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## Agglomeration and Human Capital Spillovers

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## Appendix B

Table B.1. Heterogeneous effects by educational attainment and knowledge intensity – without wage-growth controls

Column:	(1)	(2)	(3)	(4)	(5)
First-stage equation:	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)
Subsample:	Low- educated	Medium- educated	Highly educated	Knowledge extensive sectors	Knowledge intensive sectors
Age squared	-0.001*** (3.5e-06)	-0.001*** (3.3e-06)	-0.001*** (5.6e-06)	-0.001*** (2.9e-06)	-0.001*** (4.7e-06)
Wage-level effect of firm size: 10–99 employees	0.014*** (0.001)	0.017*** (0.001)	0.024*** (0.001)	0.014*** (0.001)	0.017*** (0.001)
Wage-level effect of firm size: 100–999 employees	0.027*** (0.001)	0.033*** (0.001)	0.040*** (0.001)	0.028*** (0.001)	0.030*** (0.001)
Wage-level effect of firm size: ≥1000 employees	0.049*** (0.003)	0.058*** (0.003)	0.080*** (0.002)	0.061*** (0.003)	0.067*** (0.002)
Wage-growth effects of firm size	NO	NO	NO	NO	NO
Year effects	YES	YES	YES	YES	YES
Wage-level/growth area indicators	YES	YES	YES	YES	YES
Wage-level industry effects	YES	YES	YES	YES	YES
Wage-level worker effects (FE)	YES	YES	YES	YES	YES
Wage-growth industry effects	NO	NO	NO	NO	NO
Wage-growth worker effects	NO	NO	NO	NO	NO
Observations	1,866,829	2,528,101	1,735,161	2,878,025	1,789,866
$R^2$	0.104	0.187	0.313	0.171	0.252
Second-stage equations:	(3.2 & 3.4)	(3.2 & 3.4)	(3.2 & 3.4)	(3.2 & 3.4)	(3.2 & 3.4)
<b>Wage-level benefit</b>					
Log employment within 10 km	0.009*** (0.002)	0.014*** (0.002)	0.019*** (0.002)	0.012*** (0.002)	0.017*** (0.003)
IV	YES	YES	YES	YES	YES
$p$ -value Kleibergen-Paap rk $LM$ statistic	0.000	0.000	0.000	0.000	0.000
$p$ -value Hansen $J$ statistic	0.424	0.207	0.143	0.138	0.168
$p$ -value Hausman test for endogeneity	0.221	0.000	0.001	0.072	0.003
<b>Wage-growth benefit</b>					
Log employment within 10 km	0.0012*** (0.0003)	0.0014*** (0.0004)	0.0014*** (0.0005)	0.0012*** (0.0003)	0.0019*** (0.0006)
IV	YES	YES	YES	YES	YES
$p$ -value Kleibergen-Paap rk $LM$ statistic	0.000	0.000	0.000	0.000	0.000
$p$ -value Hansen $J$ statistic	0.524	0.002	0.161	0.124	0.025
$p$ -value Hausman test for endogeneity	0.782	0.347	0.068	0.663	0.235

Notes: Second-stage estimates are based on 396 area-specific wage effects. Industry indicators are based on two-digit NACE. Robust standard errors, which are clustered by worker in the first-stage estimates, are in parentheses. First-stage  $R^2$  is within workers. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

*Table B.2. Heterogeneous effects by age groups and gender – without wage-growth controls*

Column:	(1)	(2)	(3)	(4)	(5)
First-stage equation:	(3.3)	(3.3)	(3.3)	(3.3)	(3.3)
Subsample:	Aged [18;30]	Aged [30;40]	Aged [40;65]	Male	Female
Age squared	-0.002*** (1.3e-07)	-0.001*** (1.2e-07)	-0.000*** (5.1e-06)	-0.001*** (2.7e-06)	-0.001*** (3.8e-06)
Wage-level effect of firm size: 10–99 employees	0.017*** (0.001)	0.020*** (0.001)	0.015*** (0.001)	0.019*** (0.000)	0.015*** (0.001)
Wage-level effect of firm size: 100–999 employees	0.042*** (0.001)	0.033*** (0.001)	0.027*** (0.001)	0.035*** (0.001)	0.034*** (0.001)
Wage-level effect of firm size: ≥1000 employees	0.080*** (0.003)	0.078*** (0.003)	0.050*** (0.002)	0.073*** (0.002)	0.063*** (0.003)
Wage-growth effects of firm size	NO	NO	NO	NO	NO
Year effects	YES	YES	YES	YES	YES
Wage-level/growth area indicators	YES	YES	YES	YES	YES
Wage-level industry effects	YES	YES	YES	YES	YES
Wage-level worker effects (FE)	YES	YES	YES	YES	YES
Wage-growth industry effects	NO	NO	NO	NO	NO
Wage-growth worker effects	NO	NO	NO	NO	NO
Observations	2,025,533	1,768,036	2,336,522	4,069,173	2,060,918
$R^2$	0.347	0.190	0.053	0.210	0.177
Second-stage equations:	(3.2 & 3.4)	(3.2 & 3.4)	(3.2 & 3.4)	(3.2 & 3.4)	(3.2 & 3.4)
<b>Wage-level benefit</b>					
Log employment within 10 km	0.015*** (0.002)	0.014*** (0.002)	0.011*** (0.002)	0.014*** (0.002)	0.013*** (0.002)
IV	YES	YES	YES	YES	YES
$p$ -value Kleibergen-Paap rk $LM$ statistic	0.000	0.000	0.000	0.000	0.000
$p$ -value Hansen $J$ statistic	0.104	0.097	0.664	0.144	0.785
$p$ -value Hausman test for endogeneity	0.000	0.012	0.732	0.001	0.008
<b>Wage-growth benefit</b>					
Log employment within 10 km	0.0031*** (0.0005)	0.0033*** (0.0005)	0.0009*** (0.0003)	0.0024*** (0.0004)	0.0015*** (0.0003)
IV	YES	YES	YES	YES	YES
$p$ -value Kleibergen-Paap rk $LM$ statistic	0.000	0.000	0.000	0.000	0.000
$p$ -value Hansen $J$ statistic	0.006	0.051	0.288	0.025	0.287
$p$ -value Hausman test for endogeneity	0.441	0.291	0.231	0.328	0.097

*Notes:* Second-stage estimates are based on 396 area-specific wage effects. Industry indicators are based on two-digit NACE. Robust standard errors, which are clustered by worker in the first-stage estimates, are in parentheses. First-stage  $R^2$  is within workers. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .