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Good girls go to heaven...but not together. Antecedents of employees' co-mobility
after organizational failure

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Abstract

Employees' mobility generally effects positively firms' and individual outcomes. Mirroring these findings, co-mobility research, investigating group transitions, mirrors these findings. A recent population based study found that up to 4% of all employees' transitions occur in group. Although co-mobility is an important phenomenon, its antecedents remain unknown. This study addresses this gap by linking various dimensions of homophily between co-mobile employees and the likelihood of co-mobility. Our research context is a natural experiment of an organizational collapse. We analyze 30.040 realized and non-realized transitions and find support for our theorizing on a positive effects of national homophily. We also find a strong support that gender-based homophily affects co-mobility differently for men and woman. For men, a gender-homophilic dyad has a higher likelihood of co-mobility. For women, this trend is inverted. We provide some additional evidence that, while, dyad of men are more likely to be promoted and less likely to be demoted in their new jobs, women are more vulnerable and likely to suffer from demotion. Our study contributes to the co-mobility literature and extends the literature on homophily as antecedent of tie formation.

Employees' mobility generally affects positively firms' and individual outcomes. Mirroring these findings, co-mobility research, investigating group transitions, mirrors these findings. A recent population based study found that up to 4% of all employees' transitions occur in group. Although co-mobility is an important phenomenon, its antecedents remain unknown. This study addresses this gap by linking various dimensions of homophily between co-mobile employees and the likelihood of co-mobility. Our research context is a natural experiment of an organizational collapse. We analyze 30,040 transitions and find support for our theorizing on a positive effects of national homophily. We also find a strong support that gender-based homophily affects co-mobility differently for men and woman. For men, a gender-homophilic dyad has a higher likelihood of co-mobility. For women, this trend is inverted. We provide some additional evidence that, while, dyad of men are more likely to be promoted and less likely to be demoted in their new jobs, women are more vulnerable and likely to suffer from demotion. Our study contributes to the co-mobility literature and extends the literature on homophily as antecedent of tie formation.

INTRODUCTION

The effects of worker mobility on individual and firm performance have been the subject of a large and diverse body of research (Agrawal & Cockburn, 2003; Corredoira & Rosenkopf, 2010; Gorg & Strobl, 2005; Hoisl, 2007; Magnani, 2006; Maliranta, Mohnen, & Rouvinen, 2009; Rosenkopf & Almeida, 2003; Somaya & Williamson, 2008, Carnahan & Somaya, 2013; Somaya & Williamson, 2008b). These studies unveiled beneficial effects of mobility for the mobile individual, but also both: losing and receiving firm. The underlying logic and mechanisms has been found out to be knowledge spill-overs and the persistence of team-based social capital, even for individuals no longer collocated. Scholars also raised concerns and investigated boundary conditions of such positive effects of mobility. Indeed, the positive effect of mobility is reversed and hurts the performance when a firm loses an employee to a competitor (Somaya & I. A. N. O. Williamson, 2008). Mobility also negatively affects performance of star performers embedded in local teams upon their move (Groysberg, Lee, & Nanda, 2008). More recently, research has moved beyond the study of the individuals' transitions to group transitions emphasizing the teams-based knowledge, more valuable than the sum of its individual members.

Co-mobility research focuses on the analysis of such group transitions and the outcomes for organizations and individuals (Eftekhari & Timmermans, 2015, Campbell, Saxton, & Banerjee, 2014, Chillemi & Gui, 1997). The first population-based study highlighted the importance of co-mobility by conservatively establishing that around 3% of all transitions have this characteristic (Marx & Timmermans, 2017). This research stream finds general positive links between employees' co-mobility and individual and firm performance, largely mirroring

the findings of mobility studies. However, the antecedents and exact mechanisms underlying co-mobility remain unknown.

This paper fills in this gap with a robust investigation of the antecedents of co-mobility including an experimental setting (Marx & Timmermans, 2017). We treat the event of co-mobility as a new tie formation and link it to various dimensions of homophily, antecedent of tie formation (Kleinbaum, Stuart, & Tushman, 2013; Kossinets & Watts, 2009; Mcpherson & Smith-Lovin, 1987, Dahlander & McFarland, 2013, Rivera, Soderstrom, & Uzzi, 2010) between the co-mobile employees. Our research context is a natural experiment of an exogenous and unexpected organizational collapse that gives rise to employees departures and search for new employment.

We argue that national homophily is generally positively correlated with the event of co-mobility as national migrants clusters and rely on a local networks, also in their professional job search (Montgomery, 1991; Munshi, 2003; Portes, 1998; Pugatch & Yang, 2011; Vertovec, 2002). However, the dynamics of gender and occupational position- based homophily are not as straightforward. The literature dedicated to the labor market dynamics uncovered that women are frequently discriminated against, trend otherwise absent for man. In the case of position- based homophily, the theory suggests that complementarities may underlie tie formation in cases of collaborations and migrations of employees with diverse backgrounds (Marx & Timmermans, 2017; Rivera et al., 2010); therefore we expect a general negative effect of position-based homophily on the likelihood of co-mobility.

Our study is based on a dyadic data set of 34,040 realized and potential transitions of employees after an organizational failure. This framework provides a natural experiment that brings to bear several important contingencies: the mobility (and co-mobility) that we observe is

both non-optional (or forced) as well as unexpected. We find support for our general claims on positive effects of national homophily on co-mobility, so that mobility and co-mobility seem to be affected similarly by this demographic. We also find a strong evidence that gender-based homophily affects co-mobility differently for men and women. For men, a gender-homophilic dyad has a higher likelihood of co-mobility. In contrast, for women, gender-homophily has a strong negative effect on the likelihood of co-mobility. Investigating this finding in more detail, we provide some evidence that while male-based dyads are less at risk of demotion and more likely to be promoted in their new employment, female dyads are vulnerable and more prone to demotion. This additional analysis further corroborates our theorizing on a gender discrimination in the labor market.

