting lines above the bars

Source: Derks, Van Veelen and Handgraaf

Self-rated masculinity and femininity for all disciplines

FIGURE 2

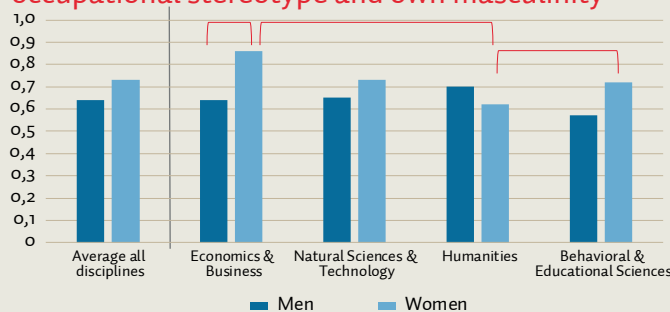


Note: Means reported in this figure have been corrected for effects of gender, age and discipline; differences significant at the 5 percent level are indicated by connecting lines above the bars

Source: Derks, Van Veelen and Handgraaf

Lack of fit between masculinity of occupational stereotype and own masculinity

FIGURE 3



Note: Lack of fit is the masculinity of the successful academic minus the self-rated masculinity. Means reported have been corrected for age; differences significant at the 5 percent level are indicated by connecting lines above the bars

Source: Derks, Van Veelen and Handgraaf

business, although differences were small. This highly masculine prototype was comparable to the prototype reported in natural sciences and technology. However, in comparison to economics and business, the scientist's prototype was significantly less masculine in the humanities and the behavioural and educational sciences. Moreover, the prototype of the successful academic was significantly less feminine in economics and business, when compared with the behavioural and educational sciences.

It is important to emphasize that there were no differences between how male and female academics rated *themselves* as to masculinity and femininity. Remarkably, in all disciplines, both men and women rated themselves as being more feminine than masculine (Figure 2). This suggests that most people working in academia think that, in order to fit in with the successful academic's stereotype, they should become more masculine and less feminine.

And they would be right in their conclusion. As depicted in Figure 2, results showed that full professors reported themselves to be more masculine and less feminine than assistant and associate professors. So, the fact that academics who have reached the highest positions in academia indeed consider themselves the most masculine and least feminine of all academics is probably due to selection effects (academics who fit better into the masculine prototype are more likely to stay in academia and to receive promotion) as well as to socialization effects (as academics climb up in the hierarchy, they adjust to the highly masculine prototype; an effect that is in line with the queen-bee phenomenon).

Finally, although both men and women in academia reported a lack of fit between how masculine they are and how masculine they need to be in order to be successful in academia (Figure 3), there was only one discipline where the lack of fit was greater for women than for men: economics and business. Moreover, whereas men's lack of fit did not depend on the discipline they worked in, women in economics and business reported a greater lack of fit than the women in the humanities did.

CONCLUSION

We present evidence to show that, though in general academia forms a masculine work setting, economics and business is perceived as being an even a more masculine discipline. The prototypical successful economics scholar has a high score on stereotypically masculine traits,

such as self-confidence, self-interest and assertiveness, rather than on collaboration and being a nice colleague. Although this image of substantial masculinity is clearly obvious in all of the scientific disciplines studied here, it was particularly marked in economics and business and the natural sciences, as compared to the humanities and the behavioural and educational sciences. The literature we reviewed (Box 1) suggests that the masculine stereotype is not only a result of the scarce representation of women in economics and business. In fact, it also reinforces the female underrepresentation in economics as this masculine image triggers gender bias, discouraging women to pursue an economics career and even motivating those who do enter to conform to the highly masculine culture rather than challenge it.

Although changing the excessively masculine occupational stereotype in economics and business will be difficult, there are things that could indeed help to change this masculine image. As people base stereotypes on the examples they see, a significant increase in the number of female professors will in the long run affect the prototypical image academics have of the successful economist, allowing for more feminine traits to be included in it. Moreover, by more explicitly rewarding stereotypically feminine qualities in performance evaluations – qualities like being a team player who focuses on *team science* rather than on individual publications – economics and business departments can change the perception that academic success depends on masculine rather than feminine traits. By actively diversifying the perception of what it takes to be successful towards a more inclusive image, incorporating both feminine and masculine qualities, it is possible to breach the self-perpetuating mechanisms that preserve female underrepresentation. This will encourage a greater number of women to enter, succeed and have their impact on the discipline of economics.

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In brief

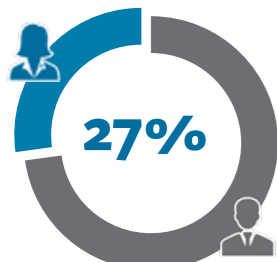
- ▶ Economists have a relatively masculine image of how they should behave in order to achieve career success.
- ▶ Female economists report a large difference between the masculinity needed to succeed and their own masculinity.
- ▶ A highly masculine occupational stereotype is a 'self-fulfilling prophecy' that perpetuates the underrepresentation of women.

Gender in economic institutions

CPB

Netherlands Bureau for Economic Policy analysis

Scientific staff



N = 103

Managers



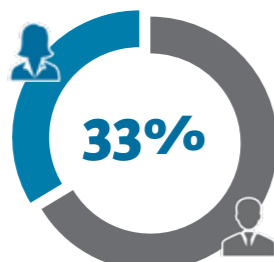
Managing board



PBL

Netherlands Environmental Assessment Agency

Scientific staff



N = 223

Managers



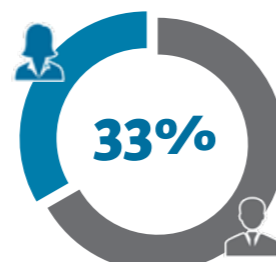
Managing board



DNB

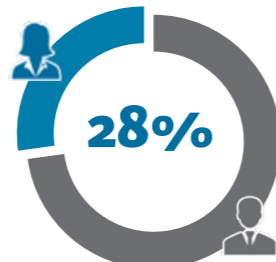
De Nederlandsche Bank

Staff



N = 575

Managers



N = 36

Governing board



Universities

PhDs



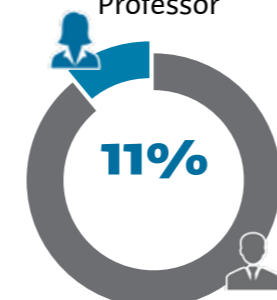
N = 551

Assistant and associate prof.



N = 856

Professor

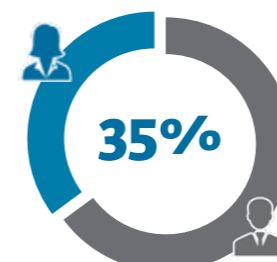


N = 315

EZK

Ministry of Economic Affairs and Climate Policy

General Economic Policy (AEP)



N = 37

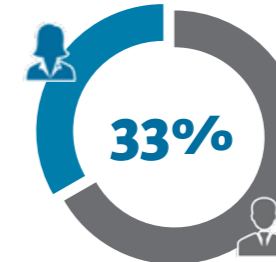
Governing council



FIN

Ministry of Finance

General Financial and Economic Policy (AFEP)



N = 24

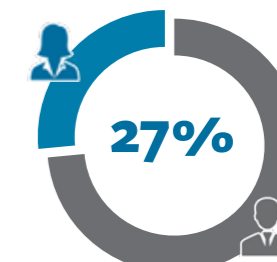
Governing council



SZW

Ministry of Social Affairs and Employment

Labour market and Social Economic Affairs (ASEA)



N = 34

Governing council



- The results show number of people employed, not full-time equivalents (FTE)
- The governing council at ministries consists of DGs, dept. SGs and SGs
- Staff at DNB: divisions *Financiële Markten*, *Statistiek*, *Chartaal*, *Financiële Stabiliteit* and *Economisch Beleid en Onderzoek*
- The data on universities come from VSNU
- *ESB* would like to thank all the institutions for providing the data

Female econometricians are the future

It used to be assumed that boys are better at economics than girls. However, today the gender gap in economics education is ancient history. In fact, now female students are the ones performing best in econometrics, the most difficult educational programme in the economics domain.

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Economics is known as a diversity-unfriendly discipline. In a recent review article, Bayer and Rouse (2016) confirm that, in the United States, women are still underrepresented among economists. In the Netherlands, it is no different. Data from the Rathenau Institute show that Economics is lagging way behind when it comes to the proportion of women among professors (Rathenau, 2018). At various points along the supply line of economics talent, diversity can be adversely affected. One's choice of high school track, one's study choice, study progress within the Economics programmes and (academic) career after graduation – all of these can influence diversity among economists. This article focuses on the chain's middle section: the flow of female students through the programme. Using data from the Erasmus School of Economics (ESE), I will investigate whether the drop-out rate and the bachelor's graduation rate are

influenced by gender. In passing, I will look at the effect of ethnicity on study performance.

The data pertain to the Dutch-language bachelor's degree programmes in Economics & Business and in Econometrics & Operations Research, covering the period from 2009 to 2015 (seven cohorts). Over that time, the proportion of women in the Economics programme's inflow increased slightly from 25.8 percent in 2009 to 28.5 percent in 2015. In the Econometrics programme, the increase was larger, going from 17.9 to 28.5 percent.

GENDER GAP IN ECONOMICS EDUCATION

Until recently, in the literature on economics education it was assumed that male students are better at economics than female students. For instance, Ballard and Johnson (2004; 2005) still reported the better study performance of male Economics students in the United States. In the course of time, various explanations have been suggested for this, such as the absence of female role models within the academic staff (McCarty et al., 2006), a comparative male advantage in answering multiple-choice questions (Walstad and Robson, 1997) and the supposedly better mathematical skills that male students have (Lindberg et al., 2010). However, a recent review by Johnson et al. (2014), concludes that the empirical support for a negative gender gap, in which female students perform less well than male students, has attenuated over time.

BACKGROUND CHARACTERISTICS

Earlier research into study progress in Economics education shows that prior education plays an important role (Allgood et al., 2015). Good results in mathematics courses in secondary education are strongly connected with study success in Economics. Within the Dutch context, subject choice in high school is relevant here. The VWO (pre-university education) track in Science & Engineering (S&E) attracts analytically adept students and offers them a mathematical education, well-suited to economics studies (mathematics B instead of mathematics A, which is usually offered within the Economics & Society track). Earlier, the fact has been established that a science-based track provides a better preparation for studying Economics than the Economics & Society track does, but unfortunately the situation still continues to exist (Arnold, 2010). Another important background characteristic is ethnicity. Students with a non-Western migration background appear to do less well in higher education (Severiens and Wolff, 2008).

Table 1 compares the background characteristics of the ESE students. In addition to the grading average for VWO and the proportion of students with a S&E track, age is also included here. Age provides an indication of the speed with which a student has completed a preparatory education. Repeating a class or a HAVO (higher general secondary education)/VWO trajectory will result in one being a bit older when the bachelor's programme starts. The greatest difference between male and female entrants has to do with track choice: for men, the S&E track is far more common. This reflects the fact that, within VWO, girls are still underrepresented in this track. Furthermore, female

entrants on average have significantly higher VWO grades. In our sample, the age of men and women is comparable. Enrollers with a non-Western migrant background have a lower VWO grade average, have less often chosen to do a S&E track, and enrol at a somewhat higher age. As to the Econometrics programme, the situation is comparable, although the differences between female and male enrollers are smaller.

STUDY SUCCESS IN THE FIRST YEAR

In the first bachelor year, each student receives a binding study advice (BSA). A negative BSA means that a student is not allowed to re-register for the study programme. With a positive BSA, a student can continue the programme. The dummy variable *PosBSA* takes on the value 1 if the student receives a (conditional) positive BSA, and 0 if the BSA is negative. *PosBSA* is explained by means of a logistic regression model which includes gender (dummy variable *Female*), non-Western migration background (dummy variable *Non-Western background*) and the rest of the background characteristics (the variables *Age*, *VWO grade* and the dummy variable *S&E track*). For the Econometrics programme, the model does not include the *S&E track*, since mathematics B is an admission requirement. In all estimates, cohort effects are included in order to take into account changes in the education system over time. Table 2 contains the regression results either with or without the variables *Age*, *VWO grade* and *SE track*. Excluding these variables, both programmes show a significant and highly negative effect of ethnicity upon 'surviving' the first year. The marginal effects show that, when *Non-Western background* goes from 0 to 1, the probability of a positive BSA decreases by 0.172 in

Background characteristics Erasmus School of Economics students, 2009–2015

TABLE 1

	Average VWO grade	Share with S&E track	Average age
Economics & Business			
Female / Male	7.0 / 6.8 ***	15.8 / 21.4 ***	19.1 / 19.0
Non-Western background / Dutch background	6.6 / 6.9 ***	14.5 / 21.7 ***	19.6 / 18.8 ***
Econometrics & Operations Research			
Female / Male	7.1 / 7.0 **	66.4 / 69.7	18.7 / 18.7
Non-Western background / Dutch background	6.8 / 7.1 ***	60.9 / 71.6 ***	19.3 / 18.5 ***

/ Significant at five and one percent level respectively

Study success in the first year

TABLE 2

	Economics & Business		Econometrics	
	PosBSA	PosBSA	PosBSA	PosBSA
Intercept	0.605 ***	-6.458 ***	0.816 ***	-3.202 *
Female	0.176 **	-0.088	0.256 *	0.154
Non-Western background	-0.730 ***	-0.118	-0.834 ***	-0.143
Age		-0.222 ***		-0.387 ***
VWO grade		0.165 ***		0.162 ***
S&E track		0.556 ***		
N	4,305	3,718	1,217	1,089
Marginal effects				
Female	0.039	-0.019	0.063	0.037
Non-Western background	-0.172	-0.025	-0.206	-0.035

*/**/** Significant at ten, five and one percent level respectively
 Note: Controlled for cohort effects

Economics and 0.206 in Econometrics. As to *Female*, there is a slightly positive effect. However, as soon as *Age*, *VWO grade* and *S&E track* are included, the significance of *Non-Western background* and *Female* disappears and the marginal effects decrease. Gender and ethnicity thus have no significant direct effects upon ‘surviving’ in the first year. The coefficients of *VWO grade* and (for Economics) *S&E track* have the predicted positive effect on study success and are very significant. *Age*, however, is a significantly negative factor. No interaction effects were found among the explanatory variables.

