DOES FEMALE MANAGEMENT INCREASE OUTREACH OF MICROFINANCE INSTITUTIONS?

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Abstract - A unique aspect of microfinance institutions is their focus on outreach, i.e., their ability to reach the poor. The purpose of this paper is to find weather the presence of females in management positions (board members, CEOs, managers or loan officers) is associated with improved depth of outreach of microfinance institutions. We examine an original dataset of 226 microfinance institutions. The model used is a single equation model and follows the one used by in microfinance literature [55;56;581]. Our results suggest that the presence of female CEOs, managers and loan officers is related to the improved depth of outreach, while the presence of female board members is not. Various researches have found women in management position of MFIs to lead to a better financial performance of these institutions. When women are in control of MFIs, they also fair better in reaching out to the poor.

Keywords - Microfinance, Outreach, Gender, Top Management Team, Corporate Governance, Gender and Finance.

I. INTRODUCTION

Highlight - The microfinance phenomenon has received great attention in recent years. Relatively unknown in the late 1970s, the microfinance industry has since grown rapidly, from just a handful of borrowers in the beginning to hundreds of millions of people in the developing world, the majority of them with poor social and economic backgrounds [1]. Indeed, the microfinance industry continues to grow; in some countries by more than 20 percent on an annual basis [2].

The microfinance industry is somewhat a unique mixture of institutionalist profit seeking approach as well as to be simultaneously welfare driven institutions[3-4]. Unlike other organizations, MFIs have dual performance goals: a social one called outreach, as well as a financial one called sustainability. The dual performance goals of sustainability and outreach build on the argument that MFIs should be able to survive independently in the long term (sustainability) while providing the poor with capital (outreach) while sustainability is fond with economically related poxies such as return on asset or return on equity. Outreach is Outreach is found as average loan balance per borrower divided by GNI per capita, lower outreach means lower loans and is preferable since those who take lower loans are usually poorer. Negative relationship between females in the management team and outreach means that they improve the outreach.

In microfinance literature, outreach performance is indeed often accepted as the MFIs' main performance goal [5-9], however several studies show that there is a tradeoff between outreach and sustainability [3; 10-15].

The microfinance literature has rightly pointed out that the microfinance industry is gender specific in that most of their borrowers are women [16-17]. Additionally, the female borrowers of MFIs are usually among the poorest of all borrowers [1]. Although women get the same loan approval rate as men, the size of the loans provided to women are generally much less [19].

Given the prevalence of female borrowers in microfinance, researchers in this area have often been drawn to gender issues when examining the industry. Drawing on Becker´s [20] matching theory, their focus has been on the characteristics of the management teams of microfinance firms. In short, Becker [20] states that people looking for a partner to marry will search for and match with people who have similar characteristics. While marriage theory was originally aimed at explaining matching in heterosexual marriages, the theory has been extended to the matching of characteristics between MFI management and their borrowers [16;19], and the matching of MFI borrowers with other similar borrowers in group loans [21-23].

Recent literature has explored the use of Becker´s [20] theory of marriage to explain the financial performance of MFIs [16; 22]. Both Mersland and Strom [6] and Strom, D´Espallier, and Mersland [18] find that the presence of female CEOs improves MFIs' financial performance. In this paper, we argue that the same should apply to the relationship between female CEOs and MFIs' outreach. As Strom et al., [18] argued, MFIs operate in a female-specific world, therefore, female CEOs should match with female borrowers. Female leaders are also more concerned with the well-being of others [24] and are oriented towards enhancing the self-worth of others [25]. We, therefore, state the following hypothesis.

H1: Having a female CEO improves the MFIs' outreach

The direction of microfinance firms is, however, not only determined by their CEOs. Managers of microfinance firms also have a significant impact on their performance. Research has found that female managers cause better financial results [26], higher

returns on equity [27] , as well as higher total return to shareholders [28-29]. There is a strong reason to believe that this will hold for microfinance firms' outreach as well.

Eagly, Johannesen-Schmidt and van Engen [30] argued that females in the upper echelon of management positions were more helpful to their staff members and helped them with their self-development, which resulted in better performance for the company. Other studies also show female managers to positively affect company performance [27; 31-33]. Furthermore, for investment decisions, women appear to be less self-confident and more risk-averse than males [34-37].

