Do startups create good jobs?

Olav Sorenson
Yale School of Management


Silicon Valley

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WHO CREATES JOBS? SMALL VERSUS LARGE VERSUS YOUNG

John Haltiwanger, Ron S. Jarmin, and Javier Miranda*

Abstract—The view that small businesses create the most jobs remains appealing to policymakers and small business advocates. Using data from the Census Bureau's Business Dynamics Statistics and Longitudinal Business Database, we explore the many issues at the core of this ongoing debate. We find that the relationship between firm size and employment growth is sensitive to these issues. However, our main finding is that once we control for firm age, there is no systematic relationship between firm size and growth. Our findings highlight the important role of business start-ups and young businesses in U.S. job creation.

I. Introduction

A common popular perception about the U.S. economy is that small businesses create the most private sector jobs. This perception is popular among politicians of different political persuasions, small business advocates, and the business press.[1] While early empirical studies (see Birch, 1979, 1981, 1987) provided support for this perception, a variety of subsequent empirical studies have highlighted (see, in particular, Davis, Haltiwanger, Schuh, 1996) statistical and measurement pitfalls underlying much of the evidence in support of this perception. These include the lack of suitable data to study this issue, the failure to distinguish between net and gross job creation, and statistical problems associated with size classification methods and regression to the mean.[2] From a theoretical perspective, the notion of an inverse relationship between firm size and growth runs counter to that described by Gibrat's law (see Sutton, 1997). But in spite of these questions from the academic literature, given the lack of definitive evidence to the contrary, the popular perception persists.

Neumark, Wall, and Zhang (2011; hereafter NWZ) recently performed a careful analysis where they avoid the misleading interpretations of the data highlighted by Davis, Haltiwanger, and Schuh (1996; hereafter DHS). Using the National Establishment Time Series (NETS) data including coverage across the U.S. private sector from 1992 to 2004, they find an inverse relationship between net growth rates and firm size. Their analysis indicates that small firms contribute disproportionately to net job growth.

In this paper, we demonstrate that an additional critical issue clouds the interpretation of previous analyses of the relationship between firm size and growth. Data sets traditionally employed to examine this relationship contain limited or no information about firm age. Our analysis emphasizes the role of firm age and, especially, firm births in this debate using comprehensive data tracking all firms and establishments in the U.S. nonfarm business sector for the period 1976 to 2005 from the Census Bureau's Longitudinal Business Database (LBD).[3] As will become clear, the LBD is uniquely well suited to study these issues on an economy-wide basis.

Our main findings are summarized as follows. First, consistent with NWZ, when we do not control for firm age, we find an inverse relationship between net growth rates and firm size, although this relationship is quite sensitive to regression-to-the-mean effects. Second, once we add controls for firm age, we find no systematic inverse relationship between net growth rates and firm size. A key role for firm age is associated with firm births. We find that firm births

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* Haltiwanger: University of Maryland and NBER; Jarmin and Miranda: U.S. Census Bureau.

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A supplemental appendix is available online at http://www.mitpressjournals.org/doi/suppl/10.1162/REST_a_00288.

[1] Policymakers regularly state that small businesses create most net new jobs. One of there common claims is that small businesses create two-thirds or more of net new jobs. Every president since President Reagan has included such statements in major addresses (often in the State of the Union addresses to Congress), and many other leaders in the U.S. House and Senate have made similar remarks. A list of selected quotes from speeches is available on request.

[2] Brown, Hamilton, and Medoff (1990) raise many related statistical issues in considering statistics by firm size but focus more on the impact of measurement issues for the employer size wage differential.

[3] An important early study that also emphasized the role of firm age for growth dynamics is Evans (1987), who found an inverse relationship between firm growth and firm size (holding firm age constant) and between firm growth and firm age (holding firm size constant) using firm-level data for U.S. manufacturing firms. As Evans points out, the work is based on data with substantial limitations for tracking start-ups and young firms, but, interestingly, some aspects of his findings hold for our data which do not suffer from the same limitations. Specifically, the departures from Gibrat's law are primarily for young and small firms. A variety of other studies have also examined the role of employer age for employer dynamics and employment growth, including Dunne et al. (1989), Haltiwanger and Krizan (1999), and Acs, Armington, and Robb (1999). These studies focused on the establishment–age establishment-growth relation, including patterns of growth and failure, as well as the volatility of new establishments. All of these studies with the exclusion of Acs et al. (1999) are limited to the manufacturing sector.

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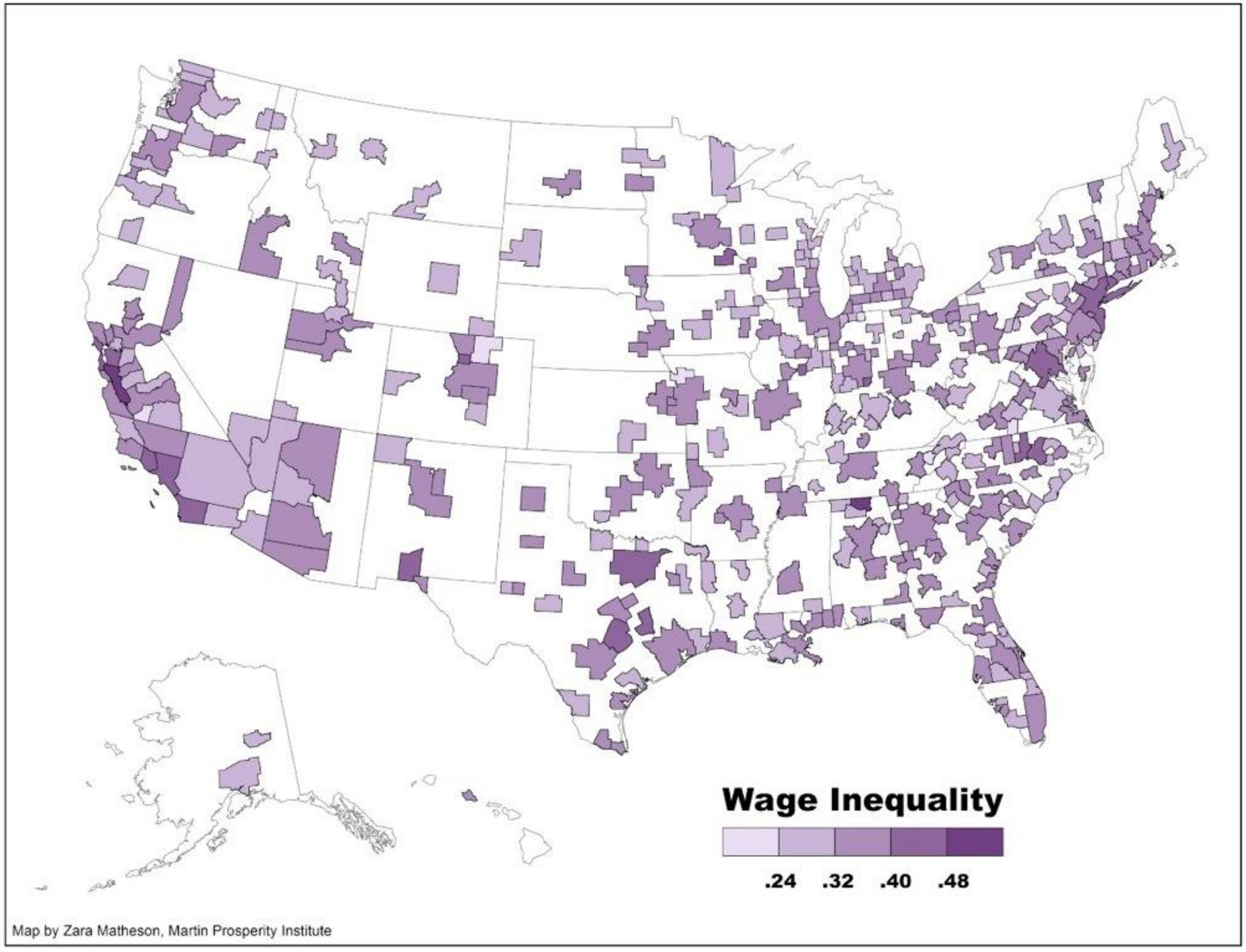

