

The Role of Firms and Job Mobility in the Assimilation of Immigrants: Former Soviet Union Jews in Israel 1990–2019

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Motivation (1/2)

Integration of immigrants: crucial topic for policy-making across the world

- ▶ Global growth in international migration
- ▶ 1970: 2.3% of world population; 2020: 3.6% (UN, 2022)

Immigrants' labor market success is a central dimension of integration

- ▶ Significance *for immigrants*
 - ▶ Significance *for host country aggregate productivity, fiscal & social insurance policies*
- Vast literature on the topic: (e.g., Chiswick, 1978; Lubotsky, 2007; Abramitzky et al., 2014)

Motivation (2/2)

Potentially important drivers of immigrants' prosperity **remain elusive to quantify:**

- ▶ Importance of **job search and job mobility**?
 - ▶ Key for young workers' progression (Topel, 1992; Bagger et al., 2014)
- ▶ Importance of **heterogeneous employers** and the **firm ladder**?
 - ▶ Identity of one's employer impacts wage determination (Abowd et al., 1999; Card et al., 2018)

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Current limitations: institutions and data

1. **Regulations** limiting immigrants' job mobility **mask root economic forces**
 - ▶ E.g., unauthorized immigrants, employer-linked visas
2. Immigrants' careers not accurately captured by admin. datasets

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⇒ *How can **firms** and the **climbing of the firm ladder** shape immigrants' labor market outcomes and convergence with natives?*

This Paper (1/2)

Context: historical mass migration ~1m. former Soviet Union Jews to Israel (1990s)

- ▷ Immigrants became Israeli citizens on arrival
- ▷ No differential regulatory restrictions
- ⇒ Key institutional feature: *unconstrained assimilation*
 - ▷ Identify undistorted immigrant-native convergence dynamics
 - ▷ *Other* common immigration hurdles were present (language, culture, little wealth)

Data: Israeli population employer-employee data

- ▷ Long panel (29 years) + good coverage of immigrants immediately since arrival
- ▷ Avoids common pitfalls that arise when studying immigrants in admin. data

This Paper (2/2)

A detailed view into immigrants' labor market progression over 3 decades

1. **Employment and wage outcomes under unconstrained assimilation**
 - ▷ Gaps with natives and long-term convergence
2. **Estimate a group-specific AKM wage model**
 - ▷ Firms pay immigrant- and native-specific pay premiums
3. **Quantify role of firm pay premiums & job mobility for immigrants' progression**
 - ▷ Differential *sorting* (across high- vs. low-paying firms)
 - ▷ Differential *pay setting* (for immigrants vs. natives, within firms)
 - ▷ Immigrant-native differences in *firm-ladder climbing* behavior
4. **Beyond wages: immigrant-native convergence in job utility**
 - ▷ Revealed-preference measure of employer desirability (Sorkin, 2018)
 - ▷ Non-pay amenities

Literature contribution

1. Immigrants' labor market outcomes and convergence with natives

Chiswick, 1978; Borjas, 1985; Lubotsky, 2007; Cohen-Goldner et al., 2012; Abramitzky et al., 2014; Aydemir and Skuterud, 2008; Pendakur and Woodcock, 2010; Carneiro et al., 2012; Barth et al., 2012; Dustmann and Görlach, 2015; Damas de Matos, 2017; Rho and Sanders, 2021; Albert et al., 2021; Adda et al., 2022; Dostie et al., 2023

- Firms' role in wage assimilation + role of job mobility
- Unique institutional and data context: *unconstrained assimilation*
- Broader inequalities: Novel and sizable *job utility* immigrant-native gap

2. Migration and imperfect labor market competition, migration and firms

Naidu et al., 2016; Amior and Manning, 2021; Amior and Stuhler, 2022; Paserman, 2013; Beerli et al., 2021; Brinatti and Morales, 2021; Dustmann et al., 2024

- Within-firm differential pay setting + differential job search
- Illustrate relocation towards productive firms

3. Firm-driven wage inequality

Abowd et al., 1999; Card et al., 2013, 2016, 2018; Goldschmidt and Schmieder, 2017; Sorkin, 2017; Song et al., 2019; Bonhomme et al., 2019; Gerard et al., 2021; Dostie et al., 2023

- Dynamics + focus on within-firm pay premium gaps

Outline

Historical and Institutional Context

Data

Framework: Job Ladder, Wages, and Assimilation Statistics

Results

- Employment and wages

- Group-specific AKM estimation

- Firm pay premiums and job mobility

- Employer desirability

Historical context

- ▶ **1989:** USSR relaxed emigration restrictions, Soviet Jews started leaving massively
- ▶ Israel accepted FSU Jews unconditionally, encouraged immigration
- ▶ **1989-1999:** ~840,000 FSU Jews migrate to Israel (1989 pop.=4.5m)

New York Times

NEW YORK, SATURDAY, DECEMBER 22, 1990

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Men

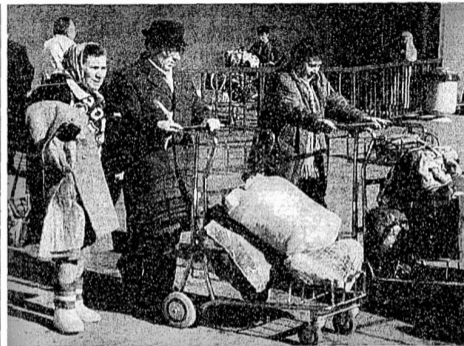
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Soviet Jews, part of the largest influx of immigrants to Israel in 40 years, arriving yesterday in Lod.

Rush of Soviet Jews to Israel Rises As Fears of Moscow Chaos Grow

By YOUSSEF M. IBRAHIM

Special to The New York Times

JERUSALEM, Dec. 21 — A sudden surge in the number of Soviet Jewish immigrants arriving in Israel this month may well bring the total of Jews settling here this year to more than 200,000, making it perhaps the largest influx of immigrants in 40 years.

The Government has ordered El Al, the national airline, to place every available plane at the disposal of the

week at the rate of 3,000 to 3,500 a day, while the average for November was around 1,000 a day.

In addition, Israeli officials say they have worked out an agreement with Ethiopia under which as many as 20,000 Ethiopian Jews may arrive in Israel this month.

May Be a Record Year

Clearly elated by the surge of immi-

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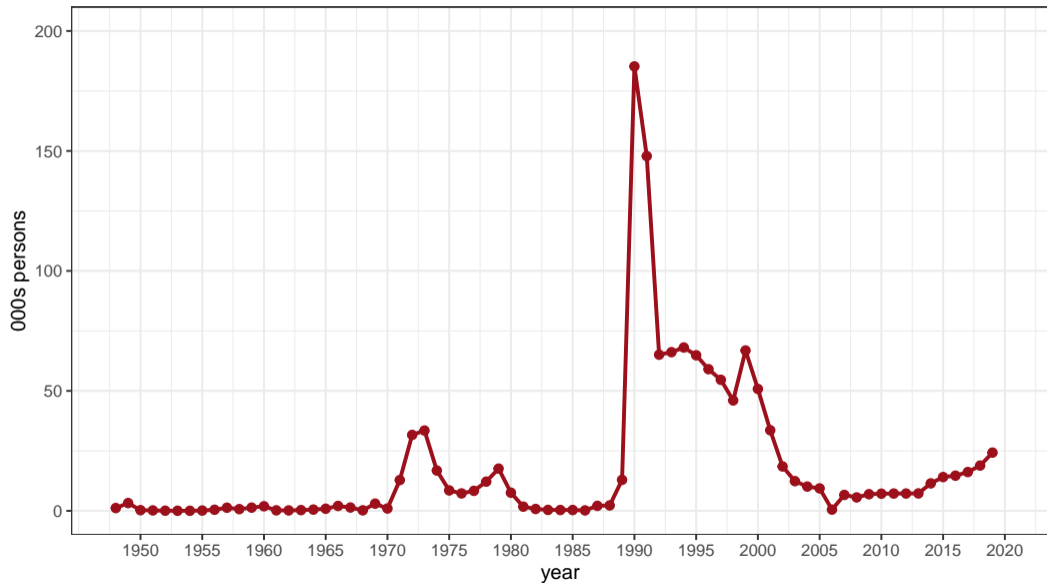
Thousands Go to Count
in Show of War Readir

By PATRICK E. TYLER

Special to The New York Times

BANI SAD, Iraq, Dec. 21 —
thousands of poor Iraqis from
Baghdad's largest Muslim

Former Soviet Union Migration to Israel (Israel Central Bureau of Statistics) [more](#)



Historical context

- ▶ Negative effects on natives? None, or modest and short-lived
Friedberg, 2001; Cohen-Goldner and Paserman, 2011; Cohen-Goldner et al., 2012
- ▶ FSU immigrants were **highly educated**
- ▶ FSU immigrants faced **many barriers in Israel**
 - ▶ Poor portability of skills/qualifications
 - ▶ Little wealth
 - ▶ Did not speak Hebrew
 - ▶ Did not follow Judaism cultural practices in FSU
 - ▶ Many not Jewish according to Orthodox Jewish law
- ▶ Comprehensive but modest assistance to new arrivals
 - ▶ e.g., Hebrew classes, housing subsidies
 - ▶ Financial support: modest and short term

Institutional Setting: *Unconstrained Assimilation*

Citizenship on arrival:

- No differential labor market regulations compared to natives
- Immigrants quickly show up on administrative data
 - Less worry about informality
- Unrestricted job mobility
 - We can study assimilation free of regulatory constraints
 - ≠ H-1B visas in US and similar programs (e.g., Canada, Australia, Sweden)
 - ≠ Undocumented immigrants

▸ Wage setting in Israel



Prime Minister Yitzhak Rabin with FSU immigrants, 1994

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Data: Population administrative records from Israel

1. Matched employer-employee records (1985–2019)
 - Person and firm IDs, monthly firm-worker indicators, monthly wage, industry
2. Israeli Population Registry
 - Demographics, **country of birth, date of immigration to Israel**

Sample Selection: Years 1991–2019, persons of age 25–59

1. FSU-born immigrants who arrived in Israel between 1990–1999
2. Jewish, non-ultra-Orthodox Israeli natives (*robustness: all Israel*)

Dual Connected Sample

- 85%–88% of total employment
- 94% of total FSU employment

▸ Summary statistics, males

▸ Summary statistics, females

▸ Dual connected sample details

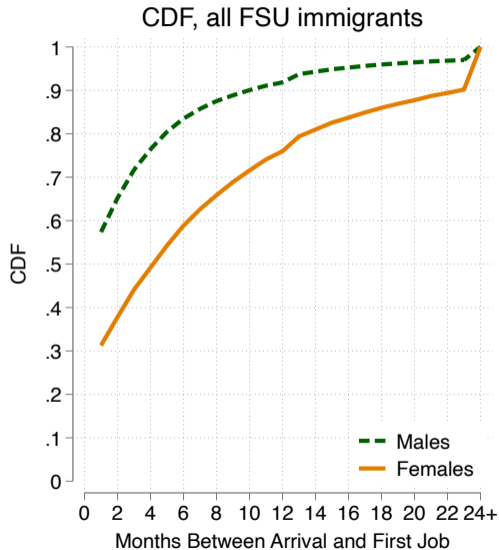
▸ Age at arrival distribution

Key features of the data

Uniquely well suited to study immigrants' progress in the labor market since arrival

1. Long panel on all immigrants regardless of length of stay
2. Population-level coverage
3. Precise date of arrival to the country
4. Knowledge of immigration status
5. Immediately good admin. coverage of immigrants' labor market outcomes

Months since arrival in Israel to first job



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Search Model Intuition: Why Gaps and Convergence Arise

Simple job-ladder logic (from the paper's framework):

- ▶ Natives have more host-country search capital; newly arrived immigrants start lower in the offer distribution
- ▶ Immigrants therefore accept lower-quality early matches and face larger initial wage and firm-pay-premium gaps
- ▶ As immigrants accumulate search time, they receive and accept better offers, climbing the firm ladder and narrowing gaps

Three implications we take to the data:

- ▶ Higher immigrant job mobility, especially early after arrival
- ▶ Positive immigrant-native gap in ladder-jump size (conditional on switching)
- ▶ Potential within-firm pay differences if immigrants have weaker bargaining power / outside options

Group-Specific Job Ladder Wage Model

AKM model, augmented with assimilation and group-specific firm pay premiums:

$$\ln w_{it} = \theta_{A_{it}} + \alpha_i + \psi_{J(i,t)}^{g(i)} + X'_{it}\beta + \varepsilon_{it}$$

- ▷ $\ln w_{it}$ = log monthly wage
- ▷ $g(i) \in \{\text{native } N, \text{FSU immigrant } M\}$
- ▷ $\theta_{A_{it}} \equiv f(A_{it}) = f(\text{years since arrival in Israel})$
- ▷ α_i = person effect
- ▷ ψ_j^g = **pay premium** firm j pays to workers of group g
- ▷ X_{it} = time and age effects
- ▷ ε_{it} = error term

Pay premiums ψ_j^g are **time-invariant**, but **firm entry** and **exit** are allowed

- ▷ Evidence on persistence of firm pay premiums (Lachowska et al., 2020)
- ▷ Importance of changing composition of firms (Card et al., 2013; Sorkin and Wallskog, 2023)

What's in a firm pay premium?

