

Table 1: Earnings Function Estimates, using Sample up to 64-year-old, including Non-regular Workers and Specialists, Variables of Occupation Tenure are not Controlled.

	OLS			IV		
	(1)	(2)	(3)	(4)	(5)	(6)
Employer tenure	0.0145*** (0.0019)	0.0087** (0.0043)	0.0180** (0.0083)	0.0066 (0.0058)	-0.0014 (0.0090)	0.0081 (0.0142)
Emp.ten. ² × 100	-0.0133*** (0.0050)	0.0260 (0.0256)	-0.0814 (0.0804)	-0.0192 (0.0147)	0.0453 (0.0575)	-0.0794 (0.1497)
Emp.ten. ³ × 100		-0.0007 (0.0004)	0.0035 (0.0029)		-0.0012 (0.0010)	0.0039 (0.0057)
Emp.ten. ⁴ × 1000			-0.0000 (0.0000)			-0.0000 (0.0000)
Old job	0.0822*** (0.0282)	0.1010*** (0.0305)	0.0838** (0.0339)	0.0580 (0.0447)	0.0757* (0.0455)	0.0622 (0.0482)
Total experience	0.0233*** (0.0026)	0.0122* (0.0070)	0.0086 (0.0143)	0.0468*** (0.0082)	0.0159 (0.0170)	0.0233 (0.0320)
Experience ²	-0.0004*** (0.0000)	0.0001 (0.0003)	0.0004 (0.0010)	-0.0007*** (0.0001)	0.0006 (0.0007)	0.0001 (0.0022)
Exp. ³ × 100		-0.0006 (0.0004)	-0.0018 (0.0030)		-0.0016* (0.0009)	-0.0006 (0.0063)
Exp. ⁴ × 1000			0.0000 (0.0000)			-0.0000 (0.0000)
N	7728	7728	7728	7728	7728	7728

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

- OLS: 2次近似ではテニュアも労働経験もきれいな凸型の関数。係数も有意 OJ ダミーは以前より小さくなつたけど1番係数大きくて有意。3次4次と増やすと OJ ダミー以外星が消えていく
- IV: ほぼすべての係数が有意ではない。2次の労働経験のみに星がつく。係数だけで見ても符号が安定しない。
- グラフでリターンを見ても IV はほぼ横ばいで有意に正にもならない
- 職業のテニュアは入れても入れなくともほぼ結果は変わらない
- その他のテニュアの年数区間をコントロールしたうえでのその年数区間の上昇率？
- OLS: 0- ζ_1 の上昇率は非有意で係数の値も小さい。25 年で上昇率が上がってその後はテニュアとともに下降するけど有意

Table 2: Earnings Function Estimates, using Sample up to 64-year-old, including Non-regular Workers and Specialists, Variables of Occupation Tenure are Controlled.

	OLS			IV	
	(1)	(2)	(3)	(4)	(5)
Employer tenure	0.0148*** (0.0021)	0.0090** (0.0046)	0.0170** (0.0086)	0.0077 (0.0063)	0.0011 (0.0097)
Emp.ten. ² × 100	-0.0145*** (0.0055)	0.0240 (0.0272)	-0.0611 (0.0843)	-0.0234 (0.0166)	0.0296 (0.0613)
Emp.ten. ³ × 100		-0.0007 (0.0004)	0.0025 (0.0030)		-0.0010 (0.0010)
Emp.ten. ⁴ × 1000			-0.0000 (0.0000)		-0.0000 (0.0000)
Occupation tenure	-0.0014 (0.0020)	-0.0015 (0.0037)	0.0032 (0.0057)	-0.0060 (0.0042)	-0.0064 (0.0071)
Occ.ten. ² × 100	0.0053 (0.0064)	0.0075 (0.0275)	-0.0721 (0.0752)	0.0157 (0.0124)	0.0294 (0.0568)
Occ.ten. ³ × 100		-0.0001 (0.0005)	0.0037 (0.0033)		-0.0004 (0.0012)
Occ.ten. ⁴ × 1000			-0.0005 (0.0004)		0.0008 (0.0009)
Old job	0.0765*** (0.0293)	0.0949*** (0.0317)	0.0774** (0.0352)	0.0481 (0.0467)	0.0624 (0.0477)
Total experience	0.0238*** (0.0027)	0.0129* (0.0072)	0.0088 (0.0148)	0.0459*** (0.0084)	0.0154 (0.0173)
Experience ²	-0.0004*** (0.0001)	0.0001 (0.0003)	0.0004 (0.0011)	-0.0007*** (0.0001)	0.0006 (0.0007)
Exp. ³ × 100		-0.0006 (0.0004)	-0.0019 (0.0030)		-0.0016* (0.0009)
Exp. ⁴ × 1000			0.0001 (0.0003)		-0.0000 (0.0006)
N	7669	7669	7669	7669	7669

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 3: Earnings Function Estimates, using Sample up to 64-year-old, including Non-regular Workers and Specialists.