Thanks to the specific set-up of our study based on a natural experiment, we contribute to the co-mobility and mobility literature with a solid identification strategy. Our study contributes also to the literature on organizational failure and its antecedents and consequences for employees (Cannella, Fraser, & Lee, 1995; Rider & Negro, 2015; Semadeni, Cannella, Fraser, & Lee, 2008). Lastly, we extend the literature on homophily by investigating the shared gender, nationality and occupational position and their correlation with employees' co-mobility.

MOBILITY AND CO-MOBILITY

The mobility literature we surveyed can be classified into categories according to the characteristics of the event triggering the subsequent employees' mobility: while some events are optional, entailing a job hopping behavior (Chillemi & Gui, 1997; Mawdsley & Somaya, 2015; Somaya & Williamson, 2008) and others are critical ones such as organizational failure or downsizing that leaves the individual no choice (Cannella et al., 1995; Hoetker & Agarwal, 2007; Rider & Negro, 2015; Sutton & Callahan, 1987). Analogously, while some events

triggering the mobility are expected, such a university graduation, naturally followed by a first employment (Faggian, Mccann, & Sheppard, 2007; Faggian, McCann, & Sheppard, 2006), others, among which unexpected organizational failure, cannot be foreseen (Cannella et al., 1995). Contingent on the characteristics of the event triggering the mobility, there is a general consensus that the event of mobility is usually beneficial to the mobile individual and, through direct or indirect knowledge spillovers occurring through employees' social capital to the former and new employer (Mawdsley & Somaya, 2015, Agrawal & Cockburn, 2003). Another possible channel through which employees' migration may benefit firms is the release of resources trapped in underperforming firms (Hoetker & Agarwal, 2007). On the contrary, the individual or firm performance is hurt when the event of mobility targets a competitor, entrepreneurial spin-off entry (Campbell et al., 2012; Klepper & Sleeper, 2005; Somaya & Williamson, 2008) or is a case of a mobile star performer strongly embedded in a team (Groysberg, Lee, Nanda, et al., 2008).

With the extant literature on mobility, scholars' attention has recently shifted to the phenomenon of co-mobility. Co-mobility refers to a group of two or more individuals transitioning into the same new employer (Chillemi & Gui, 1997; Fleming & Marx, 2006; Groysberg & Abrahams, 2006; Campbell et al., 2014, Eftekhari & Timmermans, 2015, Marx & Timmermans, 2017). Scholars used various operationalization of the concept of co-mobility ranging from transitions between firms only to transitions between firms and plants in specific locations (Marx & Timmermans, 2017). Regardless of the operationalization, co-mobility was found to trigger pecuniary advantages incurring to co-mobile employees suggesting their increased bargaining power in the negotiations with the new employer. Co-mobility is also potentially followed by differential productivity gains originating from co-mobile workers suggesting existing mutual complementarities. Such findings corroborate the view of team-

resident human capital (Chillemi & Gui, 1997), which value is maximized by the new employer through group hiring. Even though the phenomenon of co-mobility has not yet been thoroughly studied, it may alleviate disruptions in markets occurring after mass downsizing after or firm's bankruptcies (Marx & Timmermans, 2017). Moreover, the rate of co-mobility in the whole population reaches, conservatively estimated, 3 % of all workers' transitions, and, as such, its economic consequences are important. Scholars subsequently emphasized the need of studying both: consequences and antecedents of co-mobility, in particular so, within an experimental setting or with use of instrumental variables for an improved causal inference. Answering the research gap, we treat the event of co-mobility as an instance of a new tie formation between the co-mobile employees transitioning to the same employer and investigate homophily-based antecedents of co-mobility. For this purpose we make use of an exogenous and unexpected organizational failure as a natural experiment offering a solid causal inference.

Homophily-based antecedents of co-mobility

There are various mechanisms underlying a tie formation. As suggested by Rivera et al. (2010, p. 94): the *“assortative mechanisms speculate that the creation, persistence, and dissolution of social relationships are all outcomes that rely on the compatibility and complementarity of actors' attributes. Thus, assortative hypotheses are generally pair-level associations between actors' similarities or dissimilarities and their consequent propensity to form connections”*. The underlying logics is that people stick with ones who they resemble. Such behavior pertains especially in informal relations like friendship, but also in formal relationships such as the one in a workplace (Kleinbaum et al., 2013; Mcpherson, Smith-lovin, & Cook, 2001). Connecting with similar ones, or forming homophilic ties, enables trust which in turn allows to save on coordination costs. As *“shared social attributes breed association”* (Dahlander

& McFarland, 2013, p. 91), homophily is likely to drive the tie formation between individuals (McPherson & Smith-Lovin, 1987). It however also affects the persistence of ties as homophilic ties are, in comparison to heterophilic ones, less likely to break over time (Lazarfeld & Merton, 1954).

Gender

The gender-based differences have been widely studied in informal contexts of friendship networks in management (Brands & Kilduff, 2014), professional networking behavior (Bevelander & Page, 2011) and most importantly in labor market relations (Altonji & Blank, 1999; Ibarra, 1993; Ibarra, 1992; Shipilov, Gulati, Kilduff, Li, & Tsai, 2014). This literature has provided some evidence on the fact that females' performance outcomes are, *ceteris paribus*, lower than the ones of men (Lyngsie & Foss, 2016; Sackett, DuBois, & Noe, 1991). Furthermore, women are also discriminated in their access to employment. Such trend has been observed in females' constrained access to finance in entrepreneurship and to paid employment (Bigelow, Lundmark, McLean Parks, & Wuebker, 2014; Brooks, Huang, Kearney, & Murray, 2014; Carter, Brush, Greene, Gatewood, & Hart, 2003; Goldin & Rouse, 2000). Lastly, even in organizations who employ woman, female discrimination remains an issue (Kanter, 1977; Yoder, 1991). While much has been said about discriminatory practices directed at females in a work environment, scholars have remained silent about similar issues arising among male professionals. Based on the general positive effect of homophily on tie formation (such as an event of co-mobility) and possibly differential gender dynamics for females and males based on labor market discrimination, we hypothesize:

H1: Dyads of employees characterized by the same gender (different gender) will in general be more likely (less likely) to be co-mobile after the organizational failure.

and

H1a: Dyads of female employees will be less likely to be co-mobile after the organizational failure.