Two different **wage-setting models** result in AKM specification:

- ▶ Rent sharing model (Card, Cardoso, Kline, 2016)
- ▶ Monopsonistic wage setting model (Card, Cardoso, Heining, Kline, 2018)

Drivers of heterogeneous firm pay premiums ψ_j^g :

- ▶ *Between-firm* differences in pay premiums:
 - Related to firm productivity (average match surplus, value-added per worker)
- ▶ *Within-firm* differences in pay premiums for immigrants vs. natives:
 - Differences in reservation wages, bargaining power, outside options, or firm-specific labor supply elasticities

Identification and normalization

$$\ln w_{it} = \theta_{A_{it}} + \alpha_i + \psi_{J(i,t)}^{g(i)} + X'_{it}\beta + \varepsilon_{it}$$

- ▶ Identification of firm effects thanks to **firm switchers**
 - ▶ Large N for FSU immigrants + long panel
- ▶ OLS provides consistent estimates under exogenous mobility assumption
 - ▶ ε_{it} conditionally independent of employer transitions
- ▶ Specification checks consistent with exogenous mobility assumption:
 - ▶ Event studies of firm switchers ▶ wages, m ▶ wages, f ▶ firm FE, m ▶ firm FE, f ▶ symmetry
 - ▶ Residuals ▶ average residuals
- ▶ Firm fixed effects across groups are not comparable without a **normalization**
 - ▶ Assume mean pay premium in **restaurant** industry is equal to zero for all groups (Card et al., 2016; Gerard et al., 2021) ▶ CDF industry
 - ▶ If assumption fails: estimated within-firm gaps most likely *lower bound*

Assimilation statistics: Overall wage gap

Wage model: $\ln w_{it} = \theta_{A_{it}} + \alpha_i + \psi_{J(i,t)}^{g(i)} + X'_{it}\beta + \varepsilon_{it}$

Statistic: Immigrant-native wage gap, as a function of time since arrival

$$G_A^W \equiv \mathbb{E}(\ln w_{it} | M_i, A_{it}, X_{it}) - \mathbb{E}(\ln w_{it} | N_i, X_{it})$$

Assimilation statistics: Overall wage gap

Wage model: $\ln w_{it} = \theta_{A_{it}} + \alpha_i + \psi_{J(i,t)}^{g(i)} + X'_{it}\beta + \varepsilon_{it}$

Statistic: Immigrant-native **wage gap**, as a function of **time since arrival**

$$G_A^w \equiv \mathbb{E}(\ln w_{it} | M_i, A_{it}, X_{it}) - \mathbb{E}(\ln w_{it} | N_i, X_{it})$$

Interpretation:

$$G_A^w = \underbrace{\theta_{A_{it}}}_{\text{non-firm assimilation}} + \underbrace{\mathbb{E}(\alpha_i | M_i, A_{it}) - \mathbb{E}(\alpha_i | N_i)}_{\text{baseline differences}} + \underbrace{\mathbb{E}(\psi_{J(i,t)}^M | M_i, A_{it}) - \mathbb{E}(\psi_{J(i,t)}^N | N_i)}_{\text{firm assimilation: pay setting and sorting}}$$

OLS estimation: $\ln w_{it} = M_i \cdot \left[\sum_{a=1}^{29} \beta_a \cdot \mathbf{1}\{A_{it} = a\} \right] + X'_{it}\gamma + \varepsilon_{it}$

▶ within-firm wage gap

Assimilation statistics: Firm pay premium gap

Wage model: $\ln w_{it} = \theta_{A_{it}} + \alpha_i + \psi_{J(i,t)}^{g(i)} + X'_{it}\beta + \varepsilon_{it}$

Statistic: Immigrant-native **gap in pay premium**, as a function of **time since arrival**

$$G_A^\psi = \mathbb{E} \left(\psi_{J(it)}^M | M_i, A_{it} \right) - \mathbb{E} \left(\psi_{J(i,t)}^N | N_i \right)$$

2-step OLS estimation: $\widehat{\psi}_{J(i,t)}^{g(i)} = M_i \cdot \left[\sum_{a=1}^{29} \beta_a \cdot \mathbf{1}\{A_{it} = a\} \right] + X'_{it}\gamma + \varepsilon_{it}$

Assimilation statistics: Firm pay premium gap

Wage model: $\ln w_{it} = \theta_{A_{it}} + \alpha_i + \psi_{J(i,t)}^{g(i)} + X'_{it}\beta + \varepsilon_{it}$

Statistic: Immigrant-native **gap in pay premium**, as a function of **time since arrival**

$$G_A^\psi = \mathbb{E} \left(\psi_{J(i,t)}^M | M_i, A_{it} \right) - \mathbb{E} \left(\psi_{J(i,t)}^N | N_i \right)$$

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Decomposition: differential pay setting vs. differential sorting

$$\underbrace{G_A^\psi}_{\text{firm pay premium gap}} = \underbrace{\mathbb{E}(\psi_{J(i,t)}^M - \psi_{J(i,t)}^N | M_i, A_{it})}_{\text{differential pay setting (within)}} + \underbrace{\mathbb{E}(\psi_{J(i,t)}^N | M_i, A_{it}) - \mathbb{E}(\psi_{J(i,t)}^N | N_i)}_{\text{differential sorting (between)}}.$$

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- Firm pay premiums and job mobility

- Employer desirability

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Employment and wages

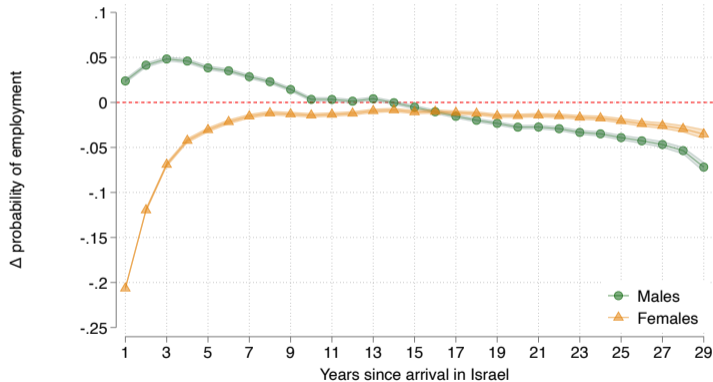
Group-specific AKM estimation

Firm pay premiums and job mobility

Employer desirability

Employment assimilation

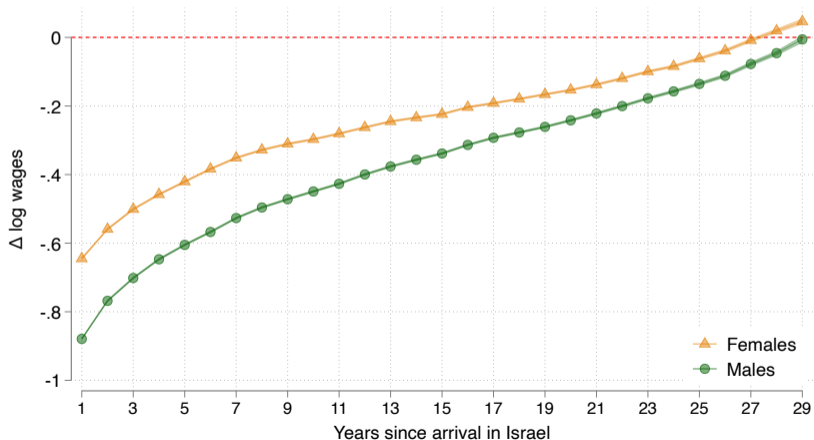
$$employed_{it} = M_i \cdot \left[\sum_{a=1}^{29} \beta_a \cdot \mathbf{1}\{A_{it} = a\} \right] + X'_{it}\gamma + \varepsilon_{it}$$



$Pr(\text{employment} = 1 | \text{native, males}) = 0.652$, $Pr(\text{employment} = 1 | \text{native, females}) = 0.657$

Wage assimilation

$$\ln w_{it} = M_i \cdot \left[\sum_{a=1}^{29} \beta_a \cdot \mathbf{1}\{A_{it} = a\} \right] + X'_{it}\gamma + \varepsilon_{it}$$



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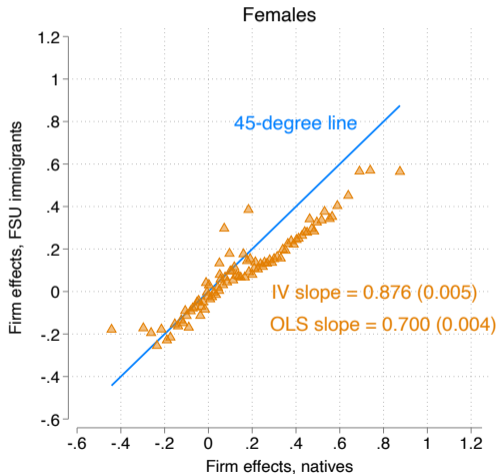
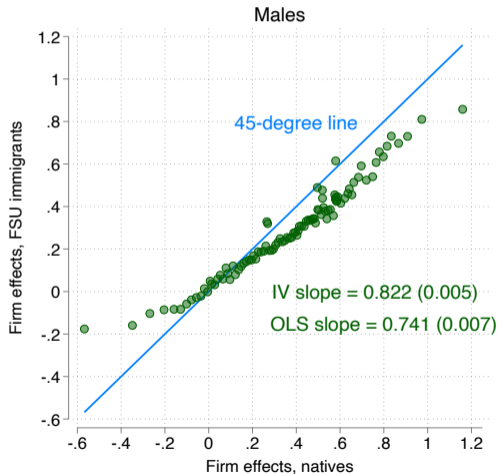
Group-specific AKM estimation

Firm pay premiums and job mobility

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Immigrant-specific and native-specific firm pay premiums

100 equally-sized bins ordered according to $\hat{\psi}_j^N$



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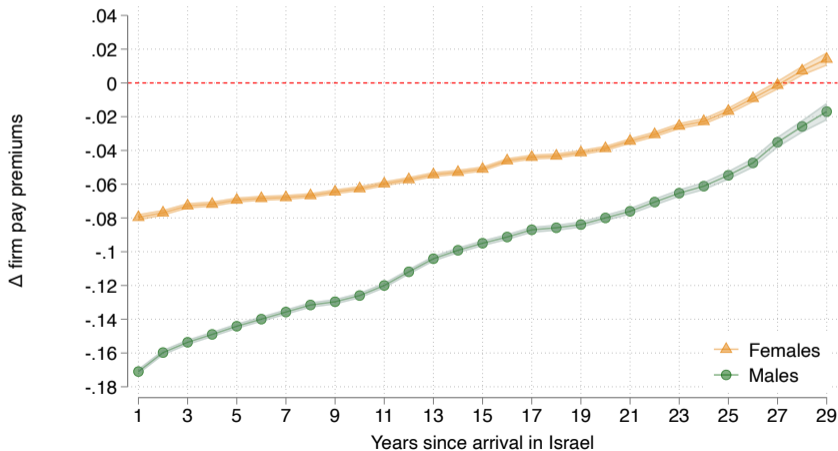
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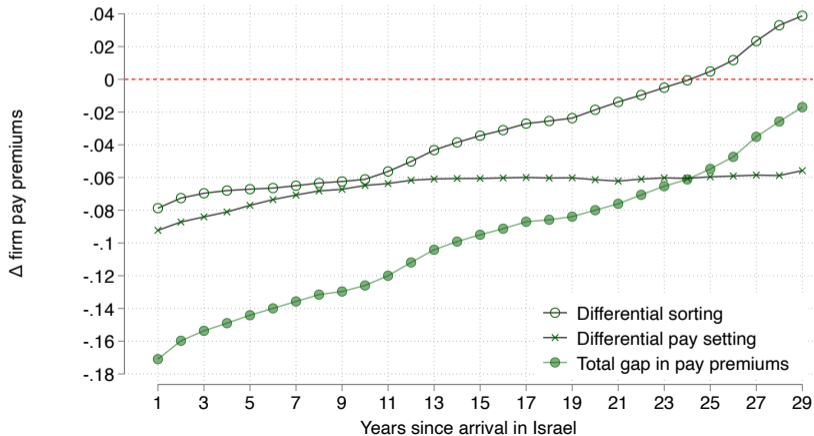
Firm pay premium assimilation

$$\widehat{\psi}_{J(i,t)}^{g(i)} = M_i \cdot \left[\sum_{a=1}^{29} \beta_a \cdot \mathbf{1}\{A_{it} = a\} \right] + X'_{it}\gamma + \varepsilon_{it}$$



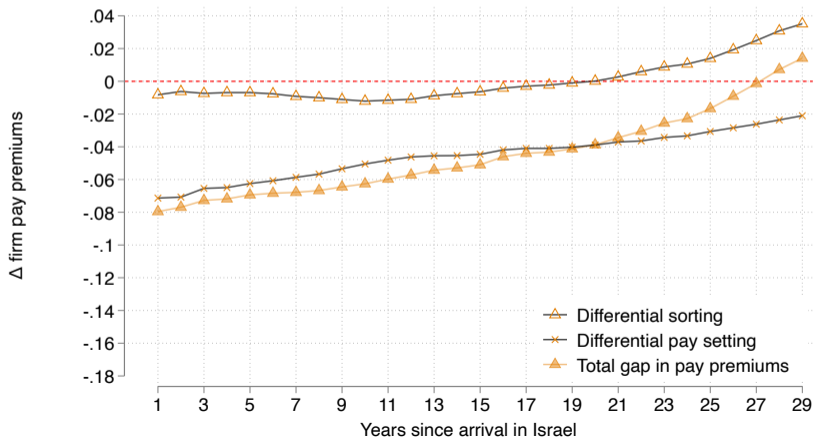
Decomposition: Pay Setting vs. Sorting - Males

$$\underbrace{\mathbb{E}(\psi_{J(it)}^M | M, A_{it}) - \mathbb{E}(\psi_{J(i,t)}^N | N)}_{\text{firm pay premium gap (total)}} = \underbrace{\mathbb{E}(\psi_{J(i,t)}^M - \psi_{J(i,t)}^N | M, A_{it})}_{\text{differential pay setting (within)}} + \underbrace{\mathbb{E}(\psi_{J(i,t)}^N | M, A_{it}) - \mathbb{E}(\psi_{J(i,t)}^N | N)}_{\text{differential sorting (between)}}$$

