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Winner-Take-All Cities

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Abstract:

This chapter examines the phenomenon of "winner-take-all urbanism" and "winner-take-all cities." Large segments of the modern economy have been shown to conform to a "winner-take-all" pattern as superstar talent draws a disproportionate share of economic rewards (Rosen 1981; Adler 1985; Frank and Cook, 1996). But cities also conform to a winner-take-all pattern in which a small group of global "superstar cities" (Gyourko et al., 2013) account for a disproportionate share of talent, economic activity, innovation, and wealth (Florida, 2017). We track the distribution of several key factors to identify and describe this pattern of winner-take-all urbanism in global cities, comparing the distribution of economic activity or output, innovation (measured as venture capital-backed startups), and wealth (measured as the share of wealth held by billionaires) and compare them to the distribution of population. In particular, we look at the disproportionate share of economic activity, innovation, and wealth held by the "alpha" global cities which stand at the apex of the global economy (Beaverstock et al., 1999; Taylor and Walker, 2001). We find clear evidence of a winner-take-all urbanism across the global economy and the world's cities.

Keywords: Winner-take-all cities, Winner-take-all urbanism, Alpha cities, Economic activity, Innovation, Wealth, Billionaires, Super-rich

Introduction

It has become a commonplace to say we live in a "winner-take-all economy" or a "winner-take-all society." That winner-take-all construct was originally introduced by Frank and Cook (Frank, 1994; Frank and Cook, 1996) who noted that the economy, and society broadly, was transforming into a winner-take-all system where the top celebrities and business people take home the lion's share of economic rewards. For example, the average CEO earned 20 times what the average worker did in 1965 but by 2000 it was 383 to 1.

This chapter suggests that cities and urbanism increasingly reflect a similar dynamic, building upon and further fleshing out the concept of "winner-take-all urbanism" advanced by Florida (2017). The basic theory argues that, similar to the way top talent garners a disproportionate share of economic gains, a relatively small number of global cities or metropolitan areas also garner a disproportionate share of talent and other economic assets, generating an inordinate share of innovation, start-up companies, wealth, income, and economic output.

Winner-take-all urbanism is related to another key urban phenomenon, the rise of so-called "superstar cities." As originally advanced by (Gyourko et al., 2013), the construct of superstar cities was used to identify cities or metro areas, such as New York, San Francisco, Los Angeles, and Boston, where real estate values were not only higher, but had appreciated faster than in other metro areas. Since housing prices largely reflect differences in productivity (Albouy, 2016) and also amenity (Glaeser et al., 2001), places with higher real estate values can also be said to have significantly more productive and robust economies. For us, the notion of superstar cities reflects not only their higher real estate prices, but their ability to attract disproportionate shares of global talent. Here we draw from the literature on "superstar talent." Rosen (1981) initially identified the capacity of superstar talent, such as celebrities and entertainers, to command extraordinarily high compensation because of their ability to attract large audiences. This superstar dynamic, he argued, was increasingly becoming a core feature of the modern economy. Later, Adler (1985) extended the basic theory by illustrating how the superstar phenomenon is also a function of network externalities associated with popularity; once something becomes popular, others are more likely to demand the same thing.

This chapter outlines the rise of winner-take-all urbanism across global cities or metro areas. We track the distribution of several key dimensions of global economic activity: economic output, innovation, and wealth held by the super-rich and compare it to the distribution of population. We examine these distributions across large samples of global cities, taking a particularly close look at the concentration of so-called "alpha global cities" (Beaverstock et al., 1999; Taylor et al., 2001; Beaverstock et al., 2017). This line of

research identifies 49 alpha cities, defined as cities which sit at the apex of the global economy and house high concentrations of globally-oriented economic functions like high-level finance and banking, legal services, accounting, marketing, and advertising. Related research notes that alpha cities are defined by so-called "alpha clusters," which include high finance and investment banking; certain high-tech or knowledge based industries; and the creative industries of media, entertainment, advertising, film, and television (Schoales, 2006) which are also disproportionately concentrated geographically in a relatively small set of global cities.

The results of our analysis provide significant evidence in support of the theory of winner-take-all urbanism and winner-take-all cities. We find that the distribution of key factors such as economic output, innovation, and wealth held by the super-rich are highly concentrated across global cities, particularly in alpha cities. In some cases, these concentrations are many times greater than the population of these cities or metro areas would predict.