	OLS			
	(1)	(2)	(3)	(4)
Employer tenure	0.0145*** (0.0019)	0.0148*** (0.0021)	0.0066 (0.0058)	0.0077 (0.0063)
Emp.ten. ² × 100	-0.0133*** (0.0050)	-0.0145*** (0.0055)	-0.0192 (0.0147)	-0.0234 (0.0166)
Occupation tenure		-0.0014 (0.0020)		-0.0060 (0.0042)
Occ.ten. ² × 100		0.0053 (0.0064)		0.0157 (0.0124)
Old job	0.0822*** (0.0282)	0.0765*** (0.0293)	0.0580 (0.0447)	0.0481 (0.0467)
Total experience	0.0233*** (0.0026)	0.0238*** (0.0027)	0.0468*** (0.0082)	0.0459*** (0.0084)
Experience ²	-0.0004*** (0.0000)	-0.0004*** (0.0001)	-0.0007*** (0.0001)	-0.0007*** (0.0001)
<i>N</i>	7728	7669	7728	7669

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 4: Estimated Returns to Employer Tenure, using Sample up to 64-year-old, including Non-regular Workers and Specialists.

	AS's IV				2SFD
	OLS		IV		
	(1)	(2)	(3)	(4)	(5)
2 Years	0.1108*** (0.0271)	0.1054*** (0.0281)	0.0703* (0.0413)	0.0625 (0.0428)	.1260** (.0503)
5 Years	0.1516*** (0.0263)	0.1468*** (0.0274)	0.0860** (0.0412)	0.0805* (0.0424)	.3104** (.1254)
10 Years	0.2143*** (0.0265)	0.2098*** (0.0277)	0.1044** (0.0491)	0.1012** (0.0505)	.6057** (.2498)
15 Years	0.2703*** (0.0272)	0.2656*** (0.0286)	0.1132* (0.0599)	0.1102* (0.0611)	.8858** (.3742)
20 Years	0.3197*** (0.0278)	0.3141*** (0.0291)	0.1123 (0.0704)	0.1075 (0.0713)	1.1506** (.5000)
25 Years	0.3624*** (0.0281)	0.3554*** (0.0293)	0.1019 (0.0814)	0.0930 (0.0820)	1.4003** (.6282)
Occupation Tenure	No	Yes	No	Yes	No
N	7728	7669	7728	7669	7724

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 5: Estimated Returns to Employer Tenure, Employer Tenure is Treated as Dummy Variables

	OLS	
	(1)	(2)
$1 \leq T_{ij} < 2$	0.0150 (0.0339)	0.0183 (0.0413)
$2 \leq T_{ij} < 5$	0.0353** (0.0141)	0.0177 (0.0200)
$5 \leq T_{ij} < 10$	0.0246*** (0.0056)	0.0123 (0.0090)
$10 \leq T_{ij} < 15$	0.0182*** (0.0029)	0.0102* (0.0052)
$15 \leq T_{ij} < 20$	0.0144*** (0.0019)	0.0068* (0.0040)
$20 \leq T_{ij} < 25$	0.0125*** (0.0015)	0.0047 (0.0034)
$25 \leq T_{ij} < 30$	0.0143*** (0.0013)	0.0069** (0.0030)
$30 \leq T_{ij}$	0.0105*** (0.0010)	0.0055* (0.0029)
Total experience	0.0223*** (0.0026)	0.0449*** (0.0078)
Experience ²	-0.0004*** (0.0000)	-0.0007*** (0.0001)
<i>N</i>	8032	8032

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 6: Earnings Function Estimates, using Sample up to 64-year-old, including Non-regular Workers and Specialists, the Interactions of Employer Tenure and Proxies of Ability are Added to e.q. (1).