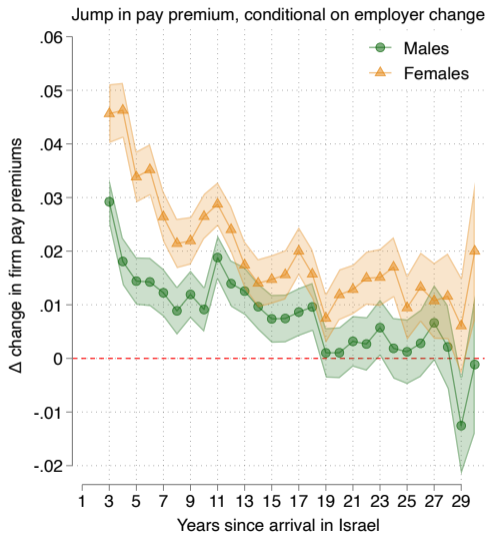
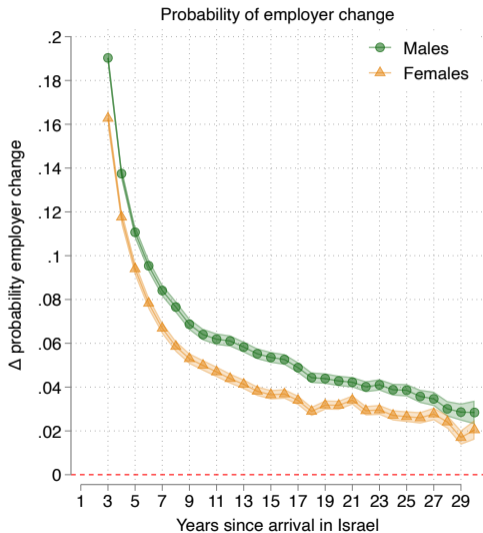


Decomposition: Pay Setting vs. Sorting - Females

$$\underbrace{\mathbb{E}(\psi_{J(it)}^M | M, A_{it}) - \mathbb{E}(\psi_{J(i,t)}^N | N)}_{\text{firm pay premium gap (total)}} = \underbrace{\mathbb{E}(\psi_{J(i,t)}^M - \psi_{J(i,t)}^N | M, A_{it})}_{\text{differential pay setting (within)}} + \underbrace{\mathbb{E}(\psi_{J(i,t)}^N | M, A_{it}) - \mathbb{E}(\psi_{J(i,t)}^N | N)}_{\text{differential sorting (between)}}$$



Assimilation in job mobility and firm-ladder climbing



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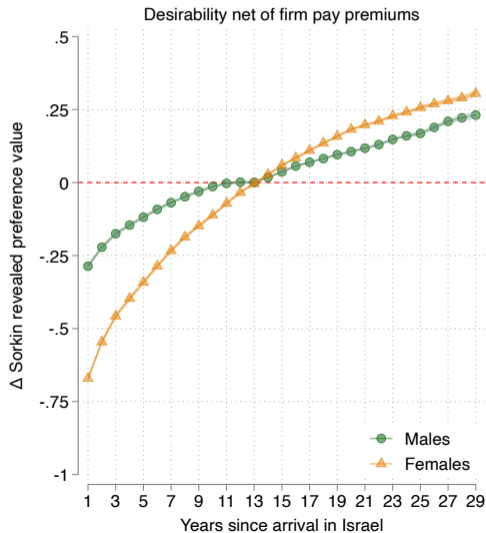
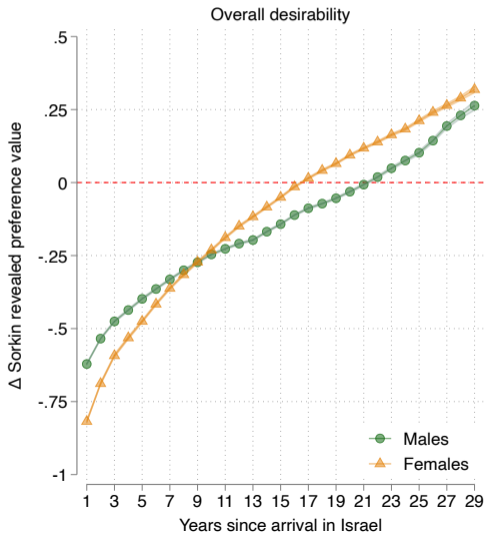
Group-specific AKM estimation

Firm pay premiums and job mobility

Employer desirability

Immigrant-native gap in employer desirability

Amenities *exacerbate* immigrant-native inequality



Additional Findings

- ▶ Firm size [▶ go](#)
- ▶ Firm age [▶ go](#)
- ▶ Distance to Tel Aviv [▶ go](#)
- ▶ Segregation [▶ go](#)
- ▶ Wage assimilation, arrival age and year FE [▶ go](#)
- ▶ Firm pay premiums assimilation, arrival age and year FE [▶ go](#)

Conclusion

A new and detailed view into immigrants' labor market progress:

- ▷ Historical mass migration episode, citizenship on arrival
- ▷ Lack of regulatory barriers → “*unconstrained assimilation*” & root economic forces
- ▷ Uniquely well-suited data

Firm-to-firm job mobility can be valuable path for immigrants' integration

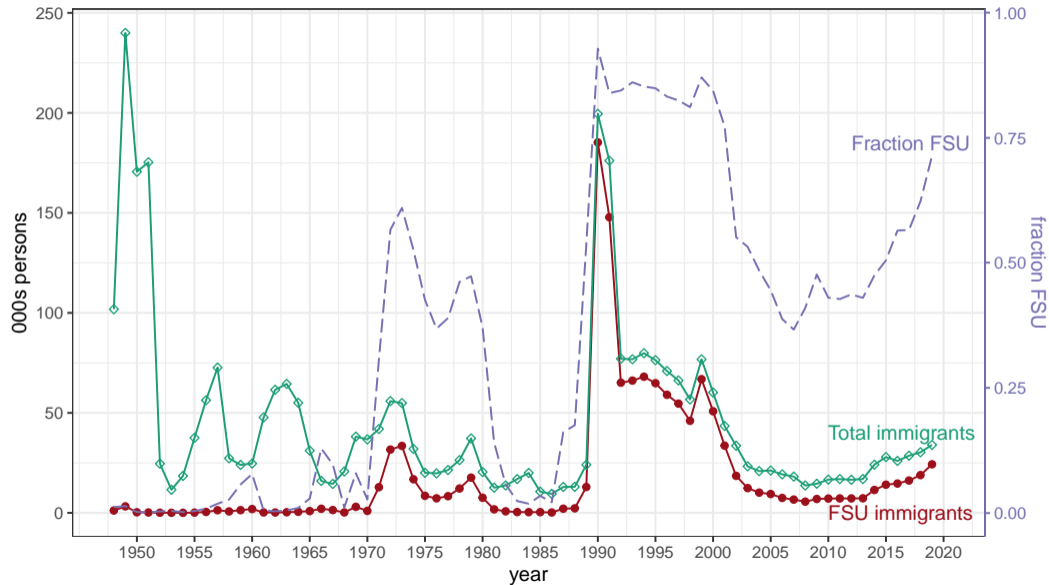
- ▷ **Firm Pay Premium Gap** explains **12–20%** of wage gap on arrival and **17–24%** over the first 10 years
- ▷ Differential *sorting* and differential *pay setting* both quantitatively relevant
 - ▷ At arrival, pay-setting share: 54% (men), 89% (women); sorting share: 45% (men), 11% (women)
- ▷ FSU immigrants **change jobs** more often than natives, with a positive differential even after 29 years
- ▷ **Job utility gap**: non-pay amenities gaps on arrival are 0.38 SD (men) and 0.94 SD (women), and amenities exacerbate pay inequality

Food for thought

- ▷ Aggregate implications: Mass **labor reallocation** towards more productive firms
- ▷ Policy: Employer-linked visa programs; regulations limiting job mobility

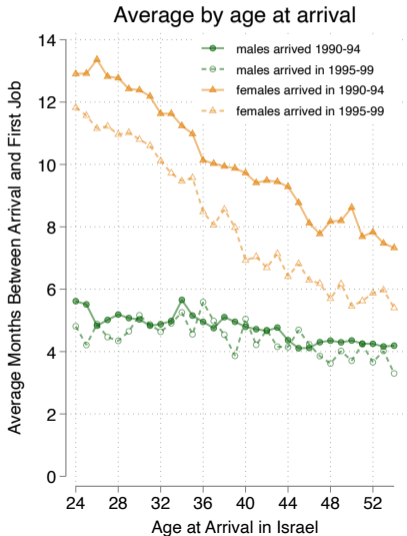
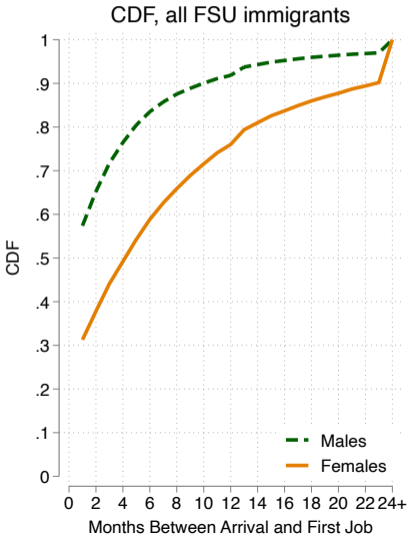
APPENDIX SLIDES

FSU and Total Migration to Israel (Israel Central Bureau of Statistics) [▶ back](#)

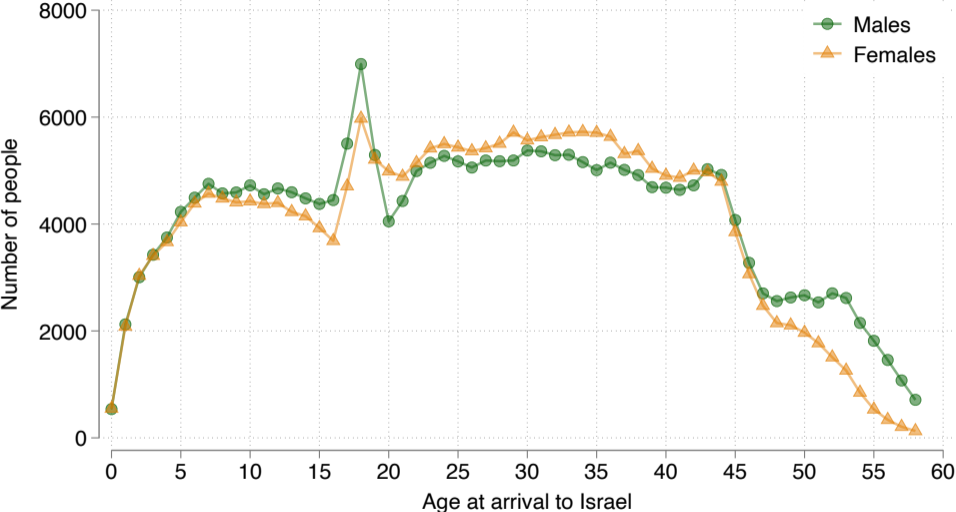


Months since arrival in Israel to first job

Age and cohort effects



Age at arrival for FSU immigrants in our sample



Summary statistics: Males

	Full Sample			Separate Connected Sample			Dual Connected Sample		
	All	Natives	Immigrants	All	Natives	Immigrants	All	Natives	Immigrants
Worker-years									
N	14,184,464	11,473,932	2,710,532	14,049,132	11,357,729	2,691,403	12,004,116	9,450,027	2,554,089
Salary (2019 Shekels)	15,425	16,464	11,026	15,468	16,515	11,048	15,943	17,217	11,229
Age	39.41	38.96	41.29	39.40	38.94	41.31	39.43	38.93	41.30
Years since arrival	-	-	13.77	-	-	13.76	-	-	13.72
Immigration year	-	-	1993.08	-	-	1993.08	-	-	1993.06
Birth year	1968.02	1968.60	1965.56	1968.03	1968.62	1965.54	1967.82	1968.45	1965.48
Firm: Size	3110.48	3346.94	2109.51	3140.40	3381.15	2124.44	3673.36	4061.23	2238.26
Firm: Age	13.31	13.38	13.02	13.35	13.42	13.05	14.31	14.53	13.47
Firm: Immigrant share	0.13	0.09	0.29	0.13	0.10	0.29	0.14	0.11	0.26
Workers									
N	1,248,506	1,005,521	242,985	1,225,820	987,031	238,789	1,144,119	909,032	235,087
Years observed	11.36	11.41	11.16	11.46	11.51	11.27	10.49	10.40	10.86
Immigration year	-	-	1993.27	-	-	1993.27	-	-	1993.26
Birth year	1971.13	1972.32	1966.21	1971.11	1972.31	1966.11	1970.96	1972.21	1966.12
Firms									
N	335,945	-	-	317,220	-	-	78,597	-	-
Years observed	6.40	-	-	6.43	-	-	10.95	-	-
Immigrant share	0.13	-	-	0.13	-	-	0.21	-	-
Avg. salary (2019 Shekels)	10,280	-	-	10,347	-	-	11,427	-	-
Firm size	14.33	-	-	15.01	-	-	44.89	-	-
Firm age	5.28	-	-	5.26	-	-	7.39	-	-