Data, Variables and Methodology

To get at the phenomenon of winner-take-all cities, we examine the global distribution and concentration of three key types of economic activity: economic output, innovation, and the wealth held by the global super-rich, comparing each of them to the share of population. We measure population and economic output (GRP) for metropolitan areas as per the Brookings Institution's Global Metro Monitor (Parilla et al., 2014). These data cover the 300 largest metropolitan economies, which account for 20 percent of the world's population and 47 percent of its economic output. We measure the super-rich based on the concentration of billionaires and their wealth using data from *Forbes* for 2015 (Florida et al., 2016). These data cover more than 1,800 global billionaires across approximately 300 global metros. We measure innovation based on venture capital investment in start-up companies for the year 2012 (Florida and King, 2016). These data cover 1,919 start-up companies and $36.5 billion in venture investment across 170 global metros. In the following pages, when we use the term city, we are referring to urbanized areas or metropolitan areas.

We examine the distribution of these kinds of economic activity across global cities or metro areas, and focus in particular on their concentration in so called "alpha cities" (Beaverstock et al., 1999; Taylor, 2001, Taylor et al., 2001). This literature identifies four broad types of cities based on their relationship to the world economy. Alpha cities are the world's leading cities and are highly integrated with each other at the top ranks of the world economy. There are three additional types of cities: "beta cities" which are regional centers for the world economy, "gamma cities" which are smaller, less

significant hubs for the world economy, and so-called "cities with sufficient services" which are the lowest category of global city (Beaverstock et al., 2017).
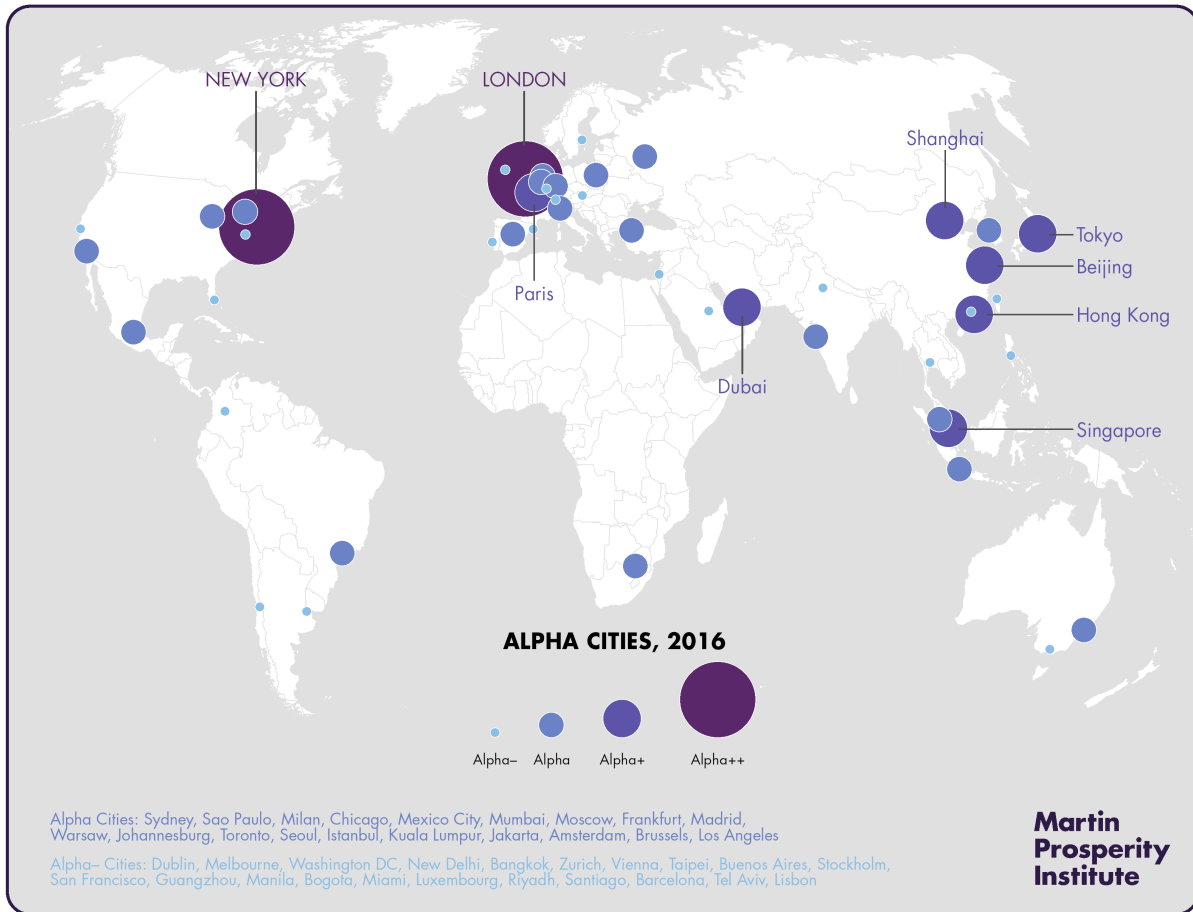