	Years of Education		Regular Employee		Firm Size	
	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)	IV (6)
Employer tenure	0.0108*** (0.0025)	0.0022 (0.0149)	0.0074*** (0.0023)	0.0085 (0.0057)	0.0143*** (0.0019)	0.0105* (0.0060)
Emp.ten. ² × 100	-0.0120** (0.0051)	-0.0193 (0.0147)	-0.0104** (0.0050)	-0.0212 (0.0152)	-0.0159*** (0.0051)	0.0016 (0.0160)
Old job	0.0824*** (0.0281)	0.0574 (0.0446)	0.0948*** (0.0284)	0.0565 (0.0446)	0.0840*** (0.0282)	0.0551 (0.0472)
Total experience	0.0228*** (0.0027)	0.0462*** (0.0083)	0.0219*** (0.0026)	0.0474*** (0.0085)	0.0226*** (0.0026)	0.0500*** (0.0087)
Experience ²	-0.0004*** (0.0001)	-0.0007*** (0.0001)	-0.0004*** (0.0001)	-0.0007*** (0.0001)	-0.0004*** (0.0000)	-0.0008*** (0.0002)
Employer tenure × High School	0.0033* (0.0017)	0.0030 (0.0151)				
Some College	0.0079*** (0.0022)	0.0135 (0.0162)				
College	0.0031* (0.0018)	0.0056 (0.0154)				
Regular Employee			0.0072*** (0.0013)	-0.0016 (0.0029)		
500 ≤ size					0.0029*** (0.0010)	-0.0249*** (0.0040)
N	7728	7728	7728	7728	7728	7728

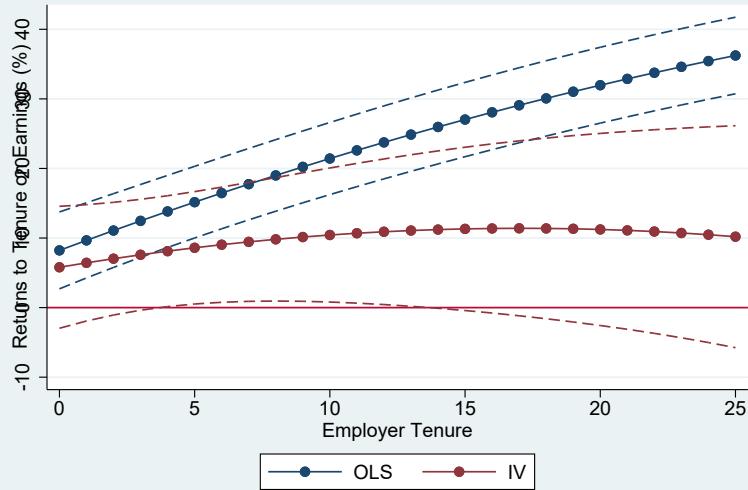
Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

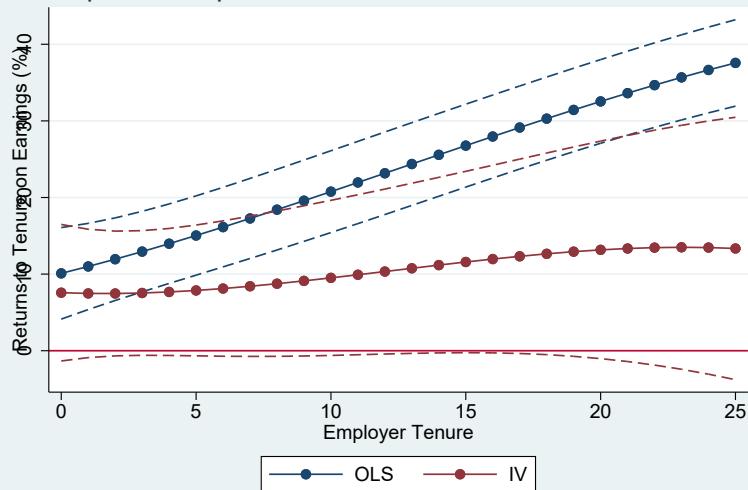
The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

- IV: テニュアとともに係数は下降気味だけど 25~30 年で上昇している。25 年以降以外非有意。

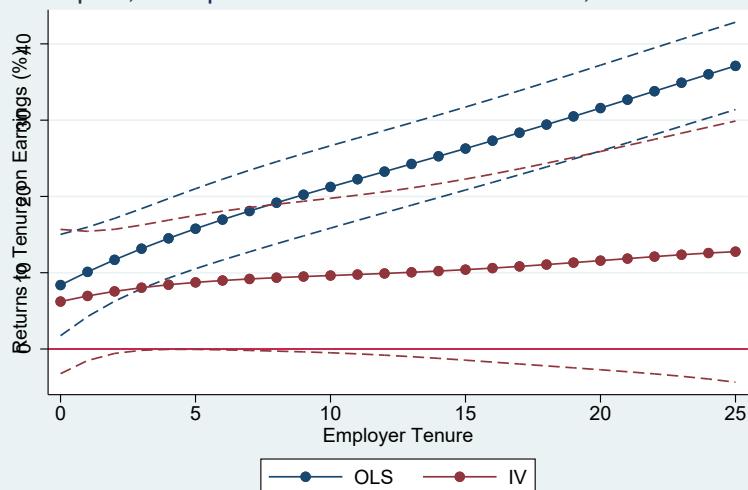
I Samples, Occupation Tenure is not Controlled, Quadratic Form



