

EMPLOYEE SPINOFFS: PREVALENCE AND PERFORMANCE

Evidence From Brazil

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Introduction

- Where do new firms come from? One answer is from other firms: employees spin off to form their own businesses, and hire additional employees.
- In this project we computed, for the first time, the share of employee spinoffs in a representative sample of a country's new firms using precise and replicable criteria, and compared basic indicators of their performance to those of other entrants.
- Employee spinoffs raise unavoidable issues for government policy. It is common in more developed countries for employers to ask key employees to sign contracts that restrict their ability, in the event of separation, to compete with their former employers.
- Governments must decide whether to enforce these “covenants not to compete.” In the United States, such enforcement varies widely from state to state and has even changed within states over time.

Summary of results

- Depending on how they are defined, employee spinoffs accounted for between one-sixth and one-third of the new firms in Brazil's private sector during the period 1995-2001.
- Regardless of definition, on average employee spinoffs employed more workers and were more likely to survive than new firms without parents.
- As a result, gross job creation by employee spinoffs was disproportionately large relative to their numbers
- **Caveat:** there is reason to believe that *net* job creation by employee spinoffs compares less favorably to that of new firms without parents
- **Policy:** it would be premature at best for developing countries to adopt policies that allow parents to control employee spinoffs, such as prevail in some U.S. states

Our Brazilian data

- Our data derive from the linked employer-employee records **RAIS** from the Brazilian labor ministry, which offer comprehensive individual employee information on occupations, demographic characteristics and earnings, along with employer identifiers.
- The rules on tax ID assignments make it possible to identify new firms (the first eight digits of the tax ID) and new plants within firms (the last six digits of the tax ID).
- Our data include 71.1 million employees (with 556.3 million job spells) at 5.52 million plants in 3.75 million firms over the sixteen-year period 1986-2001 in all sectors of the economy.
- We limit our attention to the years 1995-2001 to ensure that firms we label as new have not operated for at least a decade. In addition, RAIS offers detailed CNAE industry information starting in 1995. The Brazilian classification system CNAE recognizes 564 economic activities at the finest (four-digit) level, comparable to the European NACE and the international ISIC classifications.
- During our 7-year sample period, 1.54 million new firms and 2.17 million plants entered (of which 581 thousand new plants were created within incumbent firms).

First spinoff definition: Director/manager

- We take two complementary approaches to identifying employee spinoff firms in the RAIS data, and let each approach act as a check on the robustness of the other.
- In the first approach, we locate the human capital essential to founding the new firm in its director or manager.
- *A **director/manager employee spinoff** is a new firm whose top paid director (or top paid manager if there are no directors) previously worked for an incumbent firm in the same four-digit CNAE industry.*

Limitations of director/manager definition

- The top paid director or manager may be the owner of the firm, or may have recruited financial backing from investors who own the firm but are not employed by it. Alternatively, investors may have recruited an experienced director or manager to run a new firm that was their idea. In the latter case, some (but not all) of the human capital essential to founding the new firm is embodied in the unobserved investors.
- The director/manager spinoff definition will miss many “vertical” spinoffs, in which the top paid director or manager leaves his incumbent firm to independently produce an input he previously supplied to his former employer internally. For example, an accountant for a manufacturing firm may start an accounting firm that caters to the manufacturing industry. His new firm will not have the same four-digit CNAE industry as his former employer and will therefore be missed by the director/manager spinoff definition.

Second spinoff definition: Quarter-workforce

- Our second approach locates the human capital essential to founding the new firm in a group of employees who embody its “core competence.” Of course the core competence of a firm is unobserved, so we do not know which or how many employees embody its core competence.
- For help we turn to a fact about director/manager spinoffs: on average, the director/manager “brings along” from the parent 23 percent of the non-management employees of the new firm.
- This suggests that a reasonable cutoff for the share of employees in the new firm that is needed to transfer essential technologies or work routines from the parent firm is one-quarter.
- *A **quarter-workforce employee spinoff** is a new firm of five or more employees, at least 25 percent of whom previously worked for the same incumbent firm.*

Comparing the spinoff definitions

- We restrict the quarter-workforce definition to new firms with five or more employees because below five employees any new firm with an employee who can be traced to previous employment would automatically be a spinoff. In other words, by restricting ourselves to firms with five or more employees, we ensure that a “team” that embodies the core competence of the new firm must have at least two employees.
- An advantage of the quarter-workforce definition over the director/manager definition is that we are not restricted to firms with a paid director or manager, nor are we restricted to “horizontal” spinoffs.
- The obvious disadvantage is that without the presence of a director or manager it is entirely possible that no essential human capital is embodied in the group of employees.

Spinoffs versus divestitures: legal forms

- Both spinoff definitions are vulnerable to the problem that the offspring firms may not be truly new. An incumbent firm that divests itself of one or more divisions creates a “new” firm that is likely to satisfy both of our spinoff definitions. (One might think the same problem could arise if a firm is sold, creating a “new” firm that is again likely to satisfy both of our spinoff definitions. However, a firm that is sold retains its firm identifier and therefore is not coded as a new firm in our data.)
- We receive some help with this problem from the coding of firms by legal form in the RAIS data set. By Brazilian commercial law, there are two broad categories of legal form: incorporated firms, and associations or partnerships without independent legal existence. Most important for our purposes, associations or partnerships cannot be owned by companies, but only by physical persons. So, if an employee spinoff is an association or partnership, it is not likely to be a divestiture.
- In contrast, spinoffs that are incorporated as Corporation under private control, Close corporation, or Limited liability company are quite possibly divestitures.

Divestiture definition

- Inverting the common criterion in the labor literature that a mass layoff is a reduction of the existing workforce by 30 percent or more (e.g. Jacobson, LaLonde and Sullivan 1993), we label a new firm a divestiture if it is an incorporated firm (or if it has unknown legal form), and if it absorbs 70 percent or more of the employees of a plant of an incumbent firm.
- *A **divestiture** is a new firm with legal form coded as Corporation under private control, Close corporation, Limited liability company, or as unknown that absorbs 70 percent or more of the employees of a plant of an incumbent firm.*
- We use the share of employees of an existing plant rather than an entire incumbent firm because a typical divestiture scenario is one in which a parent firm divests itself of a particular plant, which becomes a new firm. This conservative approach makes it more difficult to classify a new firm as an employee spinoff.

New ventures of incumbent firms

- We contrast these types of new firms with new ventures of incumbent firms. Around one to three percent of incumbent firms in our data expand, diversify or otherwise grow new ventures either by starting new plants or by acquiring existing plants (2.7 percent in 1995, 1.4 percent in 2001).
- *A **new venture** is a plant, or group of plants, that is added to an incumbent firm. An **expansion venture** is a new venture within the same CNAE four-digit industry, and a **diversification venture** is a new venture in a different CNAE four-digit industry.*
- Following the literature, we only consider a diversification venture to be an entrant that is comparable to a new firm.

How common are spinoffs relative to other new firms?

- Assess relative to pools of potential spinoffs
- For the first definition, only new firms with at least one director or manager are potential spinoffs. These turn out to constitute only 5.0 percent of all new firms.
- For the second definition, only new firms with at least five employees are potential spinoffs. These are 21.5 percent of all new firms. So having a director or manager proves to be much more rare than having five or more employees.
- From these respective pools, **director/manager spinoffs and quarter-workforce spinoffs respectively account for 17.0 and 29.3 percent of new firms**. The ranking is to be expected given the greater restrictiveness of the director/manager spinoff definition.
- We can assess the overlap between our two spinoff definitions by considering the subset of new firms that have both a director/manager and at least five employees. Within this subset 59.2 percent of director/manager spinoffs are also quarter-workforce spinoffs but only 37.5 percent of quarter-workforce spinoffs are also director/manager spinoffs. This again emphasizes that the first definition is more restrictive than the second definition.

Spinoffs account for 27.5% of all new entrant employment and one-third of all new firm employment by 2001 (entrants with 5+ workers)

Table 3: SHARES OF FORMAL SECTOR EMPLOYMENT BY ENTRANT, 1995-2001

	1995	1998		2001	
	current	current	cumulative ^a	current	cumulative ^a
RAIS universe	23,222	24,606		27,426	
<i>of which:</i>					
New firms	2.8%	3.5%	13.0%	3.4%	22.2%
Diversification ventures	0.9%	0.8%	2.5%	0.7%	3.4%
New firms (5+ employees)	2.0%	2.6%	8.9%	2.5%	14.9%
Spinoffs	0.6%	0.9%	2.9%	0.8%	5.0%
Divestitures	0.3%	0.4%	1.1%	0.4%	2.0%
Unrelated	1.1%	1.3%	4.9%	1.3%	8.0%
Div. ventures (5+ employees)	0.9%	0.8%	2.3%	0.7%	3.3%

^aIncludes the 1998 (2001) employment of new firms and ventures born between 1995 and 1998 (2001). Only the entrants' original plants are included, so the cumulative shares underestimate slightly the importance of new entrants.