The empirical literature indicates that the presence of women in management positions could influence the performance of MFIs, therefore, the following hypothesis is proposed.

H2: Female managers improves MFIs' outreach

Fama and Jensen [38] argued that many important decisions are made below the top level of the organization. It is indeed important to go lower in the hierarchy of the management team of MFIs and consider loan officers who are mid-level managers. Loan officers are key decision makers regarding loan applications and their evaluation, which in turn affects MFIs performance.

Although the very limited literature does suggest that loan officers may have an effect on MFIs performance, very little is known about loan officers and their potential effects on MFIs' outreach. Agier and Szafarz [19] claim that female loan officers provide lower loans to females, which keeps them in poverty. Marr and Awaworyi [39] argued that MFIs with more assets and higher ratios of loan per loan officers were able to perform better socially and Bennouri et al, [40] found the proportion of female loan officers to reduce the negative relationship between social performance and financial performance. Finally, Beck, Behr, and Guettler [41] found that female loan officers resulted in better financial performance than male loan officers and furthermore, Blanco-Oliver et al., [42] found female loan officers more likely to lend to female borrowers.

It has already been argued in the literature that women who are in senior positions focus more on developing and mentoring their subordinates, encouraging them to reach their full potential [30]. Females in top management positions, therefore, engender increased motivation for lower-level managers. This is in line with the transformational leadership style where the leaders spot potential in their followers [43]. Indeed, the female leadership style is characterized by cooperation, collaboration and collective problem-solving and decision-making [44-45]. Furthermore, the transformational leadership style that women often use is built around characteristics of caring and to be concerned for the need of others and nurturing [44] and women are particularly concerned about the needs of others [30]. We therefore argue that female loan officers could have a decisive effect on the MFIs' outreach. This leads to the following hypothesis.

H3: Female loan officers improves MFIs' outreach

Substantial literature has investigated how women directors on corporate boards affect the performance of firms. In general, the results are mixed and inconsistent [24-25]. While some researchers have found a positive relationship [46-48] others found a negative relationship [33], while yet another research stream [49-50] reported no discernable relationship whatsoever.

In recent literature for the microfinance industry, Adusei and Obeng [51] (2019) found female board directors to reduce the leverage level of microfinance institutions and female board members were in many cases the main drivers for MFIs capital structure. Furthermore, Adsei and Sarpong-Danquah [52] found women board members to lead to less debts within MFIs.

When the focus on boards of directors is narrowed down to certain tasks, a different and more comprehensive result emerges. Brown and Brown [53] found boards with female directors to be decisive towards ethically-related tasks, such as customer satisfaction, gender representation, and corporate social responsibility. Konrad, Kramer and Erkut [54] found female board members to be particularly successful in steering organizations towards philanthropic issues, while Nielsen and Huse [25] found that having females on boards help to strengthen sensitivity to others, which then shapes the organizational strategy and results in better social performance. When looking more specifically at outreach, Hartarska [55] found that having female representatives on the board did not affect MFIs' outreach. However, Bassem [56] found that female representatives helped to improve outreach.

Although the literature of female board members provides mixed results on organizational performance, building on Bassem [56] results and with outreach being a socially-related task [25; 57], we expect the presence of female board members to enhance MFIs social performance. Therefore, the following hypothesis is stated.

H4: Higher rate of female board members improves MFIs' outreach.

III. REGRESSION ANALYSIS

The data set in this research contains data from MixMarket.org, which is then matched with original, hand-collected data. About third of the MFIs are Non-Governmental Organizations (NGOs), another third are Non-Banking and Financial Institutions (NBFIs) and the rest are Microfinance Banks,

Cooperative/Credit Unions and other types of institutions. Although Microfinance Banks are only about 10% of the number of institutions, they do account for 2/3 of total gross portfolio. Out data set of 226 MFIs are fairly representative in terms of where these institutions are located in comparison with total number of institutions provided in the MixMarket data set, most of the MFIs in the data set were located in Asia (1/3 of all the MFIs), Latin America (1/3 of all the MFIs) and Africa (1/4 of all the MFIs). It must be noted that a potential bias in the data is that it is self-selected, i.e. organizations choose themselves to send in information to the Mix Market. The additional data on gender was also from the organizations themselves as well as being from the same time period.