H1b: Dyads of male employees will be more likely to be co-mobile after the organizational failure.

Nationality

Analogously, another dimension of homophily frequently studied is a common ethnicity or nationality. Individuals with a similar ethnic or national background tend to share codes and norms which foster their propensity to connect (Bacharach, Bamberger, & Vashdi, 2005), contingent on the contextual setting.

In the labor market literature, scholars' have demonstrated interest in the phenomenon of national migrations (Brettel, 2000; Grasmuck & Pessar, 1991; Portes, 1998; Vertovec & Cohen, 1999) and migrants' outcomes on the labor markets. They advanced the existence of so called baseline "ethnic human capital" which defines the rate of intergenerational mobility in the family (Borjas, 1991). Moreover, studies found an evidence of a "clustering" behavior of national migrants in a specific host-country destination (Pugatch & Yang, 2011). Accordingly, migrants leverage their network connections to other compatriots in search of an employment the host country (Montgomery, 1991; Munshi, 2003; Sanders, Nee, & Sernau, 2002; Vertovec, 2002; Yakubovich, 2005). In line with Granovetter's (1974) argument on the critical role of friends' networks in one's employment search, national migrants rely on referrals and opportunity scouting from their compatriots in the host country. Using such informational flows helps them to ultimately achieve the access and increased performance in terms of better and higher paid

jobs. Following the theoretical insights and empirical findings on homophily effects based on shared nationality, we hypothesize:

H2: Dyads of employees characterized by the same nationality (different nationality) will be more likely (less likely) to be co-mobile after the organizational failure.

Position

Some evidence exists on similarities driving communications in a network within a formal organization (Kleinbaum et al., 2013). Scholars also proved that “upper echelons” develop a strong social identity based on their managerial position (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Mason, 1984; Piazza & Castellucci, 2013). In the labor market studies, scholars have investigated circumstances triggering joint migration of senior executives, such as a change of the CEO (Fee & Hadlock, 2004). Also, the consequences of group migration of executives has been proved detrimental to the firm (Bermiss & Murmann, 2015). Nevertheless, the studies of employees’ behavior in the labor market based on position homophily have been scarce and still little is known on whether employees tend to transition together based on their occupational position.

Organizations face scarceness of resources and actively seek to hire senior employees in order to improve their organizational performance (Phillips & Sorensen, 2003; Rao & Drazin, 2002; Sørensen, 1999). As a corollary, the inter-organizational relations are said to rely more on heterophilic than homophilic ties (Rivera et al., 2010). The underlying logic is the quest of complementarity based on different firms’ specialization (Nohria & Garcia-Pont, 1991). Complementarities have been also proved to be at play among scholars in academic production (Bercovitz & Feldman, 2011; Dahlander & McFarland, 2013) or performance of diverse entrepreneurial teams (Beckman, Burton, & O’Reilly, 2007). In line with the argument of

heterophilic ties, Marx & Timmermans' study (2017) advanced that there is a higher rate of co-mobility based on existing complementarities between migrating inventors. Based on the theoretical evidence of complementarities based on heterophily as a driver of co-mobility, we further hypothesize:

H3: Dyads of employees characterized by the same position (different position) will in general be less likely (more likely) to be co-mobile after the organizational failure.

EMPIRICAL SETTING

Founded in 1980, OW Bunker was a Danish company active in trading activities and physical supply of marine fuel (bunker) to shipping firms. The company grew continuously throughout the 90' and 00' thanks to high oil prices and good access to the financial assets secured by credit lines from well prospering banks. It reached the effective of 622 employees spread out in 30 offices worldwide and 30 operating supply ships at the end of 2013. In a highly complex and competitive market, the Danish company was the global leader with 10% of the global market worth 25 billion USD¹. In March 2014, OW Bunker finalized the second most successful IPO in the recent history of the Danish stock exchange². Six months later, on November 5th, information about the financial fraud committed by the head of one of the most important trading subsidiaries in Singapore was released to the media. The company lost its financial stability and two days later, filed for bankruptcy. The OW Bunker collapse came as a shock to the industry and most importantly to all employees. The mail sent by the top management, on November 5th required an immediate interruption of all trading activities. It

¹ <http://www.reuters.com/article/singapore-shipping-oil-ow-bunk-idUSL3N0T24RM20141114>
<https://www.bloomberg.com/news/articles/2014-12-11/marine-fuel-supplier-ow-bunker-collapses-months-after-its-ipo>

² <http://www.bloomberg.com/news/articles/2014-03-28/ow-bunker-s-980-million-ipo-denmark-s-second-biggest-since-2010>

found the trading staff by their daily activities and caused a great deal of shock and confusion. Then the management first mentioned the fraud in OW Singaporean subsidiary and the fact that the situation is life-threatening to the company. At that point, the management intensified their efforts to find a corporate buyer. Two days later, employees have been informed about the failure of negotiations, retreat of banks from the agreements on the granted credit lines and subsequent collapse of their employer. The bankruptcy resulted in an unseen market turmoil: customers, ship owners or operators, with running contracts were often left with no fuel supplies, while some fuel suppliers couldn't receive the payment for already delivered supplies. The corporate investors suffered severe financial losses. Last but not least, the collapse ended all employment contracts abruptly, except for few employees who worked along with debtors or trustees on solving arising claims. Similar, spectacular bankruptcies have been rarely observed in a global context. The cases of Enron, Arthur Andersen (Jensen, 2006) Brobeck, Phleger & Harrison (Rider & Negro, 2015), Lehman Brothers and Fannie Mae are probably the sole exceptions even though the degree of their exogenous character varies. To the authors' best knowledge, a similar collapse is also without precedent in the bunker trading industry.

STUDY DESIGN

The sudden failure of OW Bunker offers a natural experiment setting for testing our hypotheses on homophilic ties and co-mobility. The organizational failure of OW Bunker was unexpected and exogenous, induced by fraud committed by an isolated individual in one organizational subsidiary. Following the fraud and the subsequent failure of the firm, its employees in different locations departed simultaneously in search of second best employment options.

Data

In order to study the antecedents of co-mobility after organizational failure, we use insights from hand collected quantitative data on the career trajectories of 207 (out of a total 230) core front office employees directly involved in trading at OW Bunker immediately prior to the organizational failure.