Figure 1: Alpha Cities by Category
Source: Beaverstock et al., 2017

There are four sub-groups of alpha cities; figure 1 maps them according to their category. New York and London are "alpha ++" cities. There are seven cities in the "alpha +" category: Singapore, Hong Kong, Paris, Beijing, Tokyo, Dubai, and Shanghai. The next group of "alpha cities" includes 19 metros including Sydney, Chicago, Moscow, and Los Angeles. The fourth group, "alpha–" cities, includes another 21 metros. The appendix provides a full list of all alpha cities by category.

For each global city, and for the various categories of global cities, we calculate a "Winner-Take-All Quotient" (or WQ). This is a simple "over-representation ratio" that compares the share of the total amount of economic output, venture capital investment and/or, billionaires in a global city divided by its share of the world's population. We use the following equation:

$$WQ_{ij} = \frac{E_i / \sum E_j}{P_i / \sum P_j}$$

E_i is the value of a certain economic activity in city I, and $\sum E_j$ is the global value of the same economic activity. P_i is the population in city I, and $\sum P_j$ is the total population globally. In other words, the WQ is a measure to estimate the concentration of a certain economic activity compared to the population concentration. A value above 1 means that a city or metro area accounts for a larger share of that economic activity compared to its share of global population, while a value less than 1 indicates the opposite.

Findings

We now turn to our key findings. We begin with the global distribution of population and then turn to economic output, venture capital investment, and the distribution of wealth held by the global super-rich.

Global Distribution of Population

Population provides a baseline for understanding the distribution of activity across the world's cities and metro areas. The 100 largest global cities account for 12.2 percent of the world's population, the top 50 for 8.8 percent, the top 20 for 5.1 percent and the top 10 for just 3.1 percent (United Nations, 2017).

Figure 2: Population Share for the 49 Alpha Cities
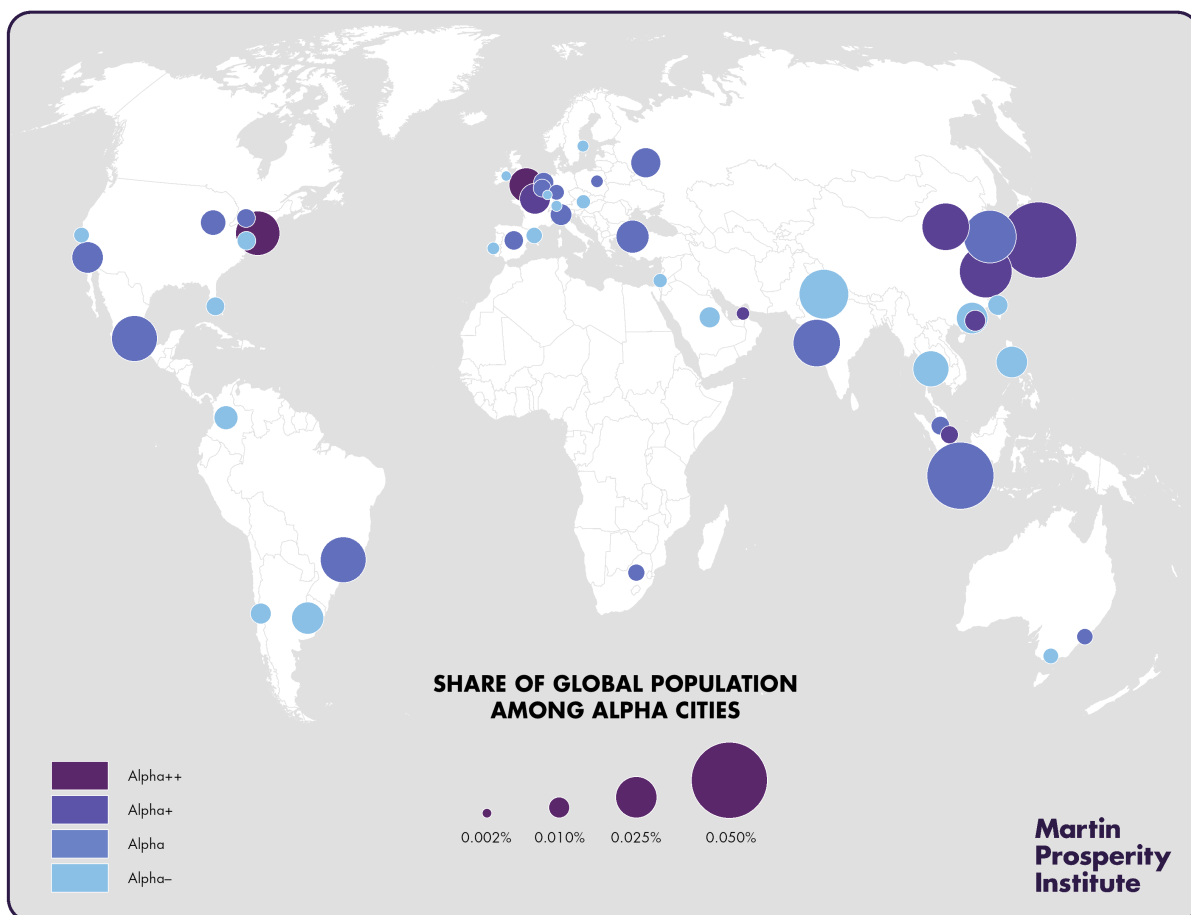Source: Brookings, 2014