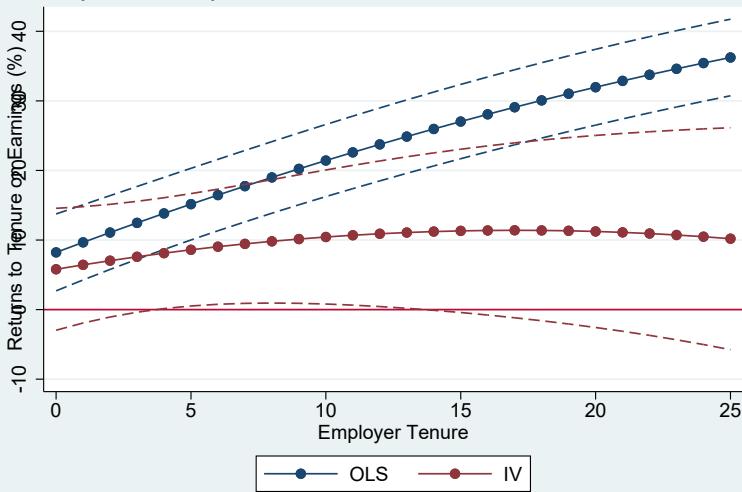
All Samples, Occupation Tenure is not Controlled, Cubic Form c



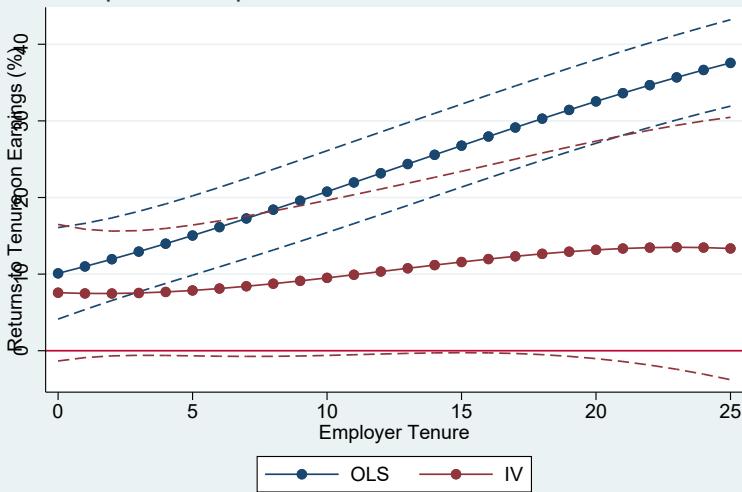
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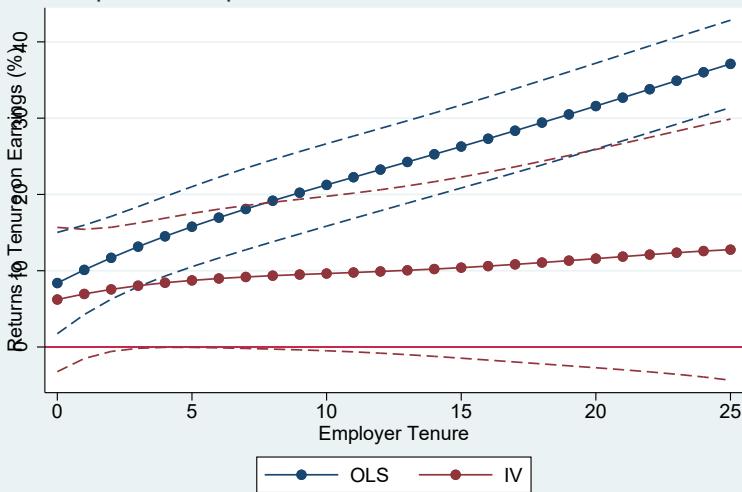
All Samples, Occupation Tenure is Controlled, Quadratic Form of



