THE ASCENT OF AMERICA'S HIGH-GROWTH COMPANIES

Founder Mobility

Analyzing movements of Inc. 500 founders across regions and metropolitan areas

KAUFFMAN
The Foundation of Entrepreneurship

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Insights from examining thirty years of Inc. 500 firm data

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Executive Summary

Research has established that mobility of human capital is an important component of economic growth and change, but has yet to fully understand how and why talent chooses to locate within certain regions or cities. Using a survey of Inc. 500 founders from 2000–2008, we investigate the movement of founders of companies on the list from the location of their alma maters to where they founded their companies. Using this unique dataset, we are able to gain insight into the mobility of this important group—founders of high-growth companies.

The story that emerges is incomplete, but allows us to begin thinking about how founders move. We found that diverse metropolitan areas and universities were represented in the data, indicating that the traditional narrative of Ivy League founders starting up in Silicon Valley is entirely too narrow to encompass the movements and experiences of high-growth company founders.

- Inc. 500 companies were located in 210 metropolitan areas and forty-nine states. These areas were home to 605 universities.
- Seventy-five percent of founders started their companies in different cities from the ones where they last received a degree, but only 37 percent moved to a different region.
- Washington, D.C., had the most businesses founded there, but when normalized for population, New York did.
- Regionally, the South did exceptionally well in most indicators, even when Washington, D.C., and Texas were removed. (The U.S. Census-designated Metropolitan Statistical Areas considers Washington, D.C., and Texas to both be in the Southern region.)
- Mobility and flux are important to cities. Even some cities, like Boston, that failed to retain founders appeared to do well overall.

The data confirm that founders are moving at relatively high rates from city to city and that regional networks are important to those movements. Ultimately, much more research is required to complete the picture of where founders actually start and end and why. Our analysis represents a first step in this process.

1. Introduction

Since the industrial age, states and cities have fought to attract the best talent and businesses to their respective areas. There is a long-standing sense of the importance of the movement of human and business capital and an equally long-standing competition between geographies to attract both. Increasingly, this fight takes place on a local level as cities, especially, vie for talent and businesses to settle in their areas.

From the smokestack-chasing policies that defined most of the twentieth century to Richard Florida's creative class, approaches to city development vary widely. The research community has

debated vigorously over why human capital chooses to locate in certain cities. While it is clear there are positive relationships between economic indicators like jobs, growth, and innovation with entrepreneurship,[1] the explanations for entrepreneurial levels in various cities range from historical incidence and agglomeration effects to weather conditions. Culture often is lauded as a defining feature of Silicon Valley and contributor to its success, yet some studies have failed to corroborate the importance of 'culture' to creating entrepreneurial activity generally.[2] Amenities, like transport systems or sports complexes, often are touted as good for development and talent attraction. Again, however, research is unable to corroborate this claim.[3] Studies have previously found baseball and football stadiums to be ineffective in spurring growth. A new study published in the *Journal of Urban Affairs* turns its focus to multipurpose basketball arenas and finds that they can be beneficial—but that the effect depends on the city itself.[4] Ultimately, a multitude of theories concern development, promotion of entrepreneurship, and the attraction of human capital at a city level. Most of them have not been sufficiently proven or disproven so as to provide a complete explanation.

While we do not understand how, exactly, a city begins to attract more human capital, we do know that the movement of this talent is important. Economists long have recognized mobility as an indicator of efficient human capital markets, and the United States traditionally has been a mobile country. However, American mobility has fallen steadily each year for the last two decades, and has declined overall by half. This trend could appear concerning if it were due to higher relocation costs or other stickiness in the labor market. However, a new paper indicates that the decline in mobility is not due to any stickiness, but is the result of a decrease in the geographic specificity of occupations and an increase in the information available to workers to learn about and visit cities before they relocate there. While people are moving less, they are doing so because their jobs require them to move less and because they can know more than ever before about their options.[5] Nonetheless, mobility is not simply an indicator of efficiency. In considering migration patterns across major American cities, it is likely that flux allows for and fosters cross-pollination of talent and ideas. Firm dynamism, considered to be the hallmark of Schumpeterian creative destruction, is high in the United States and is widely regarded as positive economic process on net.[6] It is quite possible that similar processes of movement of people benefit cities.

As entrepreneurship is more and more widely recognized as an engine of economic growth, and high-growth startups are further singled out as driving this trend, localities have placed a greater emphasis on attracting just this sort of company and founder. The companies that populate the Inc. 500 list each year are the sort of subset of businesses that cities covet and compete to attract. They form a sort of 'meso' layer in the economy. They are not traditional small businesses, but rarely become industrial behemoths. They grow rapidly and have, on average, anywhere from fifty to 100 employees and $30 million to $100 million in revenue. Whether by happenstance or by forethought, founders choose a city in which to start their companies, but understanding that process is a difficult. Here, we make a first attempt by focusing on one portion of this complicated issue: where Inc. 500 company founders went to school and where they created their companies. Understanding the movements of such a particularly dynamic group of founders provides us insight into this important, yet poorly understood, aspect of economic development.

