

Firm Pay, Amenities, and Inequality

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Introduction

- ▶ A large literature documents that **pay** varies significantly across firms
- ▶ But workers may care about both pay and non-pay factors
 - ▶ Growing literature has documented that workers value **specific amenities** a lot
 - ▶ Empirically difficult to isolate the importance of non-pay factors
 - ▶ Econometric issues: “wrong-signed estimates”, assumptions about offer rates
 - ▶ Heterogeneity: theory suggests the valuations of the marginal worker matter (Rosen 1986)
- ▶ How does the overall bundle relate to wages, wage premia?
 - ▶ What is the relative importance of wage and non-wage factors in inequality and mobility

This Paper

1. How do firms vary in the value of amenities?

- ▶ Field a large-scale survey to full-time German workers between the ages of 25 and 50
- ▶ Ask these workers where they would apply if they wanted to switch firms
- ▶ Use firm-specific discrete choice experiments to estimate overall value of firm amenities

2. Do valuations vary across workers? Are there persistent “firm effects”?

- ▶ Examine heterogeneity in valuations by sex and education
- ▶ Link to external information: firm size, employer ratings, quit rates

3. How do non-wage values shape job-to-job mobility and inequality?

- ▶ Correlate valuations with firm wage premia
- ▶ Compare (bias-corrected) variances of wage premia and amenities
- ▶ Examine mobility patterns: do workers move up/down the wage/amenity ladder

Preview of Results

1. Non-wage attributes shape stated and revealed mobility

- ▶ Even among stated destinations, workers often pick the lower-wage offer
- ▶ Observed wage cuts are more likely paired with amenity gains

2. Valuations vary across workers, yet “firm effects” are meaningful

- ▶ Low correlation between groups’ valuations (e.g. gender)
- ▶ Yet a single index has explanatory power $\Rightarrow$ not all “match effects”

3. Amenities compound, rather than offset, pay inequality

- ▶ High-wage firms have higher valuations; orthogonal when size-weighted
- ▶ Total-compensation inequality $\approx 20\%$ larger than pay alone
- ▶ Movers trade off pay and amenities; amenities close the gender gap for women

Related Literature

- ▶ **Compensating Differentials:** Rosen (1986); Sorkin (2018); Volpe (2026); Mas (2025); Humlum, Rasmussen and Rose (2025)
- ▶ **Valuations of Specific Amenities:** Mas and Pallais (2017); Wiswall and Zafar (2018); Maestas et al. (2023); Folke and Rickne (2022)
- ▶ **Firm Wage Premia and Sorting:** Abowd, Kramarz and Margolis (1999); Card, Heining and Kline (2013); Card et al. (2018); Song et al. (2019); Lamadon, Mogstad and Setzler (2022); Kline, Saggio and Sølvssten (2020)
- ▶ **Gender Sorting and Amenities:** Card, Cardoso and Kline (2016); Sorkin (2017); Palladino et al. (2025); Datta Gupta et al. (2025)
- ▶ **Selection in Mover-Based Designs:** Bonhomme and Jolivet (2009); Lavetti (2023); Lavetti and Schmutte (2023)

Data

Survey and Administrative Data

Survey of full-time German workers between 25 and 50 (Caldwell, Haegele and Heining, 2026)

- ▶ Elicited the names of specific firms workers would want to move to
- ▶ Asked them to compare hypothetical offers under researcher-randomized raises

IAB Social Security records

- ▶ Worker histories, occupation and industry codes
- ▶ Full time workers between the ages of 25 and 50
- ▶ Firm data: size, wage premia (Bellmann et al., 2020)
- ▶ 3 samples: surveyed workers, 2010-2019 movers, random sample

Firm reviews and rankings from Kununu

- ▶ Worker-provided information on what amenities are offered
- ▶ Workers' ratings (overall and in various categories) of firms
- ▶ Worker-provided reviews of firms (free-text)

Descriptive Statistics

	Survey Sample		2% Sample		Job-to-Job Movers	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
	(1)	(2)	(3)	(4)	(5)	(6)
<u>Demographics</u>						
Female	0.32	(0.47)	0.35	(0.48)	0.34	(0.47)
Age	32.96	(5.93)	39.39	(11.80)	35.80	(7.62)
German Citizen	0.91	(0.29)	0.95	(0.22)	0.92	(0.27)
College Degree	0.62	(0.48)	0.15	(0.36)	0.26	(0.44)
Apprenticeship	0.30	(0.46)	0.75	(0.44)	0.65	(0.48)
<u>Earnings</u>						
Daily Pay	173.11	(56.77)	107.58	(62.49)	103.54	(55.19)
Censored Pay	0.23	(0.42)	0.05	(0.23)	0.05	(0.21)
AKM Firm Effect	0.46	(0.15)	0.36	(0.21)	0.28	(0.23)
<u>Sector</u>						
Manufacturing Sector	0.47	(0.50)	0.31	(0.46)	0.19	(0.40)
Retail Sector	0.08	(0.28)	0.14	(0.34)	0.13	(0.33)
Professional Sector	0.13	(0.34)	0.05	(0.22)	0.08	(0.27)
Observations	2383		20339174		25361184	