All Samples, Occupation Tenure is Controlled, Cubic Form of



All Samples, Occupation Tenure is Controlled, Quartic Form of



Returns to Employer Tenure, Employer Tenure is Treated as Duration

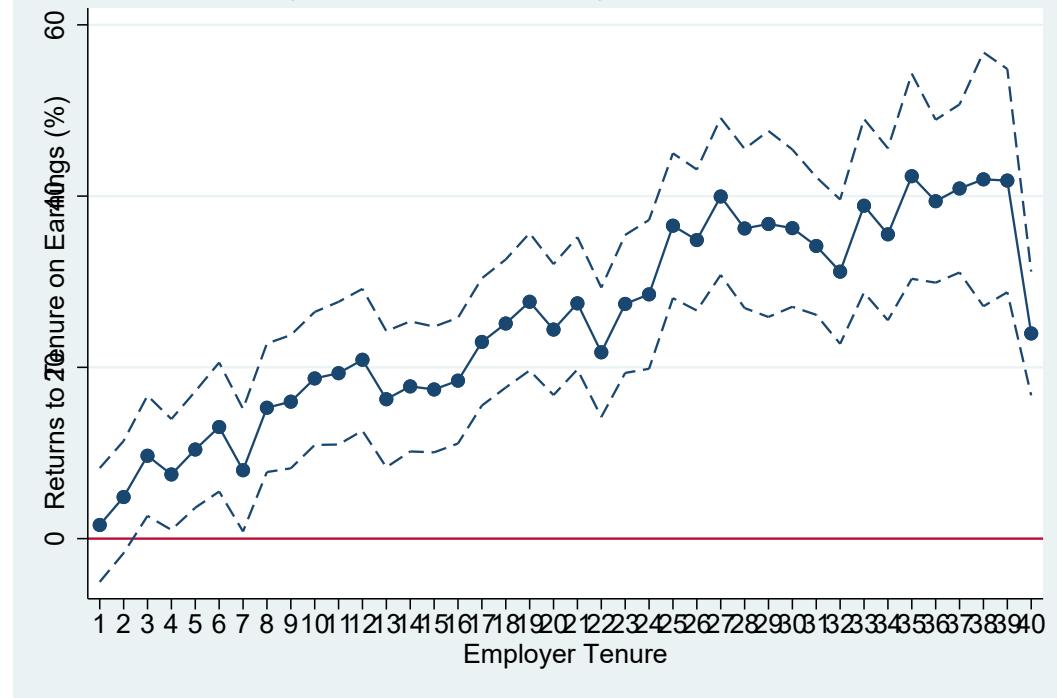


Table 7: Estimated Returns to Employer Tenure, using Sample up to 64-year-old, including Non-regular Workers and Specialists, the Interactions of Employer Tenure and Proxies of Ability are Added to e.q. (1).

	Junior	Years of Education				College		
		High School	OLS	IV	OLS	IV	OLS	IV
	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)	IV (6)	OLS (7)	IV (8)
2 Years	0.1035*** (0.0272)	0.0610 (0.0505)	0.1101*** (0.0270)	0.0669 (0.0418)	0.1194*** (0.0271)	0.0879** (0.0431)	0.1237*** (0.0273)	0.0722* (0.0415)
5 Years	0.1333*** (0.0274)	0.0634 (0.0818)	0.1497*** (0.0264)	0.0782* (0.0438)	0.1730*** (0.0270)	0.1308** (0.0534)	0.1655*** (0.0266)	0.0916** (0.0437)
10 Years	0.1782*** (0.0309)	0.0597 (0.1488)	0.2110*** (0.0271)	0.0894 (0.0566)	0.2575*** (0.0295)	0.1946*** (0.0855)	0.2309*** (0.0268)	0.1161** (0.0586)
15 Years	0.2171*** (0.0360)	0.0464 (0.2191)	0.2663*** (0.0286)	0.0910 (0.0726)	0.3361*** (0.0338)	0.2487** (0.1219)	0.2912*** (0.0278)	0.1309* (0.0773)
20 Years	0.2500*** (0.0417)	0.0234 (0.2903)	0.3155*** (0.0299)	0.0828 (0.0885)	0.4086*** (0.0388)	0.2931* (0.1591)	0.3462*** (0.0286)	0.1361 (0.0965)
25 Years	0.2768*** (0.0475)	-0.0092 (0.3625)	0.3588*** (0.0309)	0.0650 (0.1046)	0.4751*** (0.0442)	0.3279* (0.1968)	0.3960*** (0.0292)	0.1316 (0.1162)
N	7728	7728	7728	7728	7728	7728	7728	7728

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 8: Estimated Returns to Employer Tenure, using Sample up to 64-year-old, including Non-regular Workers and Specialists, the Interactions of Employer Tenure and Proxies of Ability are Added to e.q. (1), cont'd.