2. Methods and Sample

The Inc. 500 list is an annually published list of the fasting-growing private companies. To better understand multiple aspects of Inc. founders, the Kauffman Foundation commissioned a follow-up survey titled, *Where Are They*

Now? A sample of founders with companies on the Inc. list from 2000–2008 were included in the survey. The survey focused on primary founders, not entire teams, and each founder was included only once in data. That is, if a founder appeared multiple times in the list, the founder still was included only as one data point. Naturally, we were unable to include all the companies from the list during that time, which, given repeat appearances, includes about 3,000 businesses. It is likely that the data collected are biased toward surviving companies. Data ultimately were collected on 1,702 founders, and information on the last university the founder attended was available for 1,476 founders in the United States.

Our analysis is focused at the metropolitan and regional levels. As one might expect, certain universities and cities appeared more frequently than others, while some were not represented at all or were represented only once in the dataset.

Founders attended school in 164 of the 366 MSAs in the United States. As seen in Figure 1, the vast majority of MSAs were represented ten or fewer times. Only a few were represented at a high frequency. Forty-four MSAs appeared only one time. Similarly, companies were founded in 157 MSAs, and 61 of these appeared only once (Figure 2).

Figure 1. Distribution of MSAs where Founders Attended University
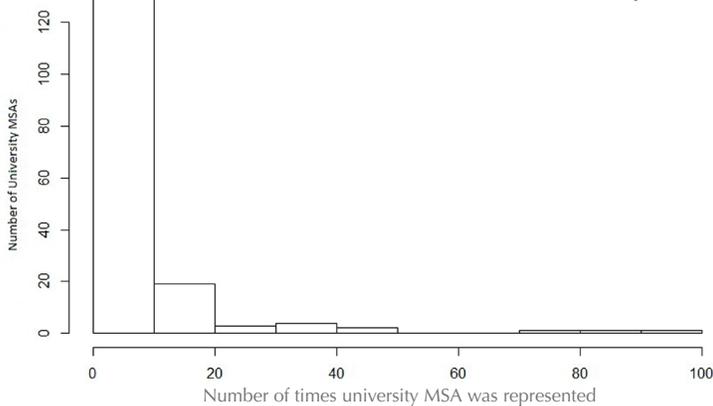
Figure 2. Distribution of MSAs where Companies were Founded
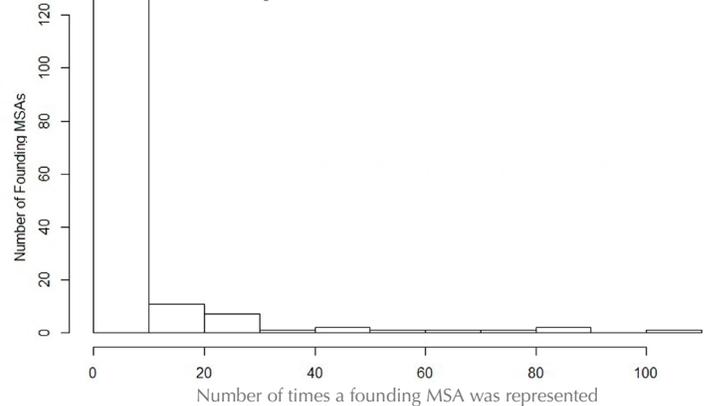
Naturally, the number of total universities represented was higher than that of MSAs represented. First, some MSAs, like Boston, host multiple universities. Second, 137 founders attended American universities that aren't located in MSAs at all. There were 609 universities represented in the survey; 386 appear only once and 475 appear only once or twice (Figure 3).

Although we have information on the specific alma maters, we hesitate here to discuss university-specific questions. Our data only indicate the university of last degree conferred and, thus, are not

necessarily indicative of educational influence or quality. Our analysis seeks to use the location of the founder's last degree as a proxy for a starting location, and to illustrate and explore mobility on a metropolitan and regional level, not to rank or discuss university quality. However, the breadth of universities included in this list is large and diverse—it is far from the case that all high-growth founders are dropouts from Ivy League universities.


Figure 3. Distribution of Universities

3. Cities

The fight for human capital is fierce at the metropolitan level. A wide array of publications regularly put out new lists of the 'best' cities, based on a plethora of indicators. Should one need to know the best city for retirees, singles, manliness, or pet owners, one inevitably can find a list. All such ranking systems inherently lack internal validity, that is, the qualities that make a 'good' city are predetermined as opposed to inferred.