For the purpose of the quantitative sampling, we have identified employees at OW Bunker at the time of collapse as follows. First, we have identified all company's subsidiaries by name. Following (Rider & Negro, 2015), we have used the company's websites for this purpose. Such approach has allowed us to identify employees by their name. Second, in absence of other sources, we have relied on abundant industry media releases, industrial reports and qualitative interviews with former traders and managers (total of 23 interviews).

Based on the outcome of the nominal identification, we have proceeded with the collection of detailed personal information on gender, nationality, and position restricting the search criteria to front-office bunker/fuel/derivate world-wide and physical traders, both juniors, seniors and managers being part of OW Bunker at the time of collapse. We have used the LinkedIn networking platform as primary source in this respect. Due to its wide-spread use among employees in the industry, we have succeeded in retrieving detailed self-reported information on most of the employees' backgrounds and careers. In total, we have excluded 8 observations from the final data set due to incomplete information. Furthermore, we have identified employees without a LinkedIn accounts in number of 9. We have managed to gather complete information on 4 of them.

We have ultimately collected 207 observations on employees from different occupational positions: 5 junior trainees, 108 traders (52%), 25 senior traders (12%) and managers 69 (33%).

Such distribution seems to be close to the last information on the distribution of occupational positions at the company before the collapse confirmed by qualitative interviews we conducted with employees from the failed firm. We believe that our final dataset is representative for the population of OW Bunker employees in various reselling occupational positions at the time of its collapse. Based on the 207 individual observations, we have further constructed a dyadic data base including all potential and realized moves with a total of 42.642 dyads. We have excluded all ego-ego dyads and an all employees who became unemployed (22 out of 207) after the organizational failure as a potential source of noise so that the data set used in the main analysis comprises 34.040 observations. We have however used the full data set in a robustness check which is largely consistent with the main analysis. Since the failure of OW Bunker was exogenous and largely unexpected, we advance that employees' transitions and subsequent changes in their careers can be attributed to the firm's failure.

Measures and Method

We investigate various dimensions of homophily as antecedents of co-mobility after OW Bunker collapse with use of the dependent variable "Co-mobility firm". This variable takes the value of one for pair of employees who transition together to the same firm³. As alternative and for the purpose of robustness checks, we use a conservative definition and consider that co-mobility happens exclusively in case of employees migrating to the same nominal firm in the exact same geographic location- city. While in the individual data set 48% of all 207 employees

³ Following indications from industry publications and interviews with industry expert such as representative of IBIA (www.ibia.net), bunker association, we cluster 7 firms under the umbrella of one holding they belong to. As alternative and for the purpose of a robustness check, we compute the co-mobility at firm level with all these firms dealt with as separate entities.

are co-mobile, in the dyadic data set, due to the multiplication of observations at the dyadic level, there are 2.724 instances of co-mobility according to the first definition.

The main independent variables define the dimensions of homophily within a dyad. Following Dahlander & McFarland (2013) and Kleinbaum et al. (2013) these variables are computed as dummies at dyadic level. “Same gender” is a dummy taking the value of one for a dyad in which both employees are of the same sex. 22.440 (or 65% of all 34.040 dyads) dyads are characterized by this dimension of homophily. “Same nationality” is a dummy taking the value of one for a dyad in which both employees are of the same nationality. Such measure captures the effects of nationality based homophily (Bacharach et al., 2005; Boschma, 2005). 4.232 out of 34.040 dyads are characterized by such type of homophily. The correlation matrix presented in the Table 2 below suggests that this measure correlates strongly with the measure of co-mobility. “Same occupational position” is a dummy that takes the value of one for each dyad where both employees have been working in the same occupational category (at non-managerial level as junior trader, trader and senior trader, and at managerial level as trading team manager, branch and global trading manager) prior to the organizational failure. It aims at capturing the effects of homophily based on professional occupation. 18.912 of all 34.040 dyads are characterized by this type of homophily. Contrarily to the other independent variables, this measure displays no correlation with the dependent variable. It displays however a slight correlation with some of the other independent variables. Such correlation does not cause any multi-collinearity issue in the further analysis as it is lower than the threshold of 0.50 suggested by the rule of thumb. The correlation of position homophily with gender may result from the relatively high amount of males in the industry who may also occupy higher, managerial positions. This intuition is confirmed by an analysis of the correlation matrix in subsamples

dedicated to either ego females or ego males: in the subsample of ego males the coefficient of managerial category is positive and significant, as opposed to ego females. The correlation of position homophily with nationality may be driven by a prevalence of Danish nationals (in total, at individual level, 67 out of 207 individuals are Danish). Indeed, as the operations of OW Bunker became successively global, the company promoted its own national to expand the activities, a procedure known in the human resources management. The correlation coefficient of managerial category in a subsample of Danish individuals is highly positive and significant which confirms the intuition. As mentioned, the extent to which the independent variables are correlated does not result in a multi-collinearity issue in our analysis.

We use four dyad-level controls. First, “Same education” is a dummy taking the value of one for a dyad in which both employees are of the same educational level: either primary/secondary education or bachelor/master/MBA or PhD. A similar distinction with use of a dichotomized measure was used by Rider & Negro (2015). 22.652 of all dyads are characterized by educational homophily and this trend is particularly driven by the educated individuals (in total: there are 26.864 dyads based on ego element displaying a higher level of education, out of which 21.170 are homophilic dyads). It is positively and significantly correlated with the dependent variable. It also displays some positive correlation with the position homophily which can be explained by firm’s hiring practices according to which more educated individuals are entrusted with managerial responsibilities. Second, “Non mobile” takes the value of one in case of both following conditions satisfied: i) both employees are co-located before the organizational failure and ii) none of them leaves the geographical location, or city, and industry. Such variable displays an important theoretical overlap with geographical homophily or co-location. We however use it exclusively as a control in our study and, by doing