BACHELOR GRADUATION RATE

After the BSA, the bachelor’s degree is the next formal measuring moment as to study progress. A common measure is the re-enrolment graduation rate after *x* years. This measures what section of the students who are allowed to continue their studies after the first year, obtained their bachelor’s degree at the end of *x* years (this is the diploma of the degree programme that students entered in the first year). Again a logistic regression model is used, in which the probability that a degree is obtained after *x* years is the explanatory variable. In addition to *Female* and *Non-Western background*, the grade average in the first bachelor year has been included as an explanatory variable. This variable measures the most recent academic achievement and makes *VWO grade*, *S&E track* and *Age* redundant. There is a considerable group of students combining the economics programme with a law programme. This combination results in study delay. Within the group of double students, however, those with a non-Western migration background are underrepresented. Therefore, for the Economics programme’s three-year graduation rate, a *Double student* dummy variable was added.

Table 3 summarizes the regression results. It is not surprising that in all regressions the first-year grade average is strongly related to the graduation rate after three or four years. What is striking is that female students have a better four-year graduation rate than their male colleagues do. The effect is particularly marked in Econometrics: for a female re-enroller, the probability of a bachelor’s degree within four years is 0.113 higher than for a male one. And, finally, students with a non-Western migration background do not have a different graduation rate, when we control for double students and the grade average in the first bachelor year.

Re-enrolment completion rate

TABLE 3

Diploma after	Economics & Business		Econometrics	
	3 year	4 year	3 year	4 year
Intercept	-8.104 ***	-6.373 ***	-9.322 ***	-6.347 ***
Female	0.116	0.264 **	0.273	0.862 ***
Non-Western background	0.178	-0.187	0.177	0.180
Grade average bachelor 1	1.046 ***	1.011 ***	1.161 ***	1.015 ***
Double student	-0.429 ***			
N	2,370	1,949	1,217	3,718
Marginal effects				
Female	0.026	0.053	0.068	0.113
Non-Western background	0.040	-0.039	0.044	0.026

/ Significant at five and one percent level respectively
 Note: Controlled for cohort effects

CONCLUSIONS

This article confirms the results of international research that the gender gap in economic education is on the decline. Within the ESE, female students don't drop out more often in the first year and have a better graduation rate. That women are increasingly interested in econometrics is promising. And they also perform well in this programme. Since many scientists in the economics discipline have an econometric background, this also inspires hope of being able to tackle the academic staff's lack of diversity. The challenge is now to preserve this up-and-coming female econometric talent for science.

As far as the influence of ethnicity is concerned, the results are less positive. During the first year, the number of students with a non-Western background dropping out from ESE programmes is disproportionately high. This may be explained by their lower VWO-grade average, their higher age, and the small number of pupils with a S&E track. When correcting for this, there is no longer a negative ethnicity effect on drop-out. This does not mean that there is no problem. Students with a non-Western migrant background face transition problems when they move from VWO to ESE programmes. This emphasizes the importance of a better awareness of and preparation for the analytical nature of these programmes.

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In brief

- ▶ The gender gap in economic education is on the decline. Boys no longer are better at economics than girls.
- ▶ More girls choose to do econometrics, and here they are performing better than boys.
- ▶ Students with a non-Western migrant background have the most transition problems when entering the university.

Experiences

Next to being a fascinating research topic, the gender balance in academia is also highly personal. Anyone aiming for a more inclusive academic environment, should take on board the views and experiences of those involved.

INTERVIEW

“I just wanted to do economics”

Siv Gustafsson was the one of the first females to become full professor of economics in the Netherlands (see text box 1). What were her experiences? An interview.

**JASPER
LUKKEZEN**
Editor-in-chief

Siv Gustafsson: “When I left Amsterdam in 2008, I wrote in the invitation to my departure lecture [Sevéus, 2009] ‘Siv Gustafsson has enjoyed every minute of being a professor in Amsterdam.’”

At an enthusiastic pace and in a welcoming voice, Gustafsson (see box 2) right away takes the lead in our conversation on the phone. I planned to explain to her about *ESB's Women in Economics*-project and arrange for an interview at a later time. Now the conversation quickly evolves into a spontaneous interview.

You were one of the first female professor in economics. Was that a difficult position?

“For me, the professorship was the platform I needed to be productive. As a full professor my peers respected me. The most difficult time in my career was before I became a full professor.

Of course, the time between being a student and being a professor is uncertain and difficult for anyone, but in the seventies there was a lot of blatant sexism. When I completed my undergraduate course in four years, the administrative records officer said ‘that was very quick for a woman!’ She did not know that those four years also included having a baby. I did not tell anybody at the university.

More than with the blatant sexism, I struggled with the invisible barriers. It was hard to get invited to present my papers, I was not offered a scholarship and did not get any career advice from the senior academics in Stockholm. Yet my male peers did have mentors who arranged those kind of things for them.”

Dutch people always consider Sweden an example when it comes to female participation.

“Sweden *is* an example for other countries as to how to organise female labour-market participation. In Sweden combining a job and a family is doable. There is subsidized day-care for children and parents are allowed to stay at home if their child is ill. This already started to be common in the seventies.

Sweden is not an example in academia though. The first female professor at the Stockholm School of Economics was appointed in 2016 and she had been preceded only by two professors of Business Administration, Guje Sevón in 2001 and Carin Holmquist also in 2001.”

So, how did you make a career?

“That such difficult and uncertain years can be much easier with a mentor, was something I experienced at Columbia University, when Jacob Mincer took me under his wing. I had met him when he was visiting Stockholm, and when I sent him my PhD thesis, I received a handwritten note with three bullets. 1. We have a conference in spring and we are happy to fund your travel expenses. 2. There is a session in the econometric society’s meeting on your topic, send them your



First female economics professor in the Netherlands

BOX 1

The trailblazer for female economists was Lizzy van Dorp. Van Dorp, born in 1872, was the first woman in the Netherlands with both a law degree and a law practice. Later on, she started teaching economics at Leiden University. She wrote a *pre-advies* [article] for the Royal Dutch Economic Association in 1910 and was a member of the editorial team of *de Economist* in 1915.

However, she never became a full professor. Her application for the chair of public finance in Wageningen was turned down by the Minister of Agriculture, who did not want such a “belligerent female” as a full professor. Soon after that Van Dorp became a member of parliament for the liberals. In 1945, she died in a Japanese internment camp in Indonesia at the age of 72.

Prior to Siv Gustafsson, at least two other women had already become professor of economics by special appointment (*bijzonder hoogleraar*) in the Netherlands: Lutgart Van den Berghe and Aldi Hagenaars, both were appointed by the Erasmus University Rotterdam in 1987. Van den Berghe became chair of the insurance industry at the age of 35 and pursued a career in corporate governance. She is currently affiliated with Vlerick Business School in Belgium. At the age of 33, Hagenaars was appointed chair of household economics. She passed away in 1993.

paper. 3. Visit me as a guest researcher. All of those things I did, and that’s what kickstarted my career.

During my visit at Columbia, I met Gary Becher and James Heckman, both Nobel Prize laureates, who also helped me get into the relevant networks. There, I also learned to write academic papers instead of monographs.”

You mentioned you had a child as a student. How did that work out for you?

“Lots of women plan to have children when they are 39 or so. At that age, it is a race against the clock, both physically and careerwise, with respect to tenure. Having said that, I became pregnant when I was just 22 with a man whom I had only been with a couple of months. Abortion was forbidden. The worst part was the negative expectations from teachers and other students. A woman who gets pregnant chooses for a family and against studies and career. I solved this by dropping out of school while my pregnancy was visible, and returned after the birth of my first son.

My children were born in 1965 and 1969. After that, I started on my PhD. When I travelled to Columbia University, my sons were already 10 and 14. Their father took great care of them, so that went fine. Nevertheless, my youngest son used his status as ‘abandoned

About Siv Gustafsson

Siv Gustafsson was born in Stockholm in 1943. She completed her undergraduate studies at the Stockholm School of Economics in 1967, and completed her Phd at the same school also in 1976.

Most of Gustafsson's work is empirical in nature and applies microeconomic theory to women's emancipation. Her first publication in English was commissioned by the OECD in 1978: *Cost-benefit analysis of early childhood care and education*.

After a series of sojourns at Columbia with Jacob Mincer and at Chicago with Bob Willis, Gustafsson accepted a position as a full professor of gender issues in the labour market (*Verkgelegenheidsvraagstukken in het emancipatiebeleid*) at the University of Amsterdam in 1989. Later on, her chair was renamed into Population and Gender Economics.

From 1990 onwards she annually published multiple papers on labour-market outcomes of policy arrangements like maternity leave, childcare subsidies and joint versus separate taxation. Gustafsson supervised eight PhD students who were all female, and her students loved her. In the *Festschrift*, one of her former students writes: 'All other courses I take are about firms. This is the only course that is about people and families.'

In 2008 she retired and returned to Stockholm.



by this mother' to get extra attention from his teacher who felt very sorry for him. Neither my husband nor I knew anything about this until his teacher scolded me after I returned: 'One doesn't leave one's children for such a long time!'"

Gender studies sounds very multidisciplinary to me.

What kind of an economist are you?

"The field is multidisciplinary, but I am not. I just wanted to do economics. When I first set up a course on gender economics, it attracted a lot of women who wanted to discuss gender, but did not fancy my empirical approach. I discontinued the course after the first year. If you want to be a good economist, doing good research, you need to know a lot about research methods. Learning about other views and approaches, which you cannot use for your research, is then a waste of time.

Later on, I learned how to deal with non-economists professionally. For economists you emphasize theory, methods and your dataset, for non-economists you emphasize the main question's relevance and its implications.

My research is quite specialized and that fitted well into the transition the economics faculty was going through during my time there. When I arrived, there were a lot of business economists who barely did any

research, but were appointed because they had done something great in business. That's something completely different from the economists who laboured over academic publications. Economists who occasionally still cite my papers, by the way."

So, all is good now?

"Good mentoring is still very important, especially for women. They need to learn that criticism of your paper, is not criticism of you as a person. That's a hard lesson. Experienced professors have a responsibility to create a collaborative and welcoming atmosphere. Small things can go a long way there, like properly introducing guest speakers and listing their accomplishments, and professors telling what they like about a paper instead of just listing its flaws. I have always aimed to do that."

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Academics on the gender imbalance in economics

The gender imbalance in economics does not only make a fascinating research topic, it is also highly personal for many researchers. In a round table discussion we asked both female and male economists to share their views.

**ELISA
DE WEERD**
Editorial staff

“I notice that we are leaving out personal experience when introducing ourselves, but I think it is relevant that I have three young children.” In the *C.W. Opzoomerkamer* in the academic building of Utrecht University, surrounded by portraits of male academics, researchers are discussing their experiences with the gender imbalance in the field of economics. The attendees are academics from seven Dutch universities who have responded to the invitation of *ESB*. During the discussion, the researchers are asked to share their perceptions on the causes and consequences of the low number of female professors in economics. The biases embedded in the workplace as well as personal preferences and experiences are considered. The discussion was held under the Chatham House Rule. So, the opinions in this article may not necessarily reflect the opinion of every individual participant.

THE ISSUE

Somehow, female economists do not feel encouraged to continue in this field. Even though the low percent-

age of women is an issue within academics in general, the gender imbalance is relatively strong in the economics domain. However, across the economics field the gender imbalance also varies. The gender imbalance is smaller in more social economics fields. Attendees feel that it is implicitly thought that women do the ‘easier’ social research, the ‘fluffy stuff’, and that men do the ‘hard’ quantitative analyses. Strikingly, the majority of the researchers participating in the discussion, both female and male, are working on the fluffy stuff.

According to the attendees, the low number of female professors in economics is clearly an issue. As there is no intrinsic reason why women should be worse economists than men, this low number of female economists in academia suggests that we are not using talent as we should. Other consequences of the imbalance are that certain research areas may be underrepresented in the field, and that intolerance towards flexible hours may continue to exist.

TENURE TRACK SYSTEM

An overly competitive culture is experienced in economics which is less the case in other fields. This is for instance reflected in an ‘extreme obsession’ with prestige and rankings. It is relatively common for economics faculties to have a tenure track system. This allows universities to attract talented researchers by using a strict selection process. On the one hand, this provides researchers with a clear career path. Once this path has been followed, there is the prospect of many years of



Participants in the discussion

Teresa Bago d’Uva	Erasmus University Rotterdam
Wike Been	University of Amsterdam
Anne Boring	Erasmus University Rotterdam
Thomas Buser	University of Amsterdam
Diogo Geraldés	Utrecht University
Carla Haelermans	Maastricht University
Max van Lent	Leiden University
Jasper Lukkezen	ESB, moderator
Anna Minasyan	University of Groningen
Karlijn Morsink	Utrecht University
Sobana Sheikh Rashid	ESB
Christina Rott	VU University Amsterdam
Trudie Schils	Maastricht University
Sylvia Teunissen	Ministry of Finance
Elisa de Weerd	ESB

employment. On the other hand, this system is based on ‘up or out’. If the criteria are not met, the staff member will have to look for a position elsewhere. There is a focus on publication in top journals, and the extreme competitiveness can make this very challenging. This strict selection process in itself may already increase the gender imbalance, as women may be less inclined to face this competition.