Conceptual Framework

A Simple Model of Workers' Utility

$$u_{ij} = \beta \log w_{ij} + a_j + \epsilon_{ij}$$

β : marginal utility of log wages

Assuming $\epsilon \sim EV1$, the share of workers who choose k over j is

$$P(\text{choose } k \text{ over } j) = \mathbb{E} \left[\frac{\exp(\beta \log w_{ik} + a_k)}{\exp(\beta \log w_{ik} + a_k) + \exp(\beta \log w_{ij} + a_j)} \right]$$

Economic and Econometric Issues:

- ▶ Endogeneity of wages
- ▶ Observed flows depend on both preferences and offer rates
- ▶ Preferences of the marginal worker matter, but movers are on one side of the margin
- ▶ Static vs. dynamic considerations

What We Estimate (and From Whom)

$$a_j = \mathbb{E} \left[\underbrace{u_{ij} - \beta \log w_{ij}}_{\text{non-wage value of firm } j} \mid j \in C_i \right]$$

Sample: full-time German workers (25–50), each ranking firms in their own **consideration set** C_i

- ▶ Value to workers **on the margin of applying** — *ex-ante*
- ▶ Captures the *whole* bundle: culture, management, etc.

Compare a_j to firm wage premia ψ_j :

- ▶ Identified based on movers (Bellmann et al., 2020)
- ▶ Previous work documents symmetry and homogeneity of estimates

Eliciting Valuations: Discrete Choice Experiments

“Suppose you planned to move to a new company in the next {one/three/six} months. What are companies that you would consider applying to?

Please list three companies that you would consider applying to and that hire employees in positions like yours (e.g. “Placeholder Inc”). These can be companies without current job vacancies.”

[Fill in Company 1]

[Fill in Company 2]

[Fill in Company 3]

☐ I do not want to answer this question

Eliciting Valuations: Discrete Choice Experiments

“Suppose you planned to move to a new company in the next {one/three/six} months. What are companies that you would consider applying to?

Please list three companies that you would consider applying to and that hire employees in positions like yours (e.g. “Placeholder Inc”). These can be companies without current job vacancies.”

[Fill in Company 1]  {Company 1} with a X% raise _____

[Fill in Company 2]  {Company 2} with a Y% raise _____

[Fill in Company 3]  {Company 3} with a Z% raise _____

☐ I do not want to answer this question

Suppose you can remain at your current company or switch to any of the companies listed below and immediately receive the raise specified.

Please rank the following job offers from 1 to 4 where 1 is the offer you are most likely to take and 4 is the offer you are least likely to take.

Remain at current firm at current pay _____

Eliciting Valuations: Discrete Choice Experiments

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Remain at current firm at current pay _____

- ▶ Do not include rankings relative to the incumbent firm
- ▶ Auxiliary discrete choice experiments hold wage growth constant

Estimating Valuations from DCEs: Two Steps

Prefer firm j to firm k if

$$\beta(\textcolor{red}{r}_j + \log w_i) + a_j + \epsilon_{ij} > \beta(\textcolor{red}{r}_k + \log w_i) + a_k + \epsilon_{ik}$$

Input: pairwise choice shares P_{jk} over outside firms (3 comparisons/worker)

Step 1 — recover a_j in *utility* units

- ▶ Eigenvector of the choice matrix (Sorkin, 2018) recovers $\exp(a_j)$, up to scale 
- ▶ Randomized raises $\Rightarrow$ wage cancels in expectation $\Rightarrow$ recover a_j *alone* (not $\beta \log w_j + a_j$)
- ▶ Normalize to a base firm ($\approx$ median)

Step 2 — convert to *money-metric*

- ▶ Divide by $\hat{\beta}$ (structural logit coef. on the experimental raise): $a_j/\hat{\beta}$, in log-wage equivalents
- ▶ Delta-method approx; simulations $\Rightarrow$ mild, correlation-preserving attenuation at our $\hat{\beta}$ 

Robustness: an exact MLE (conditional/rank-ordered logit—no eigenvector, no delta-method) recovers the same a_j 

$\Rightarrow a_j$ identified within the connected set, up to the base-firm normalization

Ranked Firms

Workers provide ~3000 distinct firms [▶ Number](#) [▶ Characteristics](#)

- ▶ Which previous workers from their firm have moved to [▶](#)
- ▶ Which are similar to where workers from their firm move (in characteristic space) [Industry](#)
- ▶ Which are “reasonable” in terms of wages [▶](#)
- ▶ Which vary significantly in size (e.g. include bakers, local municipal utility)