Spinoff performance is in between unrelated new firms and divestitures

Type of New Firm or Venture	Initial employment	Average initial wage (BRL)	Exit after 5 years
Director/Manager Sample			
New firms	21.25 (0.63)	372.00 (2.10)	52.9% (0.4%)
Employee spinoffs	29.32 (1.07)	344.20 (4.28)	45.0% (1.0%)
Divestitures	106.93 (8.87)	406.36 (10.00)	39.7% (2.1%)
Unrelated new firms	14.62 (0.58)	376.22 (2.45)	55.1% (0.5%)
Diversification ventures	117.15 (6.72)	491.28 (7.45)	46.7% (1.2%)
Five or More Employees Sample			
New firms	13.86 (0.16)	221.09 (0.42)	45.9% (0.2%)
Employee spinoffs	15.01 (0.29)	254.29 (0.95)	39.0% (0.3%)
Divestitures	37.37 (2.22)	250.39 (2.10)	38.1% (0.8%)
Unrelated new firms	11.33 (0.09)	203.53 (0.45)	49.4% (0.2%)
Diversification ventures	45.76 (1.54)	257.08 (1.94)	28.5% (0.5%)

Net job creation by spinoffs (with 5+ workers), blaming them for parent job losses

Gross and Net Job Creation of Spinoffs (in t0)

	1995	1996	1997	1998	1999	2000	Total
Total gross job creation	136,297	145,446	212,081	222,589	229,603	249,485	1,195,501
Total net job creation	41,799	40,566	60,986	62,223	73,882	71,613	351,069
Case 1: $T < t0-1$							
Gross (and net) job creation	5,039	3,170	6,113	5,352	6,244	6,598	32,516
Case 2: $T=2001$							
Gross job creation	66,563	73,919	117,181	130,945	126,532	186,102	701,242
Gross job loss at parents	42,610	50,846	81,808	91,223	78,596	136,056	481,139
Net job creation	23,953	23,073	35,373	39,722	47,936	50,046	220,103
Case 3: $t0-1 \leq T < 2001$							
Gross job creation	64,695	68,357	88,787	86,292	96,827	56,785	461,743
Gross job loss at parents	51,888	54,034	69,287	69,143	77,125	41,816	363,293
Net job creation	12,807	14,323	19,500	17,149	19,702	14,969	98,450

Notes: T is the last year the parent exists, while t0 is the birth year of the spinoff. Job loss at an individual parent defined as:

Case 2: zero if parent employment in 2001 > parent employment in t0-1, otherwise = min[spinoff employment at t0, parent employment at t0-1 - parent employment in 2001]

Case 3: min[parent employment at t0-1, spinoff employment at t0]

Implications for policy

- Should parent firms be given the option to stop employees from competing with them by founding spinoff firms? Such non-compete clauses are enforced in Brazil only in rare circumstances
- Suppose spinoff firm is profitable but parent firm is not. For example, spinoff entry cost is lower because it learned from parent
- With perfect enforcement of non-compete agreements and perfect capital markets, employees can buy out their contracts, thereby transferring enough profits from spinoff to parent to ensure entry of the latter. Everybody wins!
- Even in the United States, evidence is that borrowing constraints prevent this happy outcome, so non-competes stifle employee entrepreneurship and mobility
- In this uncertain “second-best” situation, we recommend that developing country courts *not* take on the additional burden of non-compete enforcement, pending further research

Identifying and Relaxing Constraints to Employment Generation in Small Scale African Enterprises

Marcel Fafchamps, Oxford
Christopher Woodruff, U Warwick

IGC Growth Week
Firm Capabilities Panel
London September 20, 2011



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Project motivation

- A large percentage of the labor force in developing countries is self employed. Are the microenterprises a source of job creation?
 - In Sri Lanka, 1 in 8 firms with >5 paid workers had no paid workers after 1 year; 1 in 5 had no more than 1 paid worker after 1 year
 - In U.S., Davis et al show that 3% of schedule C non-employers add at least one employee over three years. (28% of new employers)
 - In Portugal, Cabral and Mata (2003) data show that half of surviving firms with 1 employee in 1984 have >1 employee in 1991



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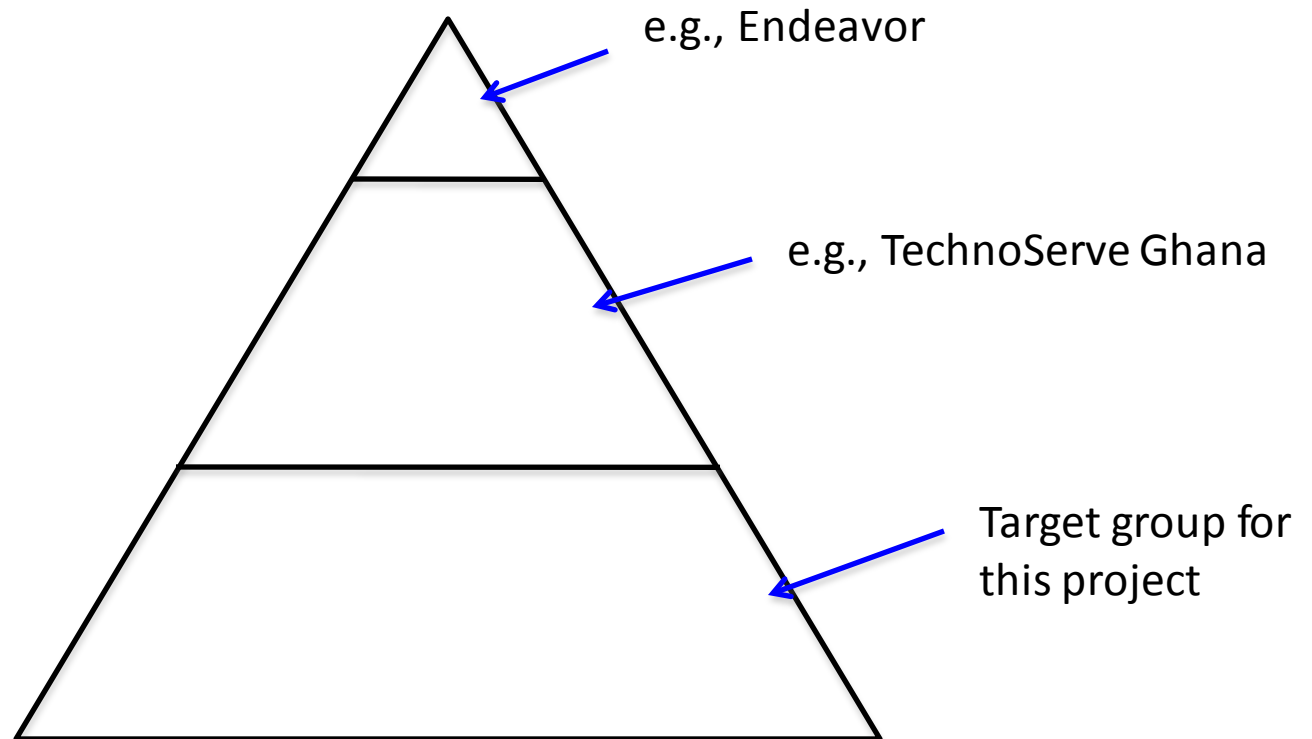
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Business plan competitions



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Project structure

- 0) Pilot project (January – March 2009)
- 1) Announcement of business plan competition (February 2010, in greater Accra urban area; targeted neighborhoods)
- 2) Baseline survey of applicants (March 2010)
- 3) Short course (3 days) on writing a business plan (March 2010; 13 sessions)
- 4) Submission of business plan (8-10 pages, April 2010)
- 5) Panel presentations and judging (May 2010; 11 sessions)
- 6) Subsequent group training for ½ of participants (September 2010)
- 7) Follow-on individualized consulting (April - June 2011)
- 8) Follow-up surveys (July 2011, March 2012)



