Housing Market and Labor Market

Inhyuk Choi*, Ji-Woong Moon†

January 22, 2021

Abstract

No abstract.

1 Motivation

In many countries, including South Korea and the U.S., housing is the single most important asset for households. As such, it is a primary interest for economists to exploring links between housing market and labor market. Previous literature proposes several mechanisms through which house prices can affect labor market outcomes; for example, wealth effect, credit constraint, and moving constraint. Most of these proposed channels work for home-owners, and previous papers confirms that house prices affect labor market choices of home-owners in various dimensions: entrepreneurship, wage, labor hours, and unemployment. (previous literature!) On the other hand, relatively little is known about how housing market condition affects non-home-owners' labor market behaviors. Indeed, many papers implicitly assume that non-home-owners' labor market choices are not responsive to house price fluctuation, and use non-home-owners as a comparison group to identify the effects for home-owners. (again, literature!) However, it can mislead the aggregate labor market implications of housing market dynamics, if non-home-owners also respond to housing market shocks. This paper examines how housing market shocks affect the labor market behaviors of both home-owners and non-home-owners.

One key channel through which house prices can affect non-home-owners' labor market choices is the expected housing cost channel. While housing wealth does not appear in non-home-owners' current balance sheet, it does not mean housing wealth never appear in their life-time. As many of them become home-owners in the future, and likely to plan the

*KIPF. ichoi@psu.edu
†SUFE. jum392@psu.edu

home purchase in advance, persistent housing market shock would affect the non-home-owners present value balance sheet through the expected cost of future housing services. It means that the house prices would affect the labor market choices of non-home-owners as well.

Regression results may not support or contradict to the introduction.

2 Regression

$$y_{it} = \alpha_i + \gamma_t + x'_{it}\beta + \eta_{j(i,t)} + \sum_{h=o,r} P_{j(i,t)} \cdot (H_{it} = h) \cdot \beta_h + \epsilon_{it} \tag{1}$$

y_{it}: dependent variable. labor hours, unemployment dummy and real wages

α_i, γ_t: individual and time fixed effects

x_{it}: age, age-squared, total wealth (financial + housing), financial debt, (hourly wage if y_{it} is labor hour)

$j(i,t)$: a region where i lives at time t

$\eta_{j(i,t)}$: region fixed effect

$P_{j(i,t)}$: regional (real) house price excluding own house price

H_{it} : house ownership status. $H_{it} = o(wner)$ or $H_{it} = r(enter)$.

β_o, β_r: effect of regional house prices on y, depending on house ownership status.

Table 1: Labor Hours

	(1) lab_hour	(2) lab_hour	(3) lab_hour	(4) lab_hour
Hourly wage	-16.44***	-17.22***	-15.69***	-16.39***
	(0.184)	(0.289)	(0.535)	(0.336)
Age	1.765***	2.225***	4.163***	1.810***
	(0.0749)	(0.287)	(0.583)	(0.138)
Age**2	-0.0142***	-0.0203***	-0.0541***	-0.0134***
	(0.000775)	(0.00431)	(0.00873)	(0.00151)
tot_wealth	0.00000637**	0.0000406***	0.0000466**	0.0000320***
	(0.00000323)	(0.0000118)	(0.0000223)	(0.00000906)
fin_debt	0.0000104**	0.0000423**	-0.0000126	0.0000209
	(0.00000518)	(0.0000205)	(0.0000479)	(0.0000158)
Renter*Reg.HP	0.000207	0.00313***	0.00852***	-0.00309*
	(0.000750)	(0.00110)	(0.00174)	(0.00159)
Owner*Reg.HP	0.00313***	0.00161	0.00914***	0.00290
	(0.00101)	(0.00234)	(0.00350)	(0.00209)
Constant	44.59***	41.52***	7.090	43.16
	(1.917)	(4.854)	(9.809)	(836193.2)
Observations	24716	10968	2948	5986
Adjusted R^2	0.190	0.128	0.068	0.263

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- (1): Baseline regression. Labor hour is positively correlated with regional house price only for home owners. One curiosity is that, why they are positively correlated. My initial guess was positive correlation for renters (work more to purchase house. More economically, work more because they become poorer as they are net-debtors in terms of housing services.) and negative correlation for owners (work less because they become wealthier)

- (2): Regression for young people, who are less than 40. Only renters' labor hours are positively correlated to regional house price. Do young renters think (rationally?) that they are net-creditors of housing service (because they will become home-owners sooner or later) so that they interpret housing price increase as a good thing?

The positive correlation might be from the demand channel (Mian and Sufi, 2011). When

housing prices increase, local demand increases so that wage and employment increase. To isolate this effect from the expected housing cost channel, I run two regressions.