It is only very recently that extensions regarding the tenure track period for pregnancies are being taken into account. Although some participants feel that this is a big improvement, others receive this optimistic view with sarcastic laughter, while emphasizing that, so far, only very small ‘improvements’ have been made. Furthermore, increasing opportunities to ‘stop the clock’ during the tenure track do not guarantee an improvement in the gender imbalance. Allowing both men and women to stop the clock when having a child, may even increase tenure rates for male staff, and reduce them for female staff (Antecol et al., 2018). This suggests that the policies do not compensate for the productivity challenges that women face after childbirth. Despite this increased divergence, stop-the-clock policies do not decrease women’s tenure rates during their overall career.

Because the tenure track period is likely to coincide with the child-bearing period, women may feel that it is impossible to meet those strict criteria as long as they are not adjusted. Entering a tenure track system requires a researcher to sacrifice a lot for what is an insecure future. As women generally have to face choices about having

children slightly earlier than men, this may even lead to self-selection out of an academic career in economics.

Moreover, compared to other disciplines, in economics it is not that common to have a career in research. There is a long list of alternative career paths, which may make a career in academia less attractive. Combined with other characteristics of the field discussed in this article, when women face choices about entering a tenure track, they may be more inclined to choose other career paths compared to researchers in other disciplines.

AGGRESSIVE CULTURE

Furthermore, researchers face an aggressive culture in the field of economics. Regardless of whether this is experienced as an issue or not, it is seen as something that distinguishes economics from other disciplines. Participants are especially critical of the aggressive manner in which criticism is voiced. A male participant

explains that he sees participating in heated discussions during seminars and classes as a sport, but that others may perceive it as demeaning. “How to get humiliated in front of an audience” can be regarded as a skill that is part of the job. Women often take feedback more personally, and can suffer more under those harsh comments than men do. Furthermore, some attendees experience that women may actually be getting more negative feedback than men. Women may also be more likely to show how they feel about feedback. “Maybe men are also scared, but don’t tell you so.” This highly critical culture is sometimes also encouraged by mentors or colleagues. If you can’t handle it, you’re out.

SINGLE-AUTHORED WORK

While in other disciplines it is completely acceptable to have a large team of authors, in economics there is a higher focus on single-authored work or small teams, especially when one is entering the job market. Contributing to another researcher’s work by, for instance, gathering data does not guarantee co-authorship, and thus a return for this effort is not assured. In general, it is often the female researchers who take this kind of work upon them. Additionally, women become less likely to receive tenure when they have more co-authors, to a greater extent than men (Sarsons, 2017). In economics, co-authors are listed in alphabetical order rather than in order of contribution. This may also influence the incentive to contribute to other people’s work, because putting more effort in a research project is not reflected in this order, while in other disciplines this would be the case. In general, women enjoy cooperation, and the insecurity of recognition for this may also discourage female staff to pursue a career in economics research. Taking into account that these papers also need to be published in top journals, the time it takes to write and publish such a good paper is relatively long in economics.

ASPIRATIONS

Reasons frequently mentioned for female staff quitting their academic career path are due to the fact that, next to their research, women aspire to other things in life. Having a family, maintaining a relationship, or engaging in societal impact activities – all of these take time and are generally not well-facilitated. “I have a female colleague who has literally been told that she is an idiot getting pregnant at this stage of her career.” Working fifty hours a week in order to meet the standard is not uncommon, and if one also takes into account teaching obligations this does not leave much time for other activities. Because of the highly competitive culture in economics, this effect may be larger in economics than elsewhere. One way to deal with this would be to facilitate support for it so that researchers can mainly focus on their core tasks, for instance by providing daycare or by making working from home possible. However, this also has its downsides. Providing these facilities may encourage the idea that working such long hours is what you can expect if you want to make a career in economics research.

MENTORING

The participants point out that a lot of support and information can be provided by mentors. There are strict and unwritten rules in economics, and knowing these from the start can make the way to the top a lot easier. Even though formal mentoring programmes may help, a lot of the information is being shared informally. This informal information sharing may take place anywhere, and spending time with your mentor increases the amount of useful information you will receive. “I hear that a lot of ideas come up when colleagues spend time with their mentor watching football, drinking in a bar, or when they go running together. Even though I enjoy running with my female friends, I would never see myself going for a run with my male seniors.” It is





suggested that male colleagues are more likely to bond with their male mentors. Most professors are male, so therefore male PhD students automatically have more access to this informal mentoring.

On the other hand, the awareness of this imbalance tends to improve mentoring. Universities and faculties are setting up more formally organized career-development or training events, sometimes focused exclusively on women. These trainings are perhaps a way to make sure that everyone has access to training and networks. “In my experience, when we give our students the opportunity to present their papers, we have to motivate the female students a bit more compared to the male students.” While these policy measures are meant to close the gender gap, one should be cautious. Some women themselves may not take those opportunities as they feel patronized, and if they do continue their career path with the help of those programmes, they may then feel as if they owe it to this support rather than to their own talent. And their colleagues might share this view, which would emphasize the differences between male and female in the faculty staff.

Furthermore, mentoring is highly dependent on the mentor him/herself. With the high work pressure in the field it is even discouraged by some mentors to have children during certain parts of your career. Even though this could be seen as useful advice, it can discourage researchers to pursue this career path or to postpone maternity more than desirable with respect to fertility. One attendee also mentions that female professors are not as willing to mentor students, as they do not believe that they have the capabilities to do this. In general, women also seem to be less inclined to use (shameless) self-promotion. This further decreases access to and visibility of female role models.

SOLUTIONS

Several solutions are put forward at this complex issue. The most popular solutions focus on creating an environment that is attractive to both male and female economists. There is general agreement as to improving the equal opportunities for entering and succeeding during tenure track, by

providing incentives to take the same sharing responsibilities or by having more flexible tenure requirements.

One of the more practical solutions mentioned focuses on changing the aggressive culture. It is proposed to hire a moderator for seminars, committees and other events in order to intervene in the discussion, and to make sure that the discussion remains polite and friendly. Heated discussions in itself are not a problem, but one must ensure that everyone participating feels comfortable.

The participants do not fully agree on the best way to mentor new researchers. On the one hand, informal information sharing is seen as the most valuable way to gain information. Encouraging top-down mentoring, at which professors may voluntarily choose to mentor junior researchers, is one way to increase the information being shared. However, it is also pointed out that some young academics might feel lost within this setup, and that therefore formal mentoring is the way to make sure that everyone receives the necessary information.

CONCLUSIONS

Even though the number of female professors in economics is increasing, one still very much experiences a gender bias. However, the growing awareness in academia of the low number of female economists is leading to more practical solutions. Extensions for pregnancy in tenure track periods are becoming more common, although they could still be improved as regards flexibility. We should optimize the field of economics given the economics talent we have. That seems like an optimization problem every economist should be interested in.

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Happy to be a role model

At first sight, the gender imbalance in academia seems weird. Discrimination and prejudices are usually of less influence when a performance can be objectively measured. Academia is furthermore characterized by a freedom of where and when to work, which makes it attractive for a work-life balance. So ...? On second thought however, one can think of three factors obstructing women's academic careers: academic job characteristics, psychology and policy. Some are particularly salient in the Netherlands, others in economics. To be successful as an academic requires making long hours and a willingness to travel abroad (and staying there for longer periods of time). Although academics divide their time between teaching, administration and research, career outcomes are almost exclusively determined by research results. For a researcher who spends thirty hours on teaching and admin, being able to spend sixty instead of forty hours a week on the job will result in 3 times as much research time, not 1.5 times as much. This outcome will prove a significant boost to one's career. As women are still the primary caretakers of the children in most Dutch households, both making long hours and travelling is more difficult for them than for men. Women do not like competitive environments and do not thrive in them, which is evidently the case in academia. As noted by several contributors to this special issue, economics seems to offer an even harsher competitive atmosphere than other fields. Economists are proponents of "revealed preferences and dislikes", and are eager to reveal them bluntly. Young women often have less self-confidence than men and research shows that "pervasive cultural associations link men, but not women, with raw intellectual brilliance" (Leslie et al., 2015). Moreover, the stereotype of the successful professor is male too, making women rather 'suspect' in these fields – among themselves as well as among their male colleagues. So, female role models matter, espe-



MIRJAM VAN PRAAG

President of the Executive Board at the Vrije Universiteit Amsterdam

cially in male-dominated environments (Rocha and Van Praag, 2017). These psychological gender differences do not help women in their academic economics careers.

Policy measures often have unfortunate outcomes. The few female economists who are invited for the many committees, internal and external, are there because female representation is deemed important. Besides, female workers are less inclined to reject such offers, in order to show good citizenship (Vesterlund et al., 2015). Hence, we are disproportionately busy with tasks that do not promote our careers.

Another seemingly positive policy measure is to make promotions easier for female academics than they are for males. However, this doesn't help us to be taken seriously by our male colleagues (or by one another).

When younger, I sometimes felt misunderstood, underestimated and miserable, or excluded by my peers from social events, soccer in particular. However, I don't know what the counterfactual is like and am pretty sure that everybody has these feelings, so let's not be oversensitive. I am also quite convinced that my gender has helped me to get fantastic roles in society. I have been a role model for younger women by helping them to build up their self-confidence and other things. I never had such a role model myself, and am happy to serve as one for many female economists to come. For me, it is really great fun.

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COLUMN

How I became a feminist

When I was a professor at the University of Notre Dame in the United States, we would spend hours organizing a gender-neutral departmental gathering. A barbecue was ruled out, for then the men would take charge of the cooking. Sports activities were out of the question, because then the women would feel overpowered. A reception at the home of the male chair was impossible, because then his wife might feel compelled to take care of the catering. The result of these annual deliberations was always the same: a catered reception in a restaurant's boring private room.

When I became a professor at the Radboud University in the Netherlands, I discovered that my colleagues never gave the gender-neutrality of our departmental gatherings any thought. The result was that we held barbecues, did sports, and held receptions at the home of the male chair with his wife taking care of the catering. Worse, I learned that there was an invite-only, all-male walking group of professors networking every weekend. And over lunch jokes were exchanged about 'maths for girls'.

Now, the political correctness in the United States may be overdone, but the situation in the Netherlands is underwhelming. The result is that women make up around 33 percent of professors in the United States, and roughly 20 percent in the Netherlands. The figures for economics are even worse, with 10 percent female professors.

The situation in the Netherlands is a pitifully missed opportunity. Why is this so? One does not have to be a feminist to favour more women in academic positions.



ESTHER-MIRJAM SENT

Professor at the Radboud University and
Leader of the Labour Party in the Senate

After all, diversity is a proven success factor. In general, economic experiments show that mixed teams of men and women perform best. In other words, we are talking about *hard* economics and not about *soft* women's lib.

If diversity really is a proven success factor, why would universities themselves not hire more women? The reasons are to be found in the deeply ingrained prejudices about women. For instance, a woman is valued less when there is only one female candidate, while a job itself is valued less when

there are three or more female candidates. Recommendation letters for women are also phrased differently. Indeed, the idea that women are not leaders is a deeply ingrained prejudice.

As a result of these deeply ingrained prejudices and as long as academia is dominated by a male culture, universities will find it hard to get a suitable female candidate for a high-ranking position. Women who adjust, are regarded as competent but unkind. Women who do not adjust, are regarded as incompetent but nice.

And when women are able to break through the glass ceiling and reach the top, they are threatened by a glass cliff. This is caused by the fact that women, more so than men, hold risky management positions in which the chances of succeeding are slim.

Just as *Loesje* (a famous Dutch opinionater) wisely wrote: "Children are the future, if their mothers also get one." Diversity is a proven success factor, and so the lack of women in academia in general and economics in particular is a pitifully missed opportunity. And that is how I became a feminist.

Solutions

The literature on the causes of the low share of female academics is growing incredibly fast, as is the number of studies describing tried-and-tested solutions.

EXPOSITION

A behavioural view of women's underrepresentation in economics

Women are underrepresented in economics and this trend has remained flat over recent years. Insights from behavioural economics provide clues about the causes and suggestions for remedies.

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While there are fewer women than men already at bachelor level, the gender imbalance is most acute at the top, as expressed by the persistently low proportion of female full professors at top departments and female authors in top journals. The fact that there are only two women ranking in *ESB*'s most recent Economentop 40 illustrates that women are relatively scarce in Dutch economics departments too.

In this article, we will explore the lessons empirical behavioural economics may teach us about the roots of the gender imbalance in our field. We will mainly cover two strands of the literature to which we have actively contributed, and which we think can shed light on why women are underrepresented in economics. First, we will discuss how the gender biases held by students and academics in economics might impede the progression of female economists. Second, we will discuss how gender differences as to competition preferences and other individual traits might magnify the impact of these biases and further hamper female economists' progression.

BIASES

Women are not only less likely to enter economics, they are also less likely to advance upon the academic career ladder. Using data from the United States in the 1990s, Ginther and Kahn (2004) find that female assistant professors have a lower probability of obtaining tenure, and take longer to do so. While they find that this result is partly explained by a lower number of publications and by family responsibilities, a significant share of the gender gap remains unaccounted for. Potentially, the remaining gap could be explained by biases and discrimination. Academics' careers are mainly based on performing as to three different tasks – research, teaching and service – and research suggests that gender norms, stereotypes and biases may influence how men's and women's performances at each of these tasks are evaluated.