Estimation Details

Trade-offs are not just about wages

- ▶ Only 60–70% pick the higher-wage firm when the randomized gap is $<10\%$
- ▶ 90% prefer the higher-wage firm when the gap is 15%

Connected Set vs. Provided Firms

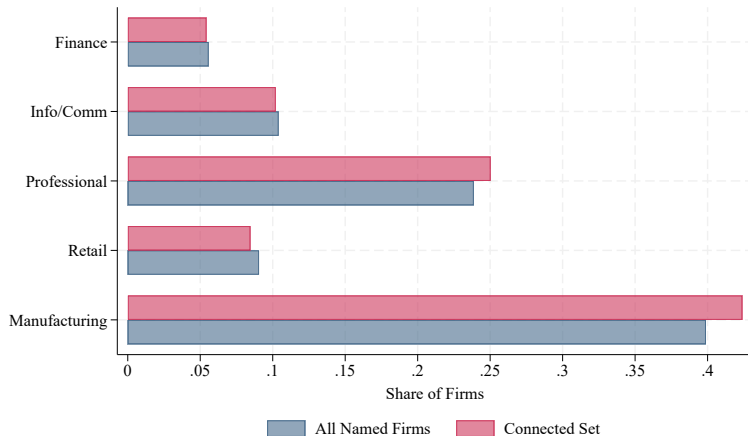
- ▶ We typically drop firms that are provided by only a single worker
- ▶ Connected set firms have a similar sectoral and wage distribution as the set of provided
- ▶ IAB links further drop public-sector firms and (sometimes) firms w/o wage premia

Measurement Error

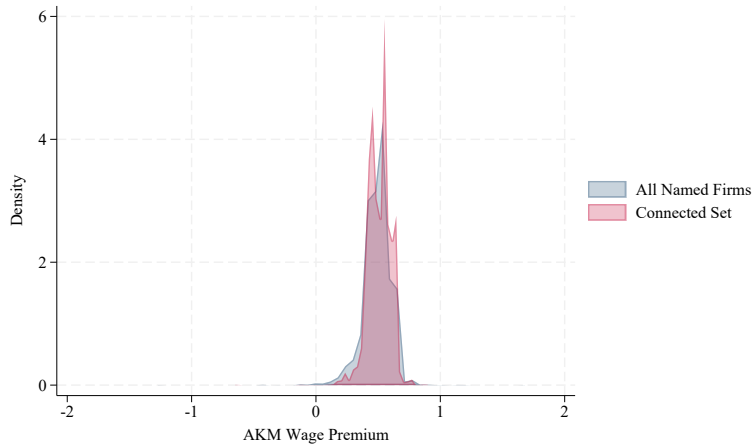
- ▶ Split-sample: valuations from one sample as instruments for valuations in the other
- ▶ Preferred spec: weight by firm size (pos. corr w/ # of times ranked)
- ▶ Robustness: weight by # ranked; drop firms ranked <5 or <10 times

Characteristics of Firms

949 Firms in the Connected Set

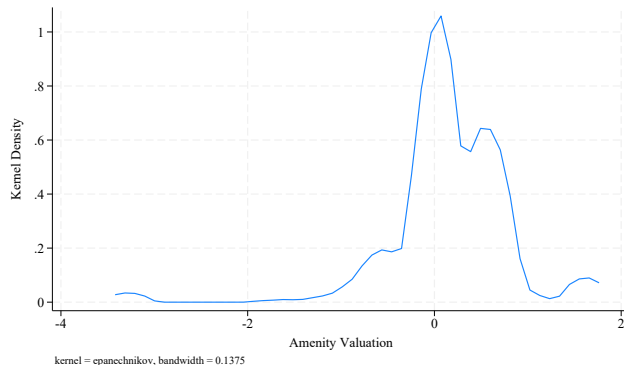


Characteristics of Firms: Connected Set vs. Provided



Characteristics of Valued Firms

Distribution of Raw Valuations (Money-Metric)



Note: average valuations across split samples to reduce the influence of measurement error

Bias-corrected signal variance of amenity values is about one-third that of wage premia in money-metric units [► Conversion](#)

Heterogeneity in Valuations

	Female (1)	Male (2)	College Degree (3)	No College Degree (4)
Female	1.000	0.454	0.666	0.584
Male	0.266	1.000	0.736	0.575
College Degree	0.629	0.570	1.000	0.359
No College Degree	0.545	0.591	0.231	1.000

Below the diagonal: Pearson correlation. Above the diagonal: Spearman rank correlation. Weighted by firm size.