Wage Inequality
.24
.32
.40
.48
Map by Zara Matheson, Martin Prosperity Institute

	1980-1991 Total dispersion	1980-1991 Within group
Industry-township employment	-1%	-1.4%
Total township employment	-8.3%	-0.2%
N of firms in township	10.7%	1.4%
Ln(N) of firms in industry-township	18.7%	5.5%
SD of sizes of firms in industry-township	-0.6%	-2.2%
Industry diversity	-2.4%	-1.6%

Corporate Demography and Income Inequality

Jesper B. Sørensen
Stanford University

Olav Sorenson
University of Toronto

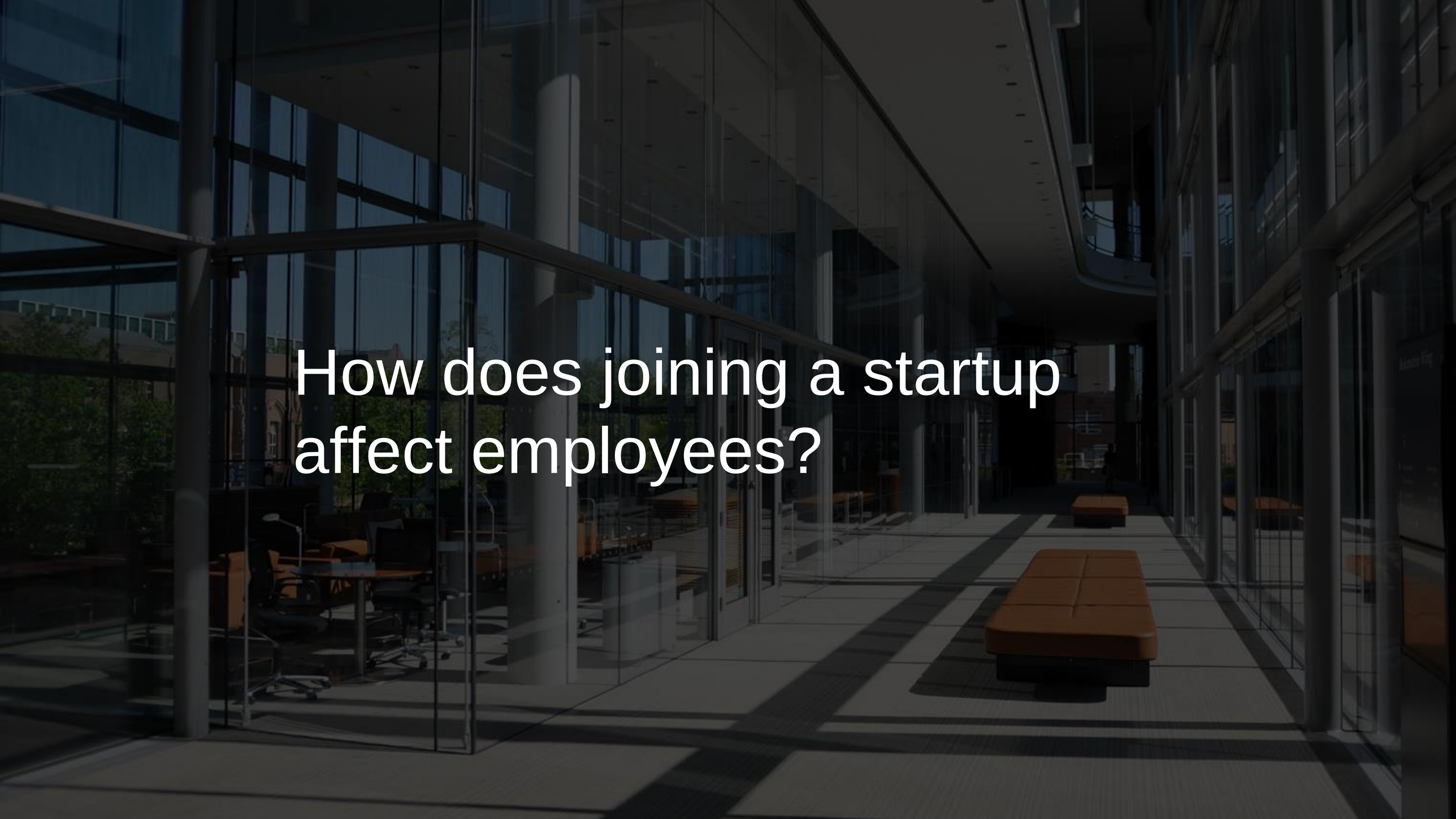
We examine the relationship between income inequality and corporate demography in regional labor markets and specify two mechanisms through which the number and diversity of employers in a labor market affect wage dispersion. Vertical differentiation, or variation in the ability of organizations of a particular kind to benefit from labor inputs, amplifies inequality through quality sorting, as the most productive employees in a particular domain pair with the most productive employers. Increasing horizontal differentiation—variation in the kinds of organizations—reduces inequality as individuals can more easily find firms interested in their distinctive attributes and talents. Our analysis of Danish census data provides support for each thesis. Increased numbers of organizations operating within an industry in a region, a proxy for vertical differentiation, increases wage dispersion in that industry-region. Variation in wages, however, declines with increased horizontal differentiation among employers; this is measured by the diversity of industries offering employment within a region and the variance in firm sizes in an industry-region.

Over the past three decades, sociologists have gained considerable insight into how organizations shape inequality. Building on the insight that rewards are often tied to positions rather than to particular employees (Sørensen and Kalleberg 1981), studies show that organizations can stratify even identically qualified individuals by appointing them to differently valued positions (Barnett, Baron, and Stuart 2000; Petersen and Morgan 1995; Reskin and Hartmann 1986). Others have found that the human-resource practices and incentive systems that firms adopt influence both the average level and the dispersion of compensation (Baron and Bielby 1980; Batt 2001; Kalleberg et al. 1996).

Despite these substantial contributions, research on the role of organizations in stratification processes has largely focused on processes operating within a firm. By contrast, the focus of organizational sociology has shifted from the internal operations of organizations to the influence of firms' environments on their behavior and performance (Scott 2002). Whether these environments comprise institutions (Meyer and Rowan 1977), buyers and suppliers (Pfeffer and Salancik 1978), or rivals (Hannan and Freeman 1977), the key insight is that organizational outcomes arise from interactions between organizations and external forces. Research on organizations and stratification, with its inward focus, and the broader literature on organizational sociology, with its more outward orientation, have therefore diverged (for exceptions, see Haveman and Cohen 1994; Phillips and Sørensen 2003).