Nonetheless, we will delve into a similar exercise. We have a concept here of the flow of human capital, which cities are 'producing,' 'exporting,' 'importing,' and 'consuming.' It is with this idea in mind that we compiled a series of lists of the Top Ten metropolitan areas (based on the U.S. Census-designated Metropolitan Statistical Areas) for a variety of factors, from number of founders who chose to leave certain cities to which cities retained the most.

These rankings are not necessarily reflective of the 'best' cities for entrepreneurs. These Top Ten lists reflect the preferences of this set of founders, and readers should be cautioned against extrapolating the lists beyond their purpose of showing where the most Inc. founders from 2000–2008 were last awarded a degree and where they founded their companies.

The first area we investigated is those cities that educate the most founders (Table 1). The list is not entirely surprising. All have multiple universities within their cities and some, like San Francisco and San Jose, are famous for incorporating 'startup' culture. However, some
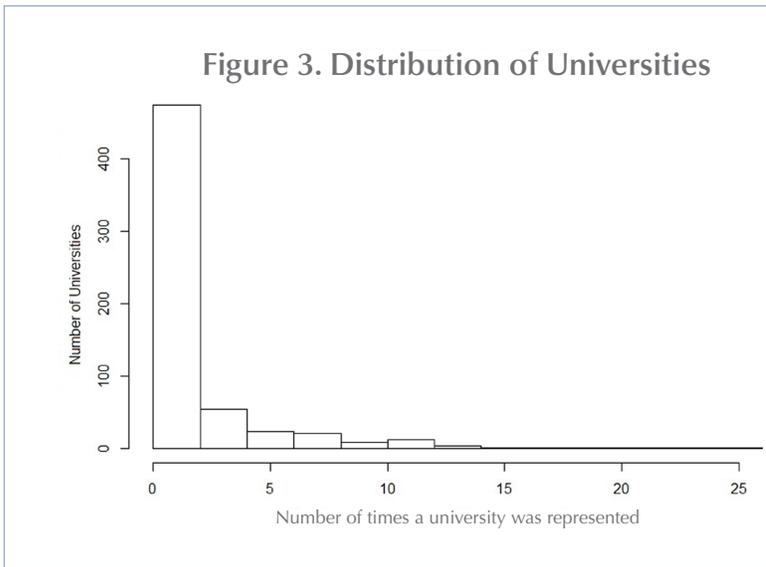
Table 1. Cities with Highest Number of Founders Educated

MSAs	Number of Founders	Percentage of Founders in Sample
Boston	95	6.44
New York	88	5.96
Los Angeles	73	4.95
Philadelphia	43	2.91
Chicago	43	2.91
Washington, D.C.	40	2.71
Austin	33	2.24
San Jose	33	2.24
San Francisco	32	2.17
Provo	25	1.69

areas are not as famous for producing entrepreneurs. Notably, Provo, Utah, appears on this list and on the retention list. It is difficult to say exactly why, but reasonable explanations include robust university programming, as well as cultural attitudes and experiences.

We went on to rank those cities that 'retained' founders from education; that is, those whose founders were last educated there (Table 2). Naturally, the list is similar to the cities who educated the most founders—the more founders a city educates, the more founders it has a chance to retain. It is worth noting here that, of the 1,268 moves we examined, three-quarters of founders founded their companies in cities different from the ones where they were last educated.

Table 2. Cities with Highest Number of Founders Retained

MSAs	Number of Founders	Percentage of Founders in Sample
New York	36	2.44
Boston	26	1.76
Washington, D.C.	26	1.76
Los Angeles	26	1.76
Atlanta	15	1.02
Seattle	12	0.81
Chicago	12	0.81
Provo	11	0.75
Philadelphia	11	0.75
San Francisco	10	0.68

However, since where the founder last attended university may not reflect the founder's origin, this indicator does not capture the cities that may have retained founders born or raised in their areas. Many cities didn't retain any founders, a topic we touch on later. Note that Washington, D.C., and Seattle are also in the top ten of those that retain the largest *fraction* of founders (Table 3).

Table 3. Cities with Highest Percentage of Founders Retained

MSAs	Number of Founders	Percentage Retained[7]
Portland	5	71.43
Houston	7	70.00
Washington, D.C.	26	65.00
Atlanta	15	60.00
Seattle	12	60.00
Louisville	3	50.00
Oklahoma City	3	50.00
Bloomington, Minn.	7	46.67
St. Louis	4	44.44
Provo	11	44.00

We also examined which cities had the most founders total (Table 4) and which attracted the most founders (Table 5). Washington, D.C., comes out on top of both lists. The number of founders attracted is generally much greater than the amount of founders a city retains, indicating that founders are relatively mobile.