Heterogeneity in Valuations: Alternative Weighting

	Female (1)	Male (2)	College Degree (3)	No College Degree (4)
Female	1.000	0.466	0.639	0.514
Male	0.300	1.000	0.824	0.639
College Degree	0.564	0.735	1.000	0.440
No College Degree	0.476	0.528	0.298	1.000

Are There Firm Effects?

$$u_{ij} = \beta \log w_{ij} + a_j + \epsilon_{ij}$$

What drives willingness to accept lower pay?

1. Differences in systematic utility (all workers): $a_j - a_k$
2. Differences in idiosyncratic utility: $\epsilon_{ij} - \epsilon_{ik}$

Analogous to wage-setting: “firm effects” or all “match effects”?

- ▶ If preferences were purely idiosyncratic, a single-index model wouldn't fit
- ▶ Split-sample correlation between the estimates: ~ 0.66

Amenity Valuations Predict Size, Conditional on Wages

	Baseline Valuations		Valuations Excluding Wage Growth	
	(1)	(2)	(3)	(4)
A. Controlling for Observed Wage Premium				
Log Firm Size	4.107*** (1.010) 552	3.784*** (1.001) 552	5.126*** (1.720) 305	4.894*** (1.793) 305
B. Controlling for Log Median Pay				
Log Firm Size	4.734*** (1.103) 577	4.374*** (1.092) 577	6.672*** (1.719) 318	6.436*** (1.732) 318
C. Controlling for Log Mean Pay				
Log Firm Size	4.566*** (1.109) 577	4.194*** (1.099) 577	6.447*** (1.727) 318	6.239*** (1.748) 318
Fixed Effects	—	Sector	—	Sector

Amenity Valuations Predict Employee Satisfaction (Kununu)

	Baseline Valuations		Valuations Excluding Wage Growth	
	(1)	(2)	(3)	(4)
A. Controlling for Observed Wage Premium				
Percent Recommend (0-100)	90.788** (35.507) 420	65.408*** (22.684) 420	86.887** (38.024) 242	39.642 (25.824) 242
B. Controlling for Log Median Pay				
Percent Recommend (0-100)	81.697** (33.014) 434	56.025*** (20.908) 434	82.473** (38.498) 251	23.804 (25.517) 251
C. Controlling for Log Mean Pay				
Percent Recommend (0-100)	83.211** (32.424) 434	57.353*** (20.655) 434	84.372** (37.942) 251	26.170 (25.135) 251
Fixed Effects	—	Sector	—	Sector

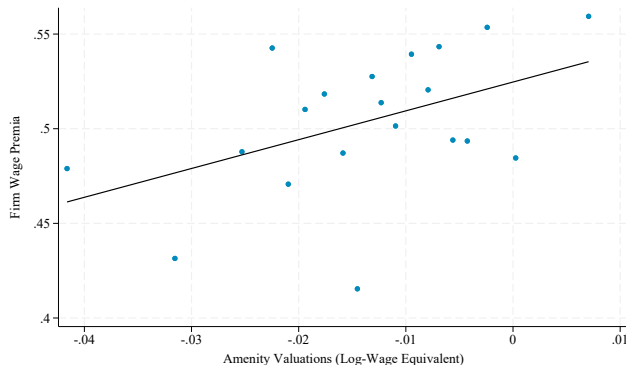
Amenities and Inequality

Implications for Inequality

- ▶ Offsetting requires a negative wage–amenity slope (compensating differentials)
 - ▶ Estimated slope is zero-to-mildly-positive
 - ▶ Total-compensation variance $\approx 20\%$ larger than pay alone
1. Weighting by firm size, amenities and wage premia are approximately orthogonal $\hookrightarrow$
 2. Wage cuts are often paired with amenity gains $\hookrightarrow$
 3. And they close (or reverse) the gender gap in firm-provided value $\hookrightarrow$

Weighting by Firm, There is a Positive Correlation

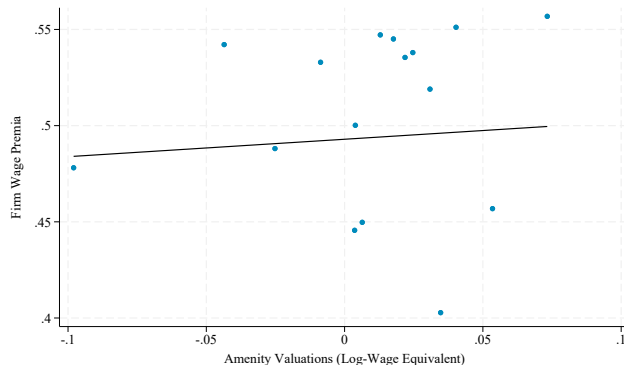
EIV-Reg Coefficient (SE): 1.522 (0.560)



Note: Figure uses split-sample approach to account for measurement error in amenity valuations.

Amenities Do Not Offset Wage Variation for the Average Worker

EIV-Reg Coefficient (SE): 0.091 (0.128)



Note: Figure uses split-sample approach to account for measurement error in amenity valuations.