so, control for the non-mobile dyads. In other words, we measure the effect of homophily only on dyads that are truly mobile and transition through a geography or industry landscape. Such control allows us to exclude that what drives the co-mobility is simply a convenience of employees moving together to new employers in the same industry and nearby. Third, “simultaneous”, is a dyad-level dummy that takes the value of one for all dyads which regained a new employment simultaneously. The time dimension of transition is counted in months. There are different mechanisms underlying co-mobility and they are all contingent on whether the co-mobility is sequential or simultaneous: while bargaining power is exclusively a mechanism at play for simultaneous transitions, strong ties, complementarities and informational flows can arise in case of both: simultaneous and sequential co-mobility. We include the control mentioned above in order to account for such differences and tease out the exact mechanisms at play in our analysis. We finally use “repatriation” which is a dummy variable which takes the value of one for all dyads working in a foreign country prior to the organizational failure and regaining their home country with the new employer. This variable captures individual expats’ preferences for an employment in the home country that the sudden organizational failure could potentially reveal. There is a total of 7 individuals in the data at individual level who, after an expat experience, are repatriated within their new employment. Given that around 70% of all individuals were nationals working in their own home country, the proportion of repatriation is rather small. All controls are defined at dyadic level since, all time in-variant individual characteristics (such as tastes and preferences or abilities) are expected to be swiped off by the individual fixed effects in all specifications of our analysis.

We further include two controls related to the characteristics of the move at ego level. First the dummy variable “other industry” denotes the quality of the ego transition in terms of

either remaining in the same industry (0), or finding a new employment in a different one (1). “Promotion” is dummy variable that takes the value of one if an ego formerly in a non-managerial promotion regains an employment at a managerial level and zero otherwise.

Finally, we need to control for firm related characteristics in order to exclude that our results are driven by such and not by homophily between the mobile individuals. It results theoretically and practically difficult to include sensitive firm level controls for firms that span many different industries and are frequently spin-offs or new companies formed after the collapse of the world leader, mostly privately held. We have therefore decided to use firm-level fixed effects that should capture all of the time invariant firms characteristics and, by doing so, alleviate the issue of firms’ characteristics driving the co-mobility.

We report the statistics at the dyadic level in Table1 and the correlation matrix in the Table 2:

Insert Table 1 about here

Insert Table 2 about here

FINDINGS

Following Kleinbaum et al. (2013), we report on the main estimation problem linked with dyadic regression: the non-independence of data. In our case this issue arises along two dimensions. First, interactions within a dyad are not independent. The fact that an individual i is co-mobile is contingent on individual j being co-mobile as well. We decided to keep structurally independent dyads, such as ij and ji , in our dataset for the purpose of controlling for the ego characteristics that may drive the co-mobility. One could indeed imagine that the event of co-mobility may be triggered by someone who is in managerial position and negotiates in favor of his colleague trader so that both move together as a team, such driving force being however absent within the same dyad but with the trader as ego. The second issue arises due to the fact that the ego part of the dyad has multiple occurrences in the dataset that potentially causes a problem of correlation between different dyads because of some unobserved attributes of the individual. This problem should not affect the parameter estimates, but it can cause standard errors to be underestimated (Kleinbaum et al., 2013). Following the best practices of empirical work with dyadic datasets, we use multi-way clustering in order to address the issue of

non-independence. We also use ego fixed effects in a robustness check to rule out that individual characteristics may drive the event of co-mobility.

We use a Logit framework to estimate the probability of co-mobility including firm level fixed effects that control for time invariant firm characteristics. We cluster the standard error at dyad level. The main model looks as follows:

Co-mobility = $\alpha + \beta$ same gender + γ same nationality + δ same occupational position + (dyad and move level control: Same education, Repatriation, Non-mobile, Simultaneous, Promotion, Other industry, firm fixed effects) + error term (clustered at dyad level).

The first model (M1) introduces the full set of controls at dyad level. The second (M2) model introduces the national homophily, at dyad level, the third (M3) one the gender homophily, fourth one (M4) the position homophily, all as stand-alone, finally the fifth (M5) includes both nationality and gender homophily together and the sixth (M6), full model, includes all the dimensions of homophily together. The error is clustered at the dyad level for in all of the tables presented below.

Insert Table 3 about here

We use the Table 3 to assess the hypothesis 1, 2 and 3. All controls, expect the repatriation are significant and display the expected signs: the education homophily is positively correlated with co-mobility, so are the dummies for simultaneous moves and non-mobility. There is a moderate support for the first hypotheses. M 3, 5 and 6 display a significant and positive

relation between gender-based homophily and co-mobility with a very stable magnitude of the coefficient in particular in the last two models. Models 2, 5 and 6 demonstrate a persistently strong, positive and significant effect of the national homophily. Even though the magnitude of the coefficients decreases throughout the models, the decrease is only marginal. This provides us with enough of support for the second hypotheses. Finally, although the position homophily coefficient displays the expected, negative sign, it is not significant in M4 and M6 which does not allow us enough of support for our third hypotheses.

We now turn to the Table 4a and 4b in order to assess our hypotheses 1a and 1b on different gender dynamics for respectively, females and males.

Insert Table 4a about here

Insert Table 4b about here

The Table 4a displays the same order of models as the main analysis. The signs of controls (except the educational homophily) are also consistent. The findings on national and position homophily remain unchanged in the subsample. Due to the restricted number of observations “Other industry” is dropped from the analysis. We assess the effects of gender homophily on the likelihood of co-mobility with use of the model 3, 5 and 6. As expected, the sign of the variable of interest turns, as compared to the main specification, it is now negative

and significant. The effect decreases throughout models, its magnitude remains however relatively high providing us with evidence towards hypothesis 1a.

The findings of the last table are largely consistent with the main analysis and the findings of the first subsample of ego females. All controls and independent variables are of the same signs and significance level as in previous tables, including the move level controls that perform well in this analysis. Nevertheless, contrarily to the Table 4a, the gender-based homophily coefficient turns positive in model 3, 5 and 6 providing us with enough of evidence towards the hypotheses 1b.