Summary statistics: Females

	Full Sample			Separate Connected Sample			Dual Connected Sample		
	All	Natives	Immigrants	All	Natives	Immigrants	All	Natives	Immigrants
Worker-years									
N	14,126,360	11,469,601	2,656,759	14,032,200	11,399,939	2,632,261	12,493,944	9,993,273	2,500,671
Salary (2019 Shekels)	9,600	9,969	8,004	9,619	9,988	8,022	9,859	10,288	8,146
Age	39.61	39.14	41.61	39.59	39.12	41.63	39.71	39.23	41.63
Years since arrival	-	-	14.37	-	-	14.36	-	-	14.36
Immigration year	-	-	1993.07	-	-	1993.07	-	-	1993.04
Birth year	1967.96	1968.46	1965.83	1967.97	1968.47	1965.80	1967.77	1968.27	1965.77
Firm: Size	12190.00	13657.58	5854.24	12271.76	13741.01	5908.65	13781.09	15673.36	6219.13
Firm: Age	15.13	15.36	14.15	15.17	15.39	14.19	15.99	16.34	14.60
Firm: Immigrant share	0.11	0.08	0.26	0.11	0.08	0.26	0.12	0.09	0.23
Workers									
N	1,233,509	998,316	235,193	1,215,521	985,208	230,313	1,163,015	936,391	226,624
Years observed	11.45	11.49	11.30	11.54	11.57	11.43	10.74	10.67	11.03
Immigration year	-	-	1993.33	-	-	1993.32	-	-	1993.32
Birth year	1971.41	1972.44	1967.03	1971.40	1972.44	1966.93	1971.32	1972.37	1967.00
Firms									
N	278,889	-	-	263,988	-	-	68,221	-	-
Years observed	6.39	-	-	6.45	-	-	11.24	-	-
Immigrant share	0.14	-	-	0.14	-	-	0.19	-	-
Avg. salary (2019 Shekels)	6,844	-	-	6,891	-	-	7,590	-	-
Firm size	16.87	-	-	17.59	-	-	50.63	-	-
Firm age	5.83	-	-	5.83	-	-	8.18	-	-

Dual Connected Sample Statistics

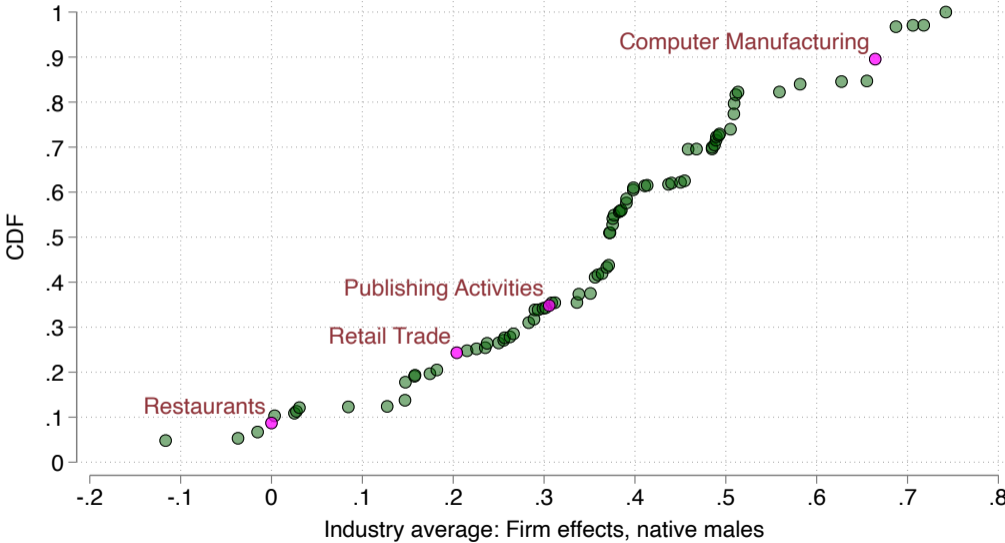
Percent of all worker-years in the Dual Connected Sample

- ▶ Men = 85%
 - ▶ Men, FSU = 94%
 - ▶ Men, natives = 82%
- ▶ Women = 88%
 - ▶ Women, FSU = 94%
 - ▶ Women, natives = 87%

Percent of all firms in the Dual Connected Sample = 23%

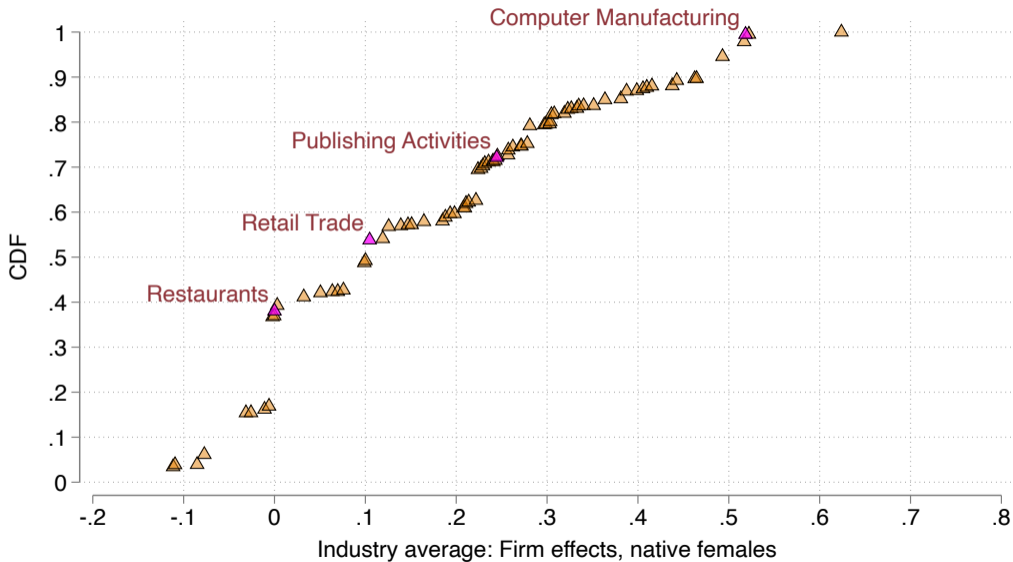
▶ back

CDF of industry averages of firm fixed effects - Native males



CDF of industry averages of firm fixed effects - Native females

[▶ back](#)



Assimilation statistics: **Within-firm wage gap**

Wage model: $\ln w_{it} = \theta_{A_{it}} + \alpha_i + \psi_{J(i,t)}^{g(i)} + X'_{it}\beta + \varepsilon_{it}$

Statistic: Immigrant-native wage gap, **controlling for employer identity**

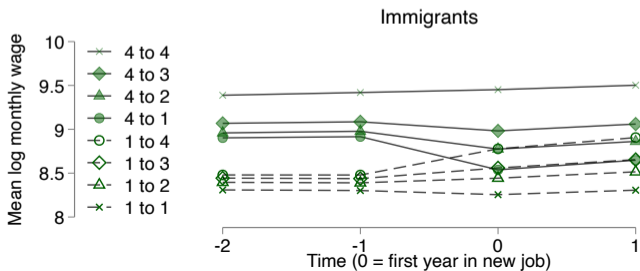
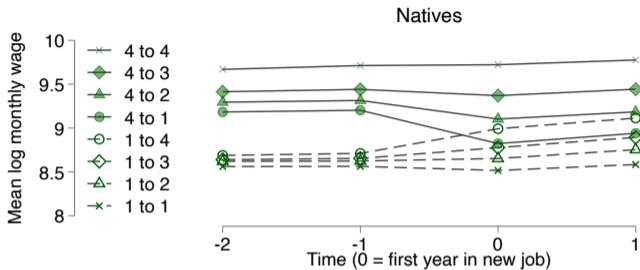
$$G_{A|J}^w \equiv \mathbb{E}(\ln w_{it} | M_i, A_{it}, J(i, t)) - \mathbb{E}(\ln w_{it} | N_i, J(i, t))$$

Interpretation:

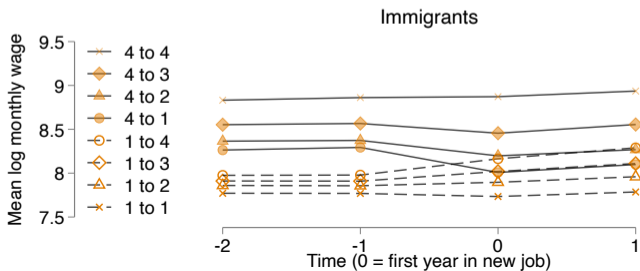
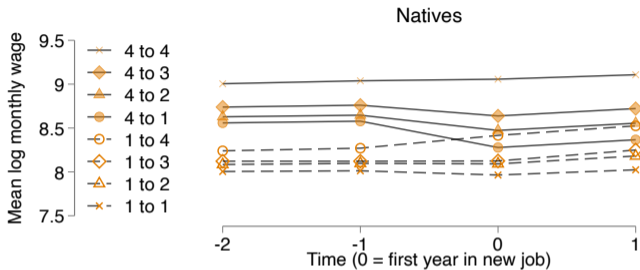
$$G_{A|J}^w = \underbrace{\theta_{A_{it}}}_{\text{non-firm assimilation}} + \underbrace{\mathbb{E}(\alpha_i | M_i, A_{it}, J(i, t)) - \mathbb{E}(\alpha_i | N_i, J(i, t))}_{\text{within-firm baseline differences}} \\ + \underbrace{\mathbb{E}(\psi_{J(i,t)}^M | M_i, A_{it}, J(i, t)) - \mathbb{E}(\psi_{J(i,t)}^N | N_i, J(i, t))}_{\text{firm assimilation: pay setting only}}$$

OLS estimation: $\ln w_{it} = M_i \cdot \left[\sum_{a=1}^{29} \beta_a \cdot \mathbf{1}\{A_{it} = a\} \right] + X'_{it}\gamma + \phi_{J(i,t)} + \varepsilon_{it}$

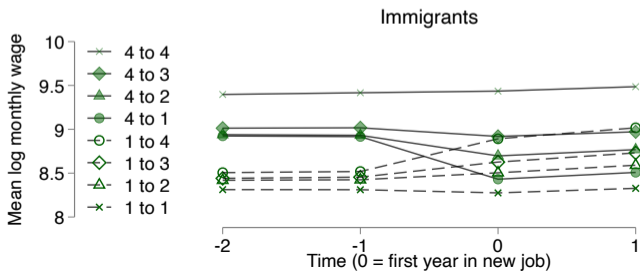
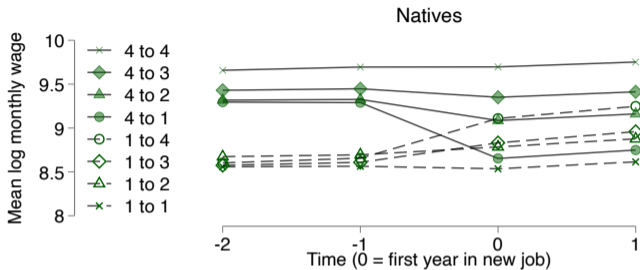
Mean Wages of Job Switchers, By Coworkers' Average Wage Quartile - Males



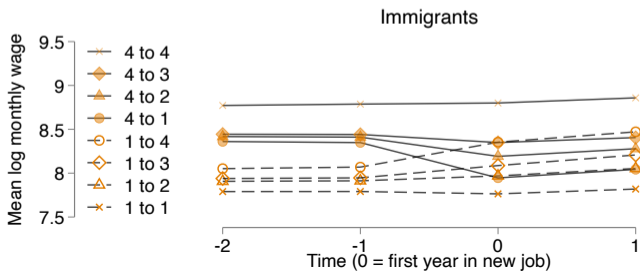
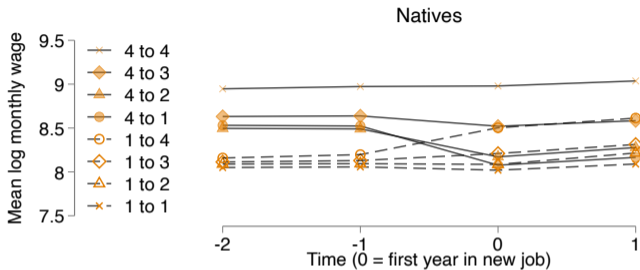
Mean Wages of Job Switchers, By Coworkers' Average Wage Quartile - Females



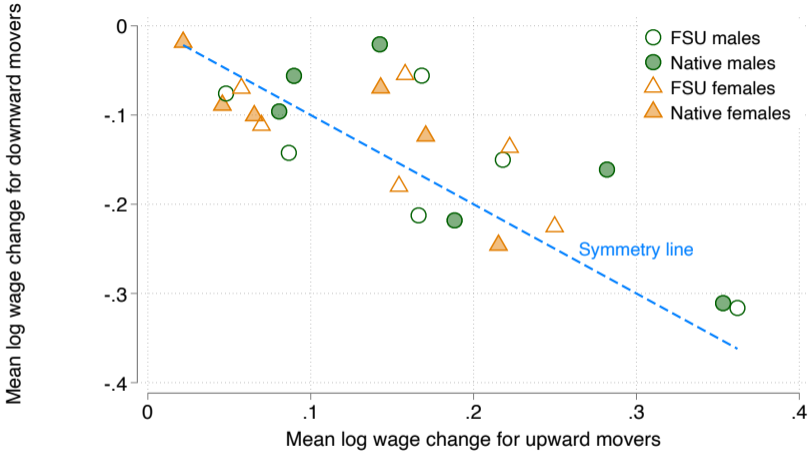
Mean Wages of Job Switchers, By Firm Pay Premium Quartile - Males