The data has several different gender variables. Women board members are measured as the percentage of the board that consist of women. Female management is defined as the percentage of female managers within the MFIs. We use dummy variable to define if the CEO of the microfinance institutions is a woman. Women loan officers is defined as the percentage of loan officers who are women.

There were some noticeable challenges in using the MixMarket data set. Not all MFIs in the MixMarket data set had information on issues such as women board members, female loan officers and female managers. Further, MFIs did not have information on asset, legal status, country/location, weather they were regulated, or information on ROA. Number of years was also unexpected challenge. Even though the data from MixMarket spans over a decade, many of the main independent variable of interest, particularly that were related to participation of women, were only available from 2010 onwards. Since data reports for the year 2012 were still being sent to the data platform, the final collection of these data was postponed until early 2014 in order to have a data set spanning three years (2010, 2011 and 2012).

Another challenge was to get the additional hand-collected data, mostly from financial statements available on line, rating reports from Planet Rating, Micro Rate, Micro Finanza, Grisil and M-Cril, as well as from MFIs' homepages. When sufficient information could not be gathered from these sources, more extensive searches had to be undertaken. Some further information could be found on the webpage LinkedIn, such as information on the MFIs' CEOs. In addition, roughly 100 emails were sent out to MFIs to gather more information. Despite being able to receive information for vast majority of our remaining MFIs, few had to be left out. The dataset spans three years (2010, 2011 and 2012) and the final sample contains 226 MFIs.

The final sample of 226 MFIs is fairly representative of the total population of the MFIs from the MixMarket data set. For the dependent variable, the outreach, the median is fairly similar, 0.30 for the population but 0.24 for the final data set. The main independent variables of interest, the gender variables, were very similar, that is the median. The percentage of female board members was 0.30 for the population but 0.27 for the final data set. The Percentage of female borrowers was 0.65 for the population but 0.66 for the final data set. The Percentage of female managers was 0.27 for the population but 0.25 for the final data set. Finally, the percent of female loan officers was 0.27 for the large data set but 0.29 for the final data set.

The model used is a single equation model and follows the one used in microfinance literature [55-56; 58] and will, therefore, include the same variables they used in order to be able to make a fair comparison. Differing from Hartarska (2005), neither random effect nor fixed effect was used, since the variable for outreach cannot take zero or negative values. A Logit Tobit regression model is therefore carried out. This model will also contain gender-specific variables that are examined separately in each case along with the rest of the model. A detailed description of the variables in the dataset, as well as descriptive statistics, can be seen in tables 1 and 2.

$$Oijt = \alpha 0 + \beta 1Gijt + \beta 2Sijt + \beta 3Mijt + \beta 4Bijt + \beta 5EGijt{-}1 + \beta 6Mjt + \varepsilon ijt,$$

Table 1.

VARIABLES	
DEPENDENT VARIABLE	*Oijt = Outreach performance, for MFI i in country*
Outreach depth	Average loan balance per borrower divided by GN indicates a poor borrower, as does negative relatior
GENDER VARIABLES	*Gijt = Are gender specific variable, the main indep*
Percentage of female board members	Proportion of women on board
Percentage of female loan officers	Proportion of loan officers who are women
Percentage of female managers	Proportion of managers who are women
Where CEO is female	Dummy, when there is female as CEO
SPECIFIC MFIs VARIABLES	*Sijt = Are MFI-specific variables*
Size of MFIs (logAsset)	Size of MFIs is measured as the logarithm of total a
Age of MFIs (years)	MFIs age is measured of years since commenceme
MFIs type	Four types of MFIs, Non Governmental Organizati Financial Institutions (NBFIs), Coops and Banks.
MFIs ALSO lending to individuals	Dummy variable of one if MFIs use group and indi
MANAGEMENT SPECIFIC VARIABLES	*Mijt = Are management-specific variables.*
Fixed salary (no bonus)	Dummy variable of one if MFIs does not provide b
CEO experience (years)	A proxy for manager´s quality, measured as years o
BOARD SPECIFIC VARIABLES	*Bijt = Are board-specific variables.*
Number of board members	Board size, number of board members.
Independent board members	Proportion of non-affiliated board members.
EXTERNAL GOV. MECHANISM	*EGijt–1 = Are external governance mechanisms*
Regulated	Dummy variable of one if MFIs is supervised by th
Rated	Dummy variable of one if MFIs is subject to indep
Audit	Dummy variable of one if MFIs is audited with fin
COUNTRY SPECIFIC VARIABLES	*Mjt = Are country specific macroeconomic variabl*
Economy size (logGDP)	Size of economy, logarithm of the country´s GDP
Average Inflation	Average inflation rate, consumer price index.
ERROR TERM	*eijt, = Error term.*