We run different robustness check in order to confirm the stability of our findings. The findings remain unchanged while replacing the firm level fixed effects with individual fixed effects. Alternatively, we also keep the firm level fixed effects and introduce a set of ego-based controls such as: gender, education, firm-experience, other industry and non-industry experience, position with no changes in the results. The results also remain consistent and significant in a specification with robust standard errors and errors clustered at ego level. The use of Chow's test confirmed that the gender homophily coefficient is stable for both groups: female and male. Our current definition of co-mobility individuals does not allow us to differentiate between a small and a mass-size transitions. In order to make sure that our results are not driven by either of these characteristics in particular, we also proceed on a sample split into one of mass-size and small size transitions and test all the hypotheses. The results hold in this test as well suggesting similar mechanisms operating for co-mobility involving fewer and more individuals. We finally test our hypotheses with the additional use of the unemployed individuals and this also yields consistent results. When we use the alternative measure of co-mobility, namely the shared destination of

co-mobile employees understood as a firm in a particular location, the results remain significant only for the national homophily, the signs of all other variables still being consistent though.

We are aware of the possibility that the particular composition of our sample, where females were underrepresented, may be affecting the results. In absence of a better benchmark, we therefore computed a Chi Square tests that compare the expected and observed frequencies of co-mobility for females and males. The test demonstrated that the realized frequencies of co-mobility for females are significantly below the expected ones. We consider this as an evidence of dependence between gender and co-mobility. Furthermore, we matched a sample of females with the same number of randomly chosen males. Tests carried analogously to the main analysis yield robust and stable results.

DISCUSSION

Our findings indicate a strong and persistent effect of national homophily on the likelihood of co-mobility between employees. Also, we find different dynamics for gender homophily for females and males: while the gender homophily decreases the likelihood of co-mobility for the former, for the latter the effect is just the opposite.

We proposed the labor market discrimination (Altonji & Blank, 1999; Becker-Blease & Sohl, 2007; Brooks et al., 2014; Ibarra, 1992; Lyngsie & Foss, 2016) as the main underlying mechanisms of the differential gender dynamics. We turned to qualitative pre-study we conducted in order to gain an understanding of the nature of organizational failure in search for an additional evidence of such. Female traders, former employees of OW Bunker, we interviewed seem indeed, without elaborating further think the industry is “a man’s world”.

Nevertheless, there may be alternative, behavioral based characteristics explaining our findings. The literature pointed to some same-gender issues for female in professional working context. According to the so-called “Queen Bee” effect (Belle Derks et al., 2011; B. Derks, Van Laar, Ellemers, & de Groot, 2011; Ellemers, van den Heuvel, de Gilder, Maass, & Bonvini, 2004; Joseph, 1985; Lyngsie & Foss, 2016; Sheppard & Aquino, 2013; Staines, Tavis, & Jayaratne, 1974) females, especially in senior positions, may disassociate from their female colleagues and compete harshly or block each other’s progress. Another alternative explanation is that some females, as compared to men, instead of engaging in a workplace competition, shy away from it (Niederle & Vesterlund, 2007). We found some evidence for such behavior in a qualitative pre-study we conducted in order to gain an understanding of the nature of organizational failure. One of our 18 interviewees, a former female trader from the failed company who moved into a different industry said:

“(...) today many traders are extremely aggressive. “Why don’t you give me this deal? Because you’re not lowering the price and the other one could supply with one batch you are having for divided into two”. I would not allow that (...) I’m not into that style. I don’t want, today as an (ship)operator, trading for bunker with a trader that’s aggressive, you know, of the smart people. I don’t want to trade with them. If they are too smart and they think “I can do this”. Yeah, I’ll make sure and when it comes to the actual trade, they’re not able to do anything”.

Such statement may indicate a possible trend of females shying away from competitive and aggressive trading industry. Nevertheless, as female individuals leaving the industry could have possibly anyways transition together into new jobs outside of the bunker trading industry, this alone can not fully explain the lower propensity for being co-mobile among females.

All the above arguments could to a certain point explain the fact the female dyads are, on average, less likely to be co-mobile than men. We additionally test the hypothesis on the professional competition in our data in twofold way: first we restrict the female sample to egos of female senior employees. We find a persistent and negative effect of gender homophily in such subsample. This means that dyads of two senior females are less likely to be co-mobile than a dyad with one senior female only. While it is plausible that it is the females themselves who shy away from moving together into a new employment, we cannot entirely rule out that this effect is also driven by a pure market discrimination. Furthermore, we test the hypothesis on the discriminative labor markets. In a subsample of female only, we check the professional outcomes after transitioning into a new employment with use of the “Promotion” variable used as dependent variable and, alternatively, a measure of demotions occurring for either ego or alter within the dyad. The pattern we find is very consistent and provides with some evidence of discrimination in the labor market: not only are female significantly more likely to be demoted, but also significantly less likely to be promoted. The dynamics of gender homophily for men are displaying the opposite trend- as male dyads are more likely to be promoted and less likely to be demoted. As more men occupied managerial positions in our sample, we exclude that such finding is driven by a “bottleneck” effect of fewer managerial positions available for employees after their transition. An interesting pattern emerge as for position homophily in our test of market performance and gender homophily. Both female and men experience a significant boost in their chances of being promoted (and decreases of risk of demotion) in case if the dyad is characterized by position homophily. Thus, all things being equal, gender-homophilic dyads, co-mobile or not, are less vulnerable and more likely to achieve better labor market outcomes if characterized by position heterophily. Even though this finding is not enough to stipulate the

existence of complementarities as underlying mechanisms of co-mobility, there is definitely a general and positive effect of complementarities for all transitioning dyads in regard to their performance. One possible explanation of why the position homophily is not a determinant of co-mobility in our study may be a specific organizational structure and its contingencies. OW Bunker was an Adhocracy (Mintzberg, 1980; Mintzberg & McHugh, 1985), organizational form in which employees are independent experts with in charge of their own tasks and with very little or no formal line of command. Indeed regular traders were not very different from managers in terms of the job content, based on an analysis of job descriptions on LinkedIn. It is therefore plausible that in order to gain a functional team, the employers within the industry did not necessarily need to hire traders along with their manager. The contingencies of organizational structure and homophily are as subject investigated in a different paper.