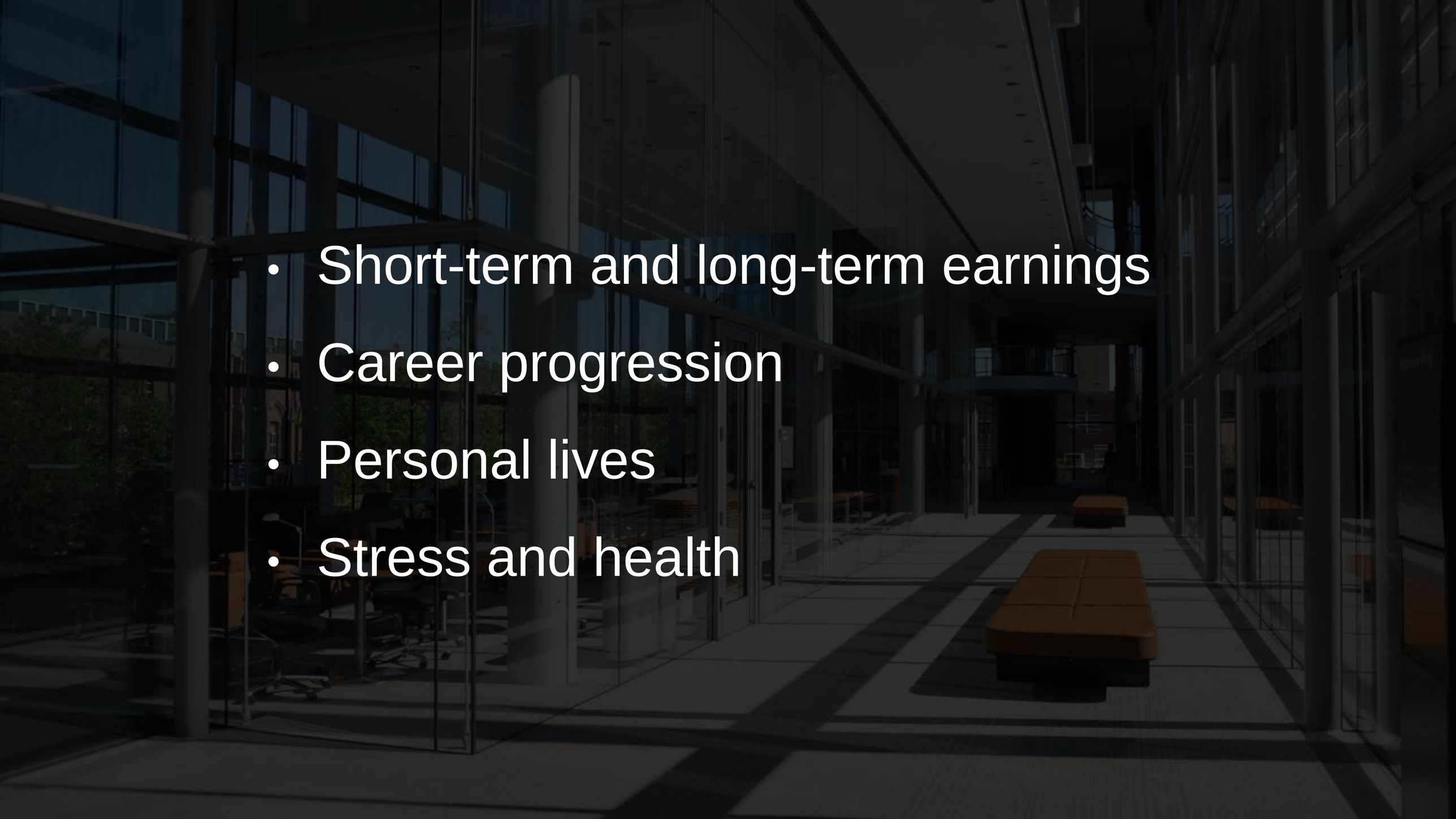
This disjuncture is unfortunate, particularly given growing evidence that much inequality

Direct correspondence to Jesper B. Sørensen, 518 Memorial Way, Stanford, CA 94305 (sorensen@stanford.edu). We are indebted to Niels Westergård-Nielsen and Tor Eriksson of the Aarhus School of Business for allowing us to use the Pay and Performance data, and to Søren Leth-Sørensen, Jørn Hansen Schmidt, and Paul Bingeley for time, advice, and resources related to the data. We also thank Howard Aldrich, Paula England, Roberto Fernandez, Mark Granovetter, Michael Hannan, Boyan Jovanovic, Leslie McCall, Glenn McDonald, Damon Phillips, and Ezra Zuckerman for useful comments on earlier drafts of this article. The usual disclaimer applies.