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Research questions

- Can the survey questionnaire predict the panel rankings?
- Can either the panel of experts or the survey questionnaire identify faster growing firms?
- Is training more effective among those ranked more highly by the panel?
 - For now, focus on the first two questions



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Project design: Panels

5) Panel presentations and judging

- a) Convene 11 panels of experts—e.g., successful business people, consultants, loan officers.
- b) Each panel of 3 or 4 reviewed ~15 written business plans, and then conducted 20-30 minute interviews with the business owners.
- c) Each panel ranked the written business plans, the presentations, and the overall package owners according to several criteria. (More later)



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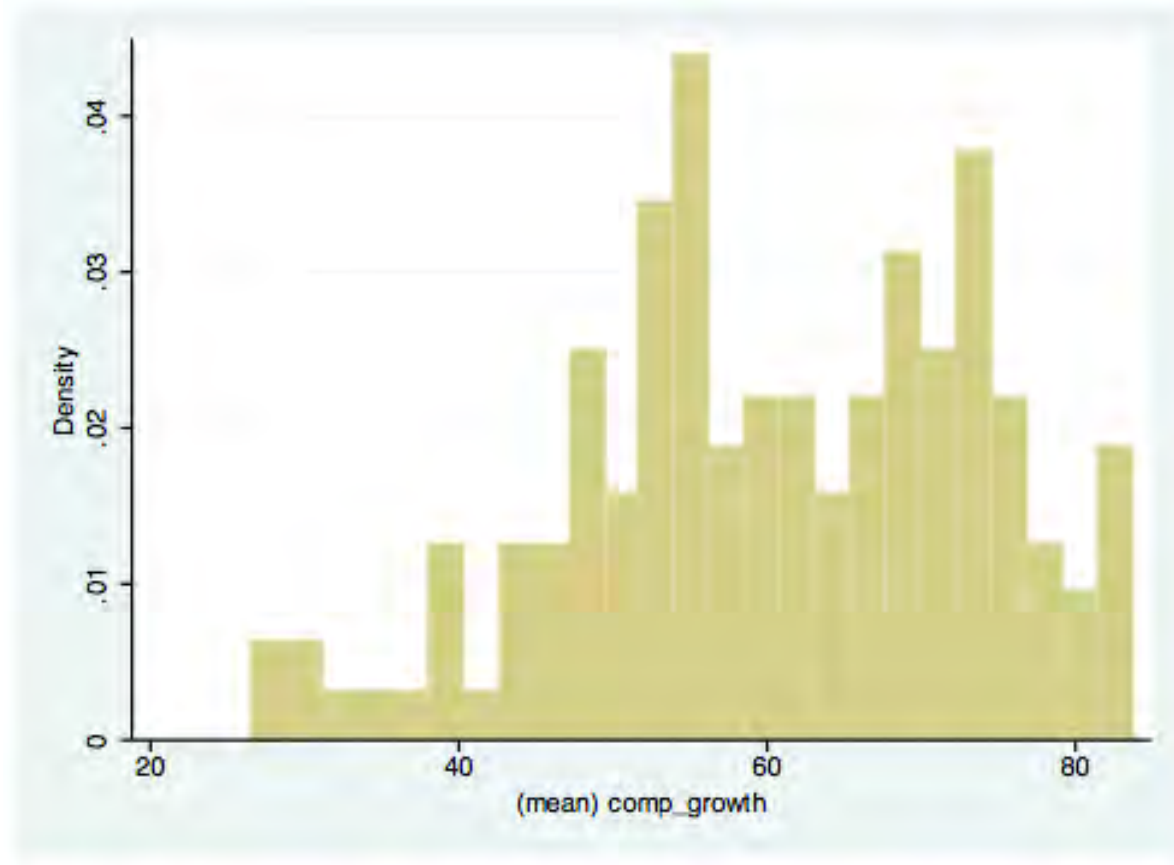
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Distribution of average panel ranking: growth potential



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Project design: Surveys

2) Baseline survey: Characteristics of business and owner.

- Demographics (age, gender, marital status, etc.)
- Labour history
- Enterprise characteristics (age, employees, capital stock, operating data; loan history, registration)
- Management practices questionnaire
- Numeracy and reasoning skills (e.g., Raven non-verbal)
- Attitudes (risk, locus of control, quality of life, etc.)



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Results: Judges vs. surveys

- Two sets of outcomes: Attrition and panel ranking
- Attrition:
 - Baseline survey: 335 business owners
 - Business plan training: 234 business owners (215 completed program)
 - Business plans submitted: 152
 - (We provided more extensive assistance with preparation than had been anticipated)
- Panel rankings:
 - Data from 141 businesses that presented plans before panel



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Attrition: Who and when?

- The punchline: By various measures of ability, attrition at the first step (not attending BP training) is from the left-hand tail; attrition at the second step (attending training, but then not submitting a BP) is also from the left-hand tail

	Ability score (to be desc.)	Attitudes (to be desc.)	Previous bank loan
Dropped out before BP training	-0.221	-0.203	29.9%
Dropped out after BP training	0.075	0.035	32.6%
Presented before panel	0.102	0.116	40.4%



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Who does the panel select?

- 141 entrepreneurs submitted business plans and then defended the plan before a panel of 3 or 4 successful businesspeople.
 - What is the correlation between the panel rankings and our survey diagnostics (e.g., management practices)?



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Panel criteria

- Panel scored each entrepreneur according to:
 - Written business plan (clear business concept; defines / understands market; current operations; financial statements; plans for growth)
 - Oral presentation (well prepared; confident; understands business; understands what makes business special; answered questions well)
 - Overall (business acumen; ability to run existing business; strategy for growth; ability to manage growing business; articulates vision)
 - Would you recommend this business to an angel investor (scale 0-100)
 - **Business growth potential (scale 0-100)**



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Who does the panel select?

- Will look at preliminary results on the first question for three outcome measures from panel:
 - Overall score – standardized
 - Growth
 - Angel
- For each of these, a movement from the 50th percentile to the 90th percentile is an increase of ~16 points on the scale



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Panel vs. surveys: Ability

- Look first at measures of ability: First principal component of raven, digitspan, backwards by 7, financial literacy, years of schooling (50th to 90th percentile: AS increases ~ 2 points)

	Overall Score (1)	Angel Investor (2)	Prospect for Growth (3)
Ability score	2.20*** (0.74)	2.62*** (0.86)	2.61*** (0.84)
Observations	140	10	140
R-squared	0.32	0.33	0.29

Notes:

Robust standard errors in parentheses clustered at the firm level, *** p<0.01, ** p<0.05, * p<0.1

All regressions include age, age-squared, female, manufacturer, retail, firm < 5 years old, panel FE



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Panel vs. surveys: Attitudes

- Add attitudes: PC of: ‘internal LOC’, willingness to take risks, expected size in 5 years, optimism (50th to 90th percentile: ~ 2 points)

	Prospect for Growth (1)	Prospect for Growth (2)	Prospect for Growth (3)
Ability score		1.79** (0.81)	1.55* (0.79)
Attitudes score	3.49*** (0.65)	3.08*** (0.67)	2.71*** (0.71)
Previous bank loan (0-1)			5.39*** (2.02)
Observations	140	140	140
R-squared	0.35	0.37	0.40

Notes:

Robust standard errors in parentheses clustered at the firm level, *** p<0.01, ** p<0.05, * p<0.1

All regressions include age, age-squared, female, manufacturer, retail, firm < 5 years old, panel FE



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Measuring management practices

- Series of questions about actual business practices:
 - In the last 3 months, have you visited one of your competitor's businesses to see what prices they are charging?
 - In the last 3 months, have you asked your existing customers whether there are any other products they would like you to sell or produce?
 - In the last three months have you attempted to negotiate with a supplier for a lower price on raw materials or goods purchased?
 - How frequently do you run out of stock of inventories or raw materials?
 - Do you keep written business records?
 - Do you have a written budget which tells you how much you have to pay each month for rent, electricity, equipment maintenance, transport, advertising, and other indirect costs of the business?
 - Do you have a target set for sales over the next year?, etc.