To sum up, we believe that our findings on the gender-homophily dynamics for woman are driven by a mix of multiple elements: first, the labor market conditions seem to be important in shaping this gender-homophily dynamics. While two co-mobile men are more likely to be promoted and less at risk of a demotion, this trend is just opposite for female suggesting a harsh professional environment. Second, we additionally find some evidence of the “Queen Bee” effect by which female may discriminate in their decision not to transition into the employment with other female, this including dyads with one female in a senior position..Finally, females may also be “opting out” and leave the industry because of the harsh competitive conditions. While we cannot exactly establish the direction of causality for the two first ones, based on the extant literature, we may presume that the market conditions make females more competitive, ultimately triggering the “Queen Bee” effect.

CONCLUSION

Our findings indicate a strong and persistent effect of national homophily on the likelihood of co-mobility between employees. We also find strong evidence that gender-based homophily affects co-mobility differently for men and women. For men, a gender-homophilic dyad has a higher likelihood of co-mobility. In contrast, for women, gender-homophily has a strong negative effect on the likelihood of co-mobility. According to our analysis, the effects of gender-homophily for female are driven by discriminatory labor market practices and, possibly, female based competition, or so called “Queen Bee” effect.

Our study contributes to the co-mobility literature by studying the homophily-based antecedents of co-mobility. We also contribute to homophily studies, in particular the gender literature studying differences in the effects of gender-homophily and also the dynamics underlying the differential effects of gender homophily for females. By analyzing a particular context of transitions, subsequent to an organizational failure, we furthermore contribute to the literature on organizational failure analyzing the cumulative career advantage of employees from a failed firm. We believe that our estimation based on a natural experiment of organizational failure, including a sample approaching the population of front-desk employees, provides a sound causal inference.

There are several limitations to our study. We discuss limitations related to the data collection and study design below. First, possible biases may arise from the use of self-reported data. First, in order to avoid negative association after bankruptcy, employees may under-report or omit mentioning their OW Bunker -related experience completely or partly on the internet platform. Such bias doesn't seem to cause major issues in our case: the final dataset includes individuals with as little OW Bunker related experience as one month and this for any given

types of position at the company. Second, on the contrary, employees suddenly losing their job may avoid reporting the end of their employment for different reasons; they may be willing to have better bargaining position during potential negotiations of a new employment contract. This may affect the observed timing of departures in our dataset. The pronounced interest and coverage of the collapse by the media is speaking against such eventuality, especially in cases of ex-OW Bunker employees negotiating a new job in the same industry. Indeed, hardly any business practitioner following oil and related industries hasn't heard of the tragic collapse. Due to such transparency, there are very little incentives for a former OW Bunker employee to hide or extend her employment status at the defunct company. Supporting this claim, there are instances in our dataset, in which employees highlighted an ongoing job search by stating it openly on their LinkedIn profile in the most visible way instead of omitting. Even though most of the departures are reported in the period of November-December 2014, there are some exceptions in which the reported employment period continues far beyond November 2014. In such case, we have assumed that a given employee didn't manage to regain a new job. In order to exclude another possible explanation, we performed thorough checks including scanning through available media resources and asking other sampled interviewees, former colleagues, for elaboration in such cases (total of 14 cases).

Our study design is based on one group pre-and post-test design (Rider & Negro, 2015). The ideal set up for natural experiments is based on the differences-in-differences framework in which a control. In such case we would need to find a group of employees at a similar firm within the industry and use them for the purpose of comparing the rates of co-mobility. Nevertheless, since the whole industry has been treated by the bankruptcy of the major player, the sudden supply of employees in the market negatively impacts the potential propensity of

employees from the competing firms to change jobs in the same time. Consequently, it results impossible to use a design with a control group and our study lacks of such.

Due to the special character of our data collection using the LinkedIn platform, we also lack financial indicators on employees' wages after the organizational failure. We used the "promotion" and "demotion" as dependent variables in our additional analyses as alternative indicator of performance and, as such, they may raise some concern. Even though, as reported by various media releases⁴, all types of existing firms in the market seized the opportunity of OW Bunker collapse to expand and form new subsidiaries, there may be differences between the promotion rates offered by various types of firms. Smaller or newly established entrepreneurial firms may be offering significantly better occupational positions, thus higher promotion rates, in order to attract employees, while well-established big firms may be more reluctant to use such strategy, benefiting from high status (Bidwell & Briscoe, 2010; Bidwell, Won, Barbulescu, & Mollick, 2015). Furthermore, our study focuses on one company case- and one particular industry of service intermediaries. While the findings may be relevant for similar industries, the external validity may be limited. We thus expect that the findings vary in terms of industries and also in terms of the event, non-option and unexpected, triggering the subsequent employees' transitions.

Finally, we suggest some avenues for future research. We believe that the investigation of the co-mobility patterns within a different industry and also following an expected failure, in order to detect patterns of similarity or dissimilarity could be interesting. The industry characteristics, such as low barriers to entry absent in our study, may change the results of co-

⁴ <http://www.reuters.com/article/bunker-bankruptcy-mercuria-idUSL3N0TL35K20141202>,
<http://www.reuters.com/article/singapore-shipping-oil-ow-bunk-idUSL3N0T24RM20141114>

mobility, since entrepreneurship may be a viable option. Second, a different type of shock may be taken into account. Downsizing or restructuring (forced, non-optional but not necessarily exogenous) may impact the co-mobility patterns in way different from the organizational failure. Third, in contrast to our study of a global industry, scholars may further investigate the co-mobility patterns after a shock but within national, not global, boundaries.