Is The Orthogonality Just Measurement Error? (No)

- ▶ Baseline approach uses a split-sample IV
- ▶ Firm-size weighting reduces measurement-error influence (corr. with # mentions)
- ▶ Additional robustness checks:
 - ▶ Weighting by the number of times a firm was mentioned
 - ▶ Dropping firms that are ranked fewer than 5 or 10 times

Wage Cuts Are Often Paired with Amenity Gains

	Change in Amenities			All Movers (4)
	>2% Cut (1)	<2% Change (2)	>2% Raise (3)	
A. Change in Own Wage				
Decrease ($< -2\%$)	28.8%	22.4%	48.8%	18.5%
Similar ($\pm 2\%$)	35.7%	14.0%	50.3%	21.2%
Increase ($> 2\%$)	34.4%	21.9%	43.7%	60.3%
All Movers	33.6%	20.3%	46.1%	100.0%
B. Change in Firm Wage Premium				
Decrease ($< -2\%$)	33.7%	19.1%	47.2%	45.6%
Similar ($\pm 2\%$)	34.4%	15.6%	50.0%	13.3%
Increase ($> 2\%$)	32.3%	25.1%	42.7%	41.1%
All Movers	33.2%	21.1%	45.7%	100.0%
C. Change in Own Wage				
Decrease ($< -2\%$)	25.6%	16.7%	57.7%	18.6%
Similar ($\pm 2\%$)	33.7%	14.7%	51.6%	22.7%
Increase ($> 2\%$)	32.5%	24.0%	43.5%	58.7%
All Movers	31.5%	20.5%	48.0%	100.0%
D. Change in Firm Wage Premium				
Decrease ($< -2\%$)	26.5%	21.9%	51.5%	46.8%
Similar ($\pm 2\%$)	34.9%	12.7%	52.4%	15.0%
Increase ($> 2\%$)	35.0%	21.9%	43.1%	38.2%
All Movers	31.0%	20.5%	48.4%	100.0%

Men and Women Have Different Mobility Patterns

	Male				Female			
	Change in Amenities			All Movers	Change in Amenities			All Movers
	Cut	Similar	Raise		Cut	Similar	Raise	
A. Change in Own Wage								
Decrease ($< -2\%$)	26.9%	22.4%	50.7%	19.0%	21.7%	17.4%	60.9%	20.7%
Similar ($\pm 2\%$)	26.7%	17.3%	56.0%	21.2%	27.3%	18.2%	54.5%	19.8%
Increase ($> 2\%$)	28.9%	24.6%	46.4%	59.8%	42.4%	18.2%	39.4%	59.5%
N			353				111	
B. Change in Firm Wage Premium								
Decrease ($< -2\%$)	20.1%	27.5%	52.3%	42.3%	26.8%	16.1%	57.1%	49.6%
Similar ($\pm 2\%$)	35.7%	10.7%	53.6%	15.9%	20.0%	40.0%	40.0%	8.8%
Increase ($> 2\%$)	32.0%	22.4%	45.6%	41.8%	48.9%	14.9%	36.2%	41.6%
N			352				113	
C. Change in Log Median Wage								
Decrease ($< -2\%$)	34.0%	26.3%	39.7%	44.1%	32.8%	19.7%	47.5%	54.0%
Similar ($\pm 2\%$)	19.0%	42.9%	38.1%	5.9%	33.3%	0.0%	66.7%	2.7%
Increase ($> 2\%$)	23.7%	16.9%	59.3%	50.0%	38.8%	16.3%	44.9%	43.4%
N			354				113	
D. Change in Log Mean Wage								
Decrease ($< -2\%$)	33.3%	27.6%	39.1%	44.1%	33.9%	20.3%	45.8%	52.2%
Similar ($\pm 2\%$)	31.8%	27.3%	40.9%	6.2%	0.0%	0.0%	100.0%	3.5%
Increase ($> 2\%$)	22.7%	17.6%	59.7%	49.7%	40.0%	16.0%	44.0%	44.2%
N			354				113	

Amenities Close (or Reverse) the Gender Gap in Firm-Provided Value

Warning: Only identified up to a normalized gap (assume $\bar{a}_{\text{serv}}^f = \bar{a}_{\text{serv}}^m$)

	(1)	(2)	(3)	(4)	(5)	(6)
	All Workers			Sex-Specific		
A. Firm Wage Premium (ψ_j)						
Female	−0.014*	−0.010	−0.003	−0.022**	−0.019**	−0.013**
	(0.008)	(0.007)	(0.003)	(0.009)	(0.008)	(0.005)
B. Amenity Value ($a_j/\hat{\beta}$, log-wage equivalent)						
Female	−0.003	−0.003	0.001	0.010	0.010	0.014**
	(0.004)	(0.004)	(0.002)	(0.007)	(0.006)	(0.006)
Mincer controls		Yes	Yes		Yes	Yes
Occupation FE			Yes			Yes
<i>N</i>	236,674	236,674	236,661	201,001	201,001	200,982