Even though they define the apex of global economic power, the 49 alpha cities house just 7 percent of the world's population. Indeed, even the largest alpha cities account for but a small fraction of the global population (see Figure 2). Tokyo, the largest alpha city based on population with 37 million people is home to just 0.5 percent of the world's

population. New York, which is one of two leading alpha ++ cities, accounts for just 0.3 percent, while London accounts for only 0.2 percent of the world's population.

Table 1: Population of the Twenty Largest Alpha Cities

Global City	Population	Share of Global Population	Category
Tokyo	37,028,032	0.504%	Alpha +
Jakarta	32,182,993	0.438%	Alpha
Shanghai	24,683,358	0.336%	Alpha +
Seoul	24,622,500	0.335%	Alpha
New Delhi	23,035,773	0.313%	Alpha -
Beijing	21,639,034	0.294%	Alpha +
Mumbai	21,535,046	0.293%	Alpha
Mexico City	20,976,194	0.285%	Alpha
Sao Paulo	20,847,942	0.284%	Alpha
New York	20,073,847	0.273%	Alpha ++
Bangkok	15,567,876	0.212%	Alpha -
London	14,620,396	0.199%	Alpha ++
Istanbul	14,023,445	0.191%	Alpha
Buenos Aires	13,381,556	0.182%	Alpha -
Los Angeles	13,221,044	0.180%	Alpha
Guangzhou	13,106,225	0.178%	Alpha -
Manila	12,856,279	0.175%	Alpha -
Paris	12,492,444	0.170%	Alpha +
Moscow	12,080,388	0.164%	Alpha
Chicago	9,568,101	0.130%	Alpha

Source: Brookings, 2014

Global Distribution of Economic Output

Generally speaking, cities or metros areas that have larger populations will have greater levels of economic activity. But economics has long established that this relationship is far from one-to-one, and hinges on factors that condition the productivity of places (Rauch, 1993; Ciccone and Hall, 1996; Glaeser et al., 2001; Glaeser and Maré, 2001). In fact, our main contention is that the distribution of economic activity in terms of output, innovation, and the concentration of wealth will conform to a winner-take-all pattern, being more concentrated than the distribution of population especially in the alpha cities that stand at the apex of the global economy.