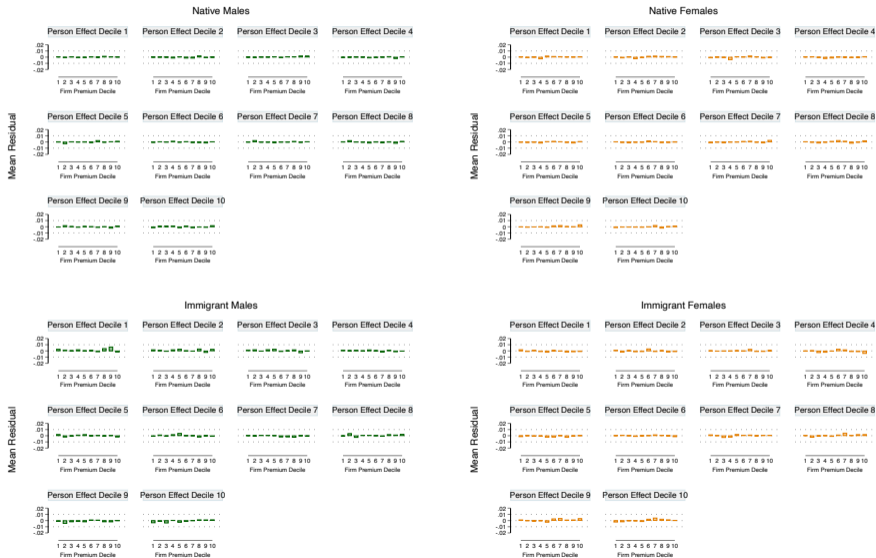
Mean Wages of Job Switchers, By Firm Pay Premium Quartile - Females



Symmetry of Wage Changes for Job Movers

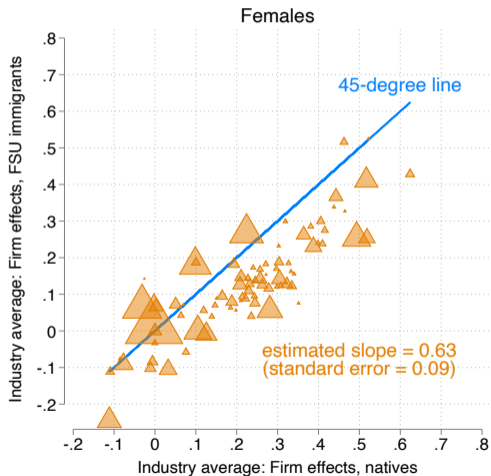
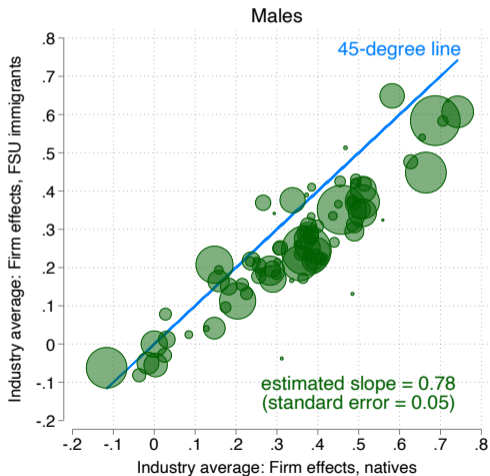


Group-Specific AKM Residuals Plot [▶ back](#)



Immigrant-specific and native-specific firm pay premiums

Industry averages

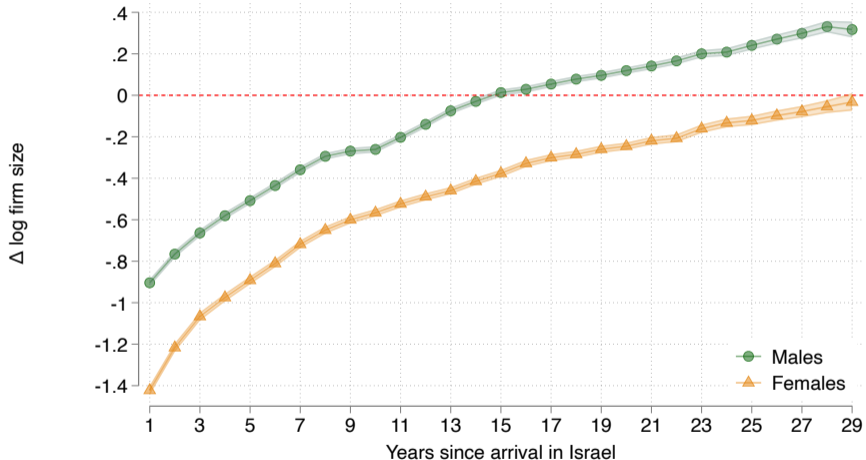


Summary of Estimated Group-Specific AKM Models

	FSU Males	FSU Fe- males	Native Males	Native Fe- males
	(1)	(2)	(3)	(4)
SD of log wages	0.586	0.567	0.707	0.608
SD of person effects	0.358	0.376	0.533	0.475
SD of firm effects	0.265	0.236	0.304	0.243
SD of covariates	0.242	0.250	0.265	0.282
Correlation of person/firm effects	0.220	0.217	0.090	0.090
Percentage of log wages variance due to:				
Person effect	37.3	43.9	56.9	61.1
Firm effect	20.5	17.4	18.5	16.0
Covariance person/firm effect	12.1	12.0	5.8	5.6
Firm effect + cov. person/firm	32.6	29.4	24.3	21.6
<i>N</i> person-year observations	2.6m	2.5m	9.5m	9.9m

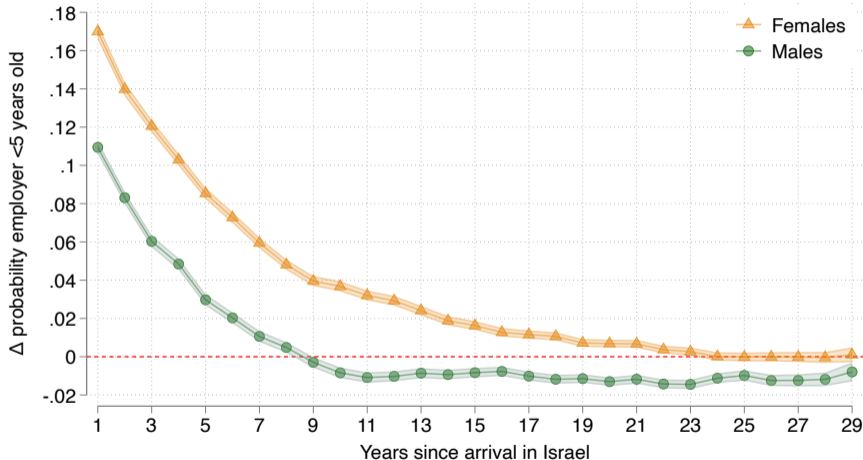
Employer size assimilation

(Log) Number of Employees



Employer age assimilation

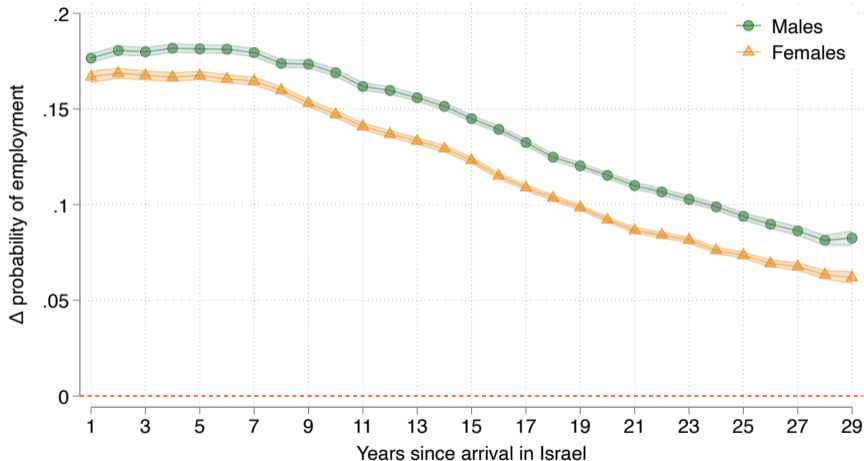
Dummy = 1 if employer age < 5 years old



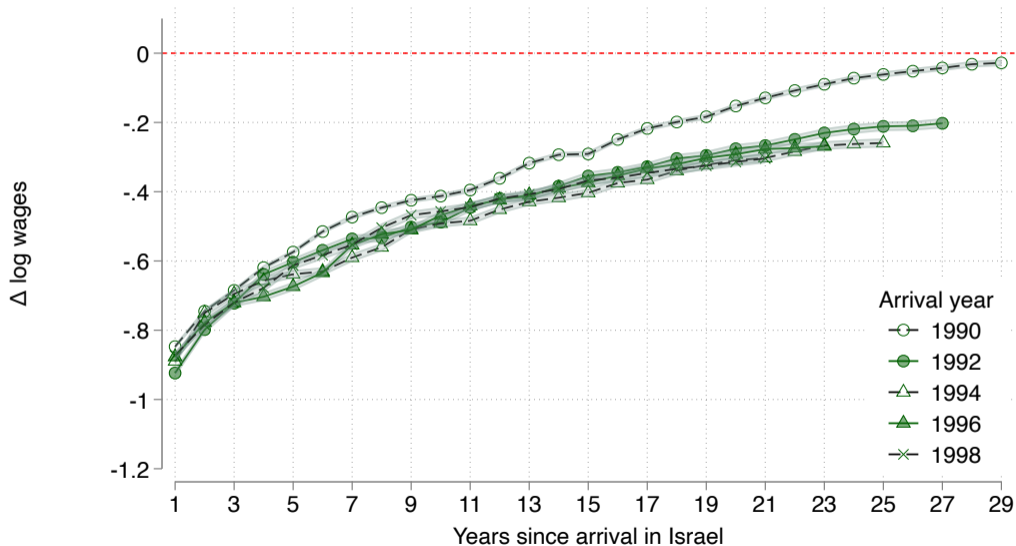
Note: $Pr(\text{YoungEmployer} = 1 | \text{native, males}) = 0.22$, $Pr(\text{YoungEmployer} = 1 | \text{native, females}) = 0.16$

Employment segregation assimilation

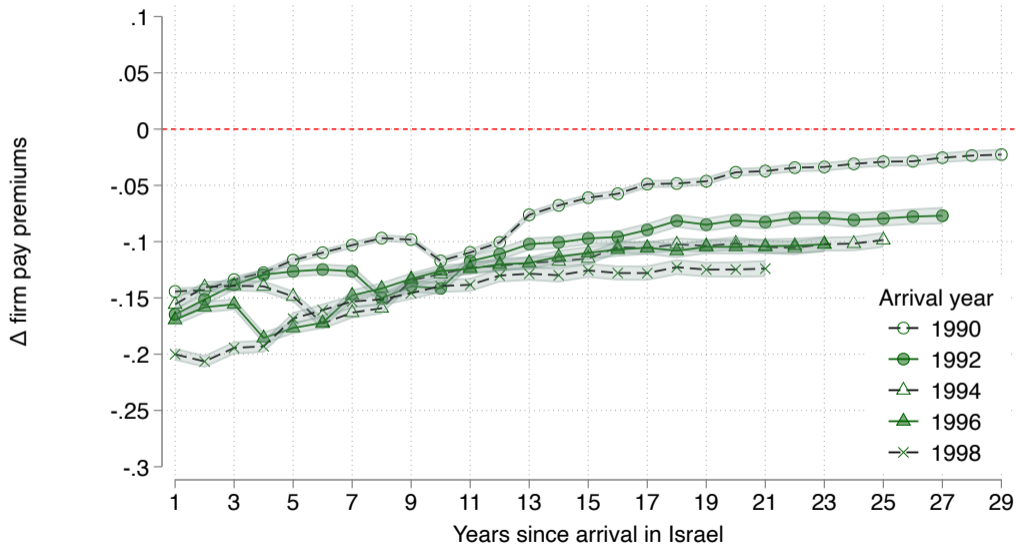
Dummy=1 if employer is > 50% FSU employees



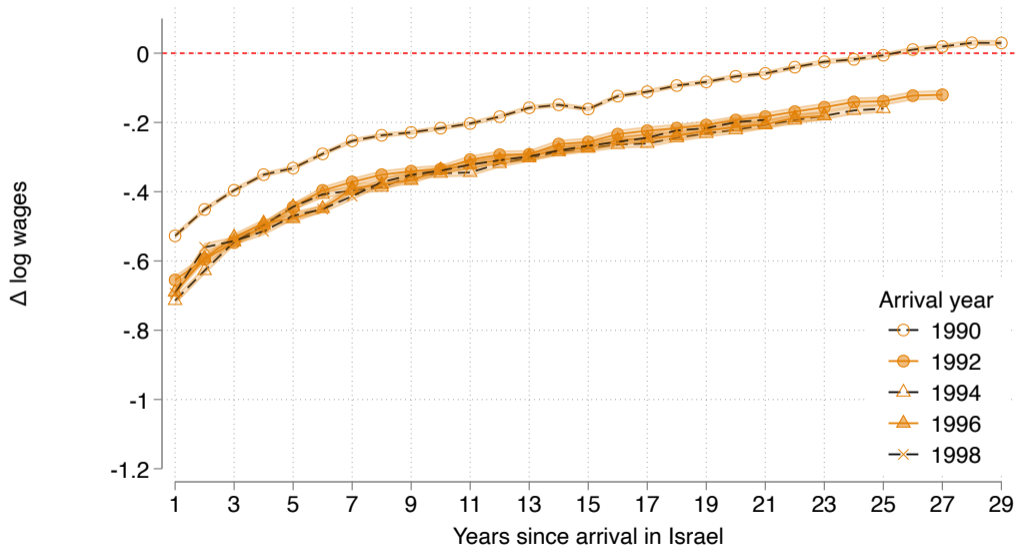
Year-of-arrival effects: Wage assimilation - Males