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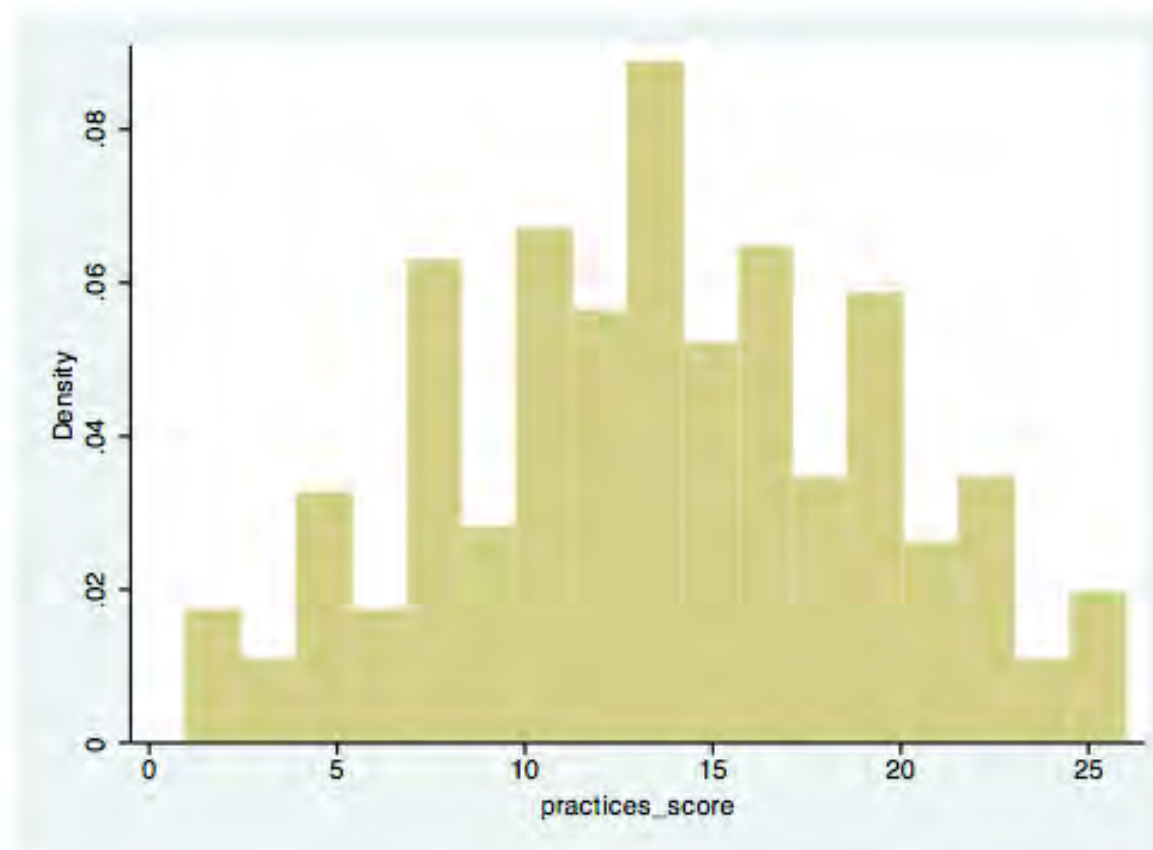
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Management practices



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Panel vs. surveys: Attitudes

- Add Management practices score (50th to 90th percentile: ~ 7 points)

	Overall Score (1)	Angel Investor (2)	Prospect for Growth (3)
Ability score	0.85 (0.73)	1.29 (0.86)	1.29 (0.87)
Attitudes score	2.49*** (0.54)	2.58*** (0.61)	2.57*** (0.63)
Management score (0-30)	0.54*** (0.19)	0.51** (0.24)	0.49** (0.22)
Observations	140	140	140
R-squared	0.44	0.39	0.39

Notes:

Robust standard errors in parentheses clustered at the firm level, *** p<0.01, ** p<0.05, * p<0.1

All regressions include age, age-squared, female, manufacturer, retail, firm < 5 years old, panel FE



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Panel vs. surveys

- Some reason for optimism: Survey measures are reasonably predictive of what the panel says.
 - Important caveat: low-stakes survey questions. Attitudes could be faked if there was something at stake.
- But: Do either predict growth?
 - *Very* preliminary results based on July 2011 follow-up survey (Note: Training ended in June 2011)



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Panel, Survey and Revenues

Log Sales	June 2011			2010 Annual	
	Panel Score (1)	Management Practices Score (2)	Management Practices Score (3)	Panel Score (4)	Manage Prac (5)
Panel score for growth potential	0.0269*** (0.0097)			0.029*** (0.011)	
Management practices score		0.056** (0.022)	0.054** (0.023)		0.042 (0.027)
Log baseline sales	0.385*** (0.113)	0.406*** (0.119)	1.12 (1.01)	0.473*** (0.143)	0.535*** (0.146)
Log baseline sales squared			-0.047 (0.069)		
Observations	108	108	108	106	106
R-squared	0.22	0.20	0.21	.27	0.24

- Note: St Dev of panel growth potential: 14
St Dev of Management Practices: 6



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Panel, Survey and Profits

Log Profits June 2011

	Panel Score (1)	Management Practices Score (Baseline)	
		(2)	(3)
Panel score for growth potential	0.0164* (0.0084)		
Management practices score		0.069*** (0.022)	0.068*** (0.022)
Log baseline profits	0.450*** (0.081)	0.434*** (0.080)	-0.613 (0.539)
Log baseline profits squared			0.080* (0.041)
Observations	98	98	98
R-squared	0.31	0.36	0.37

- Note: St Dev of panel growth potential: 14
St Dev of Management Practices: 6



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Panel, Survey and Other Outcomes

Other outcomes

	Log Monthly Expenses (1)	Log Wage Employ (+1) (2)	Investment (Probit: 0/1) (3)	Investment Amount (4)
Panel score for growth potential	0.025** (0.010)	0.0035 (0.0041)	0.0047 (0.0034)	0.0333 (0.0248)
Log baseline of dependent variable	0.512*** (0.130)	0.987*** (0.088)		0.436*** (0.255)
Observations	115	119	119	119
R-squared	0.29	0.45	0.04	0.08

- Note: St Dev of panel growth potential: 14
St Dev of Management Practices: 6



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Project design: Training

3) Business plan training (2010, all 140 that submitted BP)

3-day course built around preparing a simple business plan, especially financial records

6) Initial follow-on training (Early 2011, 70 selected)

Half of sample presenting business plans selected

-Stratified on ranking (75%% of top quartile, 50% of middle 2 quartiles; 25% of bottom quartile)

-5 day course modeled on ILO IYB program.

7) Follow-on consulting (Apr- June 2011, same 70)

Firm-level diagnostic

Individual or small group training in areas selected jointly by consultant / entrepreneur



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Initial Conclusions: what do we learn?

- Business plan competitions are an increasingly popular way of identifying high-growth entrepreneurs. Our project contributes to:
 - 1) Understanding how well the judges identify enterprises with more potential, for the full distribution of rankings
 - 2) Developing lower cost ways of identifying faster growing firms
 - 3) Identifying the types of firms for whom training is most effective
- Initial results from near-term follow-up suggest that panels and survey are able to identify faster growing firms
 - Need more careful analysis and follow-ups after more time has passed.



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Policy implications

- The self employed in Africa are a very heterogeneous group. Separating ‘subsistence’ entrepreneurs from the gazelles would allow us to differentiate programs for the sector. For example:
 - Programs on expansion, employee management, innovation for those with more potential for growth
 - Programs on mitigating risk and increasing income for those who are not likely to expand.
- The expert panels are an expensive way to identify the gazelles. If survey responses are able to predict the panel rankings, then we can develop a methodology for this which can be applied more broadly.



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(Micro) Enterprise Dynamics in Ethiopia

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*Prepared for the Firm Capabilities Session of
Growth Week, London, 2011.*

Background

- McMillan & Rodrik (2011), Page (2011):
 - Productivity differences across sectors in Africa are **large**
 - High-productivity sectors are **small**
- Suggests **structural change** can be a source of growth.
- Industry (manufacturing) is a relatively small, high-productivity sector.
- Hence, reallocation of resources from (say) traditional agriculture to manufacturing results in growth?