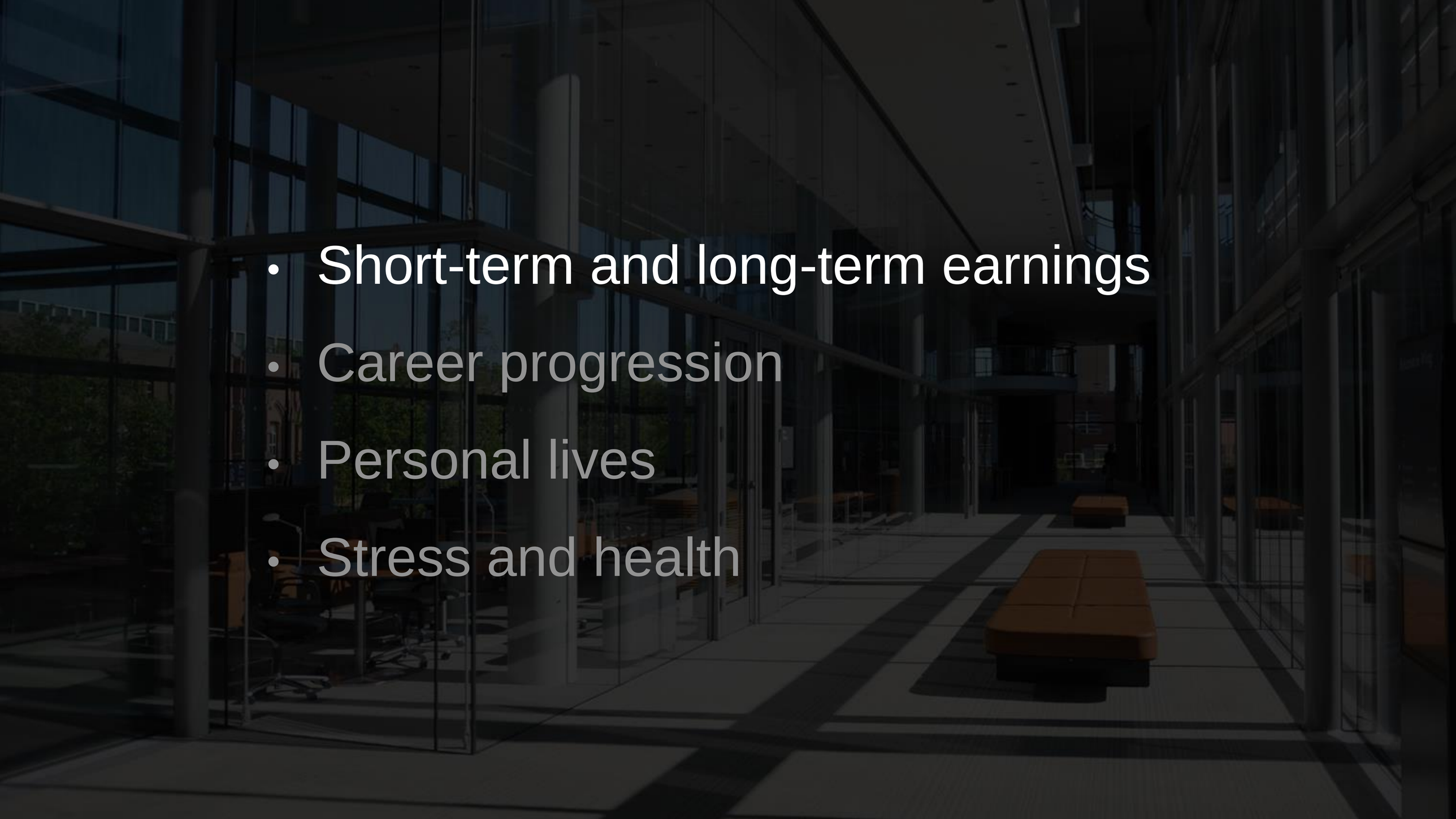

How does joining a startup affect employees?

M. Diane Burton
Cornell

Michael S. Dahl
Aalborg



- Short-term and long-term earnings
- Career progression
- Personal lives
- Stress and health



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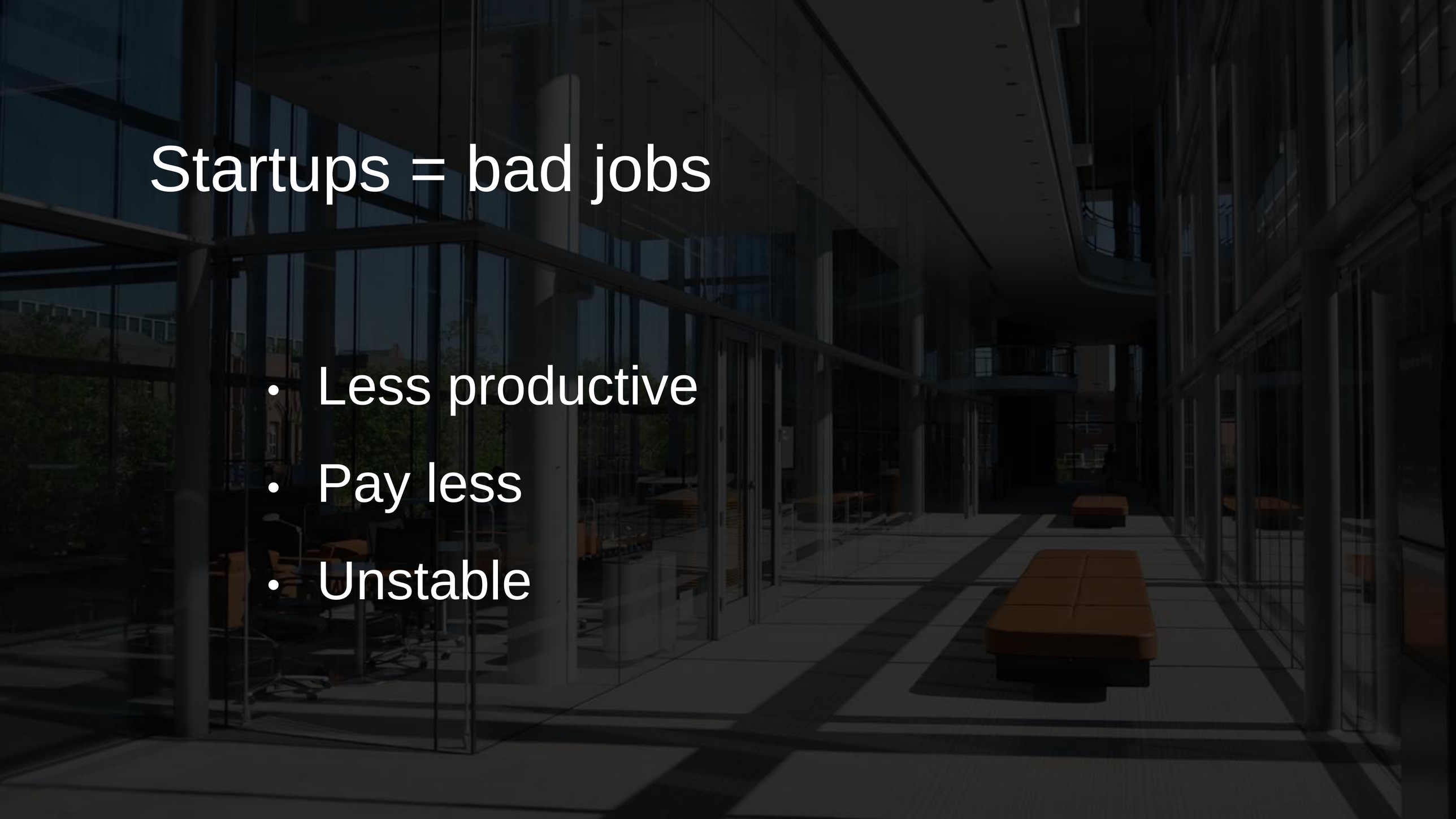
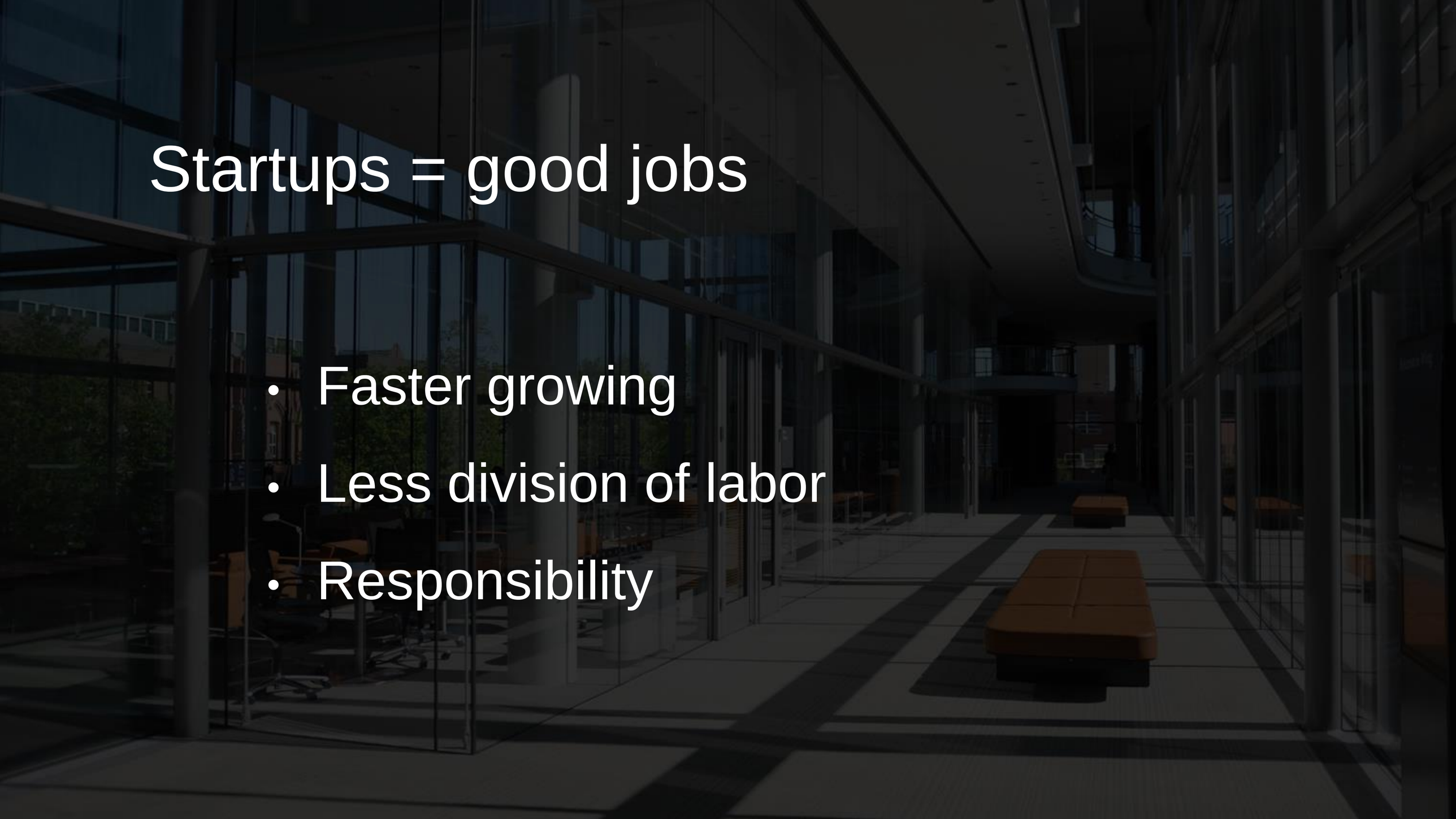