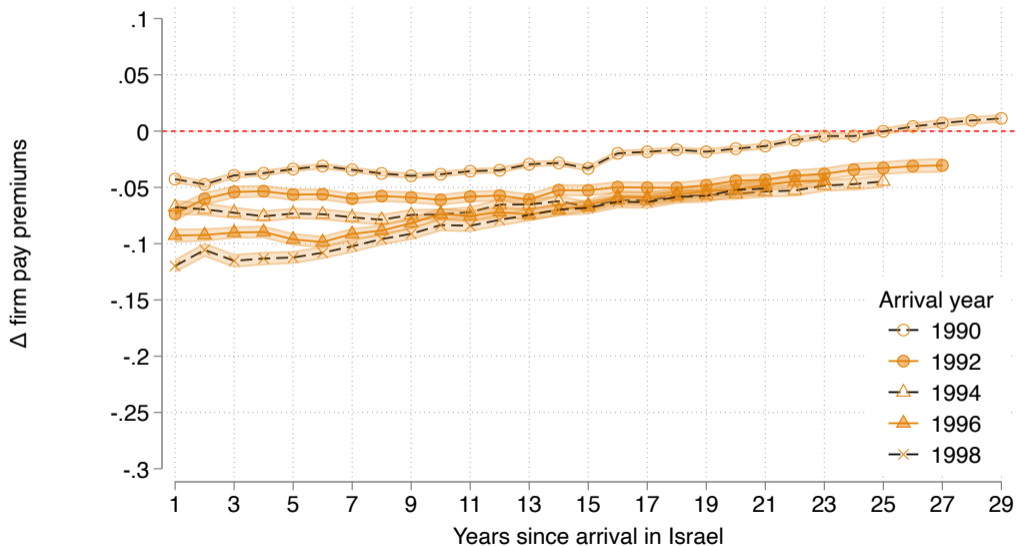
Year-of-arrival effects: Firm pay premium assimilation - Males



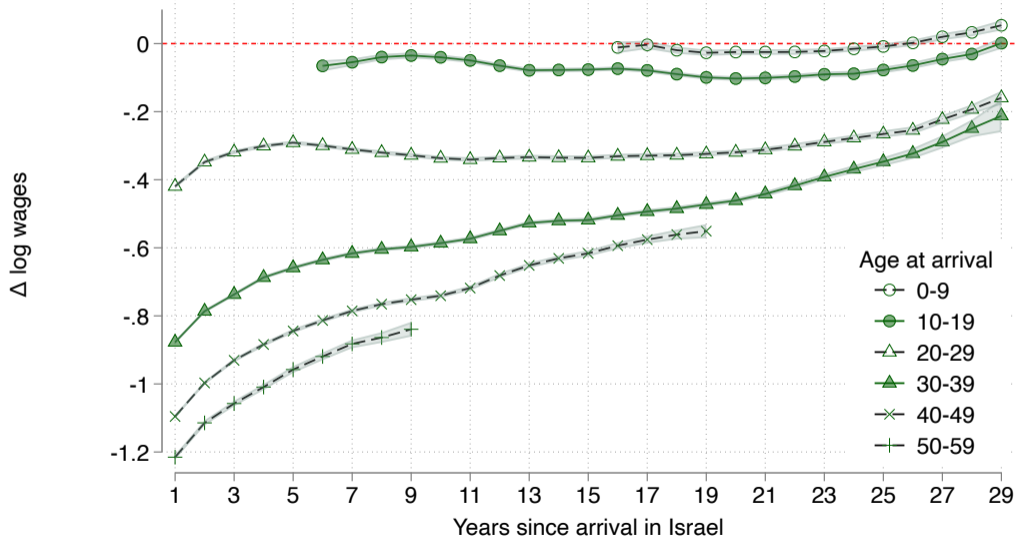
Year-of-arrival effects: Wage assimilation - Females



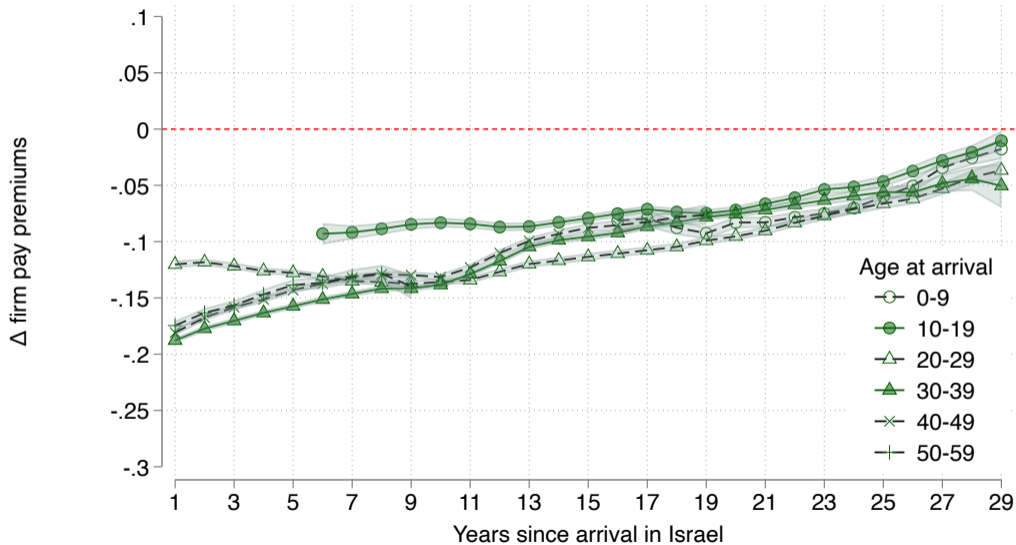
Year-of-arrival effects: Firm pay premium assimilation - Females



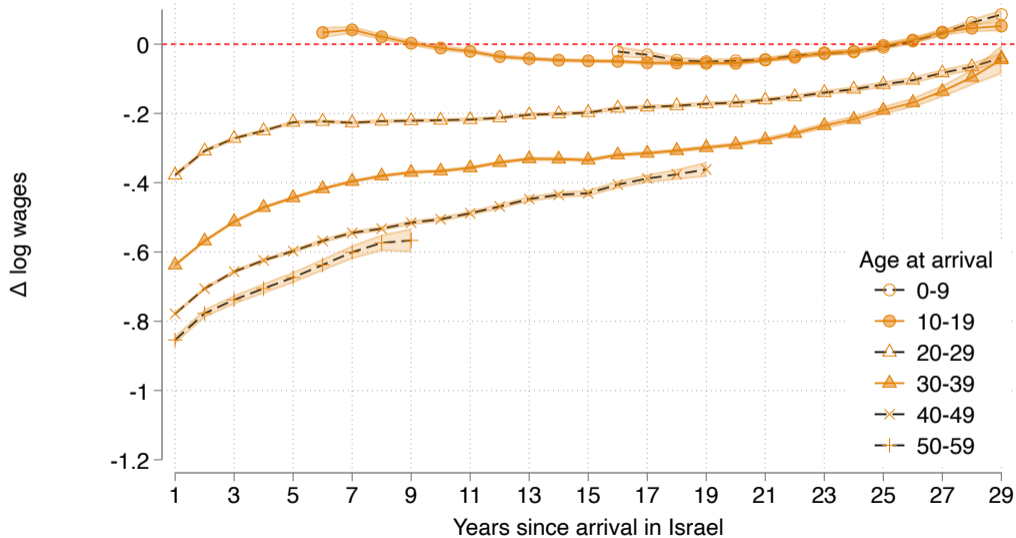
Age-at-arrival effects: Wage assimilation - Males



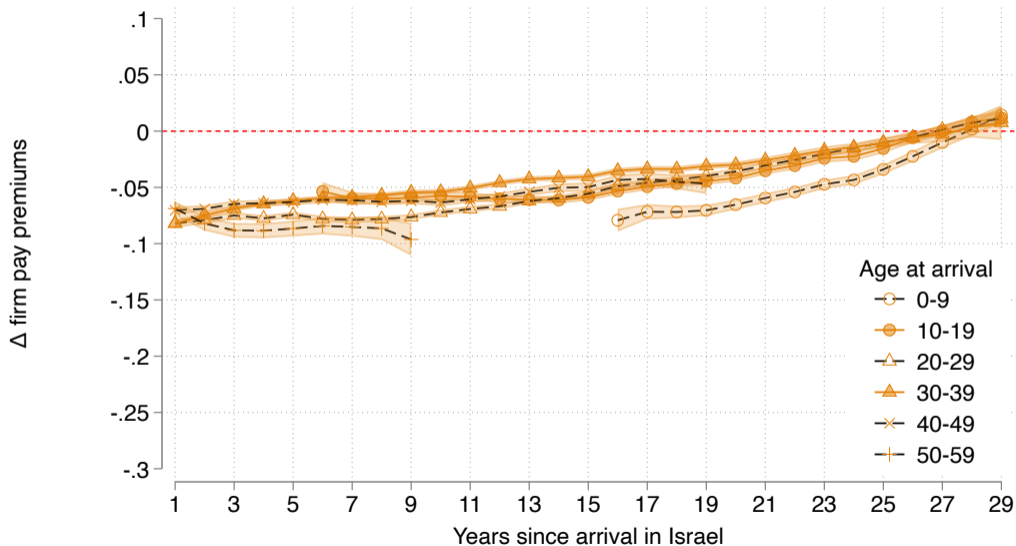
Age-at-arrival effects: Firm pay premium assimilation - Males



Age-at-arrival effects: Wage assimilation - Females



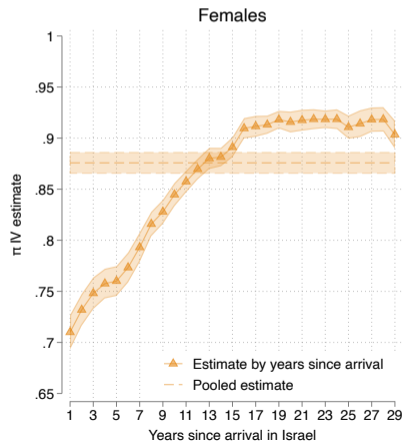
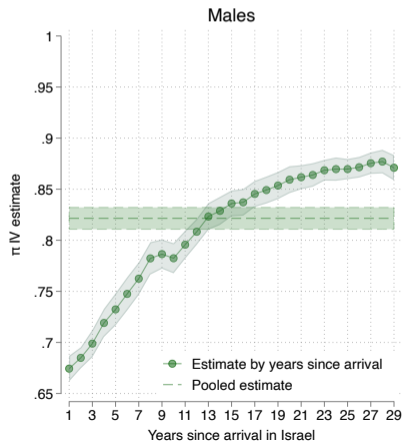
Age-at-arrival effects: Firm pay premium assimilation - Females



Correlation: $\hat{\psi}_j^N$, $\hat{\psi}_j^M$, and time since arrival [▶ back](#)

$$\hat{\psi}_{j(i,t)}^M = \pi \cdot \hat{\psi}_{j(i,t)}^N + \mathbf{X}'_{it}\beta + \nu_{it}$$

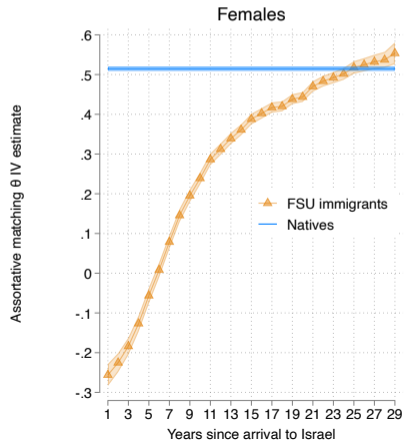
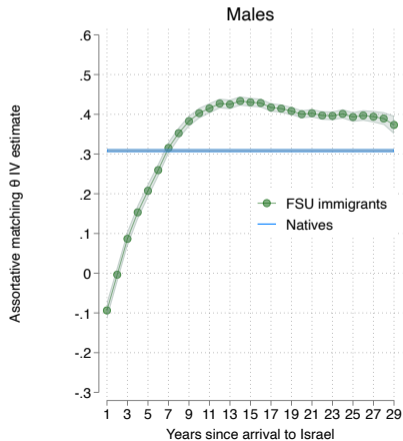
- ▶ Measurement error: split-sample IV for $\hat{\psi}_j^N$



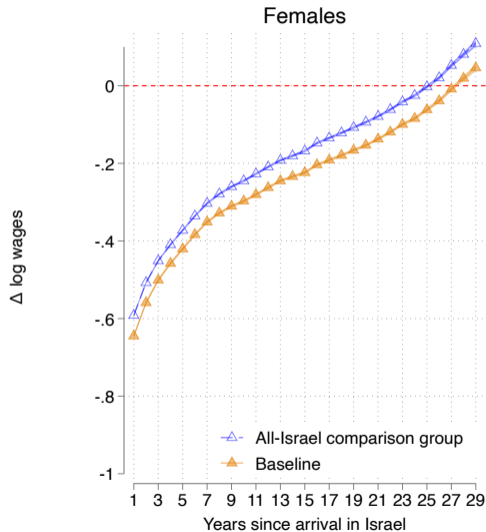
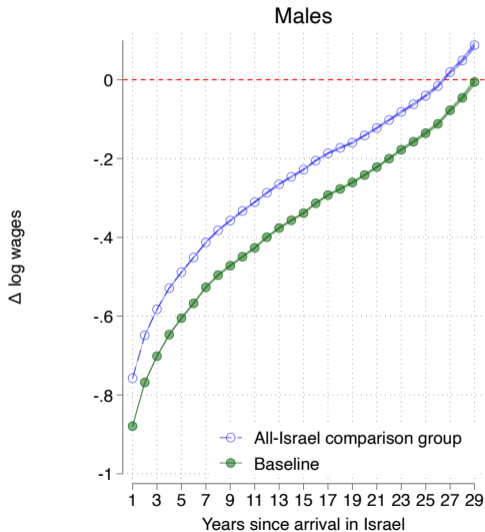
Worker-firm assortative matching ▶ back

$$\hat{\alpha}_i = \theta \cdot \hat{\psi}_{j(i,t)}^{g(i)} + X'_{it}\gamma + \eta_{it}$$