We begin with the distribution of economic output across the world's cities. Economic output is considerably more concentrated or skewed than the distribution of population. The top 100 largest global cities account for more than a quarter (26.2 percent) of global economic output (about double the top 100's share of population) the top 50 for nearly a fifth (18.9 percent) of economic output (again roughly double

the top 50's share of population), the top 20 for more than 10 percent (11.3 percent) of economic output (more than double the share of population held by the top 20 largest cities), and the top 10 for 7.5 percent of economic output (again more than double the population share of the top 10 global metros).
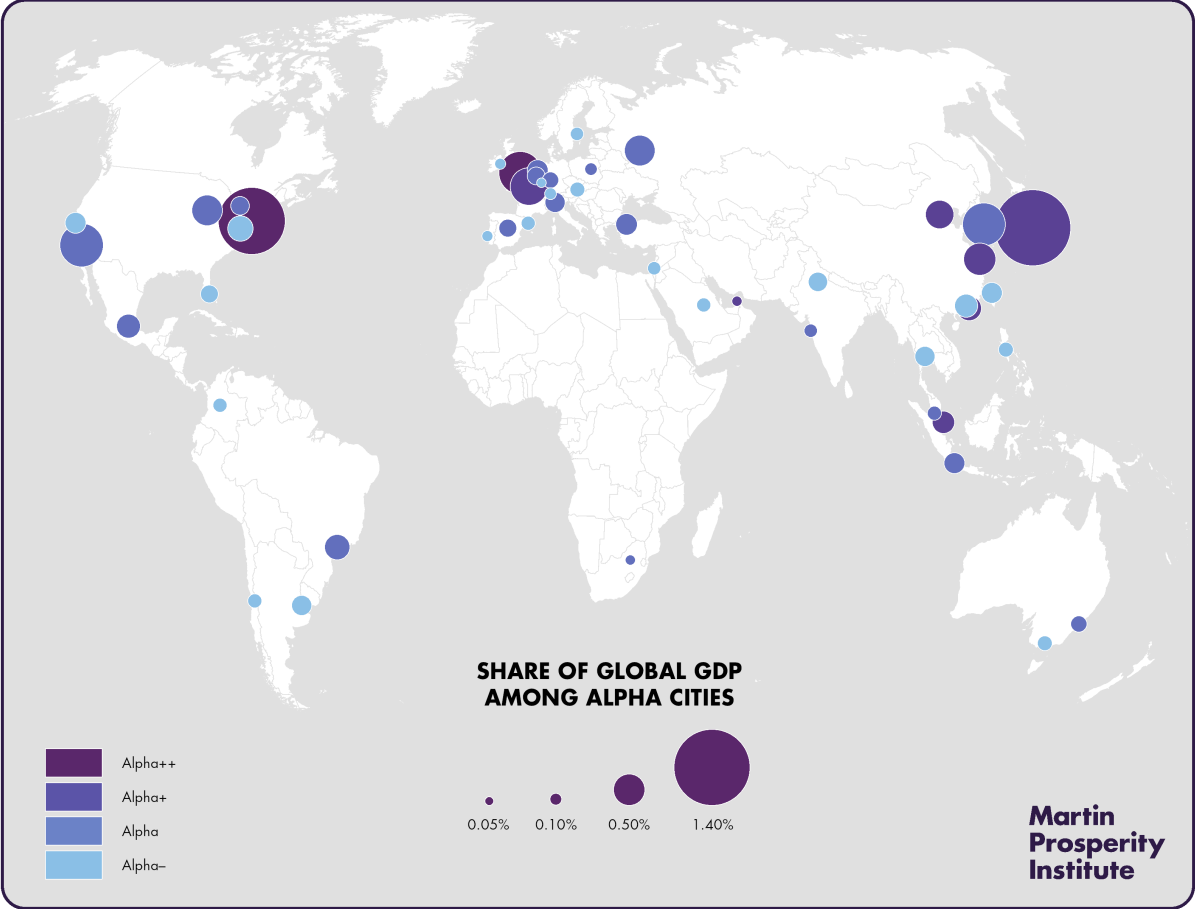

SHARE OF GLOBAL GDP AMONG ALPHA CITIES

- Alpha++
- Alpha+
- Alpha
- Alpha−

0.05%   0.10%   0.50%   1.40%

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Figure 3: Economic Output for Alpha Cities
Source: Brookings, 2014

Taken together, the 49 alpha cities generate $17.8 trillion in economic output, roughly 15 percent of the world's total and more than double their 7 percent share of population. This pattern extends across the individual alpha cities (see Figure 3). Tokyo's economic output of $1.6 trillion is 1.4 percent of the world's total, significantly greater than its 0.5 percent share of global population. New York's $1.4 trillion in economic output is 1.2 percent of the world's total compared to 0.3 percent in population. London's $835 billion in economic output makes up 0.73 percent of global economic output compared to its 0.20 share of world population.

