

Prek Availability in Vietnam: Determinants of Early Attainment & Progress

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This presentation

- Vietnam's Background
- Model
- Data
- Results
- Conclusions

This Paper

Analyses of the effect of prek availability (intent-to-treat) on grade completion indicators:
estimating the probability of

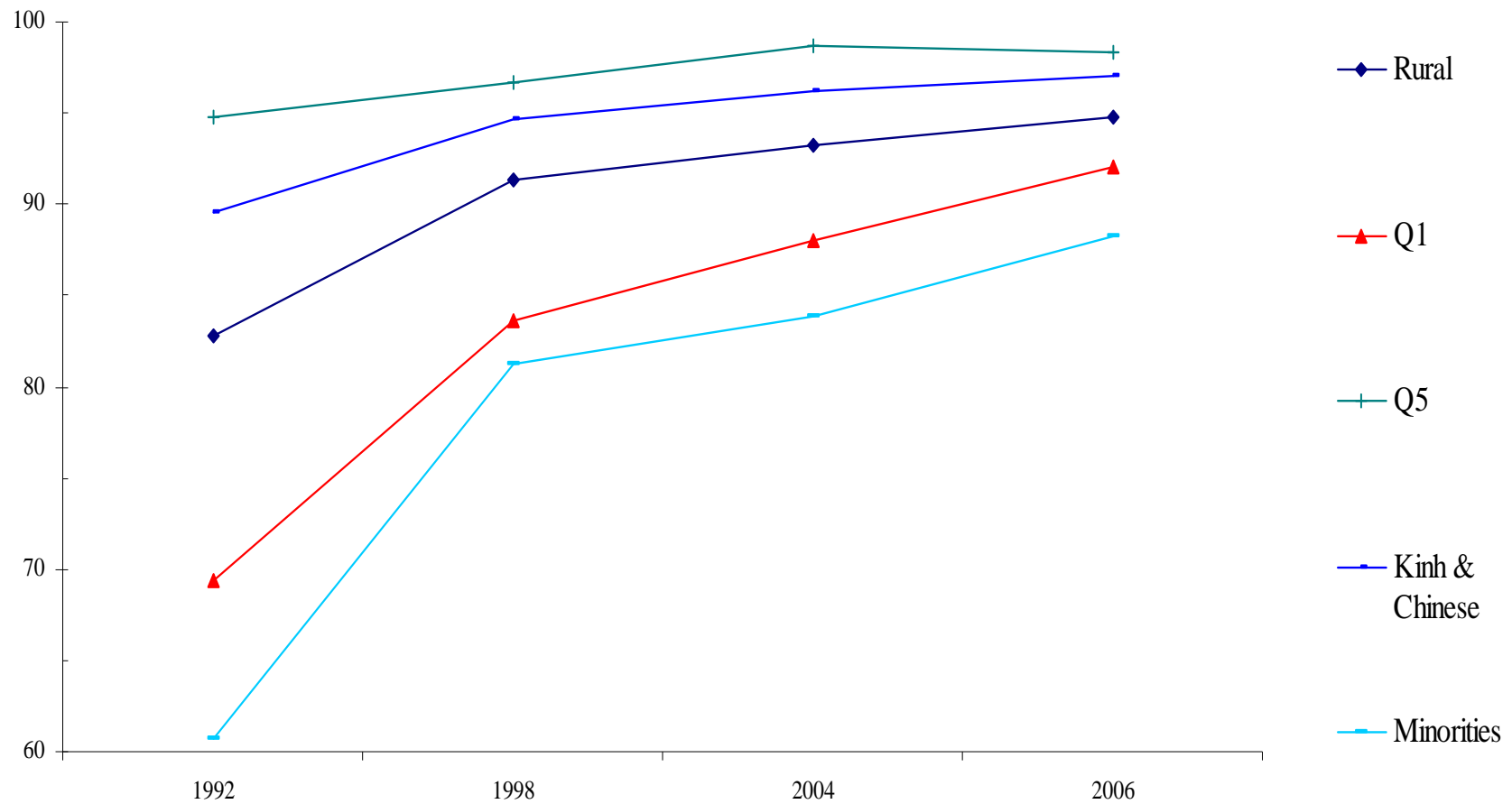
1. Grade completion in the primary cycle &
2. Grade dropout in the primary cycle

