An exploratory cross-country analysis of the relationship between new firm entry and income inequality

WONG Poh-Kam
HO Yuen-Ping

NUS Entrepreneurship Centre

NUS
National University
of Singapore

NUS Enterprise

Introduction

- Economic growth and wealth/income distribution represent the two fundamental concerns of the development economics literature (Yusuf, 2009)

- However, while the role of entrepreneurship in driving economic growth has been substantively documented in recent years (see e.g. Thurik and Wennekers, 2004, van Stel et al., 2005 and Wong et al 2005), there had been much less attention paid to the possible link between entrepreneurship and income inequality

Introduction

- The available empirical evidence on the link between entrepreneurship and income distribution is ambiguous
  - US and Italian data show entrepreneurship to be associated with greater inequality
  - Studies on a number of individual developing and transitional economies find negative association between entrepreneurship and inequality
- This paper seeks to explore the relationship using a broader set of cross-national data covering both advanced and developing economies

Literature Review - Theoretical

➢ Existing theoretical literatures on the determinants of income inequality have identified many factors, including demographic factors (e.g. literacy and fertility rates), macroeconomic variables (e.g. unemployment and inflation), and policy measures (e.g. taxation and interest rate), but the potential role of entrepreneurship appears to have been less-well researched.

➢ In macroeconomic studies of income distribution, main interest is in the Kuznets Curve hypothesis:

  – Inequality rises during early stages of development and declines as economies become more advanced

  – Indirect inference about the effect of entrepreneurship: Deutsch and Silber (2004) found the share of entrepreneurial income in total income of advanced economies to decline with level of income increases

Literature Review - Theoretical

- General equilibrium models feature entrepreneurs as decision-making agents as distinguished from wage-earning labor
  - Some of these models (see e.g. Banerjee & Newman (1993), Aghion & Bolton (1997) and Lloyd-Ellis & Bernhardt (2000)) suggest positive correlation between entrepreneurial activity and income inequality
  - However, some models conclude that the relationship is contingent on other factors, including financial market conditions (e.g. Cagetti and De Nardi (2006a) and the progressivity of the tax regime (e.g. Meh(2005) and Kanbur(1982))

➢ Besides the above literature on general equilibrium models, mainstream of entrepreneurship scholars by and large paid little attention to the possible effect of entrepreneurial activities on income distribution

Literature Review – Theoretical (cont'd)

- Mamede and Davidsson (2004) revisit the Schumpeterian view of the innovative entrepreneur and posit that entrepreneurship contributes to wealth redistribution through 3 mechanisms: new firm creation, innovation and competition

- Spencer et al. (2008) argue that new firms embody Schumpeter's emphasis on the wealth distribution function of independent entrepreneurs
  - Role of entrepreneur in wealth distribution is realized through creative destruction
  - Effect of entrepreneurship on income distribution is dynamic and varies over time

➢ Large number of contingent factors influence the relationship between entrepreneurship and income distribution. Actual relationship can be settled only through empirical observations
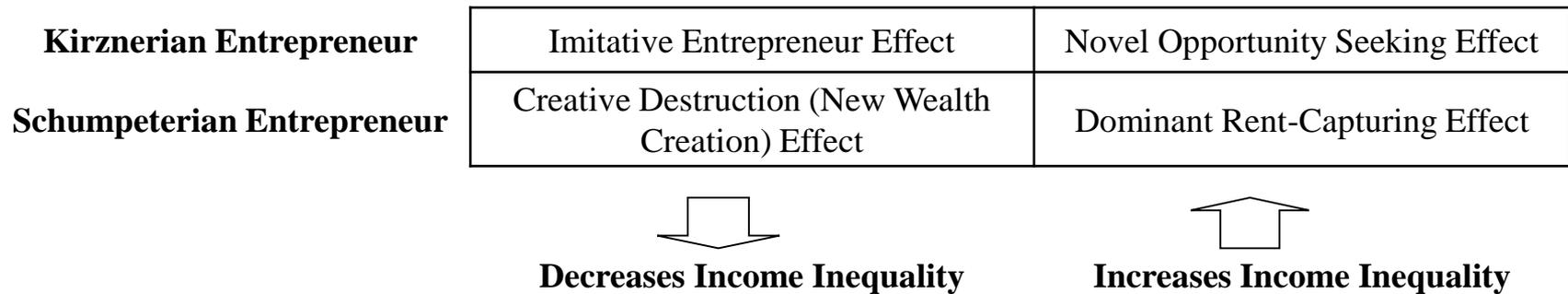
Literature Review - Empirical