In research

A few recent studies have provided evidence of biases in evaluating research quality. Sarsons (2017) has studied the CVs of tenure-track economists between 1985 and 2014, in the top 30 of PhD-granting departments in the US, to see whether men's and women's academic achievements are acknowledged in the same way. She focuses on co-authored papers, as these keep the quality across genders constant. She finds that tenure rates are similar for men and women who mostly publish solo-authored work, but co-authored work tends to increase

the men's chances of obtaining tenure more compared to the co-authoring women, especially when the latter work together with men. As a result, a man who co-authors has a comparable tenure probability to a solo-authoring man, but a woman who co-authors reduces her chances of obtaining tenure. This phenomenon is called the *Matilda effect* after suffragette Matilda Joslyn Gage who wrote about women inventors in the 19th century.

Economics has a winner-takes-all culture where having one top publication outweighs a string of publications in good field journals

In another recent publication, Hengel (2017) uses readability scores to test for gender differences as to the quality of writing in research papers on economics. She finds that female-authored abstracts are better written than equivalent papers by men, and that the gap is higher for published articles. She also finds that, at *Econometrica*, the peer-review process for female-authored papers takes six months longer. She argues that these results may provide evidence of tougher editorial standards or biased referee assignments, and that tougher standards generate a quantity/quality tradeoff so that women end up with a lower number of publications.

In teaching

Academics' teaching skills tend to be evaluated by students, with student evaluations of teaching (SET) serving as the main measure of performance. Two recent studies on gender biases in SETs, based on natural experiments, show that controlling for student learning SET scores tend to be biased in favour of male instructors. Boring (2017), using SET scores at a French university, finds evidence of biases within SET scores, with male students rating male instructors higher, despite there being no evidence that they study better when taught by men. She also finds that the students' ratings of instructors regarding different dimensions of teaching are connected with gender stereotypes, with men being rewarded for less time-consuming teaching tasks.

As a result, she argues that female instructors are likely to invest in more time-consuming dimensions of teaching, such as course preparation and availability to students, in order to improve their scores.

Using SET scores at a Dutch university, Mengel et al. (2018) also find evidence of gender biases instigated by male students, which tend to have an especially large impact on junior female instructors. Both Boring (2017) and Mengel et al. (2018) argue that these biases may induce women to invest more time in teaching, and so reduce the time they have left for research activities. Other research, including controlled experiments, has found similar evidence of gender biases in SETs (MacNell et al., 2014; Boring et al., 2016; Wagner et al., 2016).

In service

Women may also be spending more time on service compared to men, although more research is needed on this issue in economics. This might contribute to gender differences because – contrary to research and to a lesser extent teaching – effort put into service (such as faculty committee membership or management tasks) does not enhance career prospects. In an experimental setting, Babcock et al. (2017) find that women are disproportionately more often asked to do – and more likely to accept – what the authors call 'low promotability tasks'. That is administrative tasks that need to be done, but are time-consuming and do little to promote their careers.

WILLINGNESS TO COMPETE

Economists are a notoriously competitive bunch. We are obsessed with rankings and relative status as evidenced by the attention given to publications in top 5 journals, positions at top 10 departments, and rankings such as the *Economist* top 40. In particular, the focus on top 5 publications creates a winner-takes-all culture where one 'win', that is one top publication, often counts for more than a string of publications in good academic journals.

Another manifestation of the competitive culture in economics is the famously antagonistic atmosphere in economics seminars. Princeton economist Anne Case stated for example: "When I go to seminars in other disciplines, the tenor of the seminars tends to be a lot less about scoring points and a lot less about trying to nail the speaker to the blackboard. I think that women oftentimes don't respond as well to that as men do. Now, some women do, obviously. There's a distribution to both genders."

Economics' competitive environment might dissuade women from pursuing a career in the field, as many experimental studies show women to be less attracted to competition. The still rapidly growing literature on gender differences in willingness to compete was jumpstarted by Niederle and Vesterlund's (2007) lab experiment. In their experiment, students were paid for their performance in solving arithmetic problems. They gave the students a choice: they could either receive a fixed amount for each correctly solved problem, or enter into a competition with three others at which the winner would receive a much higher payoff while the others left empty-handed. The outcome: despite equal performance, men were more than twice as likely to enter into this competition.

The relevance of this result in the field has been demonstrated by several studies. Individuals choosing to compete in such an experiment were shown to select more prestigious academic paths and careers with higher pay (Zhang, 2012; Buser et al., 2014; 2015; 2017a; 2017b; Reuben et al., 2015). And field experiments have also shown that jobs with competitive bonuses attract fewer women (Flory et al., 2015; Samek 2015).

Besides gender differences in the taste for competition, also gender differences as regards (over)confidence and risk tolerance might partially explain the dearth of women in economics. A recent study by Sarah-Jane Leslie and co-authors (Leslie et al., 2015) indicates that gender differences as to overconfidence may translate into gender differences in academic career choices too. They find that the higher the share of academics in a field who believe that an "innate gift or talent" or "a special aptitude that just can't be taught" is required to succeed in their discipline, the lower the proportion of women in that field will be. Within social sciences, economics is both highest on such "beliefs of brilliance" and lowest on female scholars (mathematics and philosophy are other fields which are high on these beliefs and low on women).

Gender differences in risk tolerance may matter too; Charness and Gneezy (2012) provide a recent take on the topic. It can take a long time – say, a five-year PhD programme and a six-year pre-tenure period – until one can be certain of one's success. The duration's inherent randomness and the outcome of the refereeing by top journals only adds to the uncertainty. Moreover, the norm is to expect graduates to fully succumb to the whims of the job market and move to whatever place the best job offer happens to

come from, and to potentially do so multiple times over the course of a career. The riskiness of following an academic career is even higher in countries such as Germany, where there are many more junior researcher positions than full professorships. Ductor et al. (2018) study co-authoring in economics and find that risk aversion could also affect the academic careers of economists in a different way. They argue that differences in academic networks may partially explain the gender gap in research output. They find in particular that women tend to have smaller co-author networks. These differences they attribute to two factors: gender differences in risk aversion and a professional environment that is adverse to women.

At some point academic criticism ends and gratuitous point scoring begins

SOLUTIONS

The literature also points us towards possible solutions. Bayer and Rouse (2016), who review the literature on diversity in the economics profession, mention several broad avenues towards reducing inequalities. First, universities should support early-career pipeline and mentoring programmes, such as the mentoring programmes created by the Committee on the Status of Women in the Economics Profession of the American Economic Association (AEA) or the Standing Committee on Women in Economics of the European Economic Association. A randomized trial of the AEA's mentoring programme suggests that mentoring helps young female researchers obtain top-tier publications, increases their number of publications, and furthers their chances at obtaining grants (Blau et al., 2010), thereby allowing women to get proper credit for their research output.

Second, there are implicit and institutional barriers that can be removed to help retain women in the field. For instance, the AEA is striving to improve the information available to job-market candidates, in an effort to reduce their reliance on Econ Job Market Rumors, a forum that has been shown to be a toxic environment for female economists (Wu, 2017).

Third, we should revise the way we present economics to undergraduates. Research suggests that women may be disadvantaged by a lack of role models, discouraging high quality students or academics from pursuing careers in economics. Carrell et al. (2010) in particular show that, in the stereotypically male science, technology, engineering, and mathematics (STEM) fields, female students perform better – and are more likely to continue taking math and science courses – when their introductory level professor has been a woman. Having more women in the profession could also reduce biases in teaching evaluations.

Moreover, Stevenson and Zlotnick (2018) find that men are overrepresented in economics textbooks. Increased presence of women in economics departments and textbooks could both reduce biases in teaching evaluations and motivate more diverse students and faculties to enter the field and remain there. And individual departments can also take more concrete, practical steps. For starters, they can closely monitor any possible gender bias in teaching evaluations, and – given recent evidence that teaching evaluations do not correlate with actual learning (Braga et al., 2014; Carrell and West, 2010; Stark and Freishtat, 2014; Uttl et al., 2016) – get rid of them entirely. Finally, regarding biases in service, departments can also make sure that women are not overburdened with management tasks and committee duties, or, if the representation of women is deemed critical, are properly compensated for their service.

It is important, however, to be aware that intuitive and well-intended policies to improve the representation of women can backfire. If, for instance, a small number of female faculty members are required to sit on a large number of search committees or grant committees, this will further increase the amount of ‘non-promotable’ service taken on by women. Moreover, research indicates that having more women on such committees does not necessarily seem to help women

applicants (Bagues et al., 2017). Gender-neutral tenure-clock extensions for assistant professors with newborn children is also a well-meant policy that may actually increase differences in research productivity. The introduction of such policies had led to an increase in men’s probability of obtaining tenure in their first job, but to decrease this for women, thus resulting in an *increase* in the tenure-rate gender gap at top 50 economics departments between 1985–2004 (Antecol et al., 2016). The reason is that men tend to use stopping their tenure clock to focus on research rather than child care, resulting in an increase in top 5 publications and thereby raising the tenure bar and pushing women towards tenured positions at other, very likely lower-ranking universities. These examples illustrate that it remains unclear what types of policies are really efficient in reducing the impact of biases, and that a lot more research into the effects of the various policies is needed.

One possible direction that emerges from the discussed research on gender differences regarding the willingness to compete, would be to soften the field’s focus on competition and risk taking. We are not advocating to weaken the field’s focus on quality and objective criteria for success, and neither do we believe that it is a good idea to abstain from rigorous criticism. But surely, replacing personal judgment (and the actual reading of articles) by a quick glance at journal and department ranks is not the way to go either. And while the culture of rigorous criticism undoubtedly raises the standards in the field, there is a line where academic criticism ends and gratuitous point scoring begins. The *collegial* atmosphere within a department can be partially insulated from the field as a whole. While competition between economists from different departments (and competition between departments) undoubtedly provides important incentives for raising research quality, departments can do a lot to make sure that the atmosphere between colleagues is one of collaboration and constructive criticism.

In brief

- ▶ Female academics face biases in the evaluation of their research, teaching and service-related activities.
- ▶ The lower taste for competition and risk-taking by women may also partly explain their underrepresentation.
- ▶ To make the professional environment less adverse to women new solutions need to be tested.

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How to make career advancement in economics more inclusive

Men are overrepresented in senior academic positions in Economics. What factors can explain this phenomenon, and how can we make the academic environment more inclusive?

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Men are overrepresented in senior academic positions in Economics (Teunissen and Hogendoorn, 2018). While gender inequality in academia is universal (Miller et al., 2015), it is especially pronounced in the Economics discipline (Leslie et al., 2015) and in the Netherlands in particular (Miller et al., 2015). In nearly four decades, only six women have ever made it into the ESB Economics Top 40.

It is important to note that promoting gender equality is not just a matter of fairness; it is – as should be of interest to Economists – also a matter of efficiency. For instance, Hsieh et al. (2018) have argued that no less than a quarter of the economic growth in the US between 1960 and 2010 can be attributed to what they call “the improved allocation of talent” of members of underrepresented groups. For the Netherlands specifically, The McKinsey Global Institute recently calculated that greater gender parity in labor force participation, STEM fields, and senior positions, would add more than 100 billion euros to Dutch GDP (McKinsey, 2018).

To shed light on this phenomenon and to present insight into possible interventions, we provide a conceptual and empirical analysis of the factors underlying gender differences in career advancement in Economics, drawing on the latest research in the behavioural sciences.

CAUSES OF UNDERREPRESENTATION

Empirical evidence on the causes of women’s underrepresentation in senior positions points to gender stereotypes more than women’s preferences and ability. Gender stereotypes are commonly accepted ideas about the roles of men and women in society, both at home and at work. These ‘received ideas’ do not only reflect what men and women typically *do*, but also what they *should* do and should *not* do, and in that sense are both descriptive and prescriptive (Heilman, 2012; Ridgeway, 2009). The predominant expectation is that men work and women care; these societal gender roles are translated into typical attributes of men (e.g. competitive and assertive) and women (e.g. kind and modest).

Stereotypes may, or may not, reflect reality in terms of actual differences between men and women. What is important though is that “stereotypes, whether ‘accurate’ or not, function as expectations, thus guiding perceptions and judgment” (Biernat and Sesko, 2018). For math-intensive disciplines such as Economics, it is pertinent that many people (both men *and* women) believe that men have a higher innate ability for math

than women (Leslie et al., 2015). In reality, there is much more overlap than difference in the distribution of the actual math abilities of men and women. However, even when members of groups collaborating on math tasks are informed that the woman in the group is the person with the highest math ability, team members still tend to put more confidence in the men in the team, as a result hampering actual group performance (Van Dijk et al., 2018).

Gender bias (or prejudice) is a cognitive distortion that follows from a lack of stereotype fit between stereotypes of a particular social role and gender roles. In senior roles, there is a greater degree of stereotype fit for men than for women (Heilman, 2012). Women are thus ‘presumed incompetent’ or even inferior to men when it comes to senior, often male-dominated, roles. It is important to realise that both men and women are biased – both favour men in senior roles (Koenig et al., 2011). In academia, the stereotypical successful academic is competitive and assertive, whereas women are expected to be modest (Bleijenbergh et al., 2013). In the case of Economics, the famous adagio “think manager, think male” (Koenig et al., 2011; Schein, 1973) is thus likely translated into “think economist, think male”.