Table 4. Cities with Highest Number of Founders

MSAs	Number of Founders	Percentage of Founders in Sample
Washington, D.C.	106	7.18
New York	85	5.76
Los Angeles	83	5.62
Boston	71	4.81
Atlanta	64	4.34
San Francisco	59	4.00
Dallas	46	3.12
Chicago	45	3.05
Denver	32	2.17
Philadelphia	29	1.96

Table 5. Cities with Highest Number of Founders Attracted

MSAs	Number of Founders	Percentage of Founders in Sample
Washington, D.C.	80	5.42
Los Angeles	57	3.86
New York	49	3.32
San Francisco	49	3.32
Atlanta	49	3.32
Boston	45	3.05
Dallas	42	2.85
Chicago	33	2.24
Denver	26	1.76
Miami	22	1.49

We can examine which cities lost the most founders after education. Notably, Chapel Hill retained only one founder, while Urbana-Champaign and Ann Arbor lost all of the founders educated there to other cities.

Table 6. Cities with Highest Number of Founders Lost

MSAs	Number of Founders	Percentage of Founders in Sample
Boston	69	4.67
New York	52	3.52
Los Angeles	47	3.18
Philadelphia	32	2.17
San Jose	31	2.10
Chicago	31	2.10
Austin	26	1.76
Ann Arbor	22	1.49
San Francisco	22	1.49
Urbana-Champaign	15	1.02

Cities like Ann Arbor that seem to educate founders but not retain them or even attract are differentiated from other cities with high losses, like New York or Los Angeles, that also do well at retaining and attracting founders. To explore this concept, we constructed an indicator called *net flow*, defined as the number of individuals attracted and retained minus the number that are lost.

Table 7. Cities with Highest Net Flow of Founders

MSAs	Number of Founders	Percentage of Founders in Sample
Washington, D.C.	92	6.23
Atlanta	54	3.66
Dallas	39	2.64
San Francisco	37	2.51
Los Angeles	36	2.44
New York	33	2.24
Denver	23	1.56
San Diego	19	1.29
Houston	19	1.29
Salt Lake City	18	1.22

Table 8. Cities with Lowest Net Flow of Founders

MSAs	Number of Founders	Percentage of Founders in Sample
Ann Arbor	-21	1.42
San Jose	-19	1.29
Urbana-Champaign	-15	1.02
Durham	-12	0.81
Ithaca	-11	0.75
Syracuse	-10	0.68
Columbia, Mo.	-9	0.61
Gainesville	-9	0.61
Iowa City	-9	0.61
State College	-9	0.61

Clearly, while being strongly in the negative spectrum for net flow is a bad indicator, and having high net flow is positive, those toward the middle or even close to zero might not be performing as poorly as perhaps one might assume. Low net flow does not necessarily indicate failure or stagnation—to the contrary, movement of firms actually can contribute to economic robustness. As discussed earlier, mobility is an indicator of economic vibrancy in itself. Despite the fact that mobility is falling across the general population, these founders are moving at a

relatively high rate, and just because a city loses a founder does not mean the city is doing poorly. For example, Boston has a net flow of two (as do Little Rock, Arkansas; Lafayette, Louisiana; Scranton, Pennsylvania; and nineteen other cities). Yet, while Boston lost a lot of companies, it also gained quite a few—creating dynamism that actually could be helpful. Indeed, given Boston's place on other Top Ten lists, including most companies founded there, that seems to be the case. When examining movements across American metropolitan areas, Paul Kedrosky points to mobility as key for economic vibrancy, a view this data would appear to support.[8] It further suggests that all cities need not cling to the talent in their cities but may benefit from its free flow and flux.

Figure 4 indicates the cities with highest and lowest net flows. Red indicates negative net flows, blue indicates positive net flows. Some of the largest and smallest net flows are next to one another—this potentially would indicate that universities located in MSAs outside of other major MSAs are feeding their graduates into surrounding metropolitan areas or that people from major cities are perhaps taking some time to receive additional degrees at nearby universities.

Figure 4. Cities with Highest and Lowest Net Flows
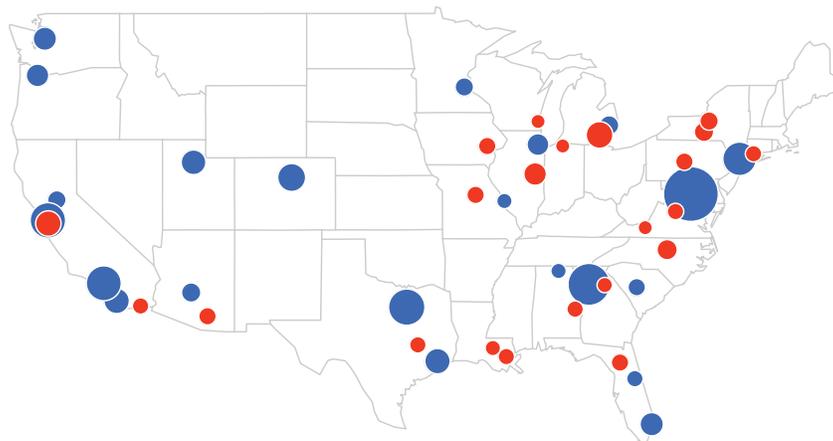
Red indicates negative flow. Blue indicates positive net flow.