► Women Care About Specific Amenities More

Conclusion

- ▶ DCEs recover money-metric amenity valuations for marginal applicants
- ▶ **Non-wage attributes drive job choice:** workers often pick lower-paying offers
- ▶ **High-amenity firms are larger, retain workers, and rate higher**
- ▶ **Amenities compound pay inequality:** total compensation $\approx 20\%$ more dispersed
- ▶ **Preferences differ by gender:** women sort to lower-pay, higher-amenity firms

Appendix

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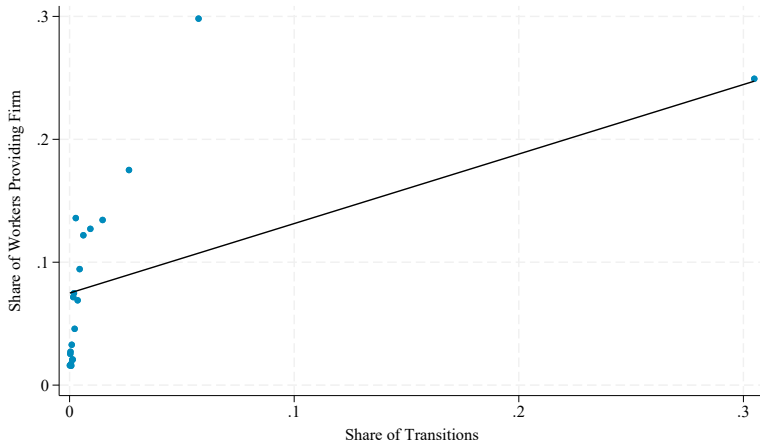
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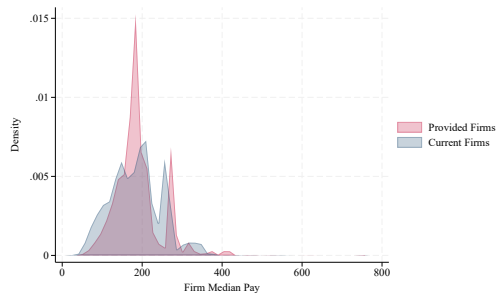
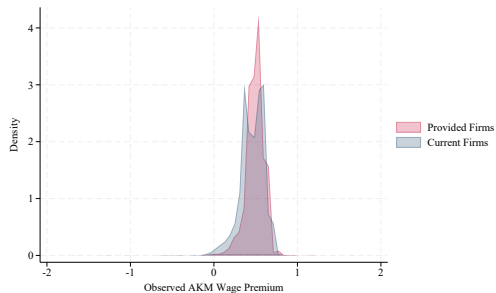
Workers Provide Many Distinct Firms

- ▶ Worker-provided firms span a broad range of the German labor market
 - ▶ Total employment in Germany > 6.2 million.
 - ▶ Received more than 190 million page views on employer rating platform Kununu.
- ▶ Nearly 3000 distinct firms—of varying sizes—are mentioned
 - ▶ Ex: local municipal utility, small manufacturer of agricultural equipment, glass producer

Stated and Revealed Mobility

[▶ Back](#)

Provided Firms Fall Throughout the Observed Distribution of Pay [▶ Back](#)



Industry Transition Rates

[▶ Back](#)

		Destination Firm						
		Manufacturing	Retail	Accommodations and Food Services	Information	Financial	Professional	Other
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Origin Firm	Manufacturing	39%	12%	2%	2%	1%	7%	37%
	Retail	15%	37%	3%	3%	1%	6%	36%
	Accommodations and Food Services	10%	11%	33%	2%	1%	4%	39%
	Information	9%	9%	1%	39%	2%	14%	25%
	Financial	6%	7%	1%	6%	44%	11%	25%
	Professional	14%	10%	2%	8%	3%	33%	31%
	Other	12%	9%	2%	2%	1%	5%	70%

		Stated Firm						
		Manufacturing	Retail	Accommodations and Food Services	Information	Financial	Professional	Other
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Current Firm	Manufacturing	38%	10%	-	12%	8%	17%	16%
	Retail	19%	24%	-	18%	3%	17%	20%
	Accommodations and Food Services	-	-	-	-	-	-	-
	Information	24%	17%	-	22%	16%	8%	13%
	Financial	25%	12%	-	7%	30%	17%	9%
	Professional	43%	11%	-	13%	8%	13%	12%
	Other	33%	12%	-	8%	4%	12%	31%

