The Impact of Temporary Low-skilled Immigrants on Firm Performances: Evidences from the Korean Small-Medium Business Sector

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- Purpose of the Study
- To analyse empirically how the influx of temporary low-skilled foreign workers affects the firm performances of their employers in the Korean small-medium sized business sector
- Firm level analysis, which is allowed due to separation between migrant-users and non-users, and the highly limited ability to change employers

- Motivation of the Study

- Even if there are lots of studies on the labour market outcomes effects of immigration, its firm performance effects are rarely examined in the previous studies, being treated as a black-box

- To investigate the firm performance effects of immigration will provide useful information to understand its economic effects fully

- Institutional Background

- The Korean temporary foreign workers program(TFWP): Employment Permit Program(EPS) & Working Visit Program(WVP)

- Some features of the Korean TFWP(Especially, EPS)

* To fill labour shortage mainly for the small medium sized firms, which arises from being shunned by young workers due to the low status and low-paid job

* Generally, recruited and allocated by public agencies, and supervised by government

-   Some features of the Korean TFWP(Especially, EPS)
* Limit on sector: manufacture, construction, agriculture,
   livestock, fishery and a small number of service sectors
* Quota for the sectors: Exhausted very quickly
* Limit on the duration of stay: 4 years and 10 months
   (renewable for another 4 years and 10 months)
 -> Enough duration to build up skills and used as
   mid-skilled workers(machinist, welder, etc) rather than
   labour-type
* Not allowed to change employers except for special
   reasonable reasons such as his/her employer's violation of
   labour law and bankruptcy

- WVP is just for the descendants of the Korean earlier emigrants

* No restriction on sector, longer duration of stay(more readily renewable), and high portability

* However, WVP foreign workers are employed heavily in a small number of sectors such as restaurant, care, and construction sectors

- Empirical Models

$$(1) \; \text{Log} \left(\frac{\pi}{L} \right)_{it} = \mu_i + \alpha_0 Log \left(\frac{\pi}{L} \right)_{it-1} + \alpha_1 \text{Log}(L)_{it} + \alpha_2 \left(\frac{F_u}{L} \right)_{it} +$$

$$\alpha_3 \text{Log} \left(\frac{K}{L} \right)_{it} + + \alpha_4 \text{Log}(w)_{it} + \beta X_{it} + \varepsilon_{it, \; Where \; L = F^u + D^u + L^s}$$

$\frac{\pi}{L}$: operating income/sales per capita(also estimate models with wage and vacancy rate as dependent variables)

$\frac{F_u}{L}$: the % of the low-skilled FW out of the total workforce

$\frac{K}{L}$: capital-labour ratio,   w: wage

X: control variables(firm size, working hour, the rate of contingent workers, labor union, market competition, demand, multi-factory firm)

- Empirical Models

- Dynamic Panel Data Analysis(using GMM estimate technique) to control for the probable endogeneity problem

* The employment of foreign workers may be affected by financial and productivity state of the firms

- Data

- The sample of the small medium sized firm

  out of the Korean Workplace Panel Survey

- 2005-2011, 1-4 waves for being surveyed
  every other year

- Sample size for this study: 157 observations

- <Table 2> Descriptive Statistics for the main variables

Variables	2005		2007		2009		2011	
	Non-user (N=118)	User (N=39)	Non-user (N=108)	User (N=49)	Non-user (N=126)	User (N=31)	Non-user (N=118)	User (N=39)
% of FW	-	8.70 (3.68)	-	7.81 (4.78)	-	10.2 (7.20)	-	9.52 (6.52)
Operating income per capita(M)	13.0 (61.2)	10.8 (12.8)	21.9 (75.2)	10.9 (20.2)	20.2 (52.3)	14.9 (23.3)	63.5 (384)	12.5 (33.1)
Sales per capita(M)	412 (1021)	258 (160)	537 (1736)	291 (196)	455 (556)	279 (218)	587 (967)	397 (330)
Capital-labor ratio(M)	132 (200)	85.6 (86.5)	144 (205)	90.6 (66.4)	268 (941)	93.5 (101)	303 (850)	114 (120)
Labor shortage rate	1.79 (4.80)	6.33 (24.7)	2.75 (13.5)	1.16 (3.35)	3.17 (16.7)	1.49 (3.11)	1.58 (5.65)	1.88 (4.62)
Wages(M)	17.4 (3.6)	16.4 (3.0)	19.6 (4.5)	17.9 (2.3)	19.8 (3.5)	19.4 (2.8)	21.3 (3.5)	20.6 (3.5)

- <Table 3> The Regression Results: Operating Income per Capita

Independent variables	Dependent variable = Log(Operating Income per capita)	
	(1)	(2)
Constant	3.364(7.439)	3.827(7.204)
Lagged Dep. Var.	.248*(.141)	.246*(.142)
Proportion of Migrant Workers	.067**(.033)	.137(.214)
Labor Shortage Rate	-.001(.007)	.001(.009)
Log(Capital-labor ratio)	-.302**(.137)	-.327**(.152)
Log(Wages)	.260(.861)	.271(.853)
Control for endogeneity of FW	No	Yes

Also controlled for firm size, working hour, the rate of contingent workers, labor union, market competition, demand, multi-factory firm, year 2009, and year 2011

- <Table 4> The Regression Results: Sales per Capita

Independent variables	Dependent variable = Log(Sales per capita)	
	(1)	(2)
Constant	5.584(.832)	6.168(1.051)
Lagged Dep. Var.	-.044(.108)	-.017(.129)
Proportion of Migrant Workers	.014***(.005)	.112*(.056)
Labor Shortage Rate	.001(.003)	.004(.003)
Log(Capital-labor ratio)	.023(.061)	-.011(.069)
Control for endogeneity of FW	No	Yes

Also controlled for firm size, working hour, the rate of contingent workers, labor union, market competition, demand, multi-factory firm, year 2009, and year 2011

- ## <Table 5> The Regression Results: Wage

Independent variables	Dependent variable = Log(starting wage of male high school graduates)	
	(1)	(2)
Constant	4.856(.709)	4.702(.742)
Lagged Dep. Var.	.335***(.085)	.346***(.086)
Proportion of Migrant Workers	-.001(.003)	-.016(.020)
Labor Shortage Rate	-.001(.001)	-.001^(.001)
Control for endogeneity of FW	No	Yes

Also controlled for firm size, working hour, the rate of contingent workers, labor union, market competition, demand, multi-factory firm, year 2009, and year 2011

- <Table 6> The Regression Results: Labour shortage

Independent variables	Dependent variable = Log(vacancy rate)	
	(1)	(2)
Constant	-5.160(5.953)	1.090(11.655)
Lagged Dep. Var.	-.034(.052)	-.020(.052)
Proportion of Migrant Workers	-.334^(.257)	-2.336(2.045)

Also controlled for working hour, the rate of contingent workers, labor union, market competition, demand, multi-factory firm, year 2009, and year 2011

- Summary of the regression analyses

- Significantly positive impacts on firm profitability

- More or less positive impacts on labour productivity

- Insignificantly negative impacts on the wage of low-skilled native workers

- Insignificantly negative impacts on labour shortage

- Profit improvement is obtained through productivity gains, not through wage reduction