The "Modern Sector" is heterogeneous

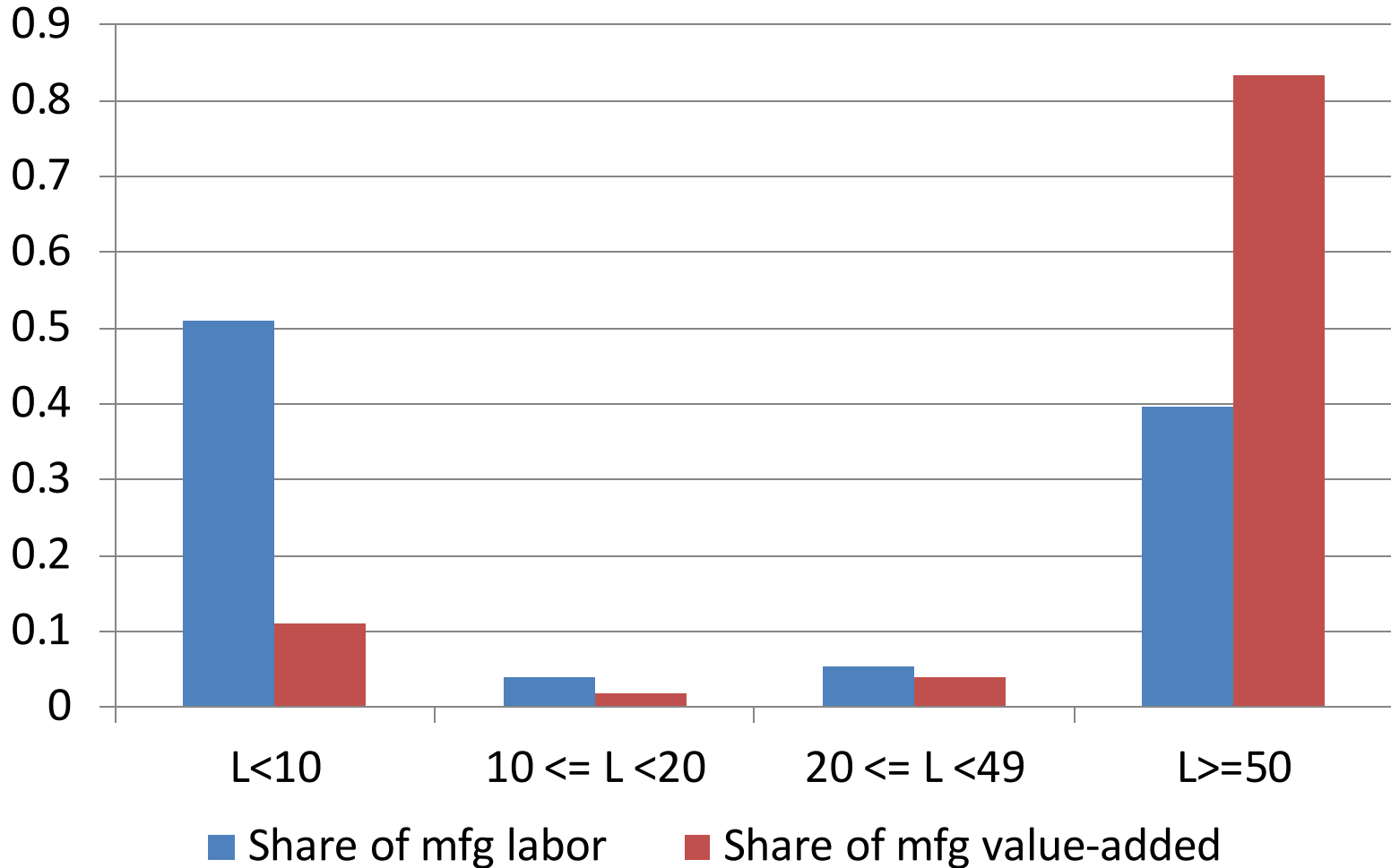
- Labor & capital must be reallocated to productive firms, otherwise the effect of resource reallocation is muted.
- The mfg sector includes firms that differ widely in terms of their capabilities: from small cottage enterprises that do not use power, to modern, large firms.
- Most firms are small and record low levels of value-added per worker
- Most jobs are in the micro/small enterprise sector.

A Case Study of Ethiopia

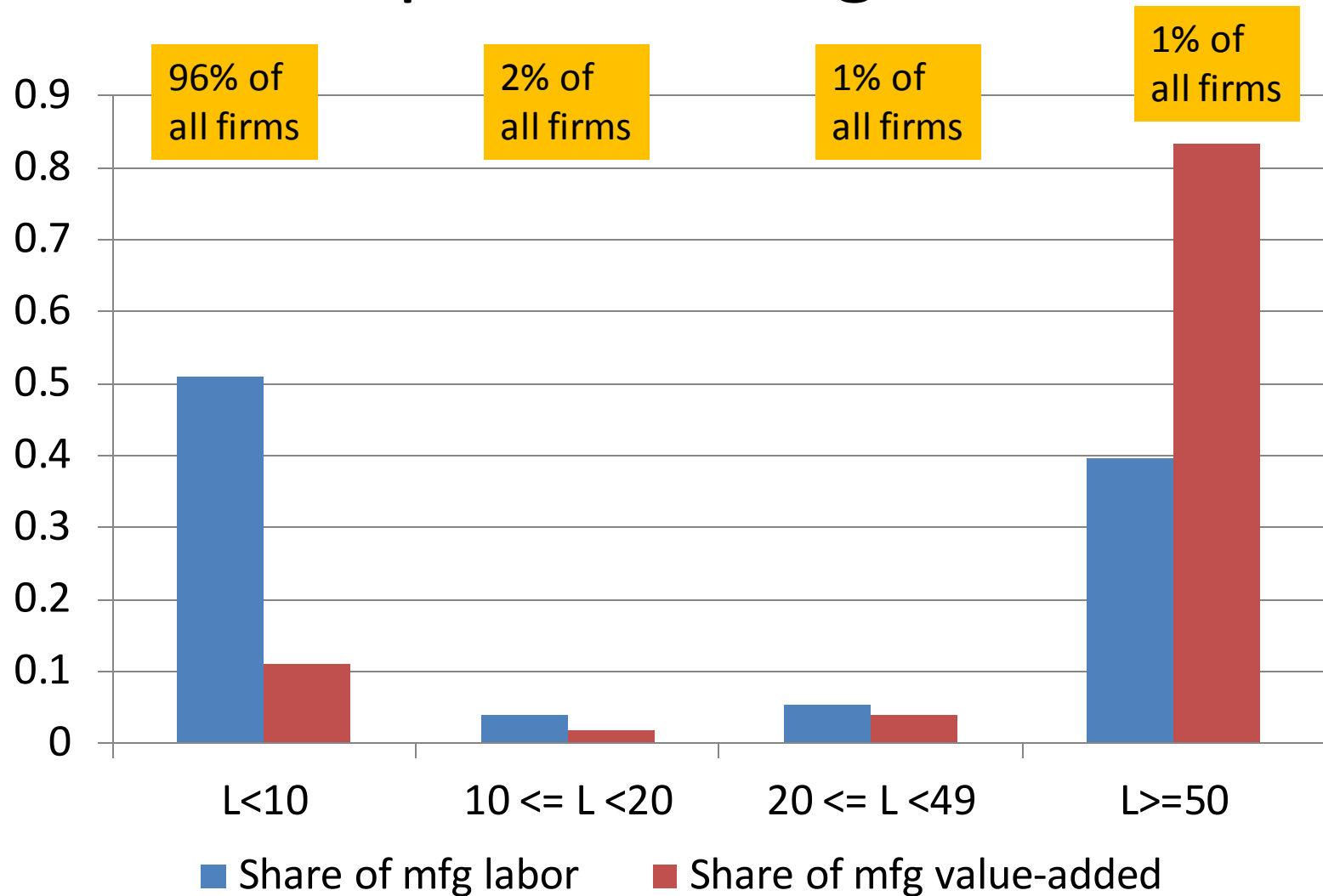
- Even by African standards, manufacturing in Ethiopia is small.
- 85% of employment in agriculture.
- High overall growth in the last decade.
- Share of manufacturing constant.
- Thus high growth in manufacturing too - but no structural change.
- Data on the following slides refer to the sector of manufacturing firms that use power in production.

