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**Rural Non-farm Dynamics:
Occupational Ladders and Earnings Mobility in Thailand**

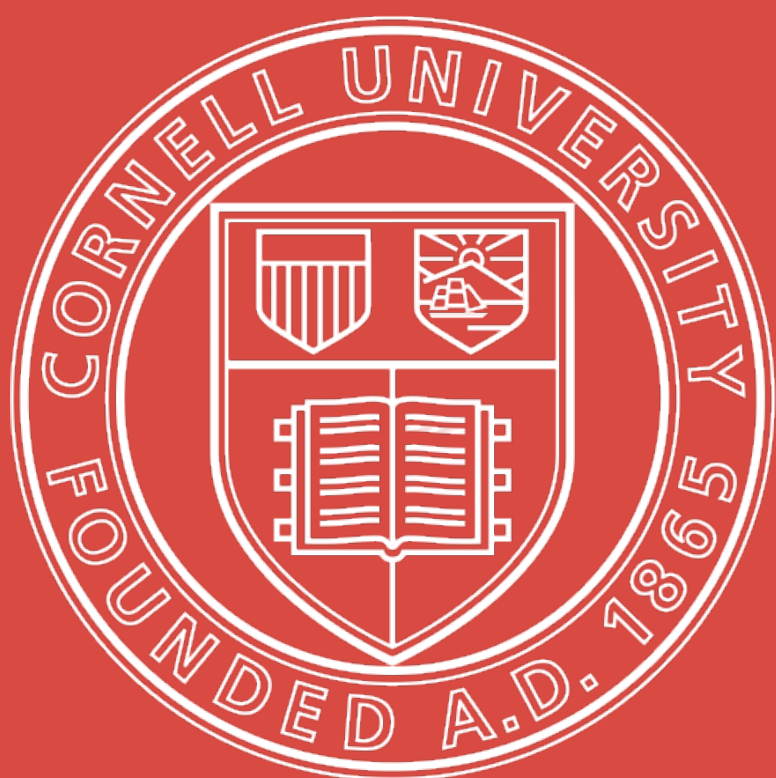
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***Poster prepared for presentation at the Agricultural & Applied Economics Association's 2011
AAEA & NAREA Joint Annual Meeting, Pittsburgh, Pennsylvania, July 24-26, 2011***

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Rural Non-farm Dynamics: Occupational Ladders and Earnings Mobility in Thailand

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Introduction

There is growing interest in rural non-farm businesses and employment in developing countries. Past research shows that those who are engaged in highly productive activities in the rural non-farm economy (RNFE) typically enjoy upward earnings mobility (Barrett et al. 2001; Block and Webb 2001; Lanjouw 2001). However, individuals with higher initial wealth and human capital are also more able to engage in high-return non-farm activities and benefit most from the RNFE (Barrett et al. 2005). As Banerjee and Newman (1993) theorize, given capital market imperfections, the poor typically choose wage work while the rich become entrepreneurs, creating an interplay between ‘the distribution of income and wealth’ and ‘the dynamics of occupational choice’. That interplay remains under-studied.

Most household businesses in developing countries are self-employment enterprises without paid employees (Haggblade et al. 2007). These businesses face several constraints, such as access to capital, skilled labor, entrepreneurial ability, and government registry requirements, that limit growth. Self-employment does not automatically lead to enterprise growth and employment creation (Mondragon-Velez and Pena-Parga, 2008; de Mel et al., 2008; Schoar, 2009).

Objectives & Methods

This study explores RNFE occupational and earnings dynamics in rural Thailand, with the objective of improving the understanding of the economics of transitions out of agriculture and the creation of rural nonfarm employment opportunities.

The research questions are as follows. First, what patterns of occupational transitions exist among farmers, non-farm employees, the non-farm self-employed, and non-farm employers in rural Thailand? Second, how do rural non-farm employment and occupational transitions affect directional earnings mobility? Which occupational shifts are associated with people gaining or losing earnings? For policy purposes, it is also crucial to know what causes these rural occupational transitions.