	Regular Employee				Firm Size			
	Non-Regular OLS (1)	IV (2)	OLS (3)	Regular IV (4)	OLS (5)	IV (6)	OLS (7)	IV (8)
2 Years	0.1093*** (0.0270)	0.0726* (0.0416)	0.1237*** (0.0273)	0.0694* (0.0414)	0.1120*** (0.0271)	0.0762* (0.0437)	0.1178*** (0.0272)	0.0263 (0.0440)
5 Years	0.1293*** (0.0262)	0.0936** (0.0418)	0.1655*** (0.0266)	0.0855** (0.0413)	0.1516*** (0.0263)	0.1080** (0.0435)	0.1661*** (0.0268)	-0.0167 (0.0474)
10 Years	0.1586*** (0.0274)	0.1201** (0.0487)	0.2309*** (0.0268)	0.1039** (0.0494)	0.2113*** (0.0265)	0.1617*** (0.0510)	0.2402*** (0.0280)	-0.0877 (0.0649)
15 Years	0.1827*** (0.0303)	0.1360** (0.0569)	0.2912*** (0.0278)	0.1117* (0.0610)	0.2630*** (0.0274)	0.2162*** (0.0609)	0.3063*** (0.0300)	-0.1579* (0.0851)
20 Years	0.2015*** (0.0335)	0.1413** (0.0638)	0.3462*** (0.0286)	0.1089 (0.0736)	0.3068*** (0.0281)	0.2715*** (0.0706)	0.3646*** (0.0320)	-0.2273** (0.1043)
25 Years	0.2152*** (0.0368)	0.1360* (0.0701)	0.3960*** (0.0292)	0.0955 (0.0882)	0.3427*** (0.0287)	0.3275*** (0.0808)	0.4149*** (0.0336)	-0.2960** (0.1226)
N	7728	7728	7728	7728	7728	7728	7728	7728

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

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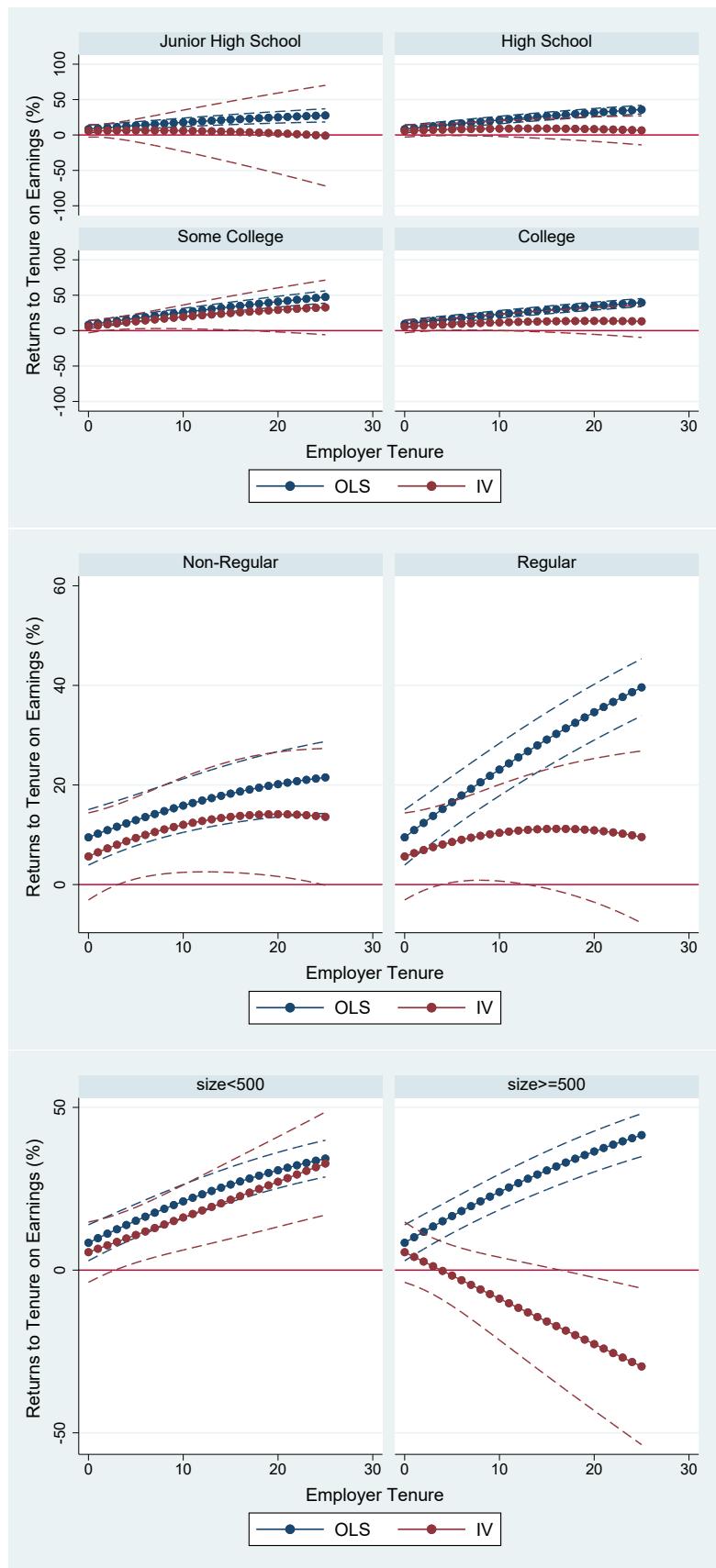