Most jobs in small firms

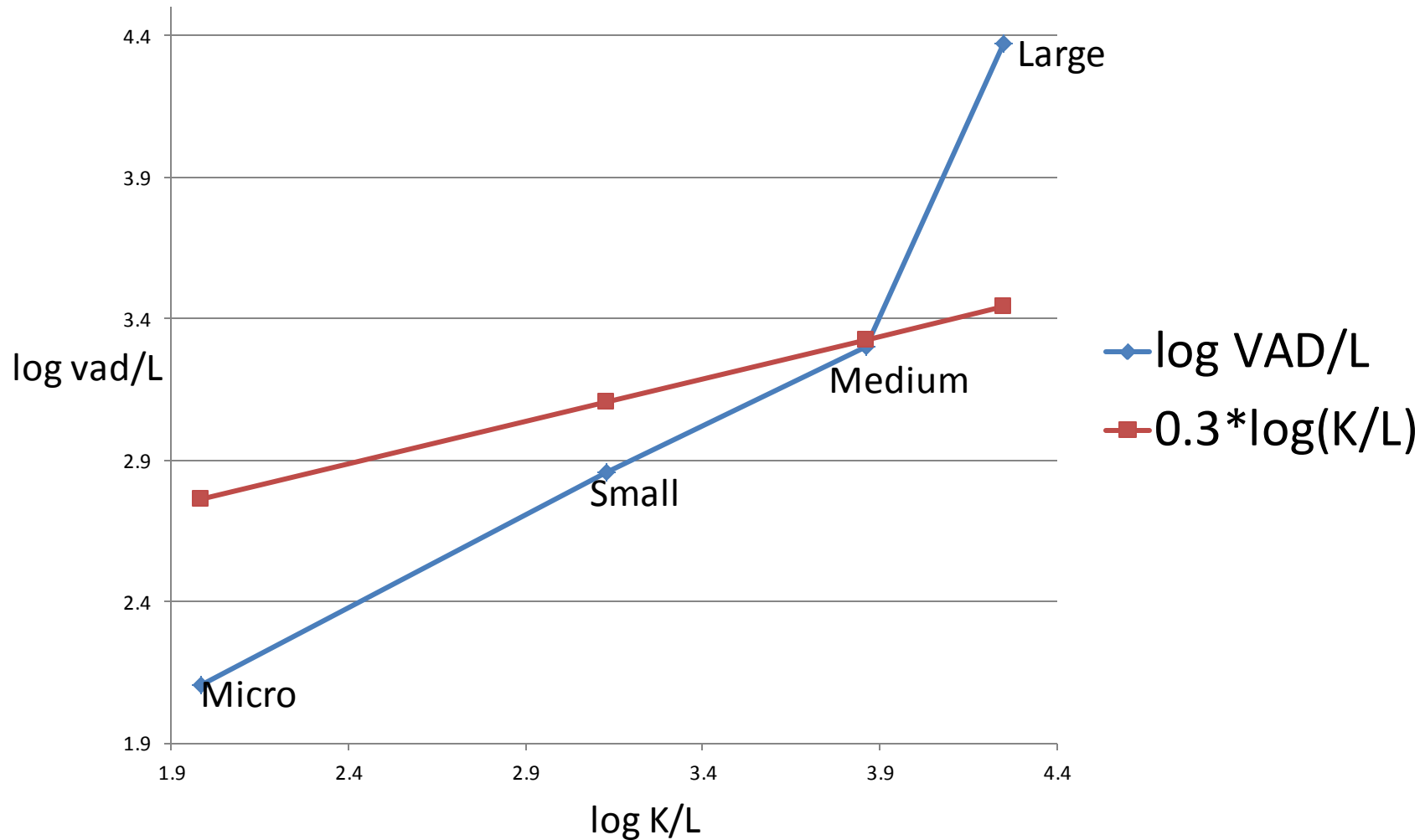
Most of total output from large firms



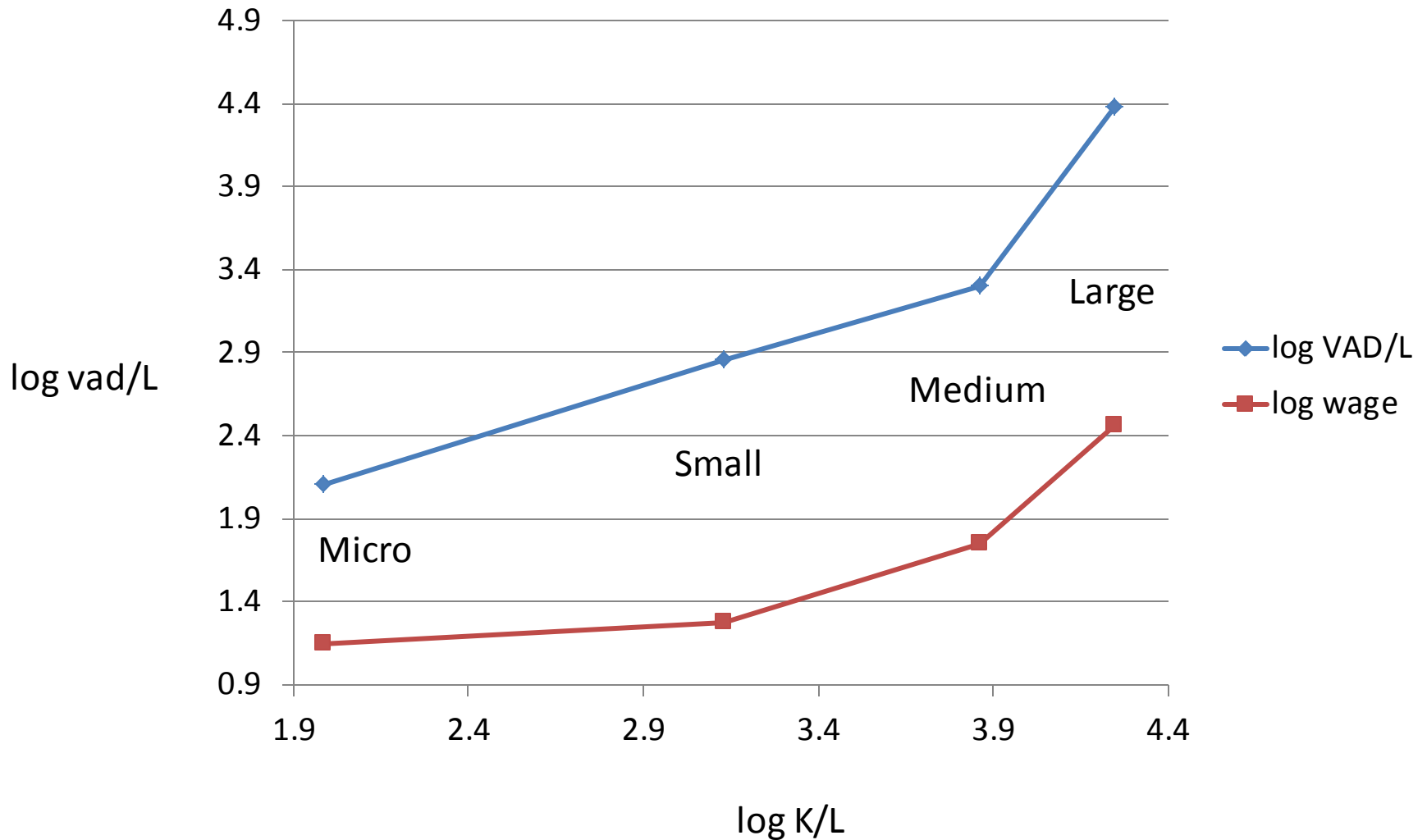
Most jobs in small firms, most of total output from large firms



Capital intensity and the size-productivity differential



Wages, value-added per worker and size



Job Creation

- The smallest firms create a lot of low-pay jobs that are associated with low labor productivity
- Job dynamics?
- Perhaps “small firms grow faster”?
- Panel data enable us to follow new entrants over time
 - Employment dynamics conditional on survival
 - Survival

Firm Level Data

- Comprehensive panel census data on formal mfg firms: 1995/6 – 2006/7
- Official lower cutoff: Employment > 10
- Still, lots of micro firms in the data
- Separate surveys of micro enterprises – no panel, not annual => can't see patterns of dynamics
- No obvious evidence that firms with 3-9 workers are radically different from firms with 10-20 workers (w.r.t. dynamics & growth).

Full sample

year	Freq.	Percent	Cum.
88	623	6.04	6.04
89	703	6.82	12.86
90	725	7.03	19.89
91	725	7.03	26.92
92	739	7.17	34.09
93	722	7.00	41.09
94	883	8.56	49.66
95	939	9.11	58.76
96	997	9.67	68.43
97	763	7.40	75.83
98	1,153	11.18	87.01
99	1,339	12.99	100.00
Total	10,311	100.00	

Note: Year according to Ethiopian calendar. Freq. shows #firms observed.

Patterns

- Firm survival
- Employment dynamics for survivors
 $E[\text{employment}(t) \mid \text{initial employment, survival}(t)]$
- Unconditional employment dynamics:
 $E[\text{employment}(t) \mid \text{initial employment}]$
- The size - value-added per worker differential
 - Do smaller firms produce low value-added products?
 - Do smaller firms charge lower output prices?