The Top Ten lists above are presented in absolute terms. However, we also calculated each of the Top Ten lists normalized by the populations of the MSAs.[9] In all lists, between two and six of the cities included in the first set of rankings remained in the top ten. In fact, New York appeared at the top of every positive, normalized Top Ten list. However, linear relationships do not necessarily hold for per capita measures—large cities would be expected to disproportionately produce companies and founders due to agglomeration effects and historical evidence.[10] The cities that move to the top of

the founders educated list, many of them college towns, also generally appear on the founders lost list. Full results of this exercise may be found in Appendix A.

This exercise guides us toward examining relationships between cities more closely. It is important not only to know which cities had the most founders, but also from where those founders came. Examining the top cities on the company-founded list, we find a few patterns. Washington, D.C., topped the list of businesses founded there, with 106 companies. Twenty-six of those founders received their last degrees in Washington, D.C., and nine and eight hailed from Boston and Los Angeles, respectively. However, after that, the quantity of founders coming from each MSA drops greatly. Below, we can see from which areas founders came to D.C. to start companies. Looking toward the second city on the list, New York, a greater number of companies (thirty-six) were retained and fewer were founded there total (eighty-five). New York's founders also came from a diverse set of MSAs. The city with the third-highest amount of founders, Los Angeles, retained twenty-six founders and attracted fifty-seven. Washington, D.C., drew from forty-six MSAs total, New York from twenty-six, and Los Angeles from thirty-five. Below are maps indicating these flows (Figures 5–7). Darker coloring indicates higher flows, while lighter coloring indicates smaller flows.

## Figure 5. Founders Flowing Toward Washington, D.C.

Lighter lines indicate few founders, darker lines indicate heavier flows.

Figure 6. Founders Flowing Toward New York
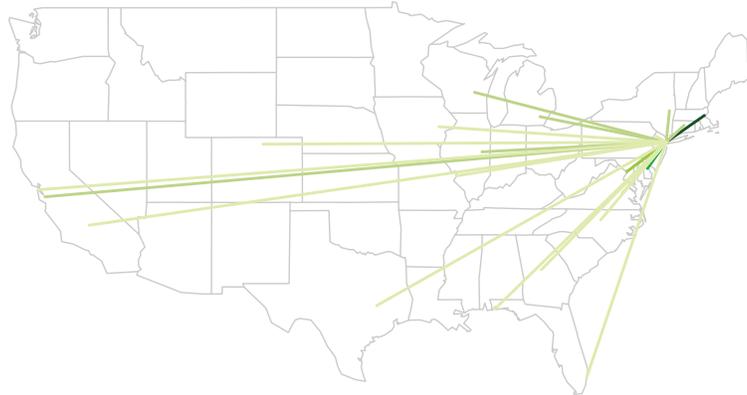
Lighter lines indicate few founders, darker lines indicate heavier flows.

Figure 7. Founders Flowing Toward Los Angeles
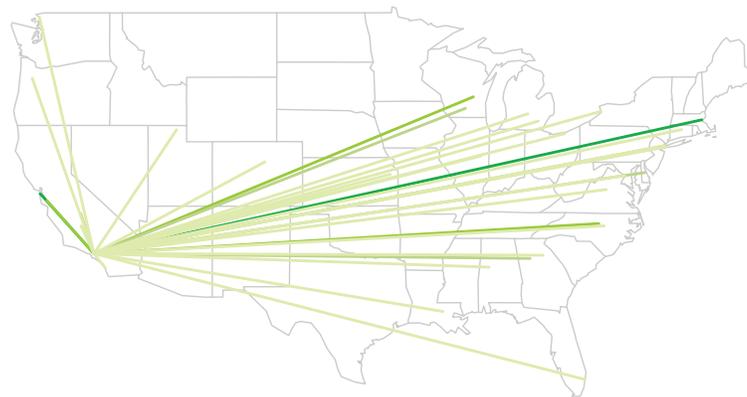
Lighter lines indicate few founders, darker lines indicate heavier flows.

We can repeat this exercise for the cities that lost the most founders (Figures 8–10). Boston, New York, and Los Angeles all ranked among the cities with the highest losses, with sixty-nine, fifty-two, and forty-seven, respectively.

Figure 8. Founders Flowing Away from Boston

Lighter lines indicate few founders, darker lines indicate heavier flows.

Figure 9. Founders Flowing Away from New York

Lighter lines indicate few founders, darker lines indicate heavier flows.