Indeed, the 20 largest global metros (by economic output) account for a considerably larger share of the global economic output than they do of global population (see

Table 2). The WQ for these cities range from lows of 1.2 and 1.3 in Mexico City and Sao Paulo to highs of 4.5, 4.7, and 4.8 in New York, Washington, D.C., and Houston.

Table 2: The 20 Largest Global Cities by Economic Output

Global City	Economic Output (Billions of US dollars)	Global Share	WQ	Type of Global City
Tokyo	$1,617	1.402%	2.8	Alpha +
New York	$1,403	1.217%	4.5	Alpha ++
Los Angeles	$860	0.746%	4.1	Alpha
Seoul	$846	0.734%	2.2	Alpha
London	$836	0.725%	3.6	Alpha ++
Paris	$715	0.620%	3.6	Alpha +
Osaka	$671	0.582%	2.3	Gamma+
Shanghai	$594	0.515%	1.5	Alpha +
Chicago	$563	0.489%	3.8	Alpha
Moscow	$553	0.480%	2.9	Alpha
Beijing	$506	0.439%	1.5	Alpha +
Köln-Düsseldorf	$485	0.421%	2.7	Beta+
Houston	$483	0.419%	4.8	Beta+
Washington, D.C.	$442	0.384%	4.7	Alpha -
Sao Paulo	$431	0.373%	1.3	Alpha
Hong Kong	$416	0.361%	3.6	Alpha +
Dallas	$413	0.358%	3.8	Beta+
Mexico City	$404	0.350%	1.2	Alpha
Guangzhou	$380	0.330%	1.8	Alpha -
Tianjin	$372	0.323%	1.8	Beta-

Source: Brookings 2014, WQ calculations by authors

The Global Distribution of Venture Capital-Backed Startups

We expect the geographic distribution of investment in venture capital-backed startups to reflect an even more skewed distribution, or winner-take-all pattern. Figure 4 maps the geographic distribution of venture capital investment in start-up companies across the world's metro areas.
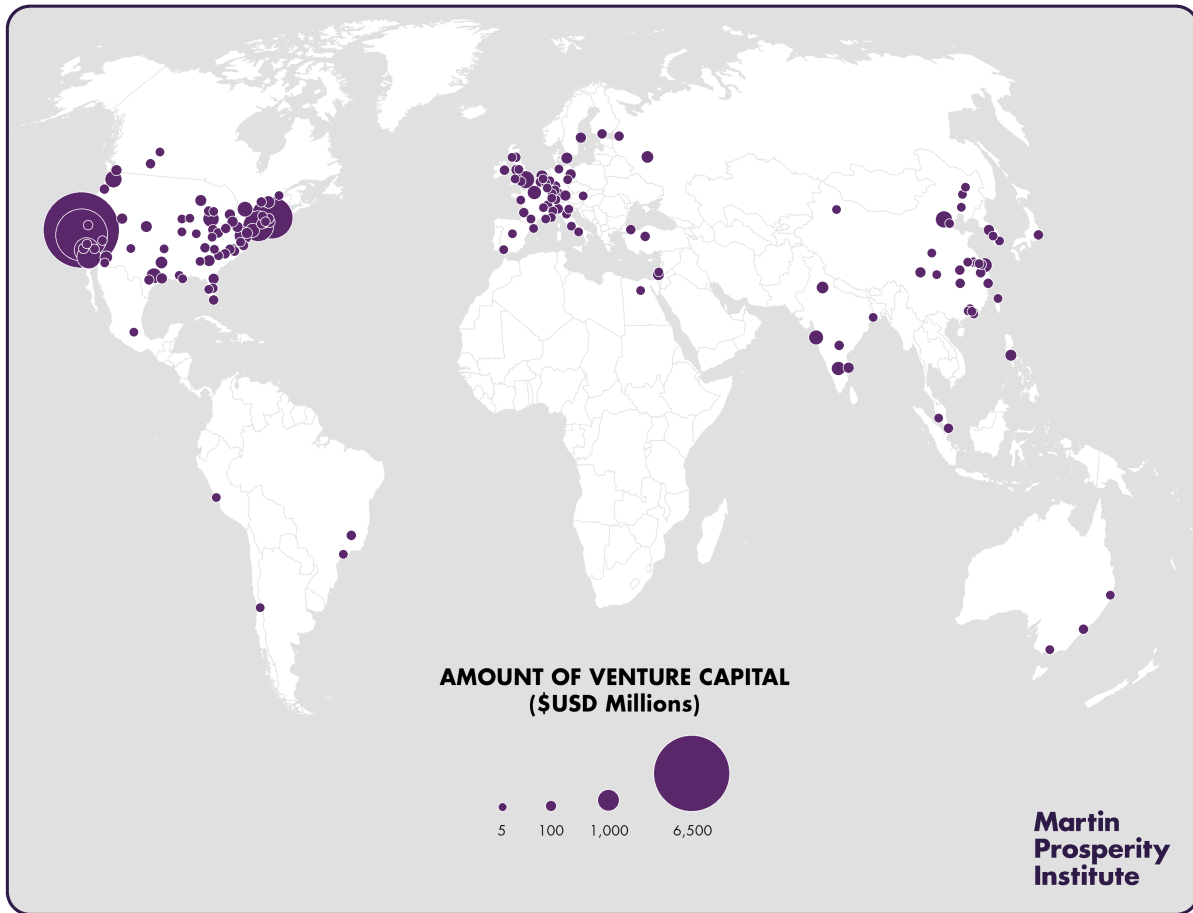
Figure 4: Venture Capital Investment across Global Cities
Source: Florida and King, 2016