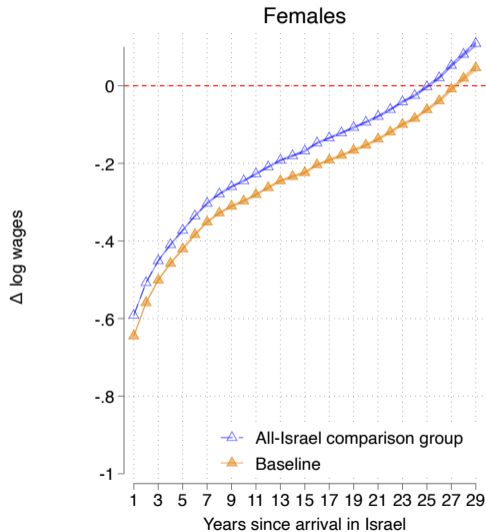
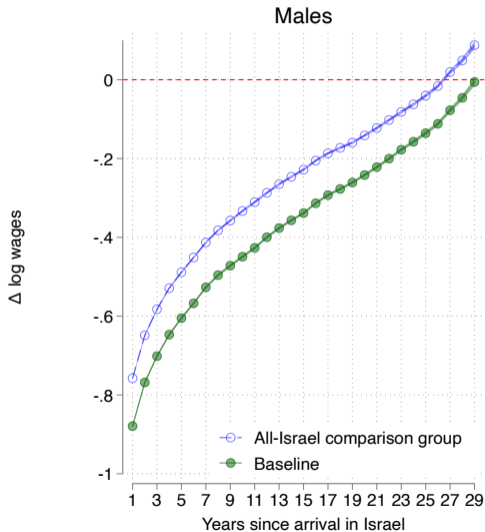
- ▶ Estimated separately by natives/immigrants and by years since arrival
- ▶ Measurement error: use IV (firm premium of other group) (Gerard et al. 2021)



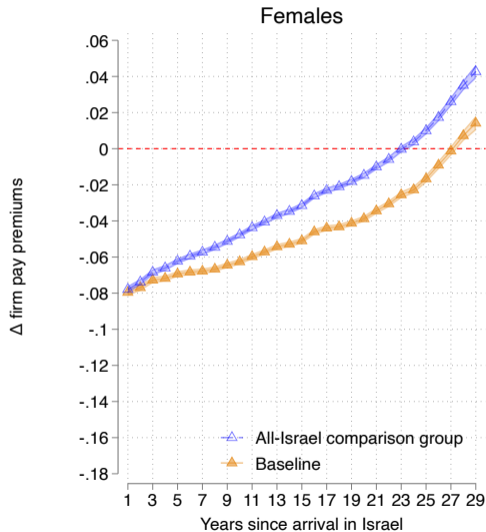
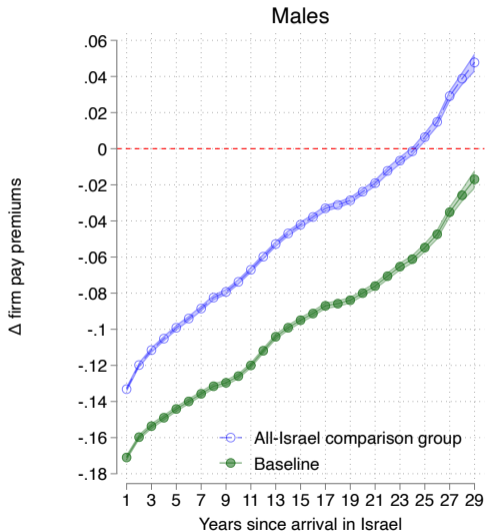
Wage assimilation: All-Israel Comparison Group



Wage assimilation: All-Israel Comparison Group

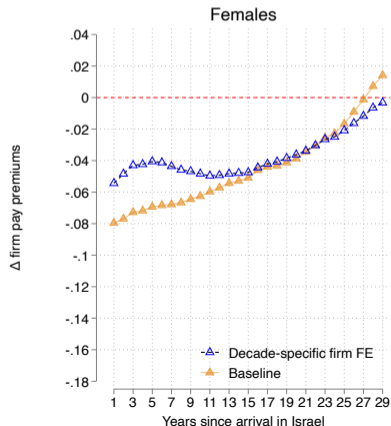
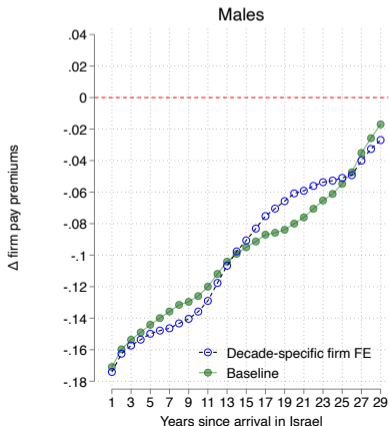


Firm pay premium assimilation: All-Israel Comparison Group

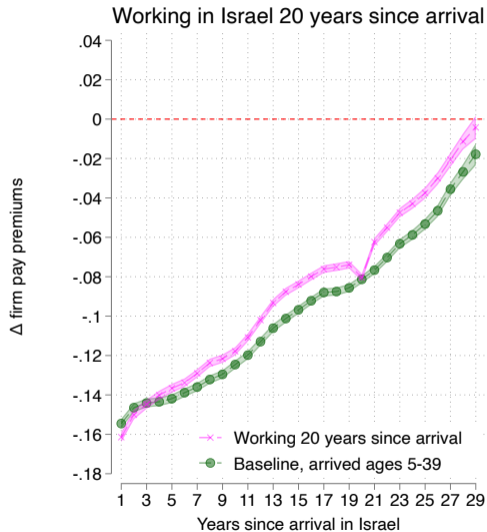
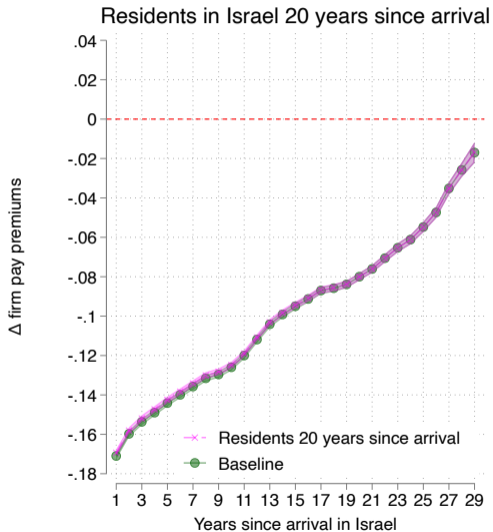


Decade-specific firm effects

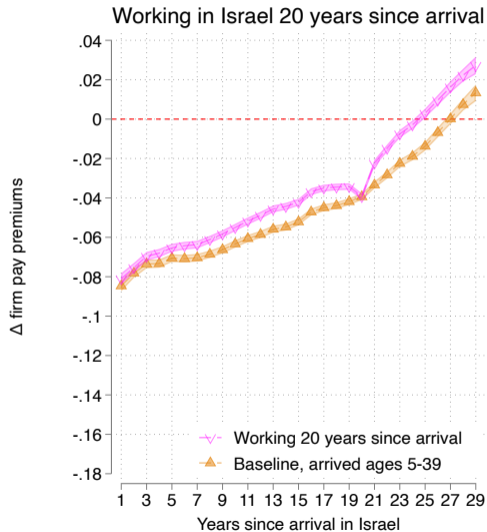
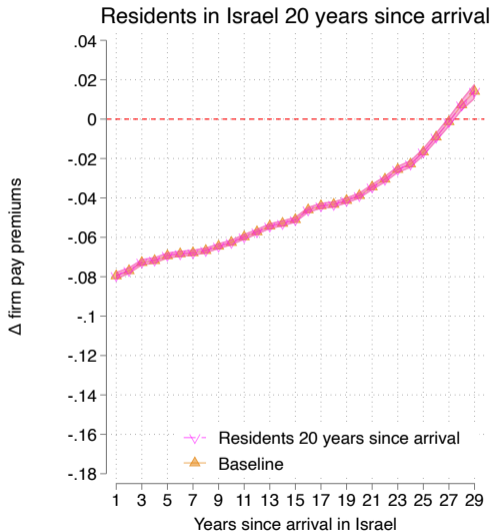
- ▶ Estimate separate firm effects $\psi_{J(i,t)}^{g(i),d(t)}$ for five overlapping decades
 - ▶ $d \in \{91 - 00, 96 - 05, 01 - 10, 06 - 15, 11 - 19\}$
- ▶ Assign each worker-year the weighted average of adjacent decades
 - ▶ E.g., FSU worker, firm J , year 2002 = $\frac{2}{3} \cdot \hat{\psi}_J^{M,96-05} + \frac{1}{3} \cdot \hat{\psi}_J^{M,01-10}$



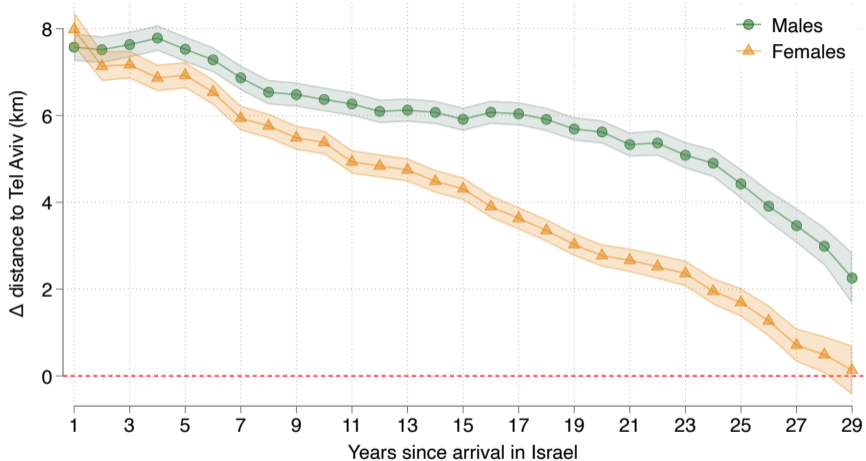
Firm pay premium assimilation - Out-Migration Robustness, males



Firm pay premium assimilation - Out-Migration Robustness, females

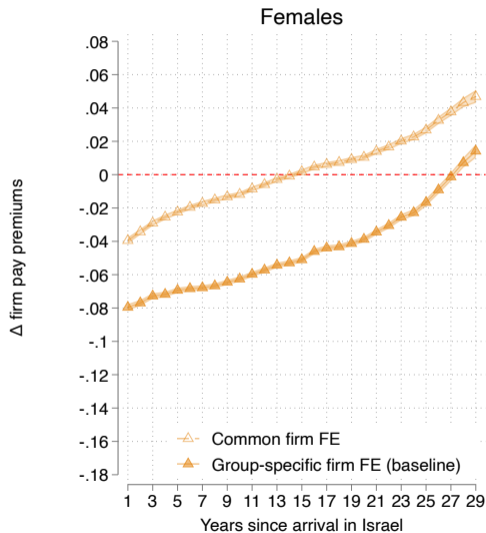
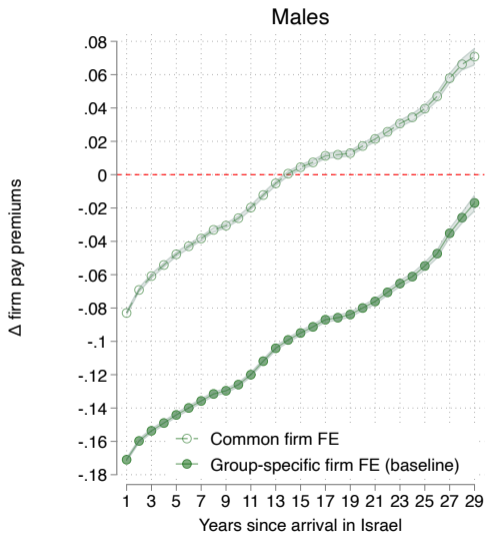


Distance to Tel Aviv

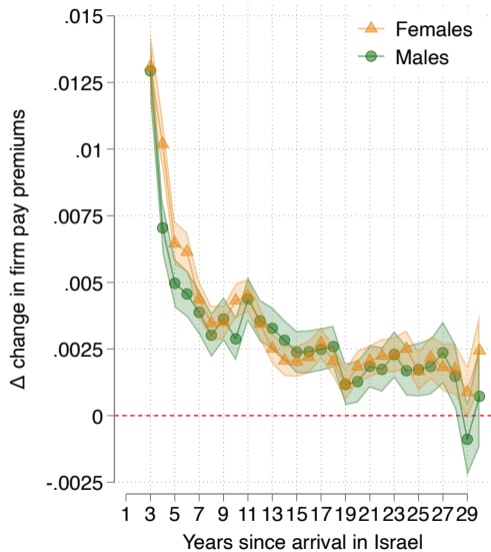


$\mathbb{E}(\text{distance to Tel Aviv} | \text{native, males}) = 32\text{km}$, $\mathbb{E}(\text{distance to Tel Aviv} | \text{native, females}) = 29\text{km}$ [▶ back](#)