- (3): This is regression only for people who are living in Seoul. The underlying assumption is that within Seoul, even services are freely traded across "local markets." Within Seoul, both renters and owners labor hours are positively (why?) correlated with regional house price.
- (4): This is regression only for workers in manufacturing industry. Mian and Sufi (2011) argue that manufacturing sectors are not responsive to local housing shock because they are nationally traded. For manufacturing sector workers, only renters' labor hours are negatively (why?) correlated with regional house price.

Table 2: Labor Hours

	(1) lab_hour	(2) lab_hour	(3) lab_hour	(4) lab_hour
Age	-0.462***	-0.911***	-0.000456	-0.111
	(0.0836)	(0.338)	(0.672)	(0.164)
Age**2	-0.000106	0.00689	-0.0103	-0.00374**
	(0.000897)	(0.00514)	(0.0102)	(0.00185)
tot_wealth	-0.00000218	-0.0000233*	0.00000950	0.00000189
	(0.00000382)	(0.0000139)	(0.0000265)	(0.0000112)
fin_debt	0.0000104*	0.0000891***	0.0000196	0.0000288
	(0.00000613)	(0.0000245)	(0.0000570)	(0.0000195)
Renter*Reg.HP	-0.000124	0.00270**	0.00635***	-0.00358*
	(0.000888)	(0.00132)	(0.00207)	(0.00196)
Owner*Reg.HP	0.000548	0.00164	0.00542	-0.00196
	(0.00119)	(0.00280)	(0.00416)	(0.00258)
Constant	63.99***	64.46	48.22***	55.52
	(2.254)	(173204.5)	(11.55)	(1040162.1)
Observations	24807	11007	2960	6010
Adjusted R^2	-0.133	-0.255	-0.321	-0.124

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In the previous regression, I control for the hourly wage which is constructed by monthly wage / labor hour. It may be problematic. Also, the sign of total wealth is counter-intuitive. So, I run the regression without this hourly wage in Table 2. The total wealth has desired sign. The effect of regional house prices are similar.

Table 3: Unemployment

	(1) unemp	(2) unemp	(3) unemp
Age	-0.00416***	-0.00716	-0.000369
	(0.00103)	(0.00597)	(0.0133)
Age**2	0.0000304***	0.000105	0.0000402
	(0.0000105)	(0.0000900)	(0.000200)
tot_wealth	-4.33e-08	5.92e-08	-7.27e-08
	(4.09e-08)	(0.000000215)	(0.000000505)
fin_debt	4.16e-08	-0.000000425	-0.000000253
	(7.72e-08)	(0.000000407)	(0.00000110)
Renter*Reg.HP	-0.0000164	-0.000123***	-0.000224***
	(0.0000116)	(0.0000233)	(0.0000405)
Owner*Reg.HP	-0.0000112	-0.0000691	-0.000174**
	(0.0000147)	(0.0000468)	(0.0000823)
Constant	0.166***	0.206	0.134
	(0.0290)	(1753.2)	(0.227)
Observations	38487	13786	3622
Adjusted R^2	-0.163	-0.245	-0.287

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3 is the result for unemployment dummy. For extensive margin, the regional house prices positively affect employment rate (reduce unemployment rate). It is so only for workers who are living in Seoul. Still, there can be chances that local demand channel is not fully controlled for.

Table 4: Wages

	(1) lnw	(2) lnw	(3) lnw	(4) lnw
Age	0.104***	0.152***	0.290***	0.0815***
	(0.00295)	(0.0132)	(0.0262)	(0.00581)
Age**2	-0.000881***	-0.00161***	-0.00374***	-0.000570***
	(0.0000308)	(0.000197)	(0.000396)	(0.0000641)
tot_wealth	0.000000329***	0.00000286***	0.00000376***	0.00000157***
	(0.000000115)	(0.000000486)	(0.000000996)	(0.000000345)
fin_debt	0.000000257	-0.00000124	-0.00000382	0.000000923
	(0.000000199)	(0.00000107)	(0.00000239)	(0.000000660)
Renter*Reg.HP	0.0000161	0.000137***	0.000342***	-0.0000850
	(0.0000292)	(0.0000463)	(0.0000807)	(0.0000659)
Owner*Reg.HP	0.000152***	-0.0000323	0.000231	0.000235***
	(0.0000393)	(0.0000975)	(0.000160)	(0.0000815)
Constant	-1.982	-2.496	-4.738***	-1.504
	(7182.1)	(13698.2)	(0.454)	(41998.1)
Observations	18764	7209	1980	4527
Adjusted R^2	-0.018	-0.016	-0.068	0.236

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4 is the result for wages. It is more problematic than previous labor supply variables (in my opinion) since wealth are highly endogenous, and interact with wages.