## Figure 10. Founders Flowing Away from Los Angeles
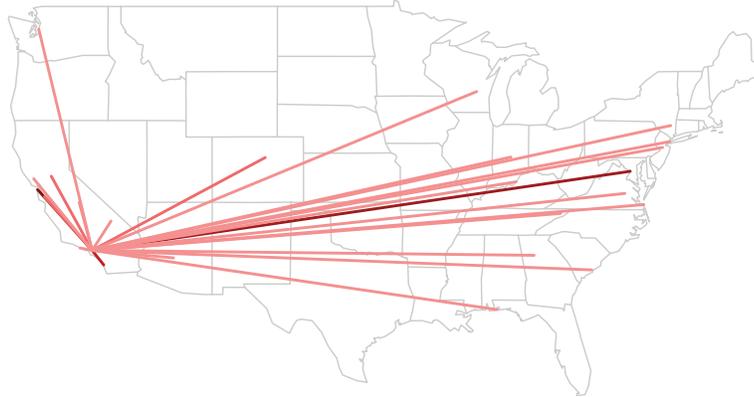
Lighter lines indicate few founders, darker lines indicate heavier flows.

We can find some interesting reciprocal relationships between cities, as well. Most of these reciprocal relationships are regional. Boston and New York, for instance, have the strongest relationship to one another, with eighteen founders moving between them both ways. Los Angeles and San Francisco have a reciprocal relationship (fourteen founders), as do San Francisco and San Jose (twelve), and Dallas and Austin (eleven). New York and Los Angeles have the strongest interregional connection, sending nine founders between them.

Taking this a step further, it also is possible to conduct a network analysis based on the founder mobility where some of these relationships are borne out. Specifically, we can construct a large network of metropolitan areas, based on which counties are connected by a founder moving from one to the other. Then, once this network is constructed, algorithms to detect communities of connected regions can be employed to find groups of regions that are more tightly connected than would be expected by chance. This previously has been done for migration as a whole in the United States at the county level, and geographically contiguous regions have been discovered.[11]

Employing a similar methodology, we created a network connecting the metropolitan areas (made up of its constituent counties) where founders' schools are connected with the metro areas in which the companies were founded. While this network is far smaller and sparser than the overall United States migration data are, we can see certain patterns. While different runs of the community detection algorithms yield somewhat different results, Figure 11 is a representative example.

Figure 11. Network Analysis of Connected Counties
Based on Metropolitan Area
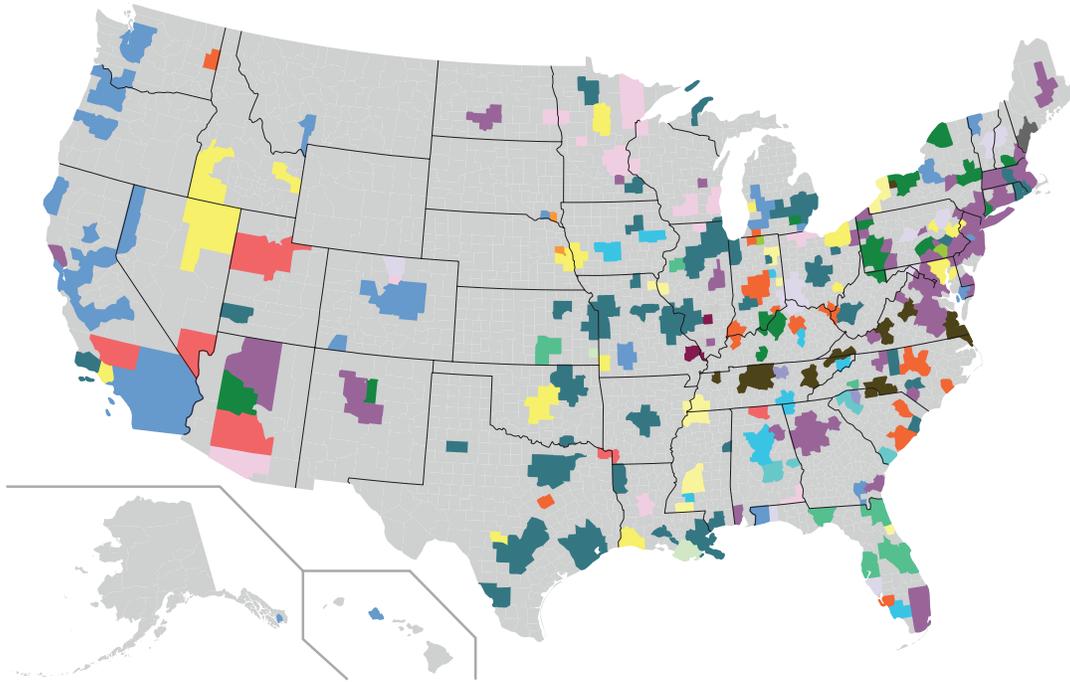
At a glance, some exciting results are visible. The East Coast is a distinct community, as is the West Coast, extending all the way to Denver (note that, in some runs, the East and West Coast communities are combined). In addition, there is a community that cuts through the middle of the country, running from Chicago through Kansas City all the way down through Texas. Similarly, there are smaller regional clusters, such as one (orange) that runs through the Carolinas and Kentucky and Indiana. The map is also reminiscent of Richard Florida's and others' 'megaregions' concept, echoing connections in the northwest, for example. However, we also see more distinct connections and communities that are not necessarily connected by neighboring geography.