We use occupational transition matrices together with earnings per capita mobility measures and conditional micro mobility regressions to answer these questions.

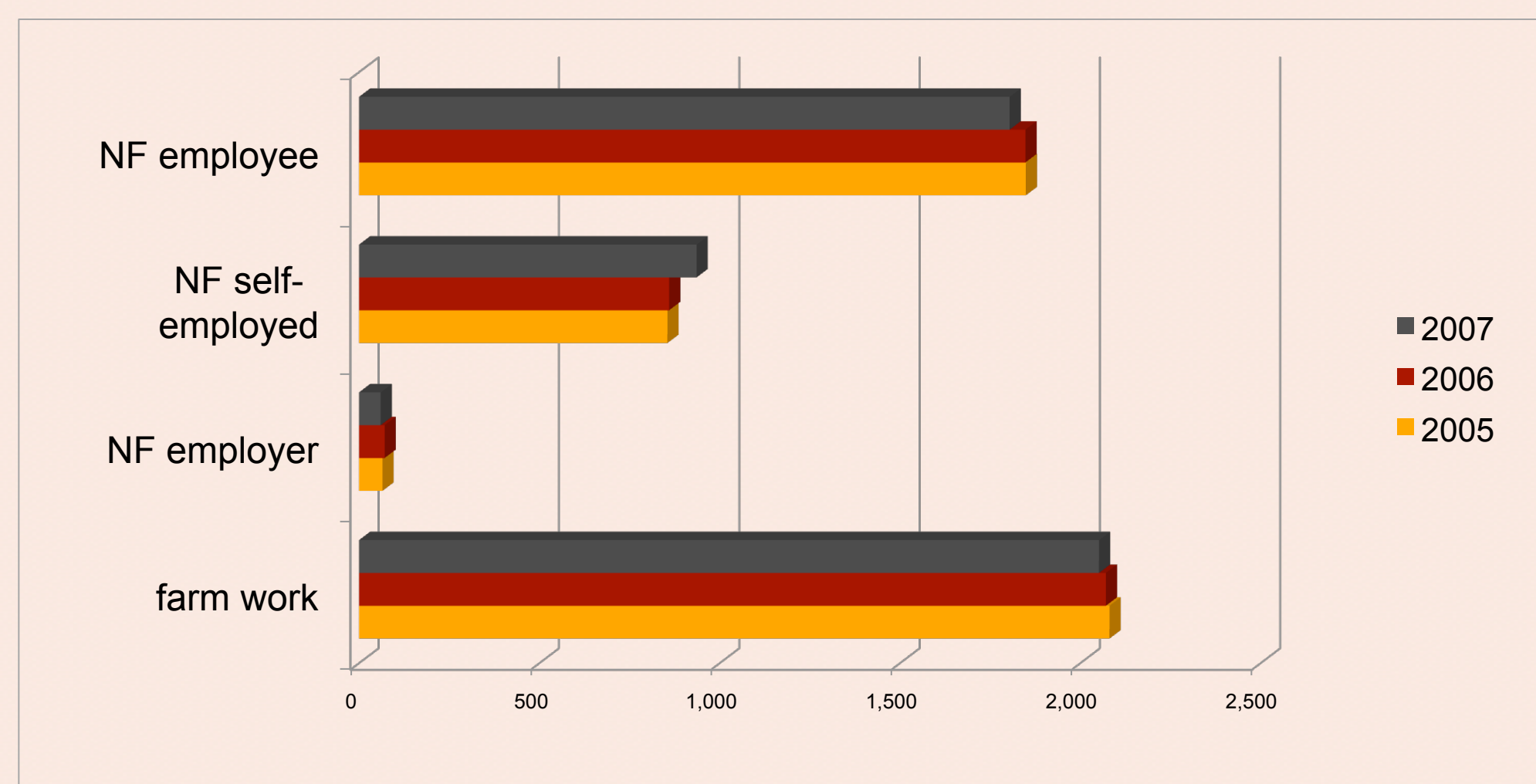
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Data & Background

The Thai Socio-Economic Survey (SES) panel data were collected by the National Statistical Office of Thailand in 2005, 2006, and 2007. The data are restricted to individuals who were employed in rural areas, including unpaid workers for household businesses, and those who were younger than 70 years old.