Vietnam: Background

- Strong macroeconomic foundations (GDP growth of about 8.5% in 2005 and 2006).
- Impressive poverty reductions: faster than any country in the region (1990 to 2004, 60% to 20% rate)
- However, evidence of a less inclusive development with time:
 - Urban household expenditures double that of rural ones, poverty has a strong spatial dimension, & progress in poverty reduction slower for Vietnam's ethnic minorities, with higher incidences of poverty.

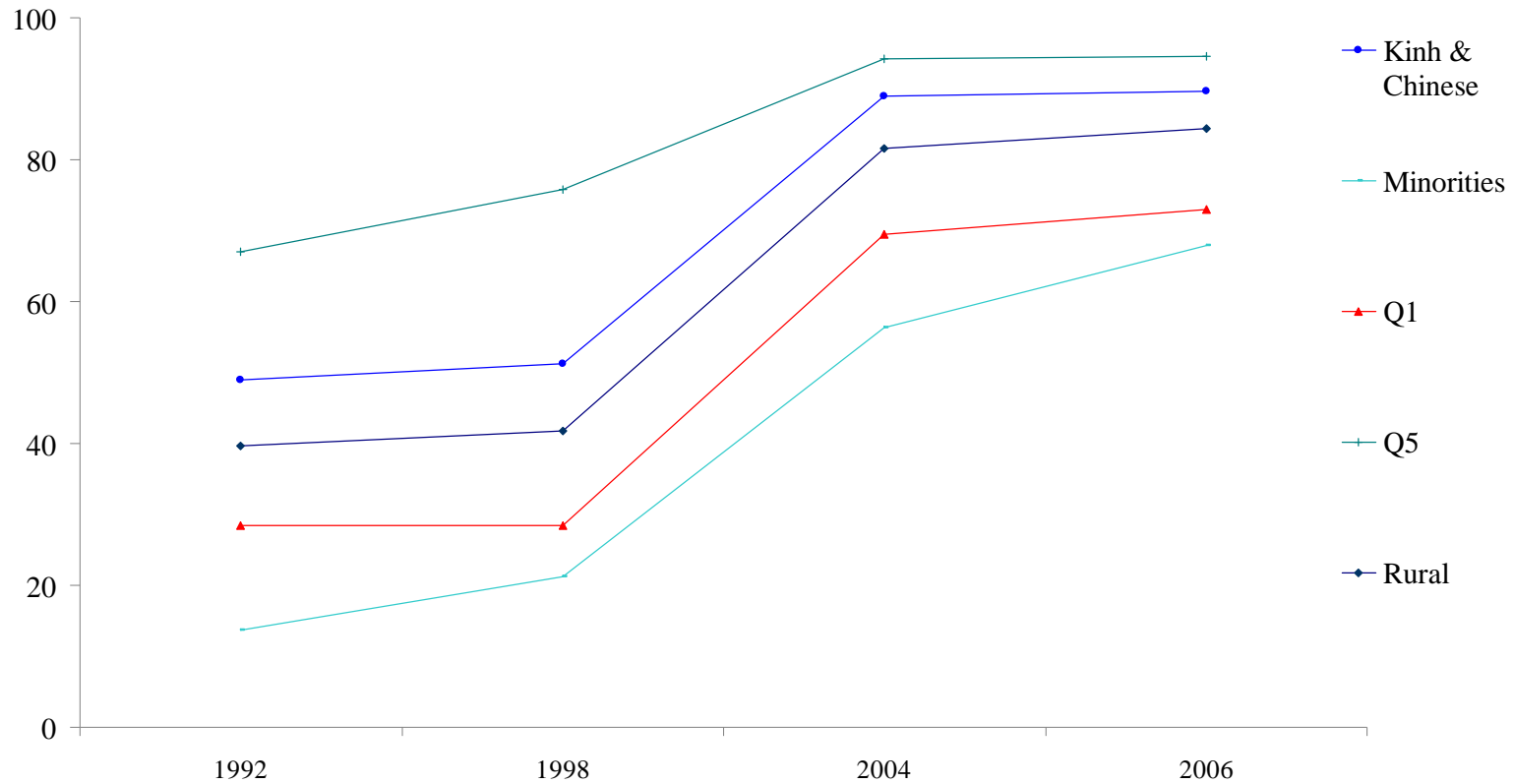
Impressive education attendance rates improvements