Table 9: Earnings Function Estimates, using Various Subsamples

	Under 59-year-old		Large firms (≥ 500)		Small Firms (< 500)		Non-Professional	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Employer tenure	0.0120*** (0.0022)	0.0023 (0.0066)	0.0225*** (0.0034)	0.0232** (0.0104)	0.0116*** (0.0024)	0.0047 (0.0078)	0.0183*** (0.0020)	0.0062 (0.0066)
Emp.ten. ² \times 100	-0.0014 (0.0061)	-0.0020 (0.0177)	-0.0300*** (0.0083)	-0.0621** (0.0253)	-0.0089 (0.0067)	-0.0045 (0.0199)	-0.0223*** (0.0054)	-0.0189 (0.0160)
Old job	0.1022*** (0.0317)	0.0680 (0.0517)	-0.0058 (0.0552)	-0.0047 (0.0697)	0.1224*** (0.0330)	0.0563 (0.0541)	0.0585* (0.0304)	0.0533 (0.0499)
Total experience	0.0214*** (0.0031)	0.0415*** (0.0093)	0.0199*** (0.0042)	0.0493*** (0.0137)	0.0234*** (0.0033)	0.0411*** (0.0119)	0.0183*** (0.0028)	0.0454*** (0.0093)
Experience ²	-0.0004*** (0.0001)	-0.0006*** (0.0002)	-0.0003*** (0.0001)	-0.0006*** (0.0003)	-0.0004*** (0.0001)	-0.0007*** (0.0002)	-0.0003*** (0.0001)	-0.0007*** (0.0002)
N	6927	6927	2976	2976	4752	4752	6584	6584

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

Table 10: Estimated Returns to Employer Tenure, using Various Subsamples.

	Under 59-year-old		Large firms (≥ 500)		Small Firms (< 500)		Non-Professional	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2 Years	0.1261*** (0.0304)	0.0726 (0.0479)	0.0380 (0.0536)	0.0393 (0.0655)	0.1453*** (0.0315)	0.0655 (0.0501)	0.0942*** (0.0292)	0.0649 (0.0459)
5 Years	0.1618*** (0.0296)	0.0792* (0.0477)	0.0992* (0.0526)	0.0960 (0.0690)	0.1782*** (0.0304)	0.0787 (0.0515)	0.1446*** (0.0284)	0.0795* (0.0458)
10 Years	0.2208*** (0.0298)	0.0893 (0.0565)	0.1892*** (0.0533)	0.1656* (0.0880)	0.2295*** (0.0306)	0.0987 (0.0654)	0.2195*** (0.0286)	0.0963* (0.0555)
15 Years	0.2790*** (0.0307)	0.0985 (0.0691)	0.2642*** (0.0551)	0.2042* (0.1085)	0.2764*** (0.0315)	0.1166 (0.0834)	0.2834*** (0.0294)	0.1035 (0.0687)
20 Years	0.3365*** (0.0313)	0.1066 (0.0828)	0.3242*** (0.0566)	0.2117* (0.1257)	0.3188*** (0.0320)	0.1321 (0.1023)	0.3360*** (0.0300)	0.1014 (0.0818)
25 Years	0.3933*** (0.0318)	0.1138 (0.0986)	0.3692*** (0.0575)	0.1882 (0.1406)	0.3567*** (0.0321)	0.1454 (0.1229)	0.3776*** (0.0303)	0.0898 (0.0952)
N	6927	6927	2976	2976	4752	4752	6584	6584

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.