Stereotypes about gender and science start young and are strong (Miller et al., 2018) – especially in Economics (Leslie et al., 2015) and in the Netherlands (Miller et al., 2015) – which makes gender bias a common phenomenon in this particular context. Making counter-stereotypical educational and professional ‘choices’, such as moving into a math-intensive field, is harder and generates more disapproval from observers and evaluators than fitting the stereotype does. Without changing stereotypes, encouraging young women to choose such disciplines will not have much effect on their representation at higher levels. In addition, women in senior positions who show assertive and self-promoting behaviour may experience backlash for not adhering to the injunctive norm of modesty fitting in with their stereotypical gender role (Rudman, 2008).

CONSEQUENCES OF GENDER BIAS

As gender bias is often implicit and subtle, it is more difficult to recognise and thus harder to counter than blatant and explicit discrimination (Biernat et al., 2011). Bias colours both decision making and the application of criteria for selection and promotion (Vinkenburg, 2017), resulting in fewer promotions for

women and ultimately in the underrepresentation of women at senior levels, relative to men. Martell et al. (2012) refer to mathematical simulations to show that only a little bit of bias in every performance evaluation along the way results in considerable gender segregation in senior positions. In terms of individual careers in academia, stereotypes and bias in performance evaluation lead to a vicious and difficult to break cycle in which women receive fewer opportunities to develop into high-performing researchers (Van den Besselaar and Sandström, 2017).

A significant part of the existing evidence of gender bias in academic hiring and promotion decisions comes from experimental studies using either fictional CVs or real CVs in which only the name and matching gender is changed (Moss-Racusin et al., 2012; Milkman et al., 2015). Even with an identical track record, the CV of job applicants with male names is usually preferred, and men have a far higher chance of being selected and/or promoted than women.

ACADEMIC SELECTION AND PROMOTION

What makes it hard to pinpoint gender bias in actual academic selection and promotion decisions is that this is only possible if we can control or correct for objective performance, which in academic careers is usually measured by publications, citations and grant income. Recent studies that were able to do so show that gender bias is clearly present. Following a cohort of Dutch researchers who submitted an application for an NWO Veni (Veni grant awarded by the Netherlands Organisation for Scientific Research) early career grant between 2003–2005, Van den Besselaar and Sandström (2016) found that men’s careers progressed faster than women’s. This was true across disciplines (including Economics), even when controlling for differences in year group, performance and mobility.

Sarsons (2017) finds that one reason why women in Economics get tenured at a lower rate than men, even with similar academic performance, is that women receive less credit than men for articles that are co-authored with men. However, even when actual performance data is available and candidates are equally qualified, decision makers have been shown to overestimate men’s track records relative to women’s (King, 2006). In grant applications, women are equally successful to men when reviewers evaluate the research idea, but not when they evaluate the researcher’s CV (Van der Lee and Ellemers, 2015; Wittteman et al., 2018).

MERITOCRACY AND DECISION-MAKING

The extent to which academics accept evidence of gender bias is complicated by their strong belief in, and matching rhetoric of, meritocracy (Nielsen, 2016). We all like to believe that those who are successful in academia are so because they have more merit (i.e. worth, superior quality) than those who are not successful, and that everyone has an equal chance regardless of their gender, race, class, or other non-merit factors (Castilla and Benard, 2010). However, reward allocation and performance evaluation practices that *appear* to be meritocratic (Joshi et al., 2015) often result in an unequal distribution of success in favour of some, *regardless* of the actual distribution of merit (Vinkenburg, 2017). For instance, when both the actual number of and relative contribution to publications are overestimated for male academics, counting publications favours men relative to women. Academia suffers from the paradox of meritocracy; in systems with strong meritocratic beliefs, decision makers are ironically more biased in favour of men (Castilla and Benard, 2010). To stay with the same example: counting publications *appears* to be objective, and thus justifies the system and its unequal outcomes.

Where decision makers have discretion, bias is more likely to affect their decisions (Castilla, 2015). However, (partial) formalisation of selection and promotion processes to reduce ambiguity and discretionary space has mixed effects (Abraham, 2017). Quantifying performance by counting publications and citations may only serve as a threshold for candidates to be considered, with the ultimate selection or promotion decision being based on other, less objective and more bias prone criteria including potential and fit (Vinkenburg, 2017). Finally, efforts to make decision makers in academia aware of the existence of bias and its cumulative disadvantageous effects on women's

careers often lead to resistance, denial, and even anger (Handley et al., 2015; Moss-Racusin et al., 2015; Van den Brink, 2015). However, when efforts to de-bias the decision-making process are successful, more women are hired and promoted (Devine et al., 2017).

'BIAS COLLECTION' AND RECOMMENDATIONS

In order to move the needle on women's representation in senior positions in academia, we present two collections: First, collated evidence of gender bias, and second, practical and evidence-based interventions to mitigate bias and to make academia more inclusive. The 'bias collection' (see Table 1a–1c) brings together very recent empirical evidence related to gender differences on a range of indicators relevant to academic careers. Indicators range from publications, citations and grant applications, questions at conferences, student evaluations, and recommendation letters, to 'academic housework'. The two boxes present a list of practical, evidence-based interventions. These interventions do not *directly* target stereotypical notions of what a successful academic career in Economics in the Netherlands looks like. However, the resulting, more balanced, representation of women and men at the top of the academic hierarchy will ultimately affect stereotypes and reduce bias. Provided the willingness to engage in change is there, the interventions are all relatively simple to implement, do not require significant financial resources and come with the added benefit of making our workplaces and professional environments more inclusive, without compromising high standards.

In brief

- ▶ Gender bias and meritocratic beliefs explain men's over-representation in senior academic positions.
- ▶ Performance evaluation practices that appear to be meritocratic often result in unequal distributions of success.
- ▶ Several practical, evidence-based, interventions can mitigate bias and promote inclusion in academia.

Performance evaluation and decision-making interventions

* **Ensure the use of objective and transparent metrics.** ‘Citizen bibliometrics’, facilitated by Google Scholar, Microsoft Academic, and Publish or Perish (Harzing, 2007) have made it easier for every academic to compare themselves to others in terms of both publications and citations, and to do so using a variety of data sources.

* **Use a variety of performance indicators.** In rankings of academics, different types of indicators favour different groups. For instance, citation-based rankings show different results from publication-based rankings, such as the ESB Economics Top 40. Two alternative Economics Top 40s (Harzing and Mijndhardt, 2015), based on authorship-corrected citation metrics rather than on publications, featured three and five women respectively, including two in the top 4 and the top 6 respectively, whereas in nearly *four decades* only six women ever made it to the publication-based ESB Economics Top 40.

* **Change principles of authorship ordering.** Economics is one of the few disciplines that favour alphabetical ordering over contribution-based ordering. As shown by Sarsons (2017), ordering by level of contribution will benefit women. Alphabetical order should thus be reserved for publications where contribution was truly equal.

* **Compensate for time to care in performance evaluation.** Managers and evaluators need to be attentive to the structural conditions affecting women’s and men’s publication rates and compensate for time to care. Given the propensity of temporary

contracts, shared care responsibilities and part-time work for both women *and* men in Dutch academia, this type of compensation takes into account the realities of combining career and care, and sustains academic career ambitions (Vinkenburg et al., 2015). For example: Tilburg School of Economics and Management offers research resources (e.g. reduction of teaching load, research assistance, travel grants) covering for time lost because of compulsory pregnancy leave; VU SBE (VU School of Business and Economics) adapts publication criteria for employees working part-time (factoring in FTE).

* **Introduce more transparency and accountability** in both selection decisions and the performance evaluation process as a means to reduce gender bias (Castello, 2015). Limiting discretion in these processes can be supported by for instance developing algorithms for automatic promotion (Bosquet et al., 2018) or by using lottery thresholds for grant applications (Fang and Casadevall, 2016).

* **Introduce behavioural modification programmes** for selection and promotion of committee members that monitor and provide feedback over a longer time (Devine et al., 2017), such as *customised bias mitigation* sessions (Vinkenburg, 2017). These sessions focus on optimising the decision-making process through the operationalisation and application of criteria for performance and potential.

Workplace interventions

* **Engage in Participatory Modelling**, a system dynamics-based intervention in which senior decision makers (e.g. dean and department chairs) together identify issues in, and solutions for, the career advancement (or stock and flow) of women and men in their faculty. This method has been applied at Dutch and other European universities and has resulted in several evidence-based local interventions to promote gender equality (Bleijenbergh and Van Engen, 2015; Van Arensbergen et al., 2017).

* **Offer more flexibility and longer paid leave** (Goldin, 2014). In the Dutch context that would include longer mandatory paid paternity leave, to decouple the stereotypical notion that mothers care and fathers work, and to reduce ‘defaulting’ into part-time work.

* **Create women-only academic networks.** Although several universities in the Netherlands have institutional, cross-disciplinary networks for women, networks such as CYGNA (Harzing, 2014) that are cross-institutional, but within-discipline might provide a more fruitful platform for mutual support, learning and networking.

* **Ensure substantive representation in all spheres of academia**, i.e. decision-making boards including student associations, applicant pools, conference panels, internal and external communication, and even pictures on the (virtual and real) wall. A simple rule of thumb is 50/50, as having only one token woman simply makes her the exception to the rule and does not change stereotypes (King et al., 2010).

RESEARCH

TABLE 1A

Area	Main topic	Discipline	First author	Year	Doi / url
Publications	Recognition for co-authored papers in tenure decisions	Economics	Sarsons	2017	10.1257/aer.p20171126
	Journal acceptances and rejections rates	Economics	Heller	2018	10.1177/0569434517732542
Citations	Analysis of citations management researchers	Business	Nielsen	2017	10.1016/j.joi.2017.09.005
Citations & memberships	Publications, citations, awards relative to society membership	Psychology	Brown	2016	10.1177/19485506166644297
	Scientific eminence	Psychology	Eagly	2016	10.1177/1745691616663918
Grants	Matthew effect (NWO ERC grants)	General	Bol	2018	10.1073/pnas.1719557115
	Grant applications	Science	Wittman	2018	10.1101/232868
Peer review	Journal peer review, writing style	Economics	Hengel	2017	10.17863/CAM.17548
	Scholarly review process	Business	King	2018	10.1177/0149206317743553
Prizes	Nobel Prizes	Economics	Rathi		https://qz.com/1097888/the-nobel-prize-committee-explains-why-women-win-so-few-prizes/
Performance	Publications, citations, grant income	General, incl. Economics	Van den Besselaar	2016	10.1007/s11192-015-1775-3
Editorial boards	Editor characteristics and representation in editorial boards	Business	Metz	2016	10.1111/1467-8551.12133
Conferences – panels	Representation at NBER Summer Institute	Economics	Chari	2017	10.3386/w23953
Conferences – speakers	Statistical likelihood of all male panels	General	Bacon	2015	http://www.laurenbacon.com/how-likely-is-an-all-male-speakers-list-statistically/
Conferences – programme committees, keynotes, panels	Gender balance at conferences	Science	Eastoe	2016	https://www.elsevier.com/editors-update/story/publishing-trends/why-gender-balance-at-conferences-should-become-the-new-normal
Conferences – questions	Visibility in academic seminars: asking and getting questions	General	Carter	2017	https://arxiv.org/abs/1711.10985
Colloquium speakers	Colloquium speakers at top universities	Economics	Nitttrouer	2018	10.1073/pnas.1708414115
Media mentions	Expert quotes in news stories	General	Yong		https://www.theatlantic.com/amp/article/552404/
Publications on bias	Bias against research on bias	Business / Psychology	Cislak	2018	10.1007/s11192-018-2667-0
	Bias against evidence on bias	General	Handley	2015	10.1073/pnas.1510649112
Societies	Scientific leadership	Science	Potvin	2018	10.1371/journal.pone.0197280
Rankings	Economists Top 40	Economics	Harzing	2015	10.1007/s11192-014-1370-z

Compiled by: Anne-Wil Harzing, Claartje Vinkenburg and Marloes van Engen

EDUCATION

TABLE 1B

Area	Main topic	Discipline	First author	Year	Doi / url
Grades	Meta-analysis performance in Economics courses	Economics	Johnson	2014	10.1080/00346764.2014.958902
	Physics grading	Science	Hofer	2015	10.1080/09500693.2015.1114190
	Exams	Science	Ballen	2017	10.1371/journal.pone.0186419
Cases	Business case studies	Economics	Symons	2014	https://hbr.org/2014/04/what-the-scarcity-of-women-in-business-case-studies-really-looks-like
Teamwork	Professors' perspective on student teamwork	Engineering	Beddoes	2018	10.1080/03043797.2017.1367759
Peer feedback	Academic performance BSc student peer feedback	Science	Grunspan	2016	10.1371/journal.pone.0148405
Textbooks	Economics textbooks	Economics	Stevenson	2018	10.1257/pandp.20181102, see also https://www.economist.com/graphic-detail/2018/01/17/how-gender-is-misrepresented-in-economics-textbooks
	Advisor – PhD candidate dyads and careers	Science	Gaule	2018	
Teaching evaluations	Student evaluations of teaching	Economics	Boring	2017	10.1016/j.jpubeco.2016.11.006
Advisors	Advisor – PhD candidate dyads and careers	Science	Gaule	2018	10.1016/j.respol.2018.02.011

ACADEMIC CONTEXT

TABLE 1C

Area	Main topic	Discipline	First author	Year	Doi / url
Job boards	Sexism, misogyny and stereotyping in job market forum	Economics	Wu	2017	https://www.aeaweb.org/articles?id=10.1257/pandp.20181101
Recommendation letters	Recommendation letters	Science	Madera	2018	10.1007/s10869-018-9541-1
Hiring	Numbers of women in applicant pools	General	Johnson		https://hbr.org/2016/04/if-theres-only-one-woman-in-your-candidate-pool-theres-statistically-no-chance-shell-be-hired
Academic culture	Gender ratio in discipline and ideologies and stereotypes	General, incl. Economics	Banchefsky	2018	http://www.mdpi.com/2076-0760/7/2/27
Pay	Market and performance bonuses in universities	General, incl. Economics	Bailey	2016	10.1177/0022185616639308
Address	Use of surname	Science	Atir,	2018	10.1073/pnas.1805284115
'Academic Housework'	Reprint of Wives of the Organization, and collection of reflections from 25 years later	Business	Huff, Harzing	1990 and 2016	https://harzing.com/blog/2016/04/female-academics-wives-of-the-organization
	Faculty service loads	General	Guarino	2017	10.1007/s11162-017-9454-2
	Academic service and requests for favours from students	General	El-Alayli	2018	10.1007/s11199-017-0872-6
Chairs	Named professorships in management	Business	Treviño	2015	10.1177/0149206315599216
Family policies	Effectiveness of 'Stop the clock' tenure policies	Economics	Antecol	2016	https://www.iza.org/publications/dp/9904
Business schools	Interventions aimed at gatekeepers in business schools	Business	Treviño	2016	10.5465/amle.2015.0053

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Twenty-five years ago, Hein Schreuder and Eline van der Heijden discussed the causes of the low share of women in economics in *ESB*. We've asked them to reflect on what they wrote at the time and on their experiences after that.