Firm pay premium assimilation: Comparison to Common Premiums

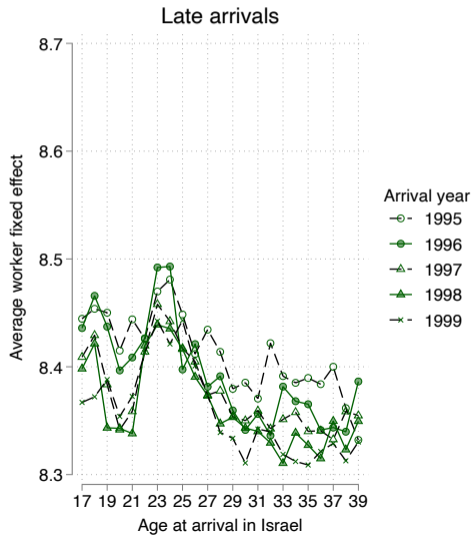
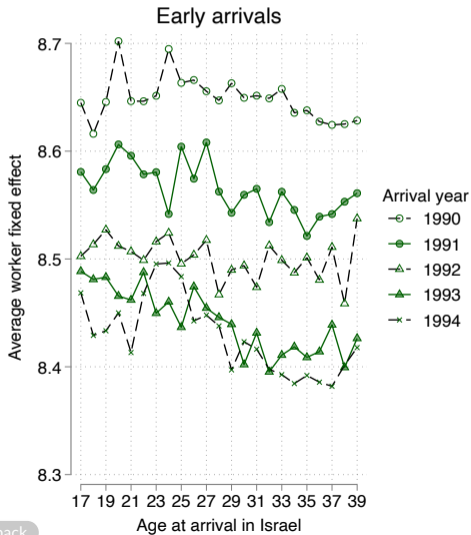


Unconditional Job Search Assimilation



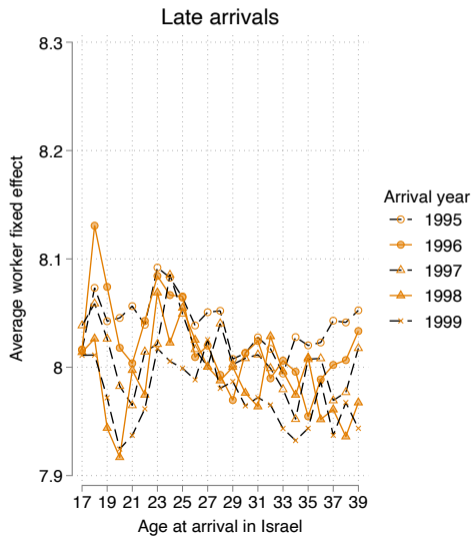
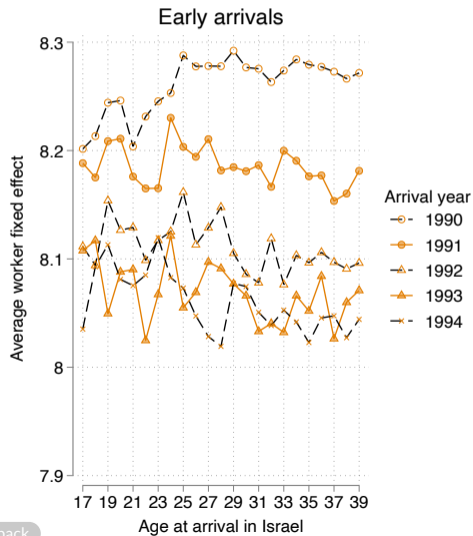
FSU immigrants' worker fixed effects α_i - Males

Selection, cohort effects



FSU immigrants' worker fixed effects α_i - Females

Selection, cohort effects



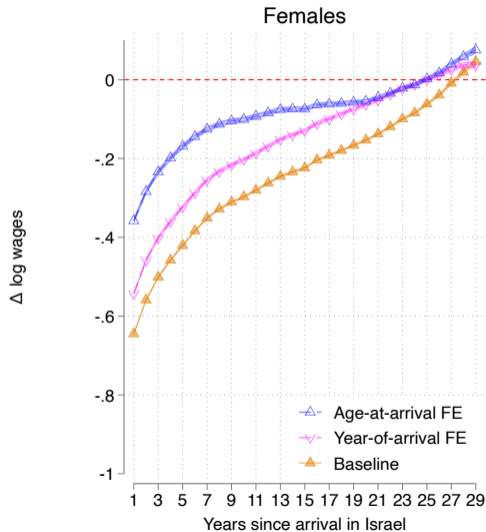
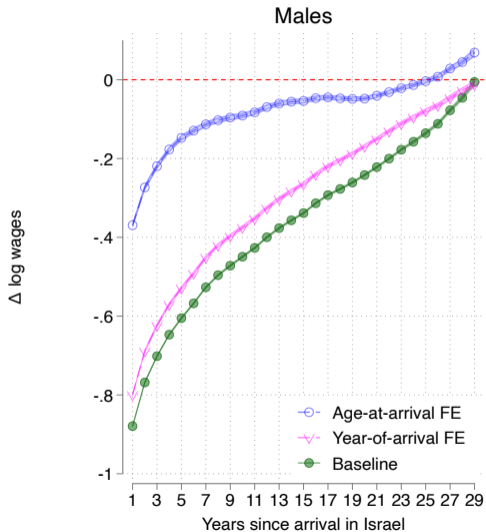
Sorkin index magnitudes

- ▶ $SD(\text{Overall Sorkin Index} | \text{native, males}) = 0.84$
- ▶ $SD(\text{Overall Sorkin Index} | \text{native, females}) = 0.76$

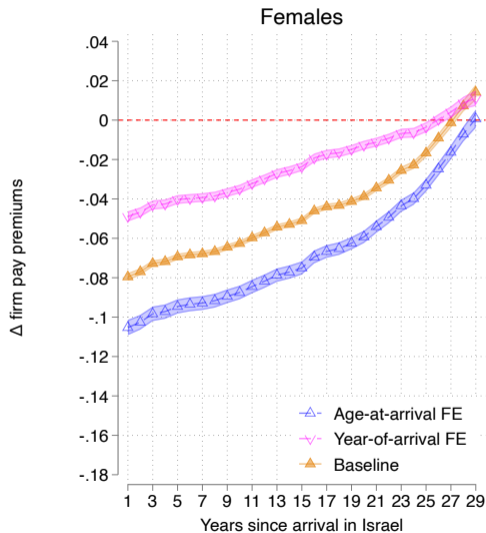
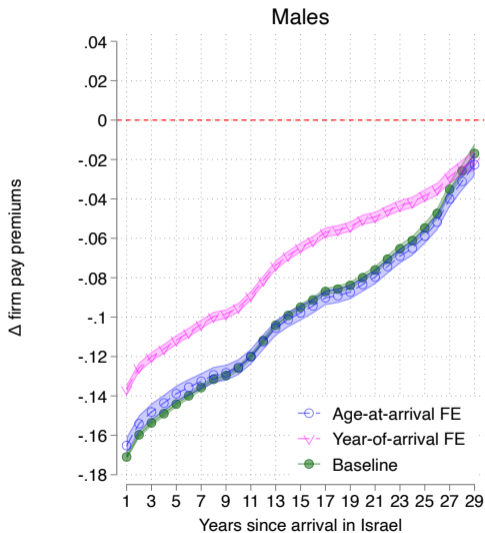
- ▶ $SD(\text{Residual Sorkin Index} | \text{native, males}) = 0.81$
- ▶ $SD(\text{Residual Sorkin Index} | \text{native, females}) = 0.76$

▶ back

Wage assimilation: Arrival Age and Arrival Year FE



Firm Pay Premiums assimilation Arrival Age and Arrival Year FE



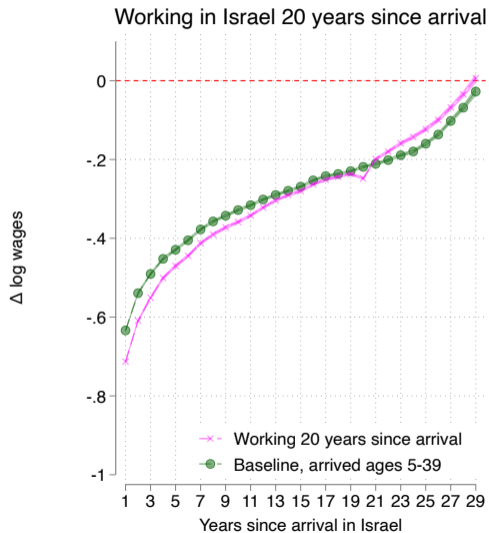
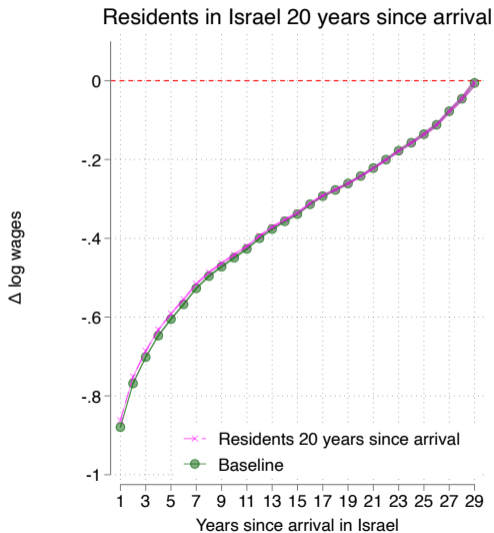
Firm Characteristics and Group-Specific Pay Premiums [▶ back](#)

	Males		Females	
	ψ_j^N (1)	$\psi_j^N - \psi_j^M$ (2)	ψ_j^N (3)	$\psi_j^N - \psi_j^M$ (4)
=1 if firm birth year > 1989 _j	-0.021 (0.015)	0.001 (0.007)	0.009 (0.015)	-0.012 (0.019)
Log firm size _{jt}	0.004 (0.006)	-0.007** (0.003)	-0.001 (0.006)	-0.010* (0.006)
Distance to Tel Aviv _j	-0.000* (0.000)	-0.000 (0.000)	-0.001*** (0.000)	-0.000*** (0.000)
=1 if FSU worker share > 0.5 _{jt}	-0.001 (0.009)	0.018*** (0.007)	0.102*** (0.021)	0.015 (0.009)
Desirability index _j	0.158*** (0.009)	-0.009** (0.004)	0.029*** (0.009)	-0.056*** (0.006)
Adj. R^2	0.152	0.015	0.032	0.093
N person-year observations	9,086,605	9,086,605	8,752,016	8,752,016

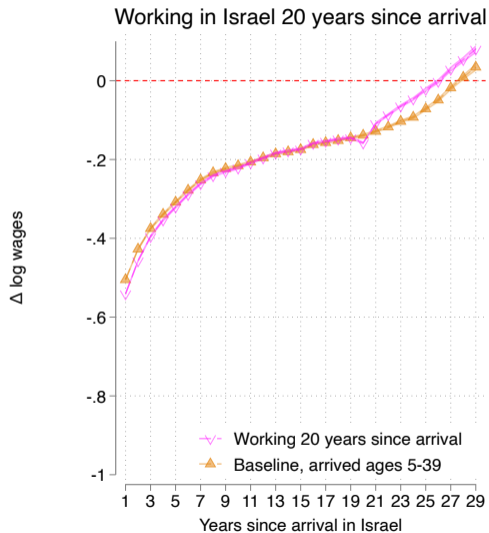
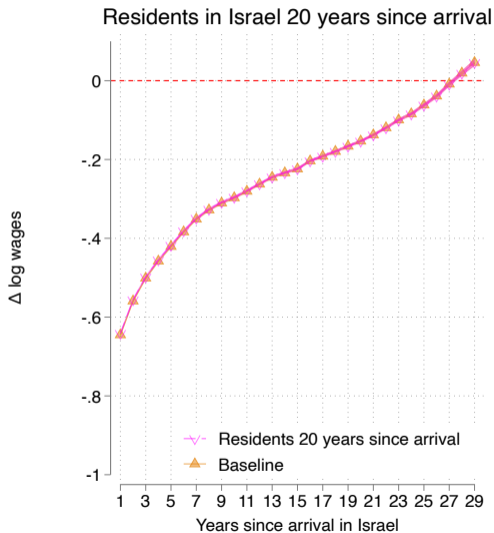
Wage Setting in Israel

- ▶ Historical tradition of collectivism and centrality of the labor movement
- ▶ Yet, steep declines in collective bargaining and union density
- ▶ Starting in 1990s:
 - ▶ Rise in agreements signed by narrower bases of unionization (occupational and local unions)
 - ▶ Decline in industry-level agreements
- ▶ Bargaining agreements have become more liberalized
 - ▶ Employer flexibility to set wages
 - ▶ Within-firm and occupation differences in pay
 - ▶ Employer flexibility to transfer workers across jobs

Wage Assimilation: Robustness to Out-Migration - Males



Wage Assimilation: Robustness to Out-Migration - Females



Baseline employer change probabilities and average jump

Baseline employer change probabilities:

- ▶ $Pr(\text{change} = 1 | \text{native males}) = 0.13$
- ▶ $Pr(\text{change} = 1 | \text{native females}) = 0.10$

Baseline average firm ladder jump:

- ▶ $\mathbb{E} \left(\hat{\psi}_{J(i,t)}^{g(i)} - \hat{\psi}_{J(i,t-1)}^{g(i)} | \text{native male switchers} \right) = 0.04$
- ▶ $\mathbb{E} \left(\hat{\psi}_{J(i,t)}^{g(i)} - \hat{\psi}_{J(i,t-1)}^{g(i)} | \text{native female switchers} \right) = 0.02$