Figure 1 Occupations in rural areas



- **Farmers:** primarily employed in agriculture, livestock, fishing, hunting
- **Non-farm employers:** own business and hire employees
- **Non-farm self-employment:** own business without paid employees
- **Non-farm employees:** wage or salary workers

Figure 2 Mean real earnings by quantiles and occupations

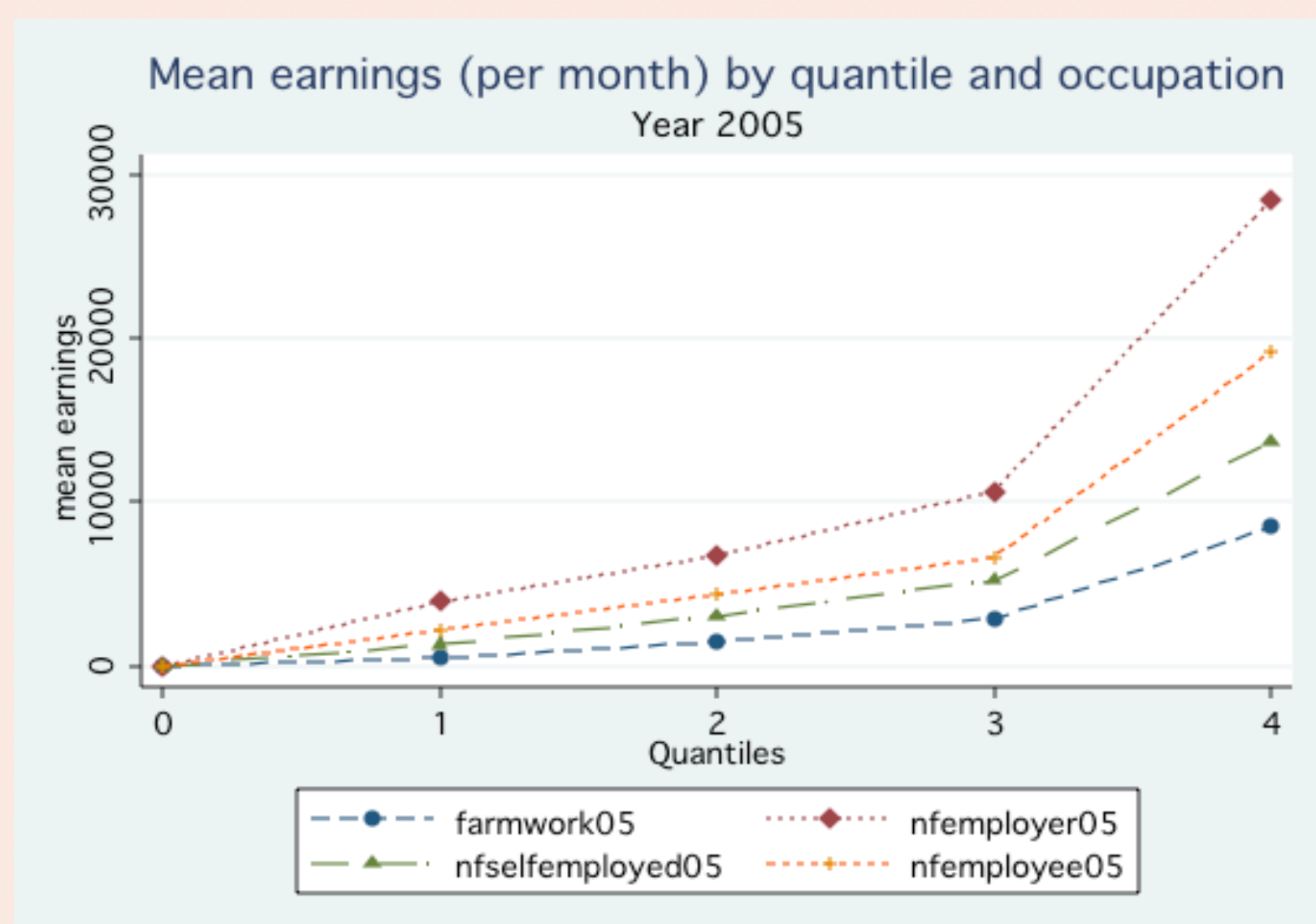
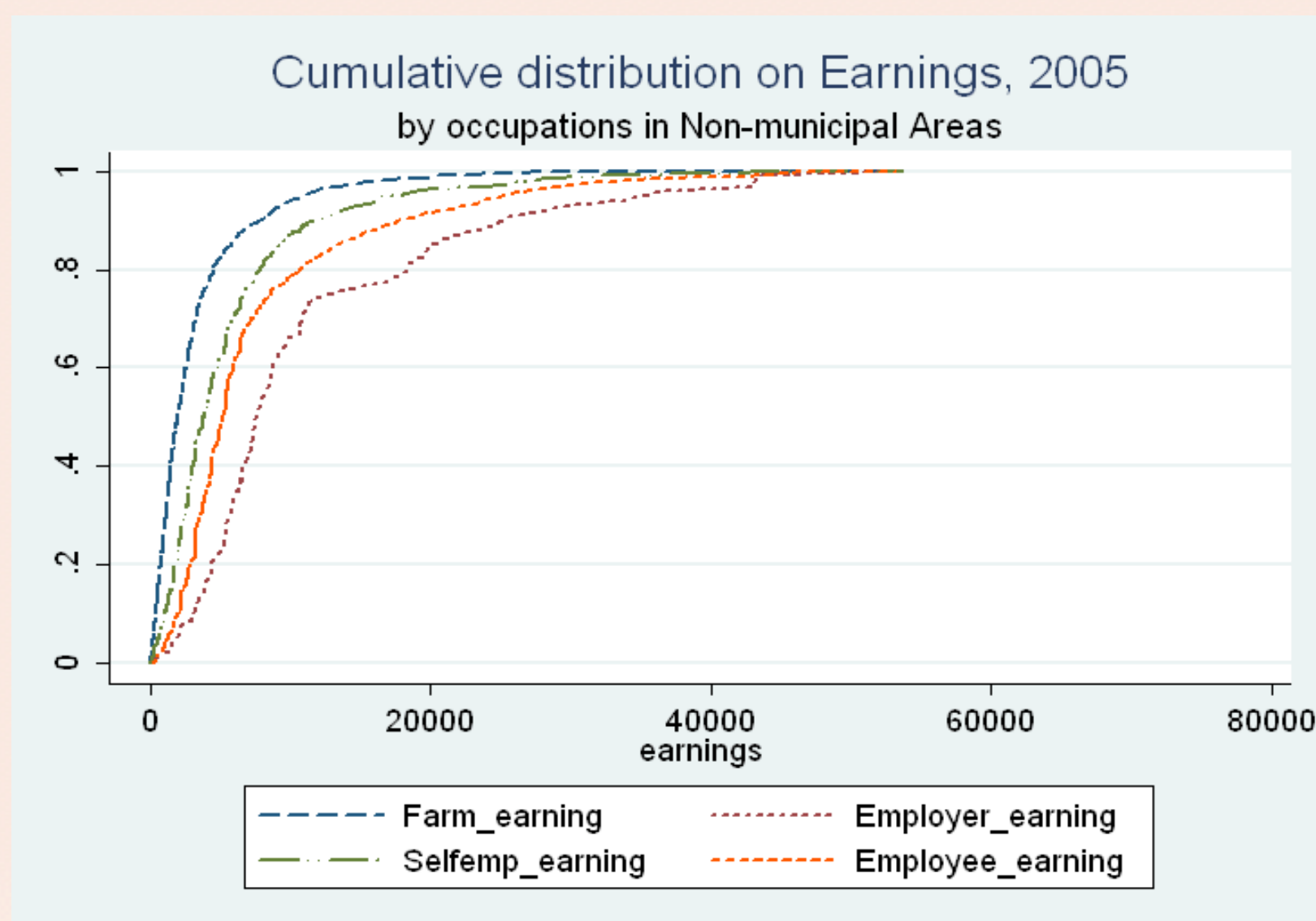