Startups = bad jobs

- Less productive
- Pay less
- Unstable



Startups = good jobs

- Faster growing
- Less division of labor
- Responsibility

hadapt

hadapt

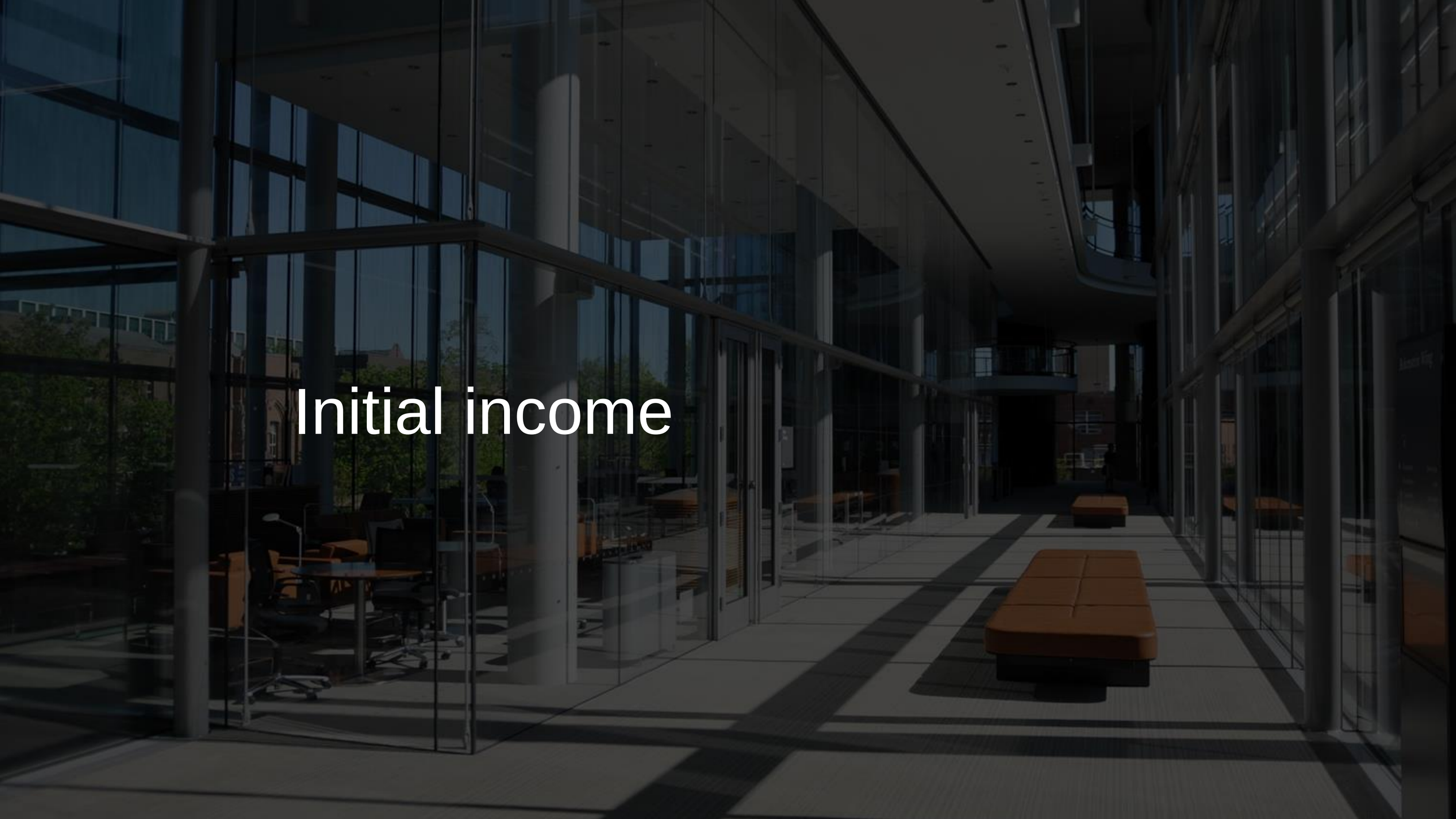
Goldman Sachs

Counterfactual

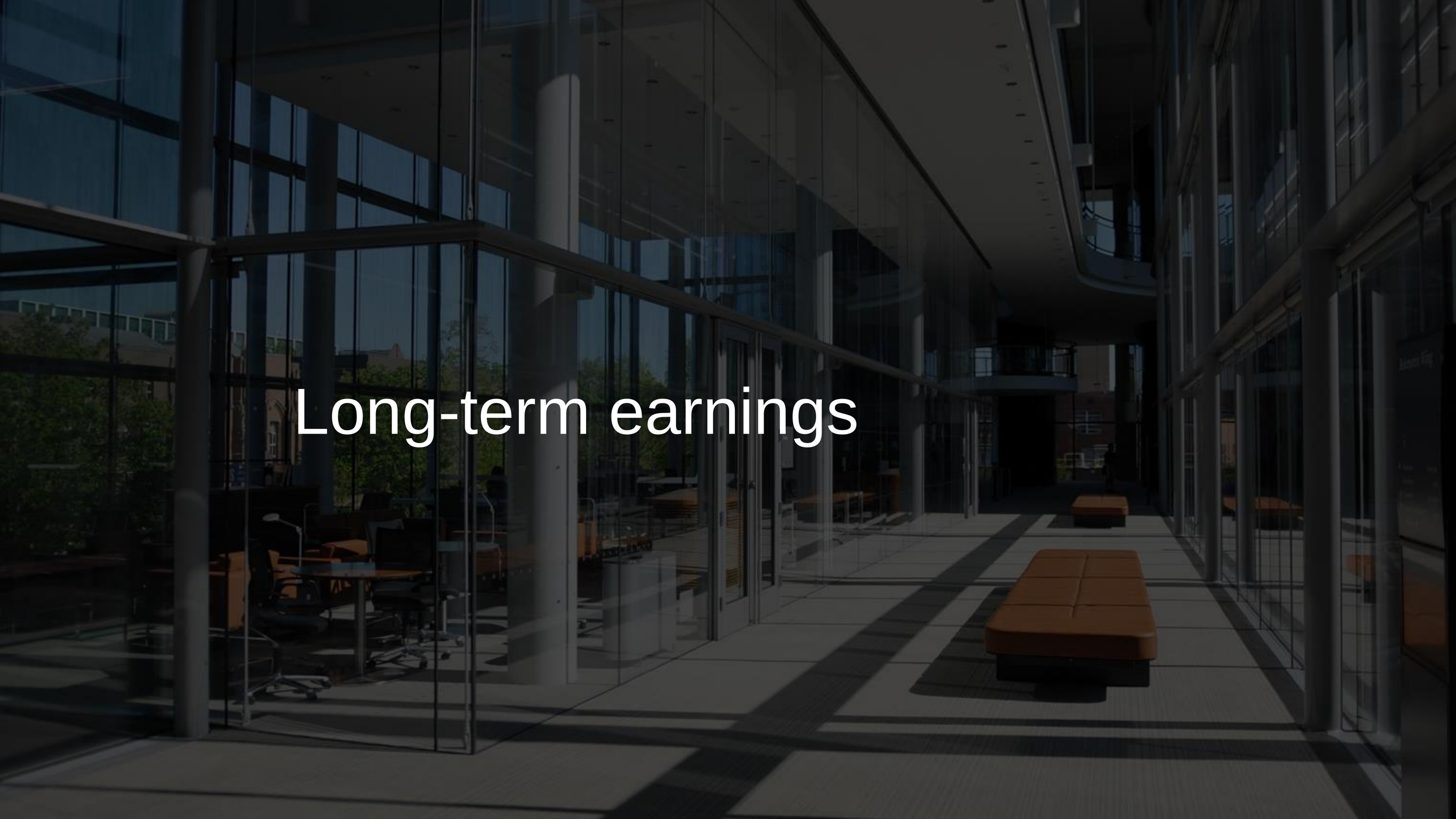

Denmark
International boundary
County (amt) boundary
National capital
County (amt) capital
Railroad
Road
Ferry
*Frederiksberg Kommune and Københavns Kommune each has status equal to that of an amt.
0 10 20 30 40 50 Kilometers
0 10 20 30 40 50 Miles
The Skaw
Skagen
Skaggerak
Hirtshals
Hjørring
Frederikshavn
Læsø
Nørresundby
Aalborg
Thisted
NORDJYLLAND
Kattegat
Thyborøn
Anholt
VIBORG
Viborg
Randers
ÅRHUS
Grenå
Holstebro
RINGKØBING
Silkeborg
Herning
Ringkøbing
Århus
Jutland
FREDERIKSBORG
Helsingør