Table 2

VARIABLES	N	Mean	SD	P50	Min	Max
Outreach depth	771	0.491	0.692	0.239	0.023	6.402
Percentage of female board members	771	0.304	0.247	0.273	0	1
Percentage of female loan officers	733	0.348	0.278	0.287	0	1
Percentage of female managers	736	0.323	0.290	0.250	0	1
Where CEO is female	771	0.209	0.497	0	0	1
Size of MFIs (logAsset)	770	16.313	1.743	16.220	12.254	21.642
Age of MFIs (years)	771	14.615	8.588	13	0	60
MFIs also lending to individuals	771	0.895	0.307	1	0	1
Fixed salary (no bonus)	771	0.696	0.460	1	0	1
CEO experience (years)	714	13.980	7.170	13	1	35
Number of board members	771	6.627	3.302	6	1	27
Independent board members	770	0.502	0.316	0.550	0	1
Regulated	771	0.553	0.498	1	0	1
Rated	771	0.553	0.498	1	0	1
Audit	771	0.988	0.107	1	0	1
Economy size (logGDP)	753	24.958	1.962	24.532	21.184	29.739
Average inflation	730	0.065	0.037	0.063	-0.009	0.473
Number of MFIID	226		226	226	226	226

III. RESULT

To test the effect of females in management positions (board members, CEOs, managers or loan officers) on outreach we use the four linear models [59]: Model 1 uses female CEO as the independent variable, Model 2 uses percentage of female managers as the independent variable, Model 3 uses percentage of female loan officers as the independent variable, and finally Model 4 uses percentage of female board members as the independent variable. The correlations between the variables can be seen in Table 3.

Table 3.

Varia-bles*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(1
(1)	1													
(2)	-0.13*	1												
(3)	-0.15*	0.20*	1											
(4)	-0.10*	0.25*	0.46*	1										
(5)	-0.10*	0.37*	0.12	0.28*	1									
(6)	0.34*	-0.16*	-0.11*	-0.08*	-0.05	1								
(7)	0.03	0.04	0.05	0.02	0.04	0.23*	1							
(8)	0.09*	-0.06	-0.13*	0.04	-0.01	0.15*	0.13*	1						
(9)	0.00	0.03	0.02	-0.01	0.10*	-0.27*	0.11*	0.08*	1					
(10)	0.04	-0.05	-0.13*	-0.10*	-0.12*	0.19*	0.10*	-0.01	-0.09*	1				
(11)	0.01	-0.02	-0.02	-0.09*	-0.01	0.39*	0.27*	0.07	-0.10*	0.26*	1			
(12)	-0.14*	-0.03	0.01	0.02	-0.03	-0.12*	-0.14*	-0.03	-0.03	-0.01	-0.12*	1		
(13)	0.16	-0.08*	-0.13*	-0.11*	0.00	0.30*	-0.14*	-0.03	-0.37*	0.09*	0.09*	-0.09*	1	
(14)	-0.01	0.02	-0.06	-0.07	0.03	0.39*	0.11*	0.17*	-0.21*	-0.03	0.02	0.00	0.14*	1
(15)	0.05	-0.07	-0.13*	-0.04	0.06	0.19*	0.10*	0.20*	0.16*	.	0.05	0.01	-0.02	0.1
(16)	-0.41*	-0.07	0.02	-0.09*	-0.05	0.04	-0.04	-0.20*	-0.09*	0.13*	0.06	-0.03	-0.07*	0.(
(17)	-0.03	-0.02	-0.11	-0.13*	-0.04	0.01	-0.13*	-0.17*	-0.05	0.16	0.07	-0.03	0.20	-0.