COLUMN

Revealed preference and gender equality

Much to my surprise *ESB* has invited me to reflect on a column I wrote 25 years ago. The column was a condensed version of a presentation I had given at a conference organized by the Emancipation Committee of Maastricht University. The theme was the rising numbers of women among the student population in Economics. Their share had risen from 2–3 percent in the years when I was a student, to 20–30 percent in the early nineties, when I was a professor in Maastricht. I had chosen a slightly provocative theme and wording, because my aim was to provide a different perspective

and to stimulate thought and discussion. My thesis was that this rise in the female share of first-year students would over time translate into similar rises among the scientific staff. Since I had already left academia to join the corporate world before publishing the column, I was very curious to see what the actual developments have been over the last 25 years.

As this special issue of *ESB* illustrates, the news is mixed. Yes, the number and share of women on the economics staff has risen over the years. But no, the share of female scientific staff is not (yet) proportional to the distribution of first-year students. In particular, the number and share of female professors of economics is still disappointingly low. At the same time, recruitment of women into the study of economics remains relatively low as well, both in the Netherlands and in other countries (Mumford, 2014; Fleisher and Schoder, 2017).



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These numbers remind me of the situation in the corporate world. Many companies have made a considerable effort over many years in recruiting women and promoting them through the ranks to top positions. Despite the progress that has been made, the results still reflect the situation in the economics profession: female participation rates become lower as staff levels get higher, and for women it is still lonely at the very top.

The usual way in which this situation is debated, is to posit that cultural factors inhibit the applicability of the Vintage model with significant time lags. While such cultural factors undoubtedly play

a part, a new perspective has recently emerged, triggered by a number of paradoxical findings with respect to gender equality. For instance, the empirical observation is that in *more gender-equal societies less* women choose to study science and technology (Stoet and Geary, 2018; The Atlantic, 2018). An even more puzzling finding is that gender differences in most aspects of personality are conspicuously larger in cultures with more egalitarian gender roles, gender socialization and socio-political gender equity (Schmitt et al., 2016; Mac Giolla and Kajonius, 2018). In the Netherlands, which scores relatively high on gender equality in international comparisons, the personality overlap between men and women was 61 percent, while in less gender-equal China this score turned out to be 84 percent. The same counterintuitive pattern has also been found in attachment styles and choice of occupation (Whipple, 2018). In business, Norway is one of the countries

leading the way in gender equality in many ways, including a quota law passed a decade ago that prescribes that public companies must have at least 40 percent female non-executive directors. Nonetheless, only 7 percent of public companies are led by a woman, a share that is much lower than in many Asian countries (FT, 2018).

The hypothesis that emerges from these paradoxes is that in wealthier and more gender-equal societies women feel a greater freedom to pursue their own preferences and make their own choices, and there is less pressure to follow the ‘male paths to success’. In economic terms: the revealed preferences of women may increasingly diverge from those of men as gender equality increases. This may not lead to the choices and outcomes we expected. But for my daughter and for my sons, I do hope that they will live in a world which allows them to freely pursue their genuine interests and passions.

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The discussion in 1993

Might and ma(i)n

Hein Schreuder. *ESB*, 78(3913)

In 1985, I predicted that more first-year female economics students (table 1) will lead to more female PhD students, and eventually to more women in all ranks of the economics faculties. Now, in 1993, the rise in the numbers of female PhD students indicates that, so far, my prediction has been correct.

This shift, which has taken place within fifteen years, has two important implications. The first is that female staff appointments in economics will become increasingly normal, eventually leading to more female professors. In economic terms, this is a Vintage model with significant time lags. Second, in recent years, now that men are experiencing that female students are just as successful, the male ‘monoculture’ in economics has been breached. It remains to be seen whether women will take over an increasing share of the higher staff positions at the economics faculties, but so far the trend is encouraging.

Table 1. Percentage of female first-year students

	‘69	‘75	‘80	‘85	‘92
EUR	2	3	11	17	18
RL	-	-	-	18	31

Re: Women in economics

Eline van der Heijden. *ESB*, 78(3918)

I dare not be so optimistic. An important caveat is that, between 1985 and 1993, there even seems to be a small decline in the number of female PhDs (table 2).

A possible explanation might be that economics is still seen as a fairly abstract science, which a number of girls do not regard as the most obvious of choices. In addition, economics does not appear to be exactly female-friendly and the advancement opportunities for women are small. However, Schreuder states that the economists’ world has become less of a man’s world. Overall this may be true, but at certain universities and tracks female students may hardly encounter any female scientific staff, which is an important factor in the desirability of a university on female PhD students. Even when extra effort is exerted, for the time being, women will not be able to establish a foothold in large parts of the economics world.

Table 2. Percentage female students, nationwide

	‘87	‘88	‘89	‘91	‘92	‘93
1st year students	23	24	24		24	
PhD			18,2	18,4		17,5

Postscript

Hein Schreuder. *ESB*, 78(3918)

Perhaps the most interesting observation is that we – while assuming approximately the same facts about the situation in the economics faculties – arrive at different explanations and evaluations. I believe that one of the causes of this difference in interpretation is the length of time considered. My column deals with the development from the late sixties to the early nineties, while Van der Heijden focuses on the late eighties to the early nineties. A second explanation for our different views, is that we have different experiences at our faculties. Van der Heijden is working in Tilburg, where there is a relatively small number of female PhD’s (9 percent) and scientific staff (3 percent). In Maastricht, within eight years, we’ve arrived at 25 percent of female PhD’s and 8 percent of other scientific staff. As we started out with an exclusively male staff in 1985, the pull effect she describes does not explain this increase. However, the proportion of first-year female students (31 percent) is a lot higher than at other faculties. This may be due to the different profiles of the economics faculties concerned.

COLUMN

Still no more than a foot in the door

In a discussion between Hein Schreuder and myself in *ESB* 25 years ago, Schreuder stated that the increase in the intake of female students would automatically lead to more women in all ranks of economics staff in the longer run. My assessment was considerably less positive. Back then, Schreuder attributed the stark contrast between our views mainly to my impatience. Was that justified? Have things changed since then?

The situation in the Netherlands has improved slightly compared to 25 years ago. Universities succeed reasonably well in attracting female Research Master and PhD students, as well as post-docs and tenure trackers, but the number of women in senior academic positions is much lower. Despite the introduction of some initiatives, there are still great differences between universities and departments. And the advancement of women in economics has remained largely unchanged. Why?

First, the environment and perceptions have hardly changed and stereotyping is still abundantly present, consciously or unconsciously. Economics is a competitive discipline, and female Bachelor's, Master's, and PhD students still have very few examples and role models. The low proportion of women in senior positions also causes a number of more subtle problems. When evaluating candidates (particularly for tenure or promotion), actual working hours, absence due to pregnancy and/or part-time work should also be taken into account. But how this works in practice is often unclear, and the 'burden of proof' typically lies with the candidate. Ano-



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ther delicate issue is committee work and administrative tasks. The rule that every committee must include at least one woman implies that female scientists disproportionately sit on such committees. Finally, women are generally more involved in departmental (non-research) issues and do more than their fair shares. All in all this means that women may spend less time on research, and do not fit the prevailing image of 'good scientists' with many publications.

Rectors, deans, department heads and policy officers often

do not seem to fully realize these differences. They need to do more and should be held accountable when, for example, targets are not met. We must move away from the one-dimensional image of scientists and invest in female capital, for instance by offering positions to talented women, even if there may not be budget available at the time.

I have to admit that I'm not the most patient person. However, when I consider the facts and my own experiences over the past 25 years, I do not think my impatience plays a role here. During a recent farewell speech by a colleague professor in Tilburg, only one female professor joined the cortège, among approximately fifty male colleagues. Unfortunately, by and large my conclusion that women in economic science have no more than a foot in the door still seems to be true. The problems are persistent and there are no simple solutions. And time alone has not solved and will not solve these issues.

Women in economics: a lifelong discouragement

The gender gap in economics science is worse than in other disciplines. Are women treated differently than men, in school and during their careers?

**HENRIËTTE
PRAST**

Professor at Tilburg
University and
member of the
Senate for D66

In 1993, Hein Schreuder argued in *ESB* that in economics the difference between men and women would automatically disappear: the number of female students was increasing, and ‘from low to high’ this would result in more female doctoral students and academic staff. Eline van der Heijden (1993) had her doubts about this, and enumerated the structural obstacles that women faced when choosing economics and making a career in it.

Ten years later Aart Jan de Geus, the Minister of Social Affairs at the time, also claimed that due to the influx of female students, the difference between men and women as to careers would disappear. As a result, the Dutch newspaper *Trouw* wrote that the emancipation had been completed, and there was no role left for the government in this respect (Prast, 2016). This ‘pipeline idea’ of Schreuder and De Geus remains a persistent misunderstanding, because there don’t seem to be or have been any facts to support this.

With a mere ten percent of female economics professors in the Netherlands, economics is doing worse than any of the other disciplines. This craves an explanation. In this article, I will look into the influx in economic studies and the careers of economic researchers.

PREFERENCES AND BEHAVIOUR

Economists traditionally assume that behaviour reveals preferences, and they regard preferences as given facts.

Although understandable as an initial hypothesis, this does not do justice to existing knowledge, also in economics, about the influence of environmental factors and prejudice as to preferences and behaviour. Three examples in economics can illustrate this bias.

First, Huberman (2001), inspired by Merton (1987), explains the *investor home bias* as ‘familiarity’: people more often opt for shares in companies that are literally or figuratively close to home. As a consequence, not only do they diversify their financial capital insufficiently, they also place too many eggs in the basket in which their human capital is invested. Secondly, in a Harvard Business Case, Avery (2012) shows that Coca Cola misjudged the use of the word *Diet* in *Diet Coke*: men did not buy it, because the word ‘diet’ evokes a realm unbecoming to the stereotypical man. However, *Coke Zero* does not have that problem. Thirdly, there is a significant difference between men and women as to their self-declared financial risk attitudes. Nevertheless, when risk attitude is measured objectively, on the basis of skin reaction, there is no difference and women are just as risk-tolerant as men (Brighetti and Lucarelli, 2015). Apparently, women fill out the questionnaire in a way that is expected of them, which is due to the stereotyping effect.

To what extent can such factors contribute to the gender gap in economics science? First of all, a few facts.

ECONOMICS IN SECONDARY EDUCATION

Over half of the university students in the Netherlands are women – but, with approximately 35 percent of female economics students, their share in economics is a lot lower than that. Since almost all graduates with a pre-university education (vwo) meet the admission

requirements for studying economics, it is obvious to attribute this diversity to a congenital or biological gender difference as to preference. Such an explanation assumes that the context in which decisions are made is neutral, though this is, as is shown by behavioural sciences, hardly ever the case.

In order to demonstrate this bias, Box 1a presents the sexes and professions mentioned in the final exams for economics in 2016–2018. These are the individuals explicitly indicated as being male or female (he/she, his/her). If the gender is unclear, the person is not included.

In these exams, 26 men and 6 women appear. The women include a welfare recipient, her girl friend, an economics teacher, a journalist, a spokeswoman for the Consumers' Association, and a woman with a negative net return on her savings account. Most men in the exams are economists, directors, ministers or governors of central banks.

The products mentioned in the final exam also evoke a man's world. Men and women differ in their consumer expenditure (Figure 1). The biggest difference is cars ($m \gg f$), followed by personal care ($f >> m$), and computers and accessories ($m >> f$).

Box 1b gives an overview of the companies and products mentioned in the exams (not including financial products). If we consider mobile telephony to be included in 'computers and accessories', men's favourite products are mentioned five times and women's favourite

products not at all. Furthermore, football is mainly associated with men as to sports (SCP, 2009; CBS, 2010).

The exams evoke an image of a world in which men achieve a lot, and women little. In addition, being an economist is something for men, and also the spending and use of time refers to men. In itself, this might already influence the attitude of girls towards economics negatively. Activating a stereotype, which these exam questions seem to do, leads to people behaving accordingly, to wit stereotypically (Wheeler and Petty, 2001), and lowers women's self-confidence in areas that are associated with men. Stereotyping therefore influences performance, study choice and career (Carlana, 2018; Lavy and Sand, 2015). Nosek et al. (2009) compare 34 countries and find that scientific gender bias – measured by the extent to which people tend to associate alpha-studies more with women and beta studies more with men – is largest in the Netherlands.