Overall, there appear to be clear regional connections between cities: geography has a large impact on migration patterns of Inc. founders.

4. Regions

Looking more closely at these regional connections, we repeat the ranking exercise using the four census regions—West, South, Northeast, and Midwest. As previously noted, some schools yield founders who stay in their metro areas, although many more graduate numerous founders who leave their metropolitan areas. However, this trend doesn't hold on a regional level: more founders stay in the region of the education than those who leave. This makes sense in terms of sheer proximity, but also encourages one to consider the importance of regional networks.[12] Similarly, it seems that flux fosters certain regional ecosystems, as seen in the network visualizations, which is reinforced by the retention rates of founders among regions. This constant churn within a region can be very powerful in cementing its economic vibrancy.

Table 9. Number of Founders Educated in Each Region	
Region	**Number of Founders**
South	420
Northeast	420
Midwest	378
West	346

Table 10. Number of Founders Retained in Each Region	
Region	Number of Founders
South	322
West	259
Northeast	210
Midwest	186

Table 11. Number of Founders in Each Region	
Region	Number of Founders
South	576
West	439
Northeast	283
Midwest	266

Table 12. Number of Founders Attracted to Each Region	
Region	Number of Founders
South	254
West	180
Midwest	80
Northeast	73

Table 13. Number of Founders Lost by Each Region	
Region	Number of Founders
Northeast	210
Midwest	192
South	98
West	87

Table 14. Net Flow of Founders for Each Region	
Region	Number of Founders
South	478
West	352
Midwest	74
Northeast	73

Noticeably, the South as a region does quite well in all of these indicators.[13] This is a particularly interesting result given that, compared to the Northeast, the South is not widely regarded for premier universities. Yet, an equal number of founders in this data went to universities in the South and in the Northeast. Furthermore, the South retained and attracted more businesses than any other region did. The Midwest, Northeast, and West all lost more founders to the South than to the other two regions combined. Clearly, there is a driving trend to locate businesses there and to remain there after education. There is a general trend for people to move toward the South and West. Edward Glaeser's book on cities notes a correlation between population growth and January temperature—higher is better.[14] Joel Kotkin holds up sprawling cities (often seen in the South), such as Houston, as great for quality of life.[15] The driving forces behind such dynamics still are unclear and beyond the scope of this survey, but the trend is nonetheless clear and interesting.

Importantly, the census considers both Washington, D.C., and Texas to be in the Southern region. If they are separated from the South as a region (but not attributed to a different region), the South fares less well—but only marginally. (For full results, see Appendix B.) The South maintains it ranking position in businesses founded, attracted, and lost, while it loses a spot to the West in businesses retained and net flow. The category where this change makes the largest difference is in where founders were educated—the South goes from tied for first to last, as 21 percent of the South's founders were educated in D.C. or Texas. Atlanta and Miami fare well and are part of the trend. However, of the 210 MSAs that appear in this analysis, seventy-eight (37 percent) are located in the South. Without D.C. and Texas, sixty-eight (32 percent) are still in the South. The South appears to have fewer major dominant cities, but more cities that are attracting founders in general in this analysis.

5. Discussion

This investigation is an important first step in analyzing the movements of human and business capital across cities and regions. Traditionally entrepreneurial-dynamic areas like San Francisco and Boston are well represented, as would be expected. However, many other cities, more or less expected, appear prominently in this analysis. The popular narrative of where high-growth entrepreneurs emerge from and where they go is too narrow to account for all of the patterns seen here. Moreover, these data fit well with a narrative of economic development in which mobility and flux play positive roles—retaining human capital is not the only way in which a city can create economic vibrancy.

The Inc. 500 data give us a concept of one part of the trajectory of a high-growth company and is a jumping off place, but more data and research are necessary to undercover the causal effects at work in the results shown here. Explaining how and why founders choose to move to different cities is an important piece to start understanding the larger entrepreneurial ecosystem. While the idea that successful founders choose cities is subtly assumed in many of the policies designed to attract and retain talent and companies, it is important to recognize that the relationship is likely to be highly endogenous. An excellent example of this is industry clusters, the benefits of which have been studied over and over. Colocation for companies creates spillovers—the large amount of technology startups in Boston, for instance, is both the cause and result of their entrepreneurial success.[16] Gathering more data and pushing forward on this topic, with this analysis as a beginning, would allow scholars to build on the rich and growing literature on founders and entrepreneurship, as well as give policymakers insight and better tools to make more effective decisions.