NUS Entrepreneurship Centre

- Most empirical studies use data on advanced economies
    - Italy and USA (Quadrini 1999; Cagetti and De Nardi 2006; Quintano et al 2005)
    - Entrepreneurial households typically found to contribute to greater income inequality
    - "Entrepreneurs" defined as business-owners or self-employed individuals, not as new firms

- Very few studies on non-OECD economies
    - Findings suggest the opposite relationship from that found in advanced economy
    - Berkowitz and Jackson (2006) find that new firm creation in the transitional economies of Russia and Poland is associated with more equitable income distribution
    - Kimhi (2009) found that increase in entrepreneurial income in Ethiopia reduced income inequality

Framework – Conceptualization of Entreprenurship

- Focus on entrepreneurial activity that results in <u>creation of new enterprises</u>
  - New firms are well-placed to redistribute wealth by introducing discontinuous change that disrupts the control of resources and scale economies of large firms
- Conceptualize the role of entrepreneurship by integrating two perspectives, both casting entrepreneurship as being driven by the actions of <u>new entrants</u>:
  - Schumpeterian – entrepreneur as innovator who endogenously engenders creative destruction
  - Kirznerian – entrepreneur as arbitrager who exploits opportunities created by exogenous change
- The dynamics of new firm formation in an economy consists of a mix of stylized Schumpeterian and Kirznerian entries

Framework – Opposing Effects of New Firm Entry on Income Inequality

	Imitative Entrepreneur Effect	Novel Opportunity Seeking Effect
Kirznerian Entrepreneur		
Schumpeterian Entrepreneur	Creative Destruction (New Wealth Creation) Effect	Dominant Rent-Capturing Effect

⬇ **Decreases Income Inequality**   ⬆ **Increases Income Inequality**

Schumpeterian entries

- Wealth creation: innovative entrepreneurs create new market demands or capture value from existing firms, mitigating concentration of wealth in large incumbents

- Dominant rent-capturing: successful new firms capture most of the new wealth created and appropriate wealth previously owned by large incumbents, creating new loci of concentration

Kirznerian entries

- Novel opportunity-seeking: entrepreneurs generate new sources of income through exploiting undervalued resources, creating wealth concentration among opportunistic entrepreneurs

- Imitative: entrepreneurs merely copy what has been discovered by others, with initial rents of the original opportunity discoverer becoming dissipated, leading to income redistribution

Hypotheses

- Prior studies have not considered these alternative perspectives of entrepreneurship, implicitly suggesting that the Schumpeterian rent-capturing and Kirznerian novel opportunity seeking effects dominate (ie. entrepreneurship leads to rising inequality). We test a similar hypothesis, mindful that the opposite effect may be observed:

  - *H1: There is a significant positive association between the rates of new firm entry and levels of income inequality in a cross-section of advanced and developing economies*

Hypotheses

- The relative incidence of the opposing effects are posited to vary with the level of development of the economy. In particular, mechanisms for income redistribution (inequality reducing) effects are better established in advanced economies.

  - Schumpeterian new wealth creation more likely to be observed in technologically dynamic environments which allow for rapid new firm entries

  - Kirznerian imitative entrepreneurs more likely gain traction in advanced economies with the knowledge base, infrastructure and systems for new firms to discover and capitalize on opportunities created by others' innovations

  - ➤ *H2: The positive association between the rates of new firm entry and levels of income inequality is stronger the lower the level of income of the economies*

Method

- Cross-country multivariate regression

  Inequality = α + β_{1i} (Control Variables) + β_2 New Firm Entry + β_3 New Firm Entry x Level of Development

- Dataset comprising 32 developing and advanced economies

- Dependent Variable – Gini Coefficient (in natural log form) for 2005, obtained from the UNU/WIDER World income Inequality Database 2.0c

- Predictor – New Firm Entry Rate (in natural log form)

  – Drawn from the World Bank Entrepreneurship Survey (WBES)

  – Computed as the share of newly registered businesses within a calendar year in the total stock of registered businesses as at the end of the calendar year

  – Lagged values of new firm entry rate are used, alternating 2003 and 2004 as the years of entry. This is done by design to establish the direction of causality in the entrepreneurship – income inequality relationship

Method

- Control Variables
- Income level (GDP per capita) and Income level squared – controls and tests for the Kuznets curve "inverse U shape" effect
- Growth in Real GDP 2001-05 – included to control for the possible effect of growth on income inequality (empirical evidence is mixed)
- Taxation – measured as total taxes collected as a share of GDP, included to control for possible income redistributive effect of taxation policy