The stronger a teacher has a stereotypical notion about pupils, the stronger her or his confirmation bias will be – the degree to which he or she filters and weighs

BOX 1

The vwo final economics exam (2016–2018)

1a. The sexes in the exam

Men (26)

- Economist (11x)
- Director of a football club
- Director of a pension fund
- Managing director of an online stock broker's
- Managing director of a theatre
- Manager multi-storey car park
- Manager of a telecom company
- Researcher (2x)
- Governor of the Central Bank
- Minister of transport
- Egg farmer
- Journalist
- Investor
- Friend of investor
- Employee with an income of 50,000 euros

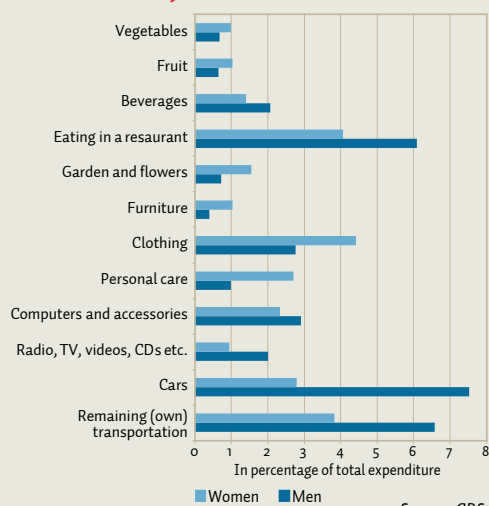
Women (6)

- Welfare recipient
- Friend of welfare recipient
- Journalist
- Economics teacher
- Saver with negative net return
- Spokeswoman of Consumers' Association

1b. Companies and products in the exam

- Multi-storey car park
- Second-hand cars
- Car manufacturer
- Toll tunnel
- House (3x): renting, buying, mortgage
- Football club
- Physiotherapy
- Pharmaceuticals
- Mobile telephony
- Eggs
- Airbnb

Spending for single men and women, 2008

FIGURE 1

up information about the pupil so that it confirms the stereotype judgment (Bordalo et al., 2016). It seems that the authors of these exam questions – economics teachers – have a stereotypical image of the sexes.

Box 2 shows the composition of the committees advising upon the final exam programme for economics, and the external experts they have consulted (Teulings, 2002; Commissie-Teulings I, 2002; Commissie-Teulings II, 2005). Women are a minority here, none of them have graduated in economics, and they have all adopted their husband’s name.

The first committee (rightly) advocated a broadening of the economy’s domain, giving as an example the division of tasks in the household. The second narrowed this down by explaining why women do more household chores than men, using the theory of com-

parative advantages. Moreover, they used the example of the man who marries his housekeeper to illustrate that GDP is an imperfect measure. The evaluation of the VWO Economics Examination Programme (2011) does indeed include a chapter on the exam, but it does not include any mention of the sexes that crop up in the exam. In Van Dalen and Koedijk (2012), fourteen economists give their view on economics education. Thirteen of them are Dutch males, the fourteenth is a non-Dutch author who has become a woman. The illustration on the cover is a shirt and tie.

STUDY CHOICE

By no means do all students who are able to study economics take the vwo economics exam. That is why it is also important to look at what students encounter when they orientate themselves towards economics studies. An inventory of the texts in which the universities and economics faculties in our country describe and recommend the economics studies shows that they are *generic*, with terms such as ‘broad’, ‘social’, ‘macro’, ‘meso’, ‘micro’, ‘current issues’, ‘many perspectives’, or with specific emphasis on business, growth, cost prices, stock exchange and market forces. Scarcity of raw materials, labour-market participation, climate, unemployment, social security, income distribution and pensions are not included in these descriptions, although they are not the least challenges as regards a discipline that deals with the allocation of scarce resources. Growth, prosperity and power are masculine values (Hofstede, 2001). The wage gap between the sexes is also lacking, even though the Netherlands is left dangling under *The Economist’s* glass ceiling index for OECD countries (The Economist, 2018) and you would expect that studying it would be worthwhile for economists.

In short, the field of economics seems not particularly attractive for girls in secondary school. How, then, do women fare who actually choose economics?

UNIVERSITY

In the grades of first-year economics students, there is actually no gender difference (Arnold and Roowaan, 2014). Moreover, women graduate more quickly, and forty percent of the economics PhD students are female (see Teunissen and Hogendoorn, in this dossier). So, are there other factors to explain why the percentage of female professors in economics is still so low?

Composition of advisory committees for the vwo economics programme

BOX 2

Teulings-1 (2002)		Chiel Renique MSc	Male
Prof. Coen Teulings	Male	Jan Klaver MSc	Male
Prof. Eric van Damme	Male	Marc Mittelmeijer MSc	Male
Prof. Hugo Keuzenkamp	Male		
Dr Henk Don	Male	Teulings-2 (2005)	
Dr Sierk Keuning	Male	Prof. Coen Teulings	Male
Els Borghols MSc	Female	Prof. Eric van Damme	Male
Dorien Klarenbeek MSc	Female	Prof. Jules Theeuwes	Male
A. Wels MSc	unknown	Loes Broer-Nieuwenhuis MSc	Female
		Dorien Doornbos-Klarenbeek MSc	Female
<i>External collocutors:</i>		Leon Knobens MSc	Male
Prof. Arnoud Boot	Male	Kees Blokker MSc	Male
Prof. Arnold Heertje	Male	Jos Steins MSc	Male
Prof. Jan Klaassen	Male	Eric Welp MSc	Male
Prof. Frans Leijnse	Male		
Prof. Piet Coppieters	Male	<i>External advisors:</i>	
Dr Louise Gunning	Female	Prof. Lans Bovenberg	Male
Dr Alexander Rinnooy Kan	Male	Prof. Rick van der Ploeg	Male
Dr Herman Wijffels	Male	Prof. Sweder van Wijnbergen	Male

Examples of readability standards

BOX 3

Score	Formula
Gunning Fog	$0.40 \times \left(\frac{\text{words}}{\text{sentences}} + 100 \times \frac{\text{polysyllabic words}}{\text{words}} \right)$
SMOG	$3.13 + 5.71 \times \sqrt{\frac{\text{polysyllabic words}}{\text{sentences}}}$

Hengel (2017)

Wu (2017) analyzes the words used by those who visit the *Economics Job Market Rumors*, an online forum where PhD students anonymously exchange information about the labour market, referring in doing so to men and women respectively. This forum gives the impression that visitors see their field as masculine and are proud of it, even though economics is essentially about allocation, distribution and welfare as a measure of well-being. This does not mean, however, that all economists talk about women in this way, nor that PhD students in economics look down on women more than PhD students in other fields.

Leading scientists also make statements that show a certain opinion about the qualities and preferences of women. Larry Summers doubts whether women have sufficient beta capacities and suggests that they were born to care of children (The Guardian, 2005). For that reason he had to resign as President of Harvard. In the Netherlands, former KNAW chairman Hans Clevers recently admitted that the gender balance in science is a problem: “But it’s because of the women, we have a lot of young women with potential, but when push comes to shove, they quit. That’s something we [the men] can do nothing about. Dutch women do not want to take the extra step.” (NOS, 2018)

CAREER DIFFERENCES

Various scientific studies have been carried out which suggest that men and women in economics are judged differently. This applies to both education and research.

Education

Female economics teachers receive lower evaluation scores than men. This is because male students grade them worse, although there is no difference in the knowledge acquired by students (Boring, 2017). Male economics students grade identical study material as worse if their working group teacher is a woman, and are also less satisfied with the speed of review, although all grades are announced at the same time (Menger et al., 2017). This difference is even greater in economics courses where mathematics plays a role. That bias is a factor here is also apparent from Macnell et al. (2015), because they find that students evaluate the teacher of an online course with higher grades if they think it’s a man.

A lesser educational evaluation can, directly as well as indirectly, adversely affect the scientific career of women in economics. Female economics scientists

spend more time on education and less on research than men do (Link et al., 2008). After all, those who receive a lower score will spend more time preparing their classes, which will go at the expense of research. Moreover, low scores can make women insecure and demotivate them, as they confirm the bias that women and economics form a lesser combination, and they can offer an argument to not promote a woman to a permanent position.

Research

Women in economics seem to have to meet higher standards than men in order to get their article published. Hengel (2017) compares the readability of articles in *American Economic Review*, *Econometrica*, *Journal of Political Economy* and *The Quarterly Journal of Economics* and their earlier working paper versions on the basis of quantitative standards (Box 3).

According to these standards, both the articles and the working paper versions of female authors are easier to read than those of men, and the difference is the largest in the final version. So, women take more steps to improve their papers, although their first version was already more readable. That takes time, because the average time between the working paper and final version is longer for articles by female authors. The extra time that women spend on rewriting cannot be spent on new research, which may result in realizing less research output than men do.

Other tasks

Compared to men, women in science devote more time to activities that are important for the department, faculty or university, but not for their own scientific career (McLaughlin Mitchell and Hesli, 2013; Porter, 2007). Is this due to preferences? Babcock et al. (2017) conclude that it is not. They compare the behaviour of male and female economics students in a mixed group with the behaviour in a group with only their own sex. In the mixed group, women volunteer significantly more often than men. As such, this might indicate a difference in preferences between the sexes, were it not that women in a group with only women behave in the same way as men in a group with only men. Apparently there is no difference in within-group preferences, but the women are expected to volunteer more often, which in a mixed group is a ‘self-fulfilling prophecy’. Babcock et al. (2017) also find that faculties and departments more often ask women than men to perform tasks that are not helpful to a career in science.

Hiring and promotion

On top of the fact that the aforementioned factors may have the effect that women with the same qualities can build up a resumé that is not as good, there is the risk that exactly the same resumé will be less well assessed if it is by a woman. This has been demonstrated in many previous studies regarding different professional groups. For the exact sciences, Moss-Racusin et al. (2012) find that the judgment of beta scientists as to the resumé of a hypothetical candidate varies, depending on whether they think it is by a man or a woman: ‘men’ score higher on competence, ‘hirability’ and the salary earned.

Research proposals

Committees of the Netherlands Organisation for Scientific Research (NWO) assess women’s research proposals similarly as those of men (Van der Lee and Ellemers, 2015), but less often accept their applications (14.9 and 17.7 percent respectively), especially in the Social and Behavioural Sciences (including economics), Earth and Life Sciences, and in Medical science.

The reason is that they undervalue female applicants. This may be due to the gender bias illustrated above, but the NWO rules and forms do not help either. The pre-notification forms for Veni, Vidi and Vici grants require a number of years since promotion and are bestowed according to the type of contract (temporary, permanent), but not for the scope of the employment, and the output also does not correct for length of employment and for absence due to pregnancy and childbirth. However, the applicant must only fill in the number of months of ‘care or sick leave’ or ‘leave’, which means that her absence due to bearing children is treated the same as illness and is therefore a defect. Because evaluators in the preliminary round only see the number of publications, uncorrected as to employment, they will underestimate the relative productivity of women, and overestimate that of men.

Furthermore, funding for Vidi and Vici research can be requested up to eight resp. fifteen years after promotion, regardless of the employment’s size. What also does not help are the characteristics as to which the applicants must be assessed according to the NWO forms. Gaucher et al. (2011) show that job advertisements in sectors where there are mainly men working, describe the candidate’s desired characteristics differently than in sectors in which mainly women work. The terms with which assessors must assess the NWO applicants are generally of the first type, and refer to the male stereotype: ‘challenging’, ‘excellent’, ‘outstanding’, ‘adventurous’, which makes men seem to meet the set requirements more. Moreover, the use of language is based on a male candidate: “is part of the top in *his* field” (Van der Lee and Ellemers, 2015).

Policy recommendations

BOX 4

- Further research into the positioning of men and women in economics texts (study material and exams)
- To take into account implicit gender attitudes within adoption and promotion policies and in membership assessment committees
- The screening of NWO application and assessment forms as to implicit discrimination (masculine qualifications and correction for size of the appointment)
- To abolish or correct education evaluations as to gender bias before sharing results
- Composition of advice committees and experts on economics education, explicitly choosing those who challenge the stereotypical image instead of confirming it: more women than men; female professors and graduates; female doctoral students
- Gender bias and (self-)stereotyping, and the consequences of this for economics in the VWO exam programme and for the university degree in economics
- A gender quota for women in economics

POLICY IMPLICATIONS

The most common explanations for the gender gap in economics – namely that women have different preferences and other capacities, respectively that there is a *pipeline effect* – lead to the conclusion that policies are unnecessary. However, there is no scientific basis for this claim. The existing scientific research and anecdotal evidence point in the direction of an implicit gender bias, especially among male economists, with consequences for study choice, assessment of women in economics, and the allocation of tasks. The seemingly innocent rules applied by NWO even go a step further. These *do* require policy if we want to combat discrimination and the suboptimal use of human capital (Box 4).

In brief

- ▶ Environmental factors and prejudice influence preferences and behaviour.
- ▶ Men and women are judged differently, both in education and research.
- ▶ The seemingly innocent rules by NWO require policy if we want to combat discrimination.

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Policy

What is currently being done to increase the share of women in senior positions?

EXPLORATION

What economics faculties are doing about female scarcity

A survey among the economics faculties in The Netherlands maps the initiatives being taken to increase the low share of women within the economics discipline. Is it enough?