Figure 3 Cumulative distribution on earnings



In Figure 3, all RNFE occupations first degree stochastically dominate farming in earnings distributions. The welfare ordering is consistent with the results presented in Figure 2, where the most desirable occupation is non-farm employer followed by non-farm employee, non-farm self-employment, and farmers. These patterns are replicated in the 2006 and 2007 data as well.

Results & Discussion

Transition matrices in Tables 1 & 2 show how occupational movements relate to earnings changes.

- Most people remain in their occupation over the three year period. But more non-farm employers converted to merely self-employed than maintain their status. It is tough to maintain a rural non-farm business with employees.
- Other transitions mainly moved into non-farm employment rather than into non-farm self-employed or employers.
- Those who did not change occupation enjoyed positive median earnings changes, except those who remained farmers.
- Moves into the RNFE generally yielded earnings gains while moves into farming typically brought earnings losses.

Table1 Transition matrix of occupation 2005/2007

Farm and Non-farm employment 2005	Farm work	Non-farm (NF) employment 2007			Total
		NF self- employed	NF employees	NF employers	
Farm work					
- Number	1,599	167	309	6	2,081
- Row percentage	76.84	8.02	14.85	0.29	100
NF self-employed					
- Number	148	591	96	19	854
- Row percentage	17.33	69.2	11.24	2.22	100
NF employees					
- Number	296	154	1,388	11	1,849
- Row percentage	16.01	8.33	75.07	0.59	100
NF employers					
- Number	7	24	10	24	65
- Row percentage	10.77	36.92	15.38	36.92	100
Total	2,050	936	1,803	60	4,849

Table2 Transition matrix of median earnings change and mean of percentage earnings change

Farm and Non-farm employment 2005	Farm work	Non-farm (NF) employment 2007		
		NF self-employed	NF employees	NF employers
Farm work				
- Median of ΔY	-134	1,463	2,705	889
- Mean of % ΔY	0.61	2.58	3.35	1.73
- (s.d.)	(2.39)	(4.30)	(4.56)	(3.80)
NF self-employed				
- Median of ΔY	-772	676	137	270
- Mean of % ΔY	0.38	0.94	0.55	0.92
- (s.d.)	(3.01)	(2.75)	(2.09)	(1.87)
NF employees				
- Median of ΔY	-1,939	-1,056	443	3,329
- Mean of % ΔY	-0.23	0.15	0.24	2.50
- (s.d.)	(1.05)	(1.49)	(0.84)	(3.82)
NF employers				
- Median of ΔY	-4,231	777	1,677	984
- Mean of % ΔY	-0.05	0.12	0.27	0.59
- (s.d.)	(0.79)	(0.82)	(1.01)	(1.43)

Earnings changes (ΔY) are in Thai Bath (real term), adjusted by CPI for each region of Thailand with base year in 2007. The reported statistics are calculated with cutting off the top and the bottom 1% of sample used.

Conditional mobility models are used to explore how earnings changes associate with farm and non-farm occupational shifts. Following Fields(2007), the model is:

$$\Delta Y_{it} = \alpha + \beta_1 Y_{i,t-1} + \beta_2 Z_i + \beta_3 \Delta X_{it} + \phi_i + t + \varepsilon_{it}$$

ΔY_{it} is the change in reported earnings. $Y_{i,t-1}$ is previous year reported earnings (to control for autocorrelation). Z_i denotes time-invariant variables, observed individual and household characteristics, in the initial year. ΔX_{it} denotes employment transition experiences, which are dummy variables for the 15 possible transitions, with staying in farm work as a base case. ϕ is individual (or sub-district) fixed effects. t is time effect and ε_{it} is a mean zero, homoskedastic, i.i.d error term.