New entrants*

year	Freq.	Percent	Cum.
88	41	7.39	7.39
89	43	7.75	15.14
90	29	5.23	20.36
91	33	5.95	26.31
92	32	5.77	32.07
93	14	2.52	34.59
94	39	7.03	41.62
95	19	3.42	45.05
96	49	8.83	53.87
97	17	3.06	56.94
98	32	5.77	62.70
99	207	37.30	100.00
Total	555	100.00	

* Only includes firms whose first appearance in the panel census matches self-reported start year

Distribution of initial size for new entrants

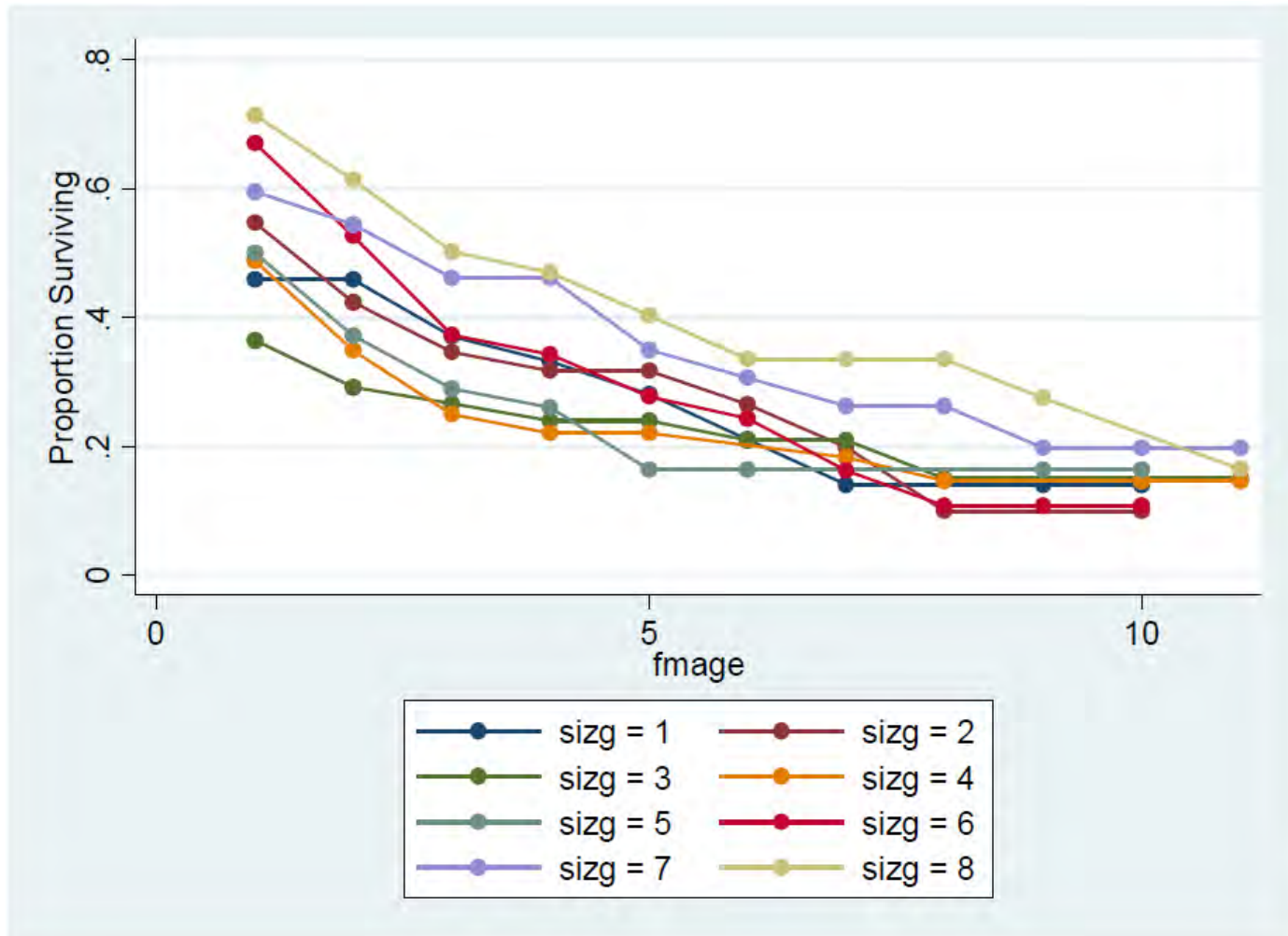
Summary for variables: initemp
by categories of: sizg

sizg	min	max	N
1	1	5	43
2	5	8	43
3	8	10	43
4	10	12	43
5	12	14.5	43
6	15	19.5	43
7	20	35	43
8	35	898.25	43
Total	1	898.25	344