Primary Attendance Rates



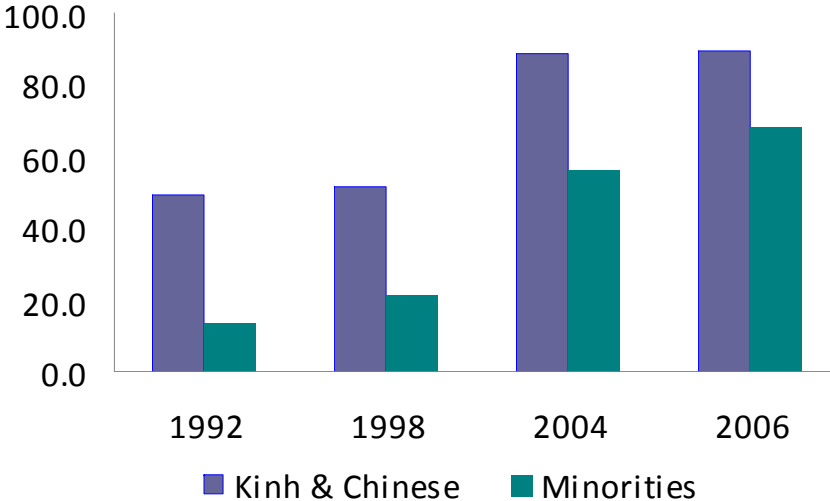
Inequalities in Vietnam

Primary Completion Rate (11 year olds)

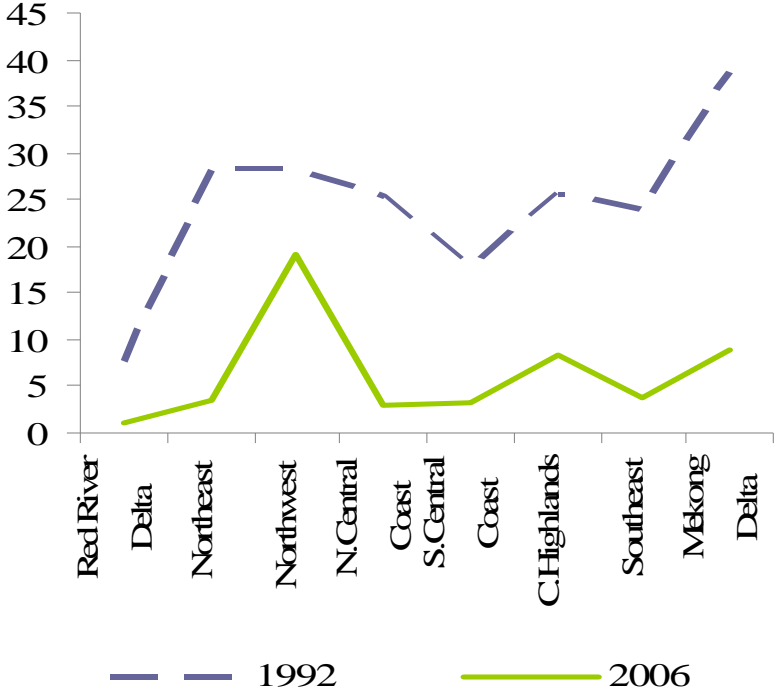


Completion and Overage

Primary Completion Rate (11 year olds)



Primary Overage Rates



Model: Intent-to-treat

- Dropout or Completion are observed as binary variables, e.g.