Direct Correlation between Firm Entry and Income Inequality
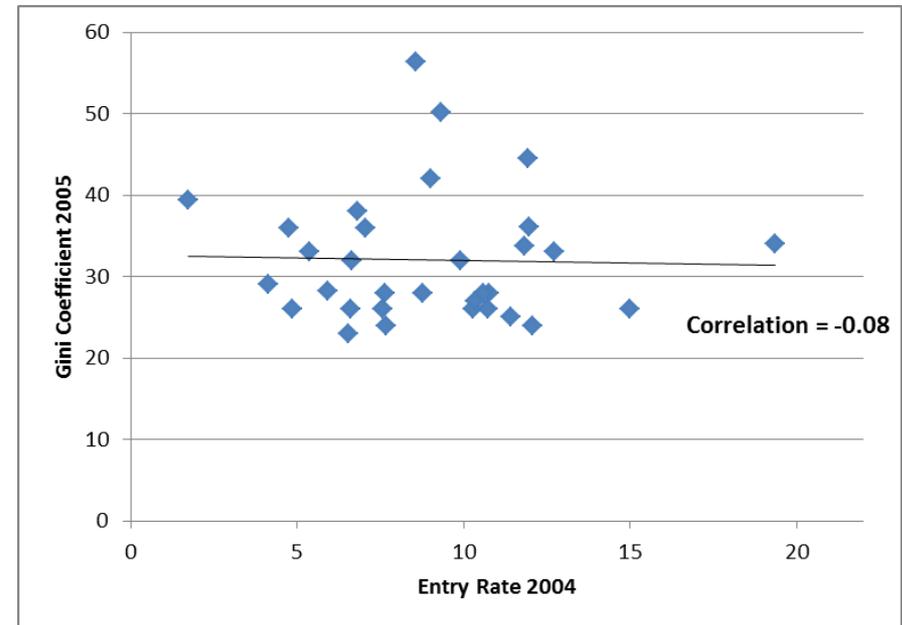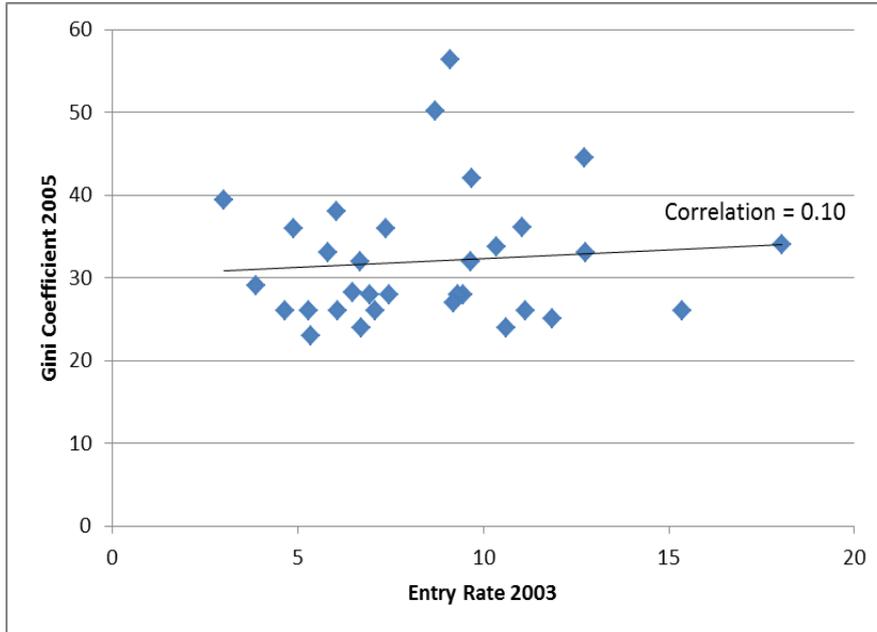
Regression Results