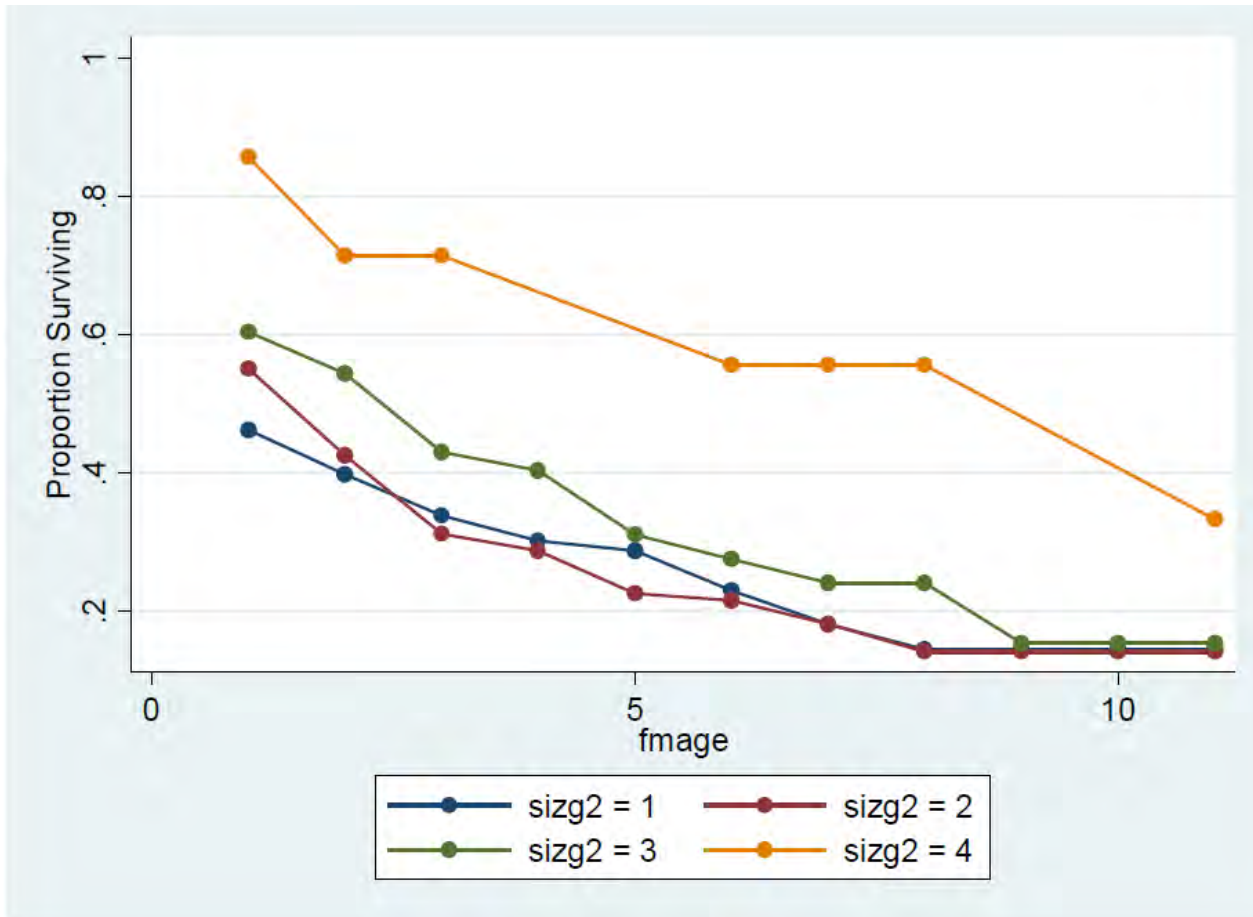
38%

38%

Survivor Functions, New Entrants

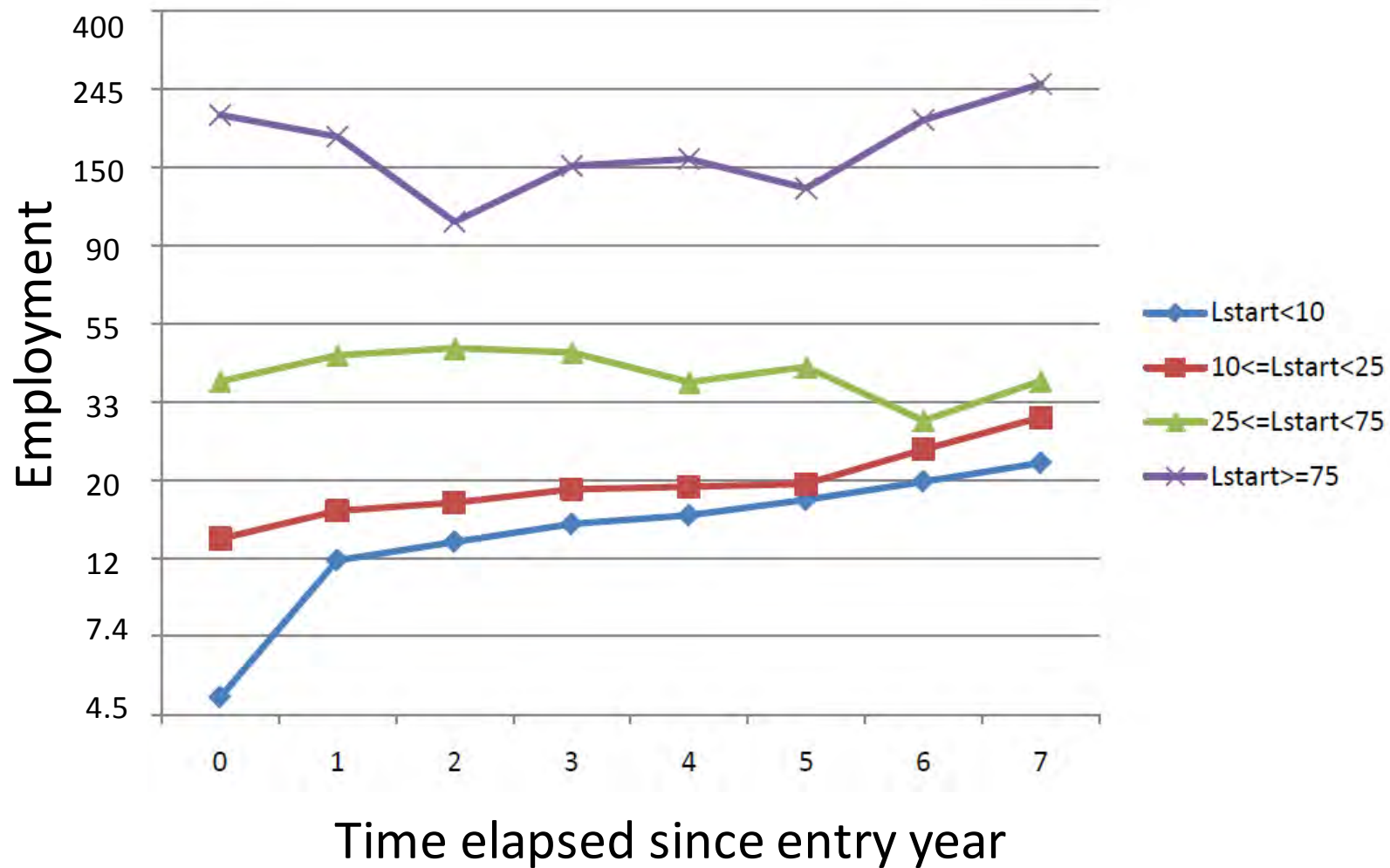


Survivor Functions, New Entrants (alternative size classification)

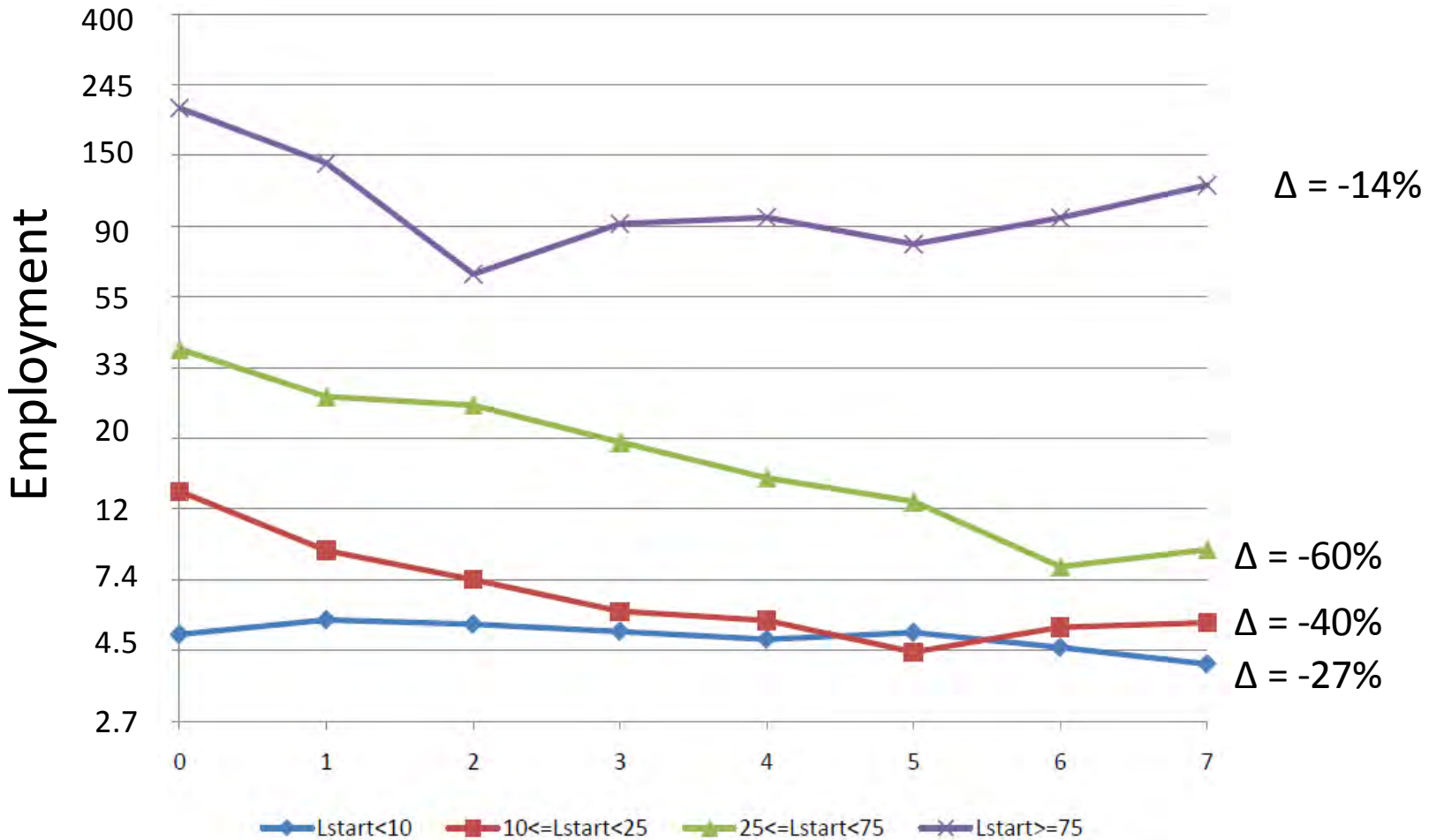


Size classification (sizg2): 1, $Li < 10$ (N=115); 2, $10 < Li < 25$ (N=161); 3, $25 < Li < 75$ (N=54); 4, $Li > 75$ (N=14)

Employment Growth Conditional on Survival



Expected Employment



Time elapsed since entry year

Employment Dynamics: Summary

- Firms that enter small have low rates of survival
- Within initial size range $\{0,25\}$, no clear size-survival relationship
- Considerable difference in survival rates if we distinguish firms with initial employment above and below 75
- Higher growth amongst initially small firms reflects survival bias.
- Expected jobs lost 7 years after entry:
 - Initial employment <75 : Between $1/4$ & $3/5$ jobs lost.
 - Firms with initial employment >75 : $1/6$ jobs lost.