Horsens
Hillerød
KØBENHAVN
Vejle
Kalundborg
Roskilde
Copenhagen
RIBE
VEJLE
Fredericia
VESTJÆLLAND
Sjælland
Esbjerg
Kolding
Odense
Slagelse
Sorø
Køge
FREDERIKSBERG and KØBENHAVN *
Ribe
FYN
Fyn
Nyborg
Korsør
Haderslev
SØNDERJYLLAND
ROSKILDE
Svendborg
Åbenrå
Tønder
Møn
Westerland
STORSTRØM
Sønderborg
Flensburg
Lolland
Nykøbing
North Sea
Baltic Sea
Göteborg
Borås
Varberg
Halmstad
SWEDEN
Hässleholm
Helsingborg
Kristianstad
Karlskrona
Malmö
Ystad
Trelleborg
BORNHOLM
Bornholm
Rønne

Matching

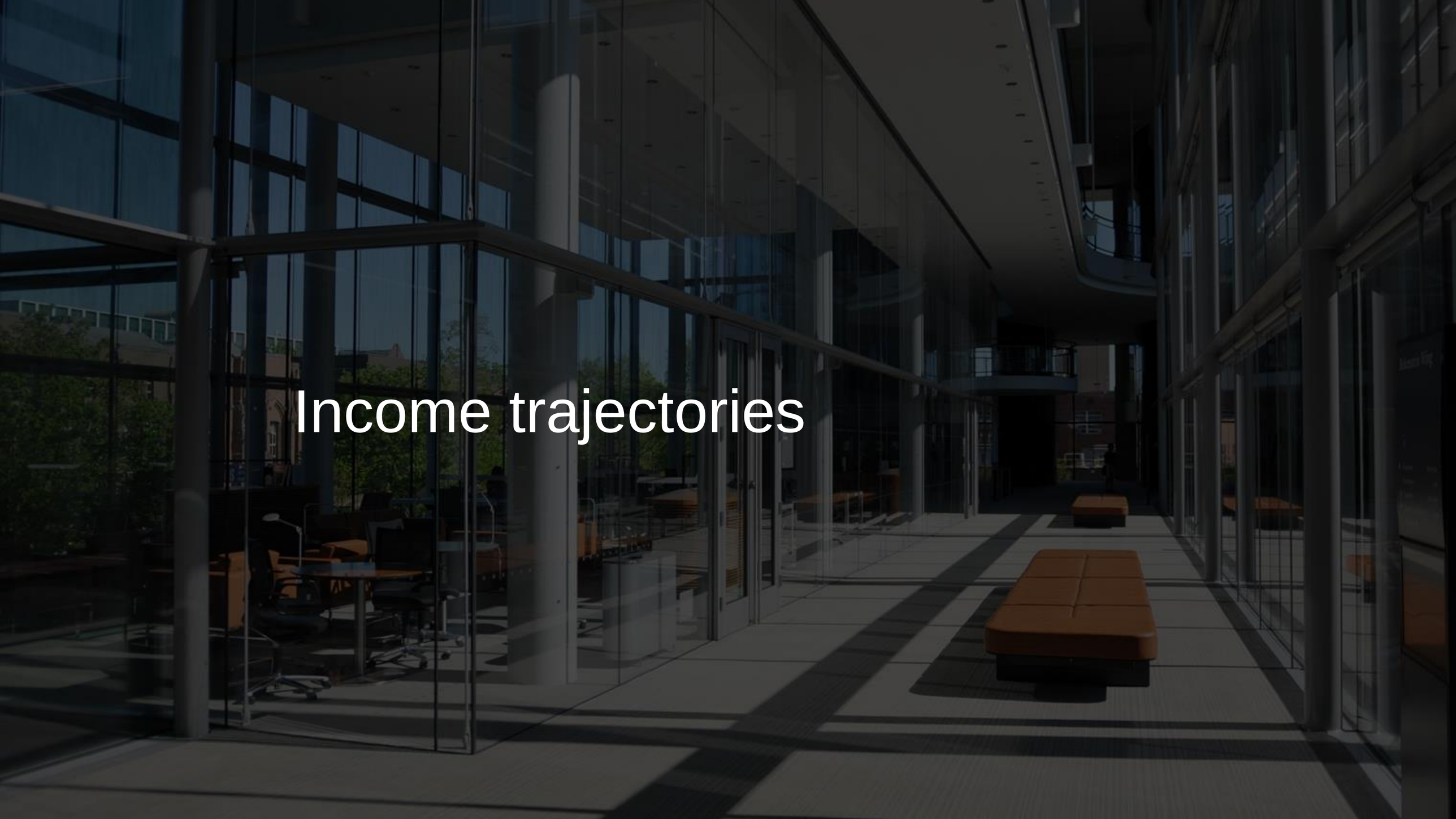
- For each cell (e.g., 1-10 employees, 1-2 years)
- For each new hire, identify those in baseline category (250+ employees, 9+ year) with same gender, age, education, and occupation
- Choose closest above and closest below in income distribution