Endnotes

1. Acs et al., 2008, Glaeser et al. 2010.

2. Glaeser and Kerr, 2009.

3. Chen and Rosenthal, 2008.

4. Propheter, 2012.

5. Kaplan and Schulhofer-Wolf, 2012.

6. Haltiwanger, 2011.

7. Calculated for cities with five or more founders.

8. Kedrosky, 2011.

9. These lists include cities with at least five founders in the category indicated or, in the case of net flow, each city lost, retained, and attracted at least one founder.

10. Bettencourt et al., 2010.

11. Arbesman, 2012.

12. Note that regional totals are larger than metropolitan totals because some universities or founding locations are not located in a U.S. Census Metropolitan Statistical Area.

13. Note that the South, as defined by the Census Bureau, includes Washington, D.C., as well as Texas.

14. Glaeser, 2011.

15. Kotkin, 2010.

16. Roberts and Eesley, 2009.

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Appendix A. Population Normalized Top Ten Lists

Cities with Highest Number of Founders Educated

City	Number of Founders	Normalized Value
New York	**88**	**136.30**
Ithaca	11	110.89
Columbia, Mo.	11	71.19
State College	10	70.91
Urbana-Champaign	15	69.05
Ann Arbor	22	64.97
Auburn	8	64.95
Iowa City	9	64.01
Provo	**25**	**55.41**
Charlottesville, N.C.	10	54.08
Bold indicates the city appeared on the Top Ten list for absolute values		

Cities with Highest Number of Founders Retained

City	Number of Founders	Normalized Value
New York	**36**	**55.76**
Provo	**11**	**24.38**
Boston	**26**	**5.82**
Washington, D.C.	**26**	**5.06**
Austin	7	4.85
Milwaukee	6	3.92
Seattle	**12**	**3.76**
Indianapolis	6	3.69
Atlanta	**15**	**3.10**
Denver	6	2.56
Bold indicates the city appeared on the Top Ten list for absolute values		

Cities with Highest Number of Founders

City	Number of Founders	Normalized Value
New York	**85**	**131.65**
Provo	17	37.68
Boulder	7	24.47
Salt Lake City	22	21.21
Washington, D.C.	**106**	**20.65**
Huntsville, Ala.	7	19.08
Austin	24	16.63
Boston	**71**	**15.89**
San Francisco	**59**	**14.13**
Trenton	5	13.91
Bold indicates the city appeared on the Top Ten list for absolute values		

Cities with Highest Number of Founders Attracted		
City	Number of Founders	Normalized Value
New York	**49**	**75.89**
Provo	6	13.30
Boulder	6	20.98
Salt Lake City	20	19.28
Washington, D.C.	**80**	**15.58**
Huntsville, Ala.	7	19.08
Austin	17	11.78
Boston	**45**	**10.07**
San Francisco	**49**	**11.74**
Trenton	5	13.91
Bold indicates the city appeared on the Top Ten list for absolute values		

Cities with Highest Number of Founders Lost		
City	Number of Founders	Normalized Value
Ithaca	11	110.89
New York	**52**	**80.54**
State College	10	70.91
Urbana-Champaign	**15**	**69.05**
Ann Arbor	**22**	**64.97**
Auburn	8	64.90
Columbia	10	64.72
Iowa City	9	64.01
El Centro, Calif.	8	52.91
Charlottesville, N.C.	9	48.60
Bold indicates the city appeared on the Top Ten list for absolute values		

Cities with Highest Net Flow*		
City	Number of Founders	Normalized Value
New York	**33**	**51.11**
Washington, D.C.	**92**	**17.92**
Salt Lake City	**18**	**17.35**
Atlanta	54	11.18
Boulder	3	10.49
Denver	23	9.83
San Francisco	**37**	**8.86**
Portland	15	7.261
Dallas	**39**	**6.80**
Provo	3	6.65
Bold indicates the city appeared on the Top Ten list for absolute values		
*Highest normalized values with movements in each category of net flow		

Appendix B. Regional Counts with Texas and Washington, D.C., Separated from the South

Number of Founders Educated by Region

Region	Number of Founders
Northeast	420
Midwest	378
West	346
South	332
D.C./Texas	88

Number of Founders Retained by Region

Region	Number of Founders
West	259
South	220
Northeast	210
Midwest	186
D.C./Texas	50

Number of Founders by Region

Region	Number of Founders
South	440
West	439
Northeast	283
Midwest	266
D.C./Texas	136

Number of Founders Attracted by Region

Region	Number of Founders
South	220
West	180
D.C./Texas	86
Midwest	80
Northeast	73

Number of Founders Lost by Region

Region	Number of Founders
Northeast	210
Midwest	192
South	112
West	87
D.C./Texas	38

Net Flow by Region

Region	Net Flow
West	352
South	328
Midwest	74
Northeast	73
D.C./Texas	38

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