Dependent = Log Gini Coeff 2005 N = 32	**Control variables**	**New Firm Entry 2003 (Lagged 2 Years)**		**New Firm Entry 2004 (Lagged 1 Year)**	
Adjusted R^2	0.448	0.526	0.63	0.485	0.569
F	7.281***	7.885***	9.804***	6.847***	7.818***
Significance of change in F		0.027**	0.008**	0.096*	0.021**
Constant	5.594***	6.050***	6.954***	6.032***	6.748***
	(0.751)	(0.722)	(0.711)	(0.768)	(0.761)
Income Level - *Log GDP Per Capita 2005 (USD PPP)*	-0.099	-0.135	-0.106	-0.127	-0.129*
	(0.074)	(0.070)	(0.063)	(0.073)	(0.067)
Income Level squared	-0.122**	-0.108*	0.020	-0.095	0.045
	(0.058)	(0.054)	(0.065)	(0.058)	(0.078)
Economic Growth – *Average Annual RGDP Growth 2001-05*	-0.011**	-0.016	-0.031**	-0.015	-0.033*
	(0.017)	(0.016)	(0.015)	(0.016)	(0.017)
Taxation - *Log Total Taxes collected/GDP 2005*	-0.578	-0.580**	-0.821***	-0.608**	-0.822***
	(0.207)	(0.192)	(0.189)	(0.500)	(0.203)
New Firm Entry – *Log Entry Rate*		0.172**	0.179**	0.131*	0.099
		(0.073)	(0.065)	(0.076)	(0.071)
New Firm Entry * Income Level			-0.367**		-0.272**
			(0.127)		(0.111)

(Standard errors in parentheses)   *** significant at 1%, ** significant at 5%, * significant at 10%

Results

- Kuznets inverted-U curve not supported (however, Bruno et al (1996) argue that cross-country data should not be used to draw conclusions on the existence of the Kuznets effect); Negative coefficient on Income Level suggest that economies in our sample fall along the downward sloping section of the Kuznets curve.
  - Sample comprises mid-income developing and high-income advanced economies, excluding poorest nations in the world
- Expected negative effect of taxation, while growth effect is also negative
- Estimated coefficients on Entry Rate 2003 and 2004 are positive and significant (at 5% for 2004).
  - Supports H1 that there is significant positive relationship between new firm entry and income inequality
  - Impact of new firm entry is stronger for the 2-years lag model
- Estimated coefficient on the interaction term Entry Rate * Income Level is significant and negative for both Entry Rate 2003 and 2004
  - Supports H2 that the new firm entry increases income inequality to a greater extent in lower income economies compared to higher income advanced nations

Discussion

- **New Firm Entry leads to increasing income inequality**, a finding consistent with previous studies on advanced economies (Italy and USA)

  – Accumulation of entrepreneurial income accrues disproportionately to wealthier agents

  – Accumulation effect is stronger than redistributive effects of increased resource utilization and demand created by new firms

  – However, result may be biased by dataset being limited to mid and high income economies, with the poorest countries excluded

Discussion

- **New Firm Entry widens the income gap more so in developing economies** compared to high-income advanced economies
  - While new firms create jobs, the required skills sets for such jobs may be scarce, driving up wages for a small segment of the labour market.
  - In advanced economies:
    - More effective mechanisms for knowledge and skills upgrading to equip workers to capitalize on opportunities created by new firms.
    - Innovation facilitate technology transfer to a greater extent, allowing other entrepreneurs to imitate and improve upon ideas of the original new entrant
    - Creates a virtuous cycle of new firm entry to counter wealth concentration from initial monopoly
  - In lower income economies:
    - Systems and structures for knowledge transfer and upgrading less well-established
    - New entrants able to engage in monopolistic rent-seeking for longer periods, scarcity of skills more pronounced

Discussion - Policy Implications

- Public policy makers need to recognize that a pure pursuit of promoting entrepreneurship may not be optimal, as it may lead to potential adverse effects on social equity.
    - entrepreneurship policy making must weigh the trade-off between its growth and equity effects.
    - when embarking on a public policy push to promote entrepreneurship, policy makers should also incorporate policies to mitigate the potential adverse consequences of increasing income inequality
- Public policies should facilitate a broader distribution of the new wealth generated by opportunity-creating innovative firms
    - Removing local supply-side bottlenecks such as skill development and local resource upgrading to meet the input demands of these new firms
- To mitigate the rent-capturing effect of new firms, public policies could facilitate the mobility of resources out of the negatively impacted industries or sectors.
    - Eg. subsidies to re-train affected workers

Conclusions

- This paper represents an exploratory attempt at understanding the empirical relationship between new firm entry and income distribution in a cross-country context covering both advanced and developing economies

- Our preliminary findings suggest that the issue warrants further research, specifically in understanding the influence of the stage of economic development

- Suggestions for future research with improved data to address limitations of current paper:
  - Entrepreneurial propensity data covering a larger sample of economies, including lower-income economies
  - Panel and longitudinal data to better understand the temporal dynamics
  - Larger panel dataset would also allow for modeling of the endogenous relationship between entrepreneurship and growth