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Women are scarce in the economics debate (Teunissen and Hogendoorn, 2018). There are also very few women with senior positions in the economics discipline. In fact, there is no discipline in the Netherlands in which the proportion of women among full professors is as low as in economics, that is 10.4 percent in comparison to a national average of 19.1 percent (Rathenau Instituut, 2018). Interestingly, this seems to be an international phenomenon, as in the United States women are also highly underrepresented within the economics profession (Bayer and Rouse, 2016). Several authors have tried to understand why; others have pointed out possible consequences (Bayer and Rouse, 2016; May et al., 2013; 2018; Teunissen and Hogendoorn, 2018). The central question in this contribution is: what are we, as a discipline, doing about it?

To find out about this, I conducted a small survey last spring among the Dutch economics and business administration faculties (FEBs) with the query what faculties are actually doing to become more 'gender diverse'. Do they recognize the problem and, if so, what

does this mean for their selection and recruitment policy? All of the economics and business administration faculties organized within the DEB (Deans of the disciplines of Economics and Business Administration in the Netherlands) have provided information in this respect.

AWARENESS

By now, most universities acknowledge the importance of diversity. In most cases it is also recognized that a gender-diverse university does not come about automatically, but that a targeted policy must be developed. As a first step, many universities have appointed a diversity manager, with the assignment to make the university more 'inclusive'. Usually such a manager has a broad task, meaning that it is not only about gender issues, but also about cultural and ethnic diversity. In some cases, an explicit responsibility for diversity also applies at faculty level. This is, for instance, the case at Amsterdam University (UvA), where the FEB has appointed a diversity officer as of 1 July 2017. In Rotterdam, RSM has an associate dean of diversity, while the Erasmus School of Economics (ESE) has given two employees the explicit task (0.1 FTE) to provide the university policy plan with some clout at faculty level.

A more inclusive university naturally requires awareness among the seated staff. Various faculties provide the possibility to do a 'bias training' or a course 'selection without judgment'. The target group may vary somewhat, but most of the time this concerns

full professors and/or members of appointment advisory committees (BACs). In Groningen, for example, all senior staff followed a course ‘diversity & inclusion for senior staff’. In other faculties, the policy seems less binding. In Tilburg, a pilot was developed in 2017 with the aim to “reduce the effect of gender bias in the selection process”. It is expected that in the summer of 2018 an adapted module will have been developed for a new pilot due to be held. Rotterdam (RSM/ESE) also focuses on ‘planning’, while in Maastricht ‘suggestions’ are made in this direction. UvA states that this is not a theme to which explicit attention is given, and the same goes for Nyenrode.

A good role model literally and figuratively opens doors

Apart from a training, awareness can of course also be raised in other ways, for instance by the invitation policy for seminars or by teaching. However, also in these areas the score seems rather meagre. No faculty has in fact explicitly developed a policy with regard to the invitation policy for seminars. Rotterdam (RSM) states: “For the invitation of guest speakers, the criteria of the ERIM support plan for visits apply. This means scientists with publications in top-tier journals.” Some faculties claim that gender diversity is taken into account in the sense that during seminars a ‘healthy’ composition of speakers is ensured: “We really pay attention to the fact that there are not only men on stage” (VU). In addition, references are made towards the diversity officer or the HR department, and their responsibilities in this respect. This mainly involves the roll-out of a strategic personnel policy, so that a more inclusive university is realized.

Awareness also requires positive role models. Without positive and appealing examples, it is difficult for young women (and men) to imagine that women can also be successful within the economics discipline. A good role model literally and figuratively opens doors and lowers, for example, the threshold towards applying for a job as a tenure tracker or – later on in one’s career – as a full professor.

TENURE TRACK

An important step in an academic career is gaining a position as a tenure tracker. Here and there, the realization seems to be dawning that, if a few preconditions are not met, the selection process might disadvantage female candidates. For example, various faculties are requiring search committees to also have female members. UvA states for instance that for several years now, serious efforts have been made to invite as many women as men to job interviews, actually ‘with varying degrees of success’. In Tilburg a department this year instructed the search committee to offer half of the *fly-outs* (job interviews for tenure tracks) to female candidates. And in Twente they have a similar goal: “The starting point is that fifty percent of the pre-selection consists of female candidates.” As to the other faculties, there are no specific conditions applying.

A subject that in fact did receive the necessary attention at most faculties is how to deal with pregnancy and maternity leave, especially during tenure track. Most faculties (Utrecht, Nijmegen, Tilburg, Groningen, Rotterdam (RSM/ESE), Wageningen and Twente) do compensate for the leave’s duration by extending the appointment and postponing the assessment moment. Also, at most faculties, educational duties are reduced. There is, however, no uniform regulation. UvA is for instance rather reticent. The faculty is ‘on the verge’ of adjusting the tenure assessment and the tenure track’s duration so that there will be more room for particular circumstances, such as pregnancy and maternity leave. “The duration of the expansion is still under discussion, the exact outcome has not yet been determined.”

FULL PROFESSOR

The pinnacle of the academic career is the appointment to professor. There, the discussion about a more proportional representation also acquired the highest profile (LNVH, 2017). Within economics, there is an extra focal point here because the share of female professors is well below the national average. So, what actions are being taken to change this?

In most faculties, the standing policy is that all BACs must at least have one female member. In Groningen, the standard is that a BAC has at least two female members. In Maastricht, the rule is that women at least have a thirty percent share. The UvA is once again rather reluctant: although the university has a policy that all BACs should have at least one female

member, this requirement does not apply at faculty level. Nor does Nyenrode set any further conditions for the BAC's composition.

In most faculties, therefore, one is working on awareness and attempting to give shape to the selection process without prejudice. However, the procedure's continuation is hardly compulsory. When asked about the invitation policy, most faculties answer that one 'aims' to appoint more women. Or "whenever possible, at the very least one woman is invited for an interview". Rotterdam (RSM) is more explicit and states that the policy is that, given one's aim to appoint fifty percent women, women are always invited. Maastricht also has an explicit policy line: the BAC is supposed to nominate at least five suitable candidates, including at least two women. In addition, most universities have guidelines as to the percentage of female professors, and many faculties have committed themselves to these; see table 1 for the ambitions in this respect.

Of course these are a 'target figures' and there is a 'best-effort obligation', while there are no hard penalties for not complying with the agreement. Various faculties also indicate that the university's target figures are indeed ambitious. For instance, Groningen explicitly questions the feasibility of the 25 percent target in 2025, given the percentage of 13 percent in 2018.

There are at least two approaches in order to show a bit more ambition here. The first approach is to develop additional policies, so that successful associate professors (or tenure trackers) receive a helping hand in their academic career. The second approach is to set up or participate in a programme that explicitly focuses on increasing women's share in the senior staff.

The first approach, an additional policy, is tentative at the outset. When asked whether female associate professors or female professors are entitled to extra support such as coaching, most faculties say that all employees within the faculty are entitled to extra support, and that in practice one often avails oneself of coaching. Rotterdam ESE also states that they have plans for a new programme focusing on female academic staff. Rotterdam RSM has various mentoring, coaching and training programmes aimed at female associate professors. Utrecht University (UU) has a similar programme for female university teachers, and in Wageningen one uses a buddy system.

A well-known example of the second approach, a policy explicitly aimed at women, is the so-called *Westerdijk Talent Impuls*, with which the Ministry of

Education, Culture and Science in 2017 was able to realize 100 additional chairs for female professors in the Netherlands. This in order to celebrate the fact that, 100 years ago, in 1917, Johanna Westerdijk was appointed as the first female professor in the Netherlands. It is not known how these chairs are divided over the disciplines; it is therefore unclear how many female associate professors were promoted to full professors within economics due to this incentive.

In addition to this national initiative, there are also university incentive programmes. For example, Tilburg has the *Philip Eijlander diversity programme* (PEDP), which aims to increase the percentage of women in higher academic positions by creating additional positions for university teachers, associate professors and professors. The ultimate goal – according to the website – is "to create an inclusive work climate in which quality comes first. Equal opportunities for all will lead to a better use of capacities and a fair representation of women in higher academic positions." 13.5 percent of the current female professors in Tilburg have been appointed by way of the PEDP. Up to now, the economics faculty has mainly focused on extra positions for university teachers, yet within the PEDP programme's second round, there will be one associate professor's position and one professor's post. Another example

Target figures with regard to the percentage of female full professors

TABLE 1

Nijmegen	37% in 2020
Rotterdam ESE	The aim is to increase the percentage of women
Amsterdam UvA	The aim is to increase the percentage of women
Groningen	25% in 2025
Tilburg	25% at the end of 2021
Rotterdam RSM	25% in 2025
Wageningen	25% in 2020
Amsterdam VU	The aim is to increase the percentage of women
Maastricht	22% in 2020
Nyenrode	No
Utrecht	27% in 2020
Twente	35% in 2020

is Groningen where the *Rosalind Franklin Fellowship programme* (RFF) was set up for talented female PhDs. The candidates are selected for a tenure track position, with as ultimate goal a permanent appointment as full professor. Over the past few years, around 100 women have been appointed to this programme, of whom about 80 are still employed. The Faculty of Economics and Business Administration has approximately seven ‘RFF’ employees, two of whom are now full professors.

CONCLUSION

The above inventory shows that diversity is regarded more and more as a point of attention, also within the economics discipline. At the same time, it is also apparent from this inventory that the changes are not introduced with a great sense of urgency. Many measures are still at the provisory stage – the selection needs to be more balanced, so a bias training is organised and so all BAC’s should have at least one female member. But

of course in doing so the outcome is not per se more diverse. The most successful programmes seem to be the additional ones specifically designed for women. In other words: as long as there are extras, women are being appointed. However, women are still not gaining a foothold through the regular application and employment policies.

Three recommendations spring to mind. The first is that one should start earlier. At present, entire generations of students are still being trained without appealing role models. If students are never taught by a female professor, it is not very surprising that these students have certain prejudices as regards female scientists or female supervisors, during their studies but also later on in their career. This argues in favour of a bias training as a standard part of a bachelor’s student’s skills program.

A second recommendation is to look again at the tenure track policy, and particularly at how this deals with pregnancy and childbirth. The current rather casuistic approach seems to indicate that extra timer is more of a favour than of a right, and implicitly confirms the idea that a scientific career cannot be combined with any other responsibility. A more generous standard arrangement – for instance that at every baby one is entitled to a year’s extension – provides more elbow room and shows that one is more understanding of other responsibilities. The third recommendation is that the implemented policy should be more strictly observed. At present, it is often simply a sum of good intentions and therefore too non-committal. Gender diversity is still too much of a female issue in the guise of an additional programme. Everyone, men and women, should be committed to shaping selection and assessment criteria that are both relevant and fair.

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In brief

- ▶ All economics faculties are taking measures to promote diversity.
- ▶ Compliance can be improved; policy is all too often the sum of good intentions.
- ▶ Positive role models and leave policies during the tenure track require more attention.

COLUMN

NWO's role in improving gender balance

The number of female academic staff members at Dutch universities is among the lowest in Europe (LNVH, 2017) and all parties involved agree that the progress to increase this number is far too little. So we need action! Wherever the Netherlands Organisation for Scientific Research (NWO) actually employs researchers, we take action to increase the female academic staff. At NWO's research institutes, the *WISE* programme offers talented female scientists tenure track positions. Also, for job application committees, we should use clear guidelines and focused evaluation formats so as to prevent gender bias and advance equal opportunities. However, in its primary role – that of a research-funding organization – NWO cannot implement HRM and employment policies, as the universities are responsible for these. Yet what we can do is to offer equal inclusive opportunities to all research-project applicants. In doing so, NWO can ensure that its job-offer texts, grant-evaluation criteria and grant-evaluation processes are not prohibitive or obtrusive to female scientists.

Our main focus here is the gender bias vis-à-vis female applicants, to which both male and female scientists are prone. In economics, an ingrained aversion to 'race attitudes' predicts trustworthiness as to judgement and 'economic trust decisions' (Stanley et al., 2011). And male as well as female scientists may show such an implicit bias in favour of male applicants. In a recent pilot, NWO offered reviewers and committee members a training in the *Veni* selection procedures. Due to this, the success rates of female applicants improved to levels similar to those of male applicants and in comparison to those in the control group (paper in preparation). In the near future, NWO will be offering this training to the members of all of its evaluation panels. NWO also



JAAP SCHOUTEN
Member of the Executive Board of NWO



STAN GIELEN
Chairman of the Executive Board of NWO

requires that at least forty percent of its members on boards, committees and evaluation panels are female.

In the past, NWO had already introduced several measures to encourage both the influx and promotion of female talent at Dutch universities. *Aspasia* is an example of a successful programme to accelerate female scientists' careers. To empower

female researchers, NWO is now organizing the *Pump your Career* conference in collaboration with LNVH (a female professor network), an event that focuses on talent and career development for women in science.

Another measure introduced by NWO is the so-called 'extension rule' in the NWO talent programme that aims to provide equal career opportunities for scientists with children. This measure extends by eighteen months the limited time ranges for the *Veni*, *Vidi* and *Vici* applications for biological mothers, and for the other parent by six months (for every child). This extension rule enables both parents to devote significantly more time to their scientific careers while raising their children, and before they apply for the talent programme.

Will all of these measures suffice to reach an equal gender balance? We don't know. It will certainly take time. Still, NWO will constantly scrutinize the effects of its measures to assess if and how they have contributed to a greater participation of talented women in science.

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Dossier

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Economisch Statistische Berichten (ESB) focuses on new developments in the science of economics. In addition, economic insights are used in ESB to make policy-relevant recommendations for the government, social institutions and companies. ESB also analyzes the most important developments in the Dutch economy. Articles in ESB appear in a personal capacity.

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