$$y_{ij} = \begin{cases} 1 & \text{if } y_1^* < \text{Completed} \\ 0 & \text{if } y_1^* \geq \text{Completed} \end{cases}$$

- We specify the determinants on the probability of children completing or overage (e.g. :

$$\Pr(\text{Completion}_{ij} = 1 \mid X_{ij} = x_{ij}) = \frac{1}{1 + \Phi(x_{ij}' \beta)}$$

where,

Φ = cumulative distribution function of a standard normal distribution,

x_{ij} = family characteristics (i) and prek average supply (or no prek) & other school quality characteristics (j) & region fixed-effects,

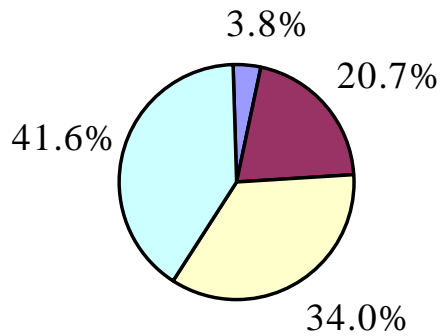
β = parameters.

Data

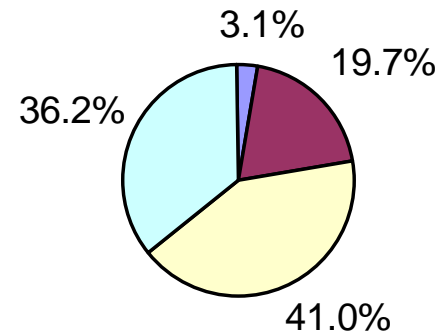
- Vietnam Living Standards Survey (VLSS)
 - representative household surveys
 - two years: VLSS 2004 and 2006
 - household income, education, health, ethnicity, region
- DFA (School Census) 2004 & 2006
 - School level indicators, aggregated at the commune level
- Merged at the Commune level (for each child w/have the average characteristics of schools in his/her commune)

Variance Decomposition by Government level PreK Availability

No preschool



% Separate site, in village



■ Region ■ Province ■ Commune ■ School

■ Region ■ Province ■ Commune ■ School

Results: Prek on Grade Completion

2004	ALL		RURAL		Q1		MINORITIES	
prekprimrm	0.048	0.053	0.049	0.055	0.050	0.048	0.091	0.094
	(0.033)	(0.034)	(0.034)	(0.035)	(0.047)	(0.048)	(0.054)	(0.055)
prekprimsite	0.052	0.054	0.036	0.039	0.102	0.101	0.144	0.144
	(0.022)*	(0.022)*	(0.024)	(0.024)	(0.037)**	(0.037)**	(0.050)**	(0.050)**
prekoth	0.044	0.047	0.046	0.049	0.000	-0.003	0.139	0.139
	(0.022)*	(0.022)*	(0.023)*	(0.023)*	(0.036)	(0.036)	(0.057)*	(0.057)*
	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q
Observations	6337	6337	5172	5172	1987	1987	1148	1148

2006	ALL		RURAL		Q1		MINORITIES	
prekprimrm	0.003	-0.012	-0.005	-0.016	-0.052	-0.053	-0.025	-0.026
	(0.040)	(0.040)	(0.041)	(0.042)	(0.057)	(0.057)	(0.057)	(0.057)
prekprimsite	0.005	0.008	-0.001	0.003	0.025	0.030	0.047	0.050
	(0.020)	(0.020)	(0.023)	(0.023)	(0.036)	(0.036)	(0.046)	(0.046)
prekoth	-0.002	0.002	0.009	0.013	-0.002	0.000	0.044	0.045
	(0.021)	(0.021)	(0.023)	(0.023)	(0.037)	(0.037)	(0.049)	(0.049)
	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q
Observations	4876	4876	3967	3967	1608	1608	1161	1161