Table3 Multivariate regressions of earnings change

	(1) Individual fixed effects		(2) OLS (Bootstrap s.e.)		(3) Hausman-Taylor (random effects)	
	Coef.	Std. err.	Coef.	Std. err.	Coef.	Std. err.
Income (t-1)	-1.36***	0.01	-0.36***	0.04	-0.96***	0.03
Sector transitions						
Farm to (farm: base)						
NF self-employed	1412.89***	288.10	1296.71***	310.63	1559.15***	345.81
NF employee	1924.75***	215.36	2080.57***	190.62	2843.27***	236.01
NF employer	5508.90***	1214.57	3634.34	2267.48	8271.16***	2193.22
NF self-employed to						
Farm	456.22	282.86	-1255.41***	305.49	99.53	270.59
NF self-employed	2109.96***	348.53	694.41***	187.70	2115.60***	491.79
NF employee	2392.80***	372.45	618.04***	279.72	3021.30***	384.87
NF employer	3267.68***	817.61	1479.89	1009.25	3569.19***	1529.96
NF employee to						
Farm	651.20***	213.01	-1573.30***	229.60	618.60***	239.47
NF self-employed	1729.38***	333.54	-213.47	315.78	2339.44***	401.73
NF employee	3297.26***	268.85	1491.94***	183.88	4680.91***	339.43
NF employer	4039.71***	1103.36	2240.05	1824.93	4536.58**	1861.04
NF employer to						
Farm	1827.98	1206.87	-2494.53*	1293.59	2309.01	1885.40
NF self-employed	2447.30***	785.28	1063.83	812.12	3735.58**	1645.92
NF employee	1919.17*	1156.94	-1730.81	1446.06	1317.00	1563.33
NF employer	2220.81*	1210.14	1830.88*	1004.00	4553.32*	2356.05
Age			73.23***	24.35	189.87***	54.19
Age2			-0.76***	0.28	-1.88***	0.63
HH head			96.38	87.40	501.21***	181.09
Married			208.24**	100.43	256.21	163.16
Female			-186.80**	73.15	-605.52***	158.19
Education (Less than primary school/none:base)						
Primary school			233.29	147.63	-179.48	363.18
Secondary school			522.42**	219.90	357.56	485.47
High/Vocational school			1112.54***	254.26	1415.54***	547.50
College and above			4260.41***	545.41	8649.66***	930.15
Owned house			-129.73	217.50	-1151.29***	328.56
Asset Index			667.64***	125.51	2309.03***	180.56
Constant	6045.61***	151.65	-972.16	603.19	-834.57	1462.41
Individual fixed effects	Yes		No		Yes	
Time effect (2006)			227.73*	118.11		
Sub-district fixed effects	No		Yes		No	
R-squared	0.73		0.26			
Wald test					1808.79***	
N. of obs	9492		9492		9492	

Observations are cut off the top and the bottom 1% of sample used. Model (2) is bootstrapped and clustered at sub-district level.

The regression results confirm the transition matrix findings (Table 2). Shifts into farming are associated with earnings losses, on average. By contrast, participation in the RNFE is associated with statistically significant earnings gains. The results are quite consistent with the unconditional welfare ordering in Figure 3.

Conclusion

This study finds significant occupational transitions in rural Thailand, mainly involving moving to non-farm employment, rather than starting businesses. Starting a business that employs non-family members is least common and most difficult to maintain over time. Transitions into the RNFE are associated with statistically significant earnings gains while transitions into farming are associated with earnings losses. The cumulative distribution of income shows that non-farm employers’ earnings distribution stochastically dominates the others, signaling an occupational ladder: the best employment is as a RNFE business owner and employer; the worst is as an agricultural worker or farmer. However, only a small number of individuals become non-farm employers, reflecting the difficulty involved in starting, expanding or even keeping a rural non-farm business.