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Table 1 **Descriptive Statistics- dyad and move level variables**

	mean	sd	count
1.Co-mobility firm	.0843713	.277948	34040
2. Same education	.6654524	.471839	34040
3. Non-mobile	.0250881	.1563951	34040
4. Repatriation	.0012338	.0351049	34040
5. Same nationality	.1243243	.329956	34040
6. Same gender	.6592244	.473977	34040
7. Same occupational position	.5555817	.4969084	34040
8. Simultaneous	.2623384	.4399121	34040
9. Promotion	.2432432	.4290471	34040
10.Other industry	.1783784	.3828366	34040
Observations	34040		

Table 2 **Correlation matrix- dyad and move level variables**

	1	2	3	4	5	6	7	8	9	10
1.Co-mobility firm	1									
2. Same education	0.0271***	1								
3. Non-mobile	0.184***	-0.0184***	1							
4. Repatriation	-0.00465	-0.0176**	-0.00564	1						
5. Same nationality	0.105***	0.00562	0.156***	-0.00817	1					
6. Same gender	0.0291***	0.00647	-0.0234***	-0.0100	0.0936***	1				
7. Same occupational position	-0.00800	0.0302***	0.00965	-0.00898	-0.0350***	-0.0433***	1			
8. Simultaneous	0.105***	0.0175**	0.0452***	-0.00574	-0.0239***	-0.00125	0.0176**	1		
9. Promotion	-0.0142**	0.0541***	0.000994	-0.00822	-0.0154**	0.0111*	0.0854***	0.0208***	1	
10.Other industry	-0.138***	0.0863***	-0.0747***	-0.0164**	0.0784***	-0.0487***	0.00857	-0.0706***	0.197***	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3 **Logit estimation: dependent variable co-mobility at firm level**

Controls						
Same education	0.189*** (3.99)	0.188*** (3.97)	0.188*** (3.98)	0.189*** (3.99)	0.187*** (3.96)	0.187*** (3.96)
Non mobile	2.110*** (22.44)	1.894*** (19.39)	2.123*** (22.53)	2.111*** (22.44)	1.910*** (19.50)	1.910*** (19.50)
Repatriation	-0.800 (-1.10)	-0.733 (-1.08)	-0.754 (-1.04)	-0.801 (-1.11)	-0.698 (-1.02)	-0.698 (-1.02)
Simultaneous	0.513*** (11.70)	0.538*** (12.19)	0.513*** (11.69)	0.513*** (11.70)	0.537*** (12.17)	0.537*** (12.17)
Other industry	-3.357*** (-3.75)	-3.616*** (-3.88)	-3.357*** (-3.74)	-3.357*** (-3.75)	-3.607*** (-3.88)	-3.607*** (-3.88)
Promotion	-0.0519 (-0.90)	-0.0463 (-0.80)	-0.0519 (-0.90)	-0.0506 (-0.88)	-0.0465 (-0.80)	-0.0463 (-0.80)
H2: Same nationality		0.622*** (10.74)			0.607*** (10.44)	0.607*** (10.44)
H1: Same gender			0.167*** (3.59)		0.127*** (2.69)	0.126*** (2.69)
H3: Same occupational position				-0.0152 (-0.35)		-0.00212 (-0.05)
Constant	-1.671*** (-8.85)	-1.882*** (-9.91)	-1.802*** (-9.39)	-1.667*** (-8.80)	-1.977*** (-10.24)	-1.976*** (-10.21)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	26068	26068	26068	26068	26068	26068

t statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4a **Logit estimation: dependent variable co-mobility at firm**
level, subsample of ego females

Controls						
Same education	0.189*	0.184	0.184	0.191*	0.180	0.177
	(1.66)	(1.61)	(1.61)	(1.67)	(1.57)	(1.54)
Non-mobile	2.229***	2.022***	2.245***	2.232***	2.048***	2.041***
	(12.31)	(10.43)	(12.38)	(12.29)	(10.56)	(10.53)
Repatriation	-0.344	-0.279	-0.341	-0.349	-0.279	-0.270
	(-0.33)	(-0.29)	(-0.33)	(-0.34)	(-0.29)	(-0.28)
Simultaneous	0.568***	0.586***	0.565***	0.568***	0.582***	0.581***
	(5.39)	(5.54)	(5.36)	(5.40)	(5.50)	(5.48)
Promotion	-0.0181	-0.00582	-0.0151	-0.0213	-0.00423	0.0000672
	(-0.10)	(-0.03)	(-0.09)	(-0.12)	(-0.02)	(0.00)
H2:Same nationality		0.558***			0.528***	0.537***
		(3.43)			(3.21)	(3.27)
H1:Same gender			-0.351***		-0.322**	-0.335**
			(-2.61)		(-2.39)	(-2.45)
H3:Same position				-0.0438		0.0558
				(-0.41)		(0.50)
Constant	-3.008***	-3.030***	-2.942***	-2.981***	-2.967***	-2.999***
	(-18.21)	(-18.21)	(-17.76)	(-16.51)	(-17.78)	(-16.38)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	5166	5166	5166	5166	5166	5166

t statistics in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4b **Logit estimation: dependent variable co-mobility at firm level subsample of ego males**

Controls						
Same education	0.189*** (3.61)	0.188*** (3.57)	0.188*** (3.58)	0.189*** (3.60)	0.187*** (3.54)	0.187*** (3.54)
Non-mobile	2.106*** (18.86)	1.893*** (16.40)	2.130*** (19.02)	2.107*** (18.86)	1.922*** (16.62)	1.922*** (16.62)
Repatriation	-1.170 (-1.16)	-1.094 (-1.15)	-1.070 (-1.06)	-1.172 (-1.17)	-1.012 (-1.05)	-1.013 (-1.05)
Simultaneous	0.506*** (10.30)	0.530*** (10.72)	0.506*** (10.28)	0.506*** (10.29)	0.529*** (10.70)	0.529*** (10.70)
Other industry	-16.64*** (-55.10)	-16.19*** (-83.70)	-16.63 (.)	-16.64 (.)	-16.18*** (-100.36)	-16.18*** (-119.97)
Promotion	-0.0538 (-0.86)	-0.0453 (-0.71)	-0.0540 (-0.86)	-0.0520 (-0.83)	-0.0458 (-0.72)	-0.0452 (-0.71)
H2: Same nationality		0.622*** (9.94)			0.597*** (9.48)	0.597*** (9.48)
H1: Same gender			0.290*** (4.65)		0.239*** (3.82)	0.238*** (3.81)
H3: Same occupational position				-0.0150 (-0.31)		-0.00589 (-0.12)
Constant	-1.669*** (-8.78)	-1.879*** (-9.83)	-1.897*** (-9.68)	-1.664*** (-8.73)	-2.060*** (-10.46)	-2.057*** (-10.40)
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	20648	20648	20648	20648	20648	20648

t statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$