* The variables are defined in Table1. Numbered here as follow: 1= Outreach depth, 2=Percentage of female board members, 3=Percentage of female loan officers, 4=Percentage of female managers, 5=CEO is female, 6=Size of MFIs (logAsset), 7=Age of MFIs (years), 8=MFIs also lending to individuals, 9=Fixed salary (no bonus), 10=CEO experience (years), 11=Number of board members, 12=Independent board members, 13=Regulated, 14=Rated, 15=Audit, 16=Economy size (logGDP), 17=Average inflation. 5% significance level.

Looking at our first hypothesis, the presence of the female CEO appears to result in better outreach, but the result is not very strong, with only marginal significance (Table 4). However, the rather weak statistical significance is sufficient and thus hypothesis 1 is supported (Model 1). For Hypothesis 2, we find that the rate of female managers improves MFIs outreach. This suggests that female managers do improve MFIs when it comes to outreach (Model 2). The third hypothesis, which argues that female loan officers will improve outreach, is supported but the statistical significance is rather weak (Model 3). Finally, when looking at the fourth hypothesis regarding the rate of females in the board of directors, we do not find a significant relationship with outreach (Model 4). Female board members appear to have no effect on outreach. The fourth hypothesis is therefore not supported.

In some way our results are in line with previous findings in the microfinance literature. Our results

indicate that the presence of a female CEO improve outreach. This finding is in line with those outlined by Hartarska et al [60]. It is noteworthy, particularly since it has already been found that female CEOs in MFIs improve financial performance [6; 16]. However, when it comes to female boards members, our results are not in agreement with Bassem [56] and Hartarska [55]. We expected the presence of female board members to improve outreach. However, this was not the case and that could be because females are more effective when they are at the lower level of the management team rather than at the upper echelon [61]. The contradicting results from this research and from the existing literature calls for further exploration and explanation.

One of the novel contributions of this paper is the linking of the lower levels of the management hierarchy and outreach. We find that female loan officers improve outreach. This results is interesting as Beck, Behr, and Guettler [41] found that the presence of female loan officers improved MFIs financial performance. It appears that having female loan officers may improve both financial performance and outreach. We also find that female managers improve outreach. This is in line with prior research which found that female managers improve organizational financial performance in general [27; 31-33].

As for the control variables, MFIs size is positively related to outreach, i.e. the larger the MFIs, the less is the focus on outreach. This should not be surprising since the largest profit oriented MFIs in the data set, the MFIs that are legally defined as banks, are more inclined to be focusing on profit rather than outreach. The control variables used in relation to outreach in this research, are the same as have been used in previous microfinance research, such as independence of board members [55-56], number of board members [55], fixed salary/bonus [56] and individual v.s. group lending [56]. However, since the number of MFIs in the data set were only 226, they were not further divided into MFIs types.

Table 4.

VARIABLES Women	Outreach MFIs CEO	Outreach MFIs Managers	Outreach MFIs Loan Of.	Outreach MFIs Board M.
Woman: CEO/Managers/ Loan officers/Board members	-0.137* (0.0767)	-0.140** (0.0564)	-0.117* (0.0676)	-0.0491 (0.0659)
Size of MFIs (logAsset)	0.130*** (0.0197)	0.137*** (0.0200)	0.123*** (0.0188)	0.130*** (0.0198)
Age of MFIs (years)	-0.00518 (0.00415)	-0.00576 (0.00415)	-0.00569 (0.00404)	-0.00568 (0.00416)
MFIs lending to individuals	0.0680 (0.133)	0.0939 (0.133)	0.0596 (0.131)	0.0796 (0.134)
Fixed salary (no bonus)	0.0516 (0.0841)	0.0414 (0.0839)	0.0346 (0.0827)	0.0431 (0.0844)
CEO experience (years)	0.00367 (0.00454)	0.00413 (0.00454)	0.00236 (0.00444)	0.00433 (0.00454)
Number of board members	-0.0154** (0.00672)	-0.0164** (0.00690)	-0.0115* (0.00641)	-00154** (0.00674)
Independent board members	-0.253*** (0.0898)	-0.269*** (0.0915)	-0.252*** (0.0870)	-0.253*** (0.0901)
Regulated	0.0181 (0.0773)	-0.00262 (0.0773)	0.0179 (0.0760)	0.00912 (0.0776)
Rated	-0.0523 (0.0770)	-0.0643 (0.0771)	-0.0285 (0.0758)	-0.0518 (0.0775)
Audit	-	-	-	-
Economy size (logGDP)	-0.139*** (0.0186)	-0.140*** (0.0186)	-0.141*** (0.0183)	-0.137*** (0.0187)
Average inflation	-0.496 (0.331)	-0.451 (0.341)	-0.375 (0.323)	-0.480 (0.331)
Constant	2.039*** (0.578)	1.974*** (0.579)	2.212*** (0.565)	1.984*** (0.581)
Observations	675	650	642	675
Number of MFIID	226	226	226	226