Initial income

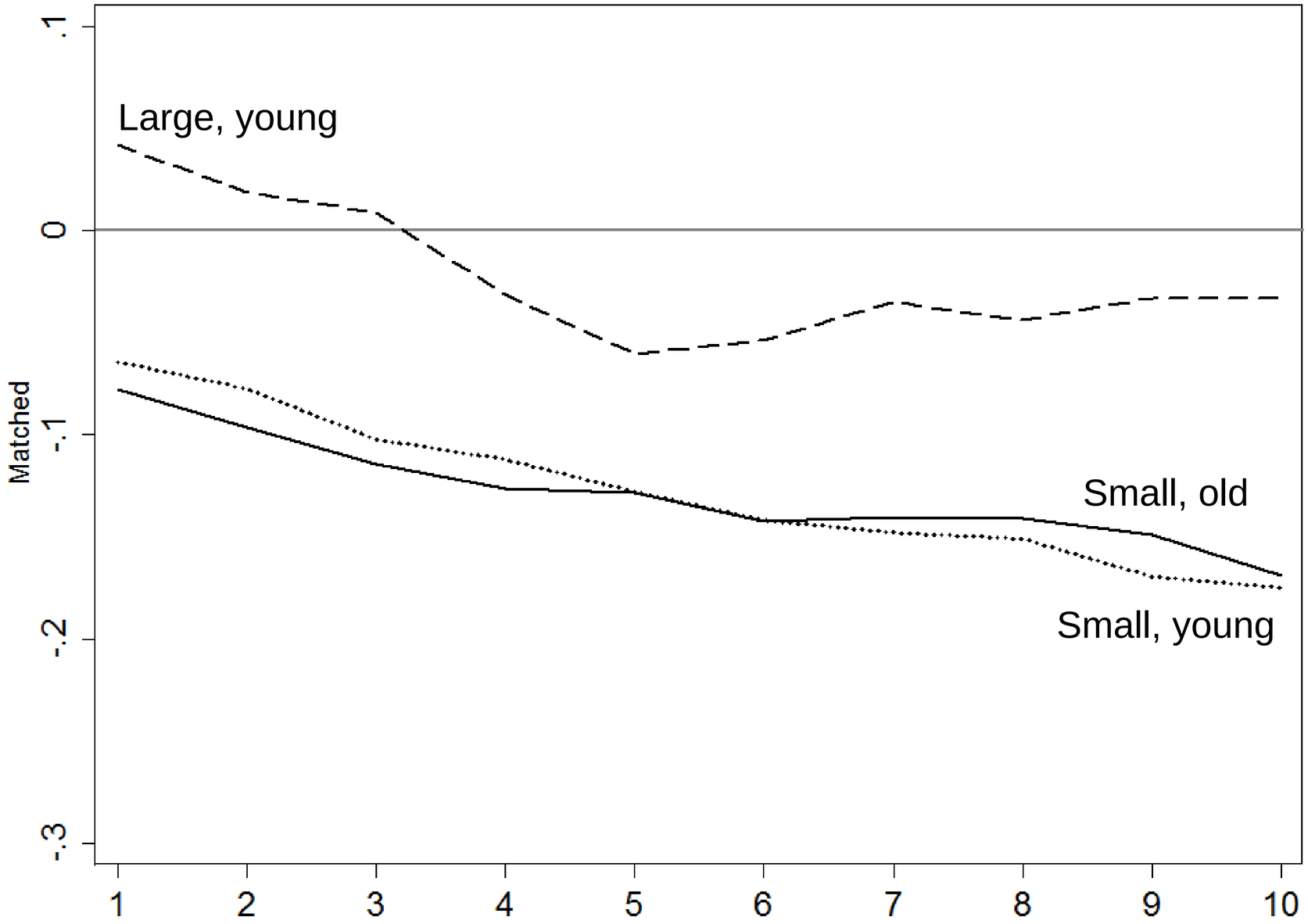
	1-2 years	3-4 years	5-8 years	9+ years
1-10	-25	-30	-30	-30
11-49	1	-6	-8	-12
50-249	13	6	3	-2
250+	27	13	5	


Long-term earnings

	1-2 years	3-4 years	5-8 years	9+ years
1-10	Small young		Small old	
11-49				
50-249	Large young		Large old	
250+				