**Deutsche Bahn AG**

als Arbeitgeber

auf kununu aktiv

[All und weitere](#)**3,8** ★★★★★☆**kununu Score**

13.153 Bewertungen

72% **Weiterempfehlung**

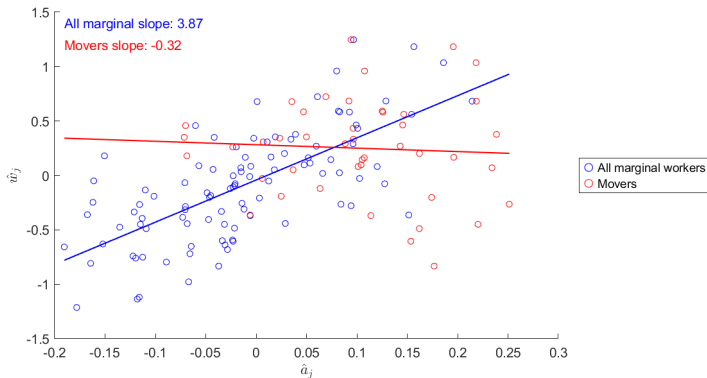
Letzte 2 Jahre

[Übersicht](#)[Bewertungen \(13.153\)](#)[Gehälter \(9.876\)](#)[Jobs \(579\)](#)[Firmenkultur \(3.281\)](#)[Fragen](#)[FOLGEN](#)[ARBEITGEBER BEWERTEN](#)

Why Not Movers?

[▶ Back](#)

- ▶ Workers at low-wage firms are more likely to be selected on having high amenity valuations than workers at high-wage firms within a given labor market.
- ▶ The bias can be large under reasonable parameterizations (see simulation below)



Estimation of Firm Valuations 1/2 [▶ Back](#)

Person i 's hypothetical value of working at firm j is:

$$u_{ij} = r_{ij} + \log w_i + a_j + \epsilon_{ij}$$

The probability of ranking firm k above firm j is

$$P_{kj} = \mathbb{E}_{j,k} \left[\frac{\exp(r_{ik} + a_k)}{\exp(r_{ik} + a_k) + \exp(r_{ij} + a_j)} \right].$$

Let $\mathbf{x}$ solve the linear problem from Sorkin (2018)

$$x_k = \frac{\sum_j P_{kj} x_j}{\sum_j P_{jk}}.$$

Define a bias term ξ_k where

$$x_k \propto \exp(a_k + \xi_k).$$

Estimation of Firm Valuations 2/2

[▶ Back](#)

Then

$$\frac{\exp(\xi_k)}{\exp(\xi_j)} = \frac{\mathbb{E}_{j,k} \left[\frac{\exp(r_{ik})}{\exp(r_{ik}+a_k)+\exp(r_{ij}+a_j)} \right]}{\mathbb{E}_{j,k} \left[\frac{\exp(r_{ij})}{\exp(r_{ik}+a_k)+\exp(r_{ij}+a_j)} \right]}.$$

The first order expansion of $\mathbb{E}[\frac{X}{Y}]$ around $\mathbb{E}[X]$ and $\mathbb{E}[Y]$ is $\mathbb{E}[\frac{X}{Y}] \approx \frac{\mathbb{E}[X]}{\mathbb{E}[Y]}$. Therefore,

$$\frac{\exp(\xi_k)}{\exp(\xi_j)} \approx \frac{\mathbb{E}_k [\exp(r_{ik})]}{\mathbb{E}_j [\exp(r_{ij})]} = 1$$

because r_{ik} is randomly assigned. Therefore,

$$x_k \propto \exp(a_k)$$

$$\log(x_k) \approx a_k + c$$

for some constant c . So,

$$\log(x_k) - \log(x_j) \approx a_k - a_j.$$

Money-Metric Conversion [▶ Back](#)

The eigenvector recovers a_j in utility units. To compare to wage premia, divide by the structural wage coefficient $\hat{\beta}$:

$$a_j^{\text{money-metric}} = a_j / \hat{\beta}, \quad \text{Var}(a_j^{\text{money-metric}}) = \text{Var}(a_j) / \hat{\beta}^2.$$

Estimating $\hat{\beta}$: structural logit on the choice experiments

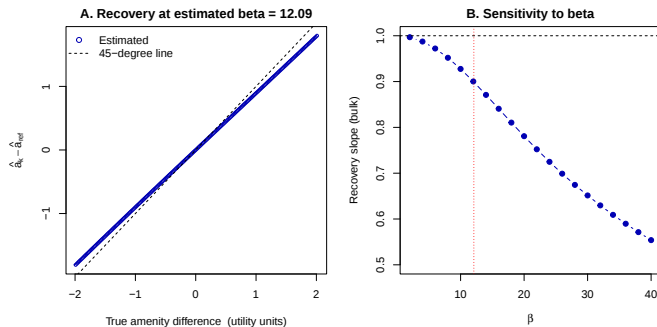
- ▶ Pooled estimate: $\hat{\beta} = 12.08$ (SE 0.50)
- ▶ Similar across men/women, college/non-college (see Table 2 / Panel B)