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

IV. CONCLUSION

Because Delivering capital to the poor is the most important goal of MFIs. As the poor are predominantly women, success in this endeavor is also a gender issue. However, the extent to which the different characteristics of MFIs management team can improve outreach has so far been a rather neglected issue in the literature. Built on prior research in management, this paper focuses on whether increasing the rate of women in MFI management positions is associated with improved depth of outreach.

Overall, our findings suggest that the presence of female CEOs, managers and loan officers is related to improved outreach, while the presence of female board members is not. The finding is noteworthy, as outreach is considered the main performance goal of MFIs and does provide substantial benefit to the poor. Our research contributes to the existing body of knowledge in three major ways. Firstly, it provides evidence on how female participation in the different levels of management within MFIs is associated with outreach. Although prior research has found women in the upper echelon of the management system to be associated with better outreach, namely board members [55] and female CEOs [16; 60], this has so far not been linked to the lower levels of the management team. Our research, therefore, contributes to the microfinance literature by showing the importance of female presence in the lower levels of the management team for MFIs outreach.

Secondly, this study highlights a practical way for MFIs to improve their outreach depth and fight poverty more effectively. Finding ways to improve outreach is important for both MFIs and some of the poorest people on earth. So far, the relationship between outreach and female management has also remained a mostly unexplored subject. Thirdly, our result should be useful for both policymakers and microfinance participants. Introducing more women to the MFIs' management team should serve the dual purpose of improving female empowerment and addressing poverty.

While one of the novel contributions of this paper is the linking of the lower levels of the management hierarchy and outreach, it is however possible that rotation of loan officers and managers could make outreach harder to measure. Same could be true for the socially oriented MFIs and also for private MFIs where incentives given to female managers are not enough to assure their permanence there. These issues would be worth considering in future research.

A short coming of this research is the lack of a clear theory as to why female management at different levels of the firm have different impact on performance. Although several possible explanations have been suggested in this paper further research needs to disentangle these effects and provide a clear theory. An especially interesting avenue to pursue are empirical findings that women tend to be more risk averse and less self-confident than men [34-37]. Microfinance literature appears to support this as well, women clients is associated with lower portfolio risk and fewer write offs [18] and female borrowers appears to reduce cost related to portfolio risk and therefore women may be unlikely to lead to performance trade off [19]. Given these findings, our results seem to indicate that the greater risk aversion of women could be offset by their matching with borrowers, thereby increasing outreach [16; 22; 56]. Further researches of the relationship between women, their risk averseness and outreach would be noteworthy to carry out.

As for further research, it has been pointed out that outreach is one of the main goals of the MFIs and should be treated as such. However, it would be interesting to see more research on the subject, particularly since MFIs have evolved over the last few years. Further work is also needed to assess the robustness of these results. The limited sample, which was the result of original data gathering, requires an extension. Further analysis using a larger dataset might include the use of panel data methods as well as addressing potential endogeneity problems or unobserved factors. Additionally, issues regarding selection bias need to be tackled. This is especially true since organizations choose themselves to send in information to the Mix Market. However, our results indicate a promising research avenue to pursue.

While acknowledging certain shortcomings of the study, this research paper presents an interesting platform for future research. As microfinance research seems to indicate that increasing female presence in the management team improves both financial performance as well as outreach, it would be interesting to see if the presence of a female management team could lead to no trade-offs between these two performance goals. Another direction for future research would be to investigate why women seem to improve the outreach of MFIs. As research seems to indicate that females have a different leadership style that is characterized by cooperation and collaboration [44-45], this might prove to be a valuable avenue to investigate.

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