Income trajectories

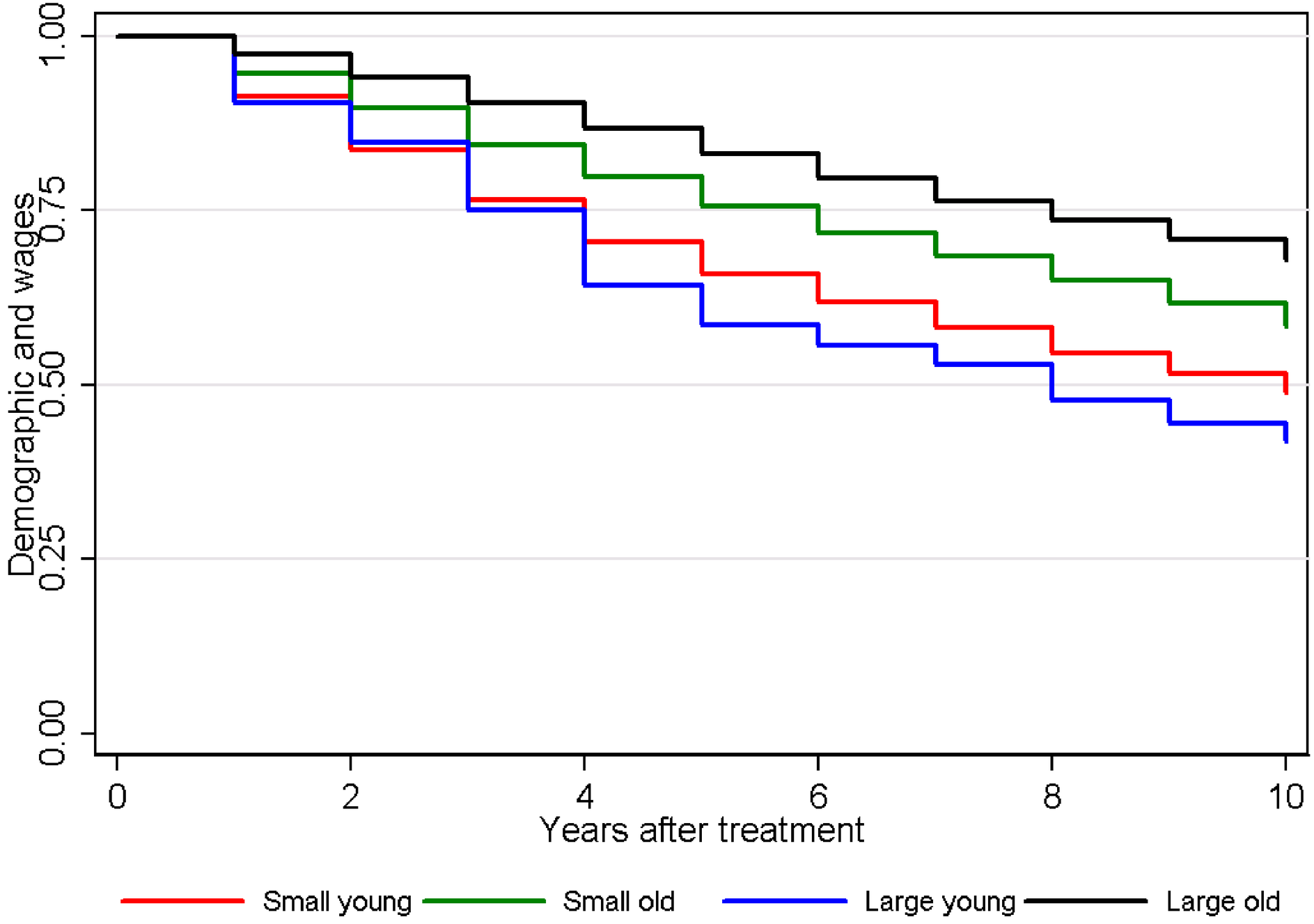

Large, young
Small, old
Small, young
Matched
.1
0
-.1
-.2
-.3
1
2
3
4
5
6
7
8
9
10

Lifetime (10-year) earnings

	Random	Matched	Matched movers	IV
Small young	-0.286	-0.120	-0.105	-0.153
Small old	-0.318	-0.114	-0.093	-0.158
Large young	-0.066	-0.014	0.022	-0.038

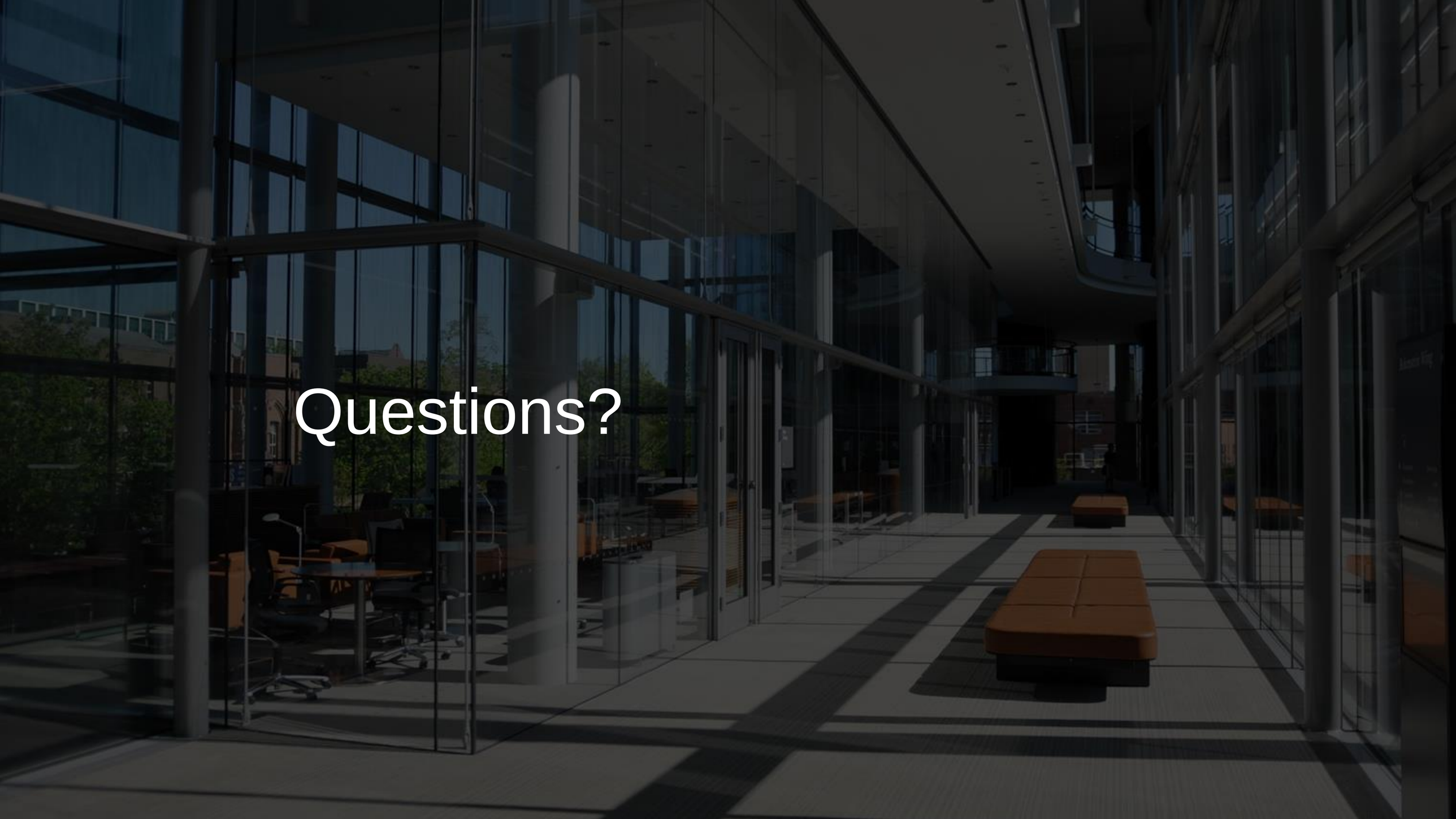
Why do they earn less?

- Unstable employment
- Stigma of failure
- Continue to work in small firms


Demographic and wages
1.00
0.75
0.50
0.25
0.00
0
2
4
6
8
10
Years after treatment
Small young
Small old
Large young
Large old

Lifetime (10-year) earnings

	Matched	Matched	Matched
Small young	-0.040	-0.035	0.002`
Small old	-0.049	-0.044	-0.002`
Large young	0.034	0.042	0.045
Employed	0.733	0.716	0.713
Stigma		0.029	0.019
Current age-size cell	N	N	Y


Questions?