Results: No Prek on Grade Completion

	2004		ALL		RURAL		Q1		MINORITIES	
noprek	-0.048	-0.051	-0.009	-0.043	-0.046	-0.050	-0.048	-0.125	-0.127	
	(0.015)**	(0.015)**	(0.025)	(0.016)**	(0.017)**	(0.026)	(0.026)	(0.036)**	(0.037)**	
	Region f.e.	School Q	Age f.e.	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q	
Observations	6337	6337	6337	5172	5172	1987	1987	1148	1148	

	2006		ALL		RURAL		Q1		MINORITIES	
noprek	-0.002	-0.004	0.072	-0.003	-0.006	-0.004	-0.007	-0.032	-0.033	
	(0.017)	(0.017)	(0.062)	(0.019)	(0.019)	(0.030)	(0.031)	(0.039)	(0.039)	
	Region f.e.	School Q	Age f.e.	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q	
Observations	4876	4876	4876	3967	3967	1608	1608	1161	1161	

Ibid previous table. There were no differences between region f.e. and no f.e. estimations.
No s.s. age and noprek interactions.

Results: Prek on Dropout Rates

2004	ALL		RURAL		Q1		MINORITIES	
prekprimrm	0.010	0.010	0.012	0.012	0.027	0.027	0.048	0.044
	(0.005)	(0.006)	(0.006)*	(0.006)	(0.012)*	(0.012)*	(0.018)**	(0.019)*
prekprimsite	-0.002	-0.002	-0.001	-0.001	0.000	-0.000	0.010	0.006
	(0.006)	(0.006)	(0.007)	(0.007)	(0.012)	(0.012)	(0.021)	(0.020)
prekoth	0.002	0.003	0.002	0.002	-0.022	-0.022	0.007	0.003
	(0.006)	(0.006)	(0.007)	(0.007)	(0.020)	(0.020)	(0.024)	(0.024)
	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q
Observations	6337	6337	5172	5172	1987	1987	1148	1148
2006	ALL		RURAL		Q1		MINORITIES	
prekprimrm	-0.018	-0.028	-0.023	-0.029	0.001	-0.003	0.028	0.036
	(0.033)	(0.033)	(0.034)	(0.034)	(0.050)	(0.050)	(0.053)	(0.053)
prekprimsite	-0.021	-0.020	-0.045	-0.043	-0.030	-0.026	-0.009	-0.006
	(0.017)	(0.017)	(0.019)*	(0.019)*	(0.033)	(0.033)	(0.043)	(0.043)
prekoth	-0.033	-0.032	-0.044	-0.043	-0.079	-0.075	-0.022	-0.018
	(0.018)	(0.018)	(0.020)*	(0.020)*	(0.035)*	(0.035)*	(0.046)	(0.047)
	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q
Observations	4876	4876	4876	3967	3967	1608	1608	1161

Results: No Prek on Grade Dropout

2004	ALL		RURAL		Q1		MINORITIES		
noprek	-0.003	-0.003	0.002	-0.005	-0.005	-0.006	-0.006	-0.027	-0.022
	(0.004)	(0.004)	(0.023)	(0.004)	(0.004)	(0.009)	(0.009)	(0.016)	(0.016)
	Region f.e.	School Q	Age f.e.	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q
Observations	6337	6337	6337	5172	5172	1987	1987	1133	1133

2006	ALL		RURAL		Q1		MINORITIES		
noprek	0.026	0.025	0.006	0.042	0.041	0.045	0.042	0.006	0.001
	(0.014)	(0.014)	(0.033)	(0.016)**	(0.016)**	(0.028)	(0.028)	(0.037)	(0.037)
	Region f.e.	School Q	Age f.e.	Region f.e.	School Q	Region f.e.	School Q	Region f.e.	School Q
Observations	4876	4876	4876	3967	3967	1608	1608	1161	4876

Ibid previous table.

Conclusions & Future of this research

- There is indication of an effects on grade completion and some effect on grade dropout within the primary cycle, particularly for disadvantaged populations.
- Better prek availability measures might help disentangle these effects.
- The size of effects (if what we are measure is in fact prek) are comparable to income and parental education effects.
- Next steps: (a) Panel estimation, to include lag variables (better measure of intent-to-treat than cross-sections); (b) Other measures of Prek.