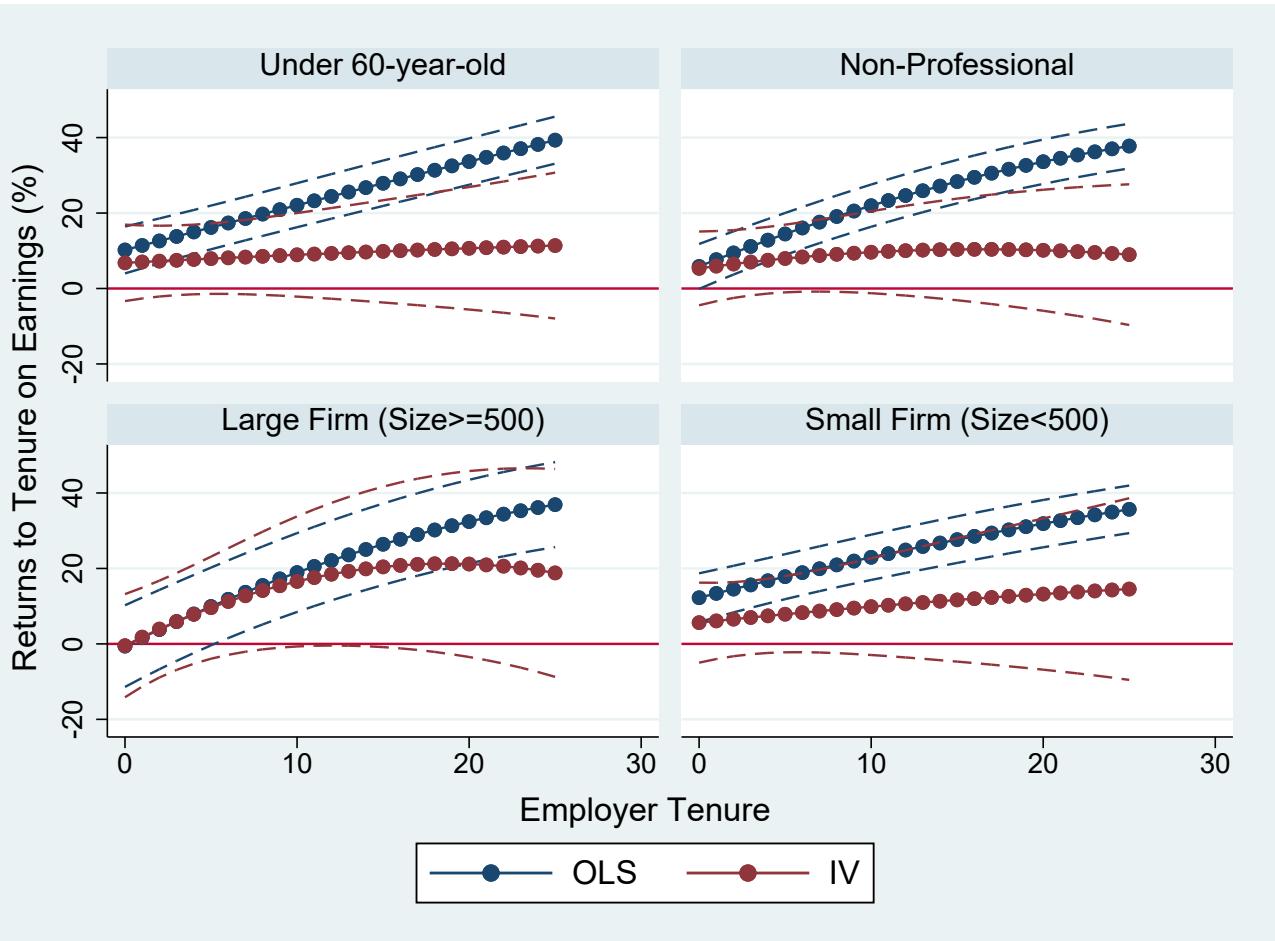


Table 11: Estimation Results, using the Method of 2SFD Estimation.

	(1)	(2)	(3)
1st stage			
Constant	0.1102*** (0.0207)	0.1619*** (0.0248)	0.1228*** (0.0379)
Emp.ten. ² × 100		-0.0304 (0.0294)	0.0320 (0.1026)
Emp.ten. ³ × 1000			-0.0133 (0.0188)
Experience ² × 100		-0.0891*** (0.0305)	0.0555 (0.1487)
Experience ³ × 1000			-0.0172 (0.0188)
2nd stage			
Total Experience	.0539*** (.0010)	.0983*** (.0010)	.0639*** (.0010)
Employer Tenure	.0564*** (.0212)	.0636** (.0252)	.0588 (.0414)
<i>N</i>	5665	5565	5565
<i>N</i>	7616	7616	7616

Notes: Robust standard errors are in parentheses.

* , ** and *** Denote statistical significance at the 10%, 5% and 1% level, respectively.

The dependent variable is log real hourly wages. Other covariates include an intercept, education dummies, occupation and industry dummies, a union member dummy, a marital status dummy, firm size dummies, and regular employee dummy. Columns (1) and (2) denote the coefficients of earnings function (??) which is estimated by the OLS, and columns (3) and (4) denote those by AS's IV method.