Implication for the variance ratio:

- ▶ Amenities are dispersed in utility units (range ≈ 4 utility units)
- ▶ The large $\hat{\beta}$ compresses amenity dispersion in money-metric units
- ▶ Net: signal variance about one-third that of firm wage premia

Delta-Method Approximation: Accuracy [▶ Back](#)

Recovery of a_j in simulated DCEs (calibrated to $\hat{\beta}$ + experimental raise grid):



- ▶ Panel A: hugs 45° (slope ≈ 0.90 , corr > 0.999 , ranks exact); Panel B: stable across β
- ▶ Near-linear $\Rightarrow$ wage–amenity *correlation* unaffected; only money-metric magnitude compressed

Exact Estimator Validates the Eigenvector [▶ Back](#)

The model can be estimated by maximum likelihood with the offered wage *in* the likelihood—a conditional / rank-ordered logit with firm fixed effects. No eigenvector, no delta-method.

Researcher-provided design (fixed firm set ranked by all; the exact MLE is identified here, unlike the sparse worker-named design):

- ▶ Correlation with eigenvector estimates: $\rho = 0.95$
- ▶ Slope of exact on eigenvector: 1.06 (s.e. 0.07) — cannot reject 1 ($p = 0.34$, 30 firms)

⇒ the eigenvector recovers the same a_j as the exact MLE; the approximation is not load-bearing.

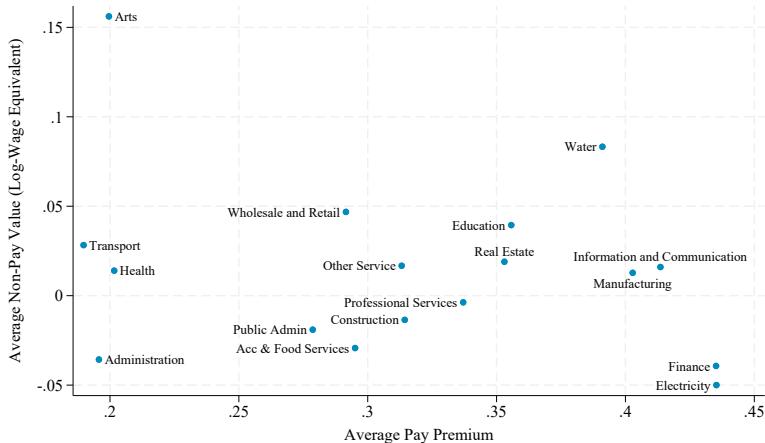
Amenity Values Predict Size, Conditional on Wage $\leftarrow$

	Baseline Valuations		Valuations Excluding Wage Growth	
	(1)	(2)	(3)	(4)
A. Controlling for Observed Wage Premium				
Log Firm Size	4.107*** (1.010) 552	3.784*** (1.001) 552	5.126*** (1.720) 305	4.894*** (1.793) 305
Percent Recommend (0-100)	90.788** (35.507) 420	65.408*** (22.684) 420	86.887** (38.024) 242	39.642 (25.824) 242
B. Controlling for Log Median Pay				
Log Firm Size	4.734*** (1.103) 577	4.374*** (1.092) 577	6.672*** (1.719) 318	6.436*** (1.732) 318
Percent Recommend (0-100)	81.697** (33.014) 434	56.025*** (20.908) 434	82.473** (38.498) 251	23.804 (25.517) 251
C. Controlling for Log Mean Pay				
Log Firm Size	4.566*** (1.109) 577	4.194*** (1.099) 577	6.447*** (1.727) 318	6.239*** (1.748) 318
Percent Recommend (0-100)	83.211** (32.424) 434	57.353*** (20.655) 434	84.372** (37.942) 251	26.170 (25.135) 251
Fixed Effects	—	Sector	—	Sector

Higher-Amenity Firms Have Lower Quit Rates $\leftarrow$

	Baseline		No Growth	
	(1)	(2)	(3)	(4)
A. Controlling for Observed Wage Premium				
Amenity Valuation	-0.040	-0.047	-0.014	0.006
	(0.049)	(0.064)	(0.023)	(0.022)
	421	421	235	235
B. Controlling for Median Pay				
Amenity Valuation	-0.073	-0.075	-0.006	0.008
	(0.059)	(0.068)	(0.021)	(0.022)
	438	438	243	243
C. Controlling for Mean Pay				
Amenity Valuation	-0.073	-0.075	-0.006	0.008
	(0.059)	(0.068)	(0.021)	(0.022)
	438	438	243	243
Fixed Effects	---	Sector	---	Sector

Amenities Do Not Offset Wage Variation, by Sector ↵



Women Care More About Specific Amenities ↵