San Francisco tops the list with $6.4 billion in venture capital investment, nearly a fifth of the global total, with a whopping WQ of 285. San Jose is second with $4.2 billion, more than 10 percent (WQ=433). Boston is third with $3.1 billion (8.6 percent)(WQ=134), New York is fourth with $2.1 billion (5.8 percent)(WQ=21), and Los Angeles is fifth with $1.45 billion (3.9 percent)(WQ=22). These five global metros account for nearly half (47.6 percent) of global venture capital investment compared to 3.3 percent of global economic output and just 0.8 percent of population. The top 10 leading global metros for venture investment account for 56 percent of the global total compared to 5 percent of global economic output and just 1.4 percent of population. And the top 20 accounts for roughly three quarters (73.5 percent) of global venture capital investment compared to roughly 8 percent of global economic output and just 3 percent of population.

Table 3: Top 20 Global Cities for Venture Capital Investment

Global City	Venture Capital Investment (millions of US dollars)	Share	WQ	Global City Type
San Francisco	$6,471	17.75%	285.3	Alpha -
San Jose	$4,175	11.45%	432.7	Beta -
Boston	$3,144	8.62%	134.1	Beta +
New York	$2,106	5.78%	21.1	Alpha ++
Los Angeles	$1,450	3.98%	22.1	Alpha
San Diego	$1,410	3.87%	87.4	Beta -
London	$842	2.31%	11.6	Alpha ++
Washington	$834	2.29%	27.8	Alpha -
Beijing	$758	2.08%	7.1	Alpha +
Seattle	$727	1.99%	40.0	Beta -
Chicago	$688	1.89%	14.5	Alpha
Toronto	$628	1.72%	21.0	Alpha
Austin	$626	1.72%	65.2	Gamma
Shanghai	$510	1.40%	4.2	Alpha +
Mumbai	$497	1.36%	4.7	Alpha
Paris	$449	1.23%	7.2	Alpha +
Bangalore	$419	1.15%	9.4	Beta +
Philadelphia	$413	1.13%	13.7	Beta
Phoenix	$325	0.89%	14.7	Gamma
Moscow	$318	0.87%	5.3	Alpha

Source: Florida and King 2016, WQ calculations by authors

The WQs for some of these cities are off the proverbial chart. San Jose's is above 400; San Francisco's is nearly 300 and Boston's is in excess of 100. Half of the top 20 have WQs of 20 and above, which means that the concentration of global venture capital investment is at least 20 times what their share of the global population would predict. 11 of the top 20 cities for global venture capital investment are alpha cities; and both of the alpha ++ cities are among the top 20 cities with the largest amounts of venture capital investment in startup companies.

The Global Distribution and Concentration of Super-rich Wealth

The very definition of a winner-take-all economy is a skewed distribution of wealth, where top talent takes home a disproportionate share of it. When it comes to winner-take-all urbanism, we would expect a similarly skewed distribution of wealth across global cities. To get at this, we examine level of wealth held by billionaires across the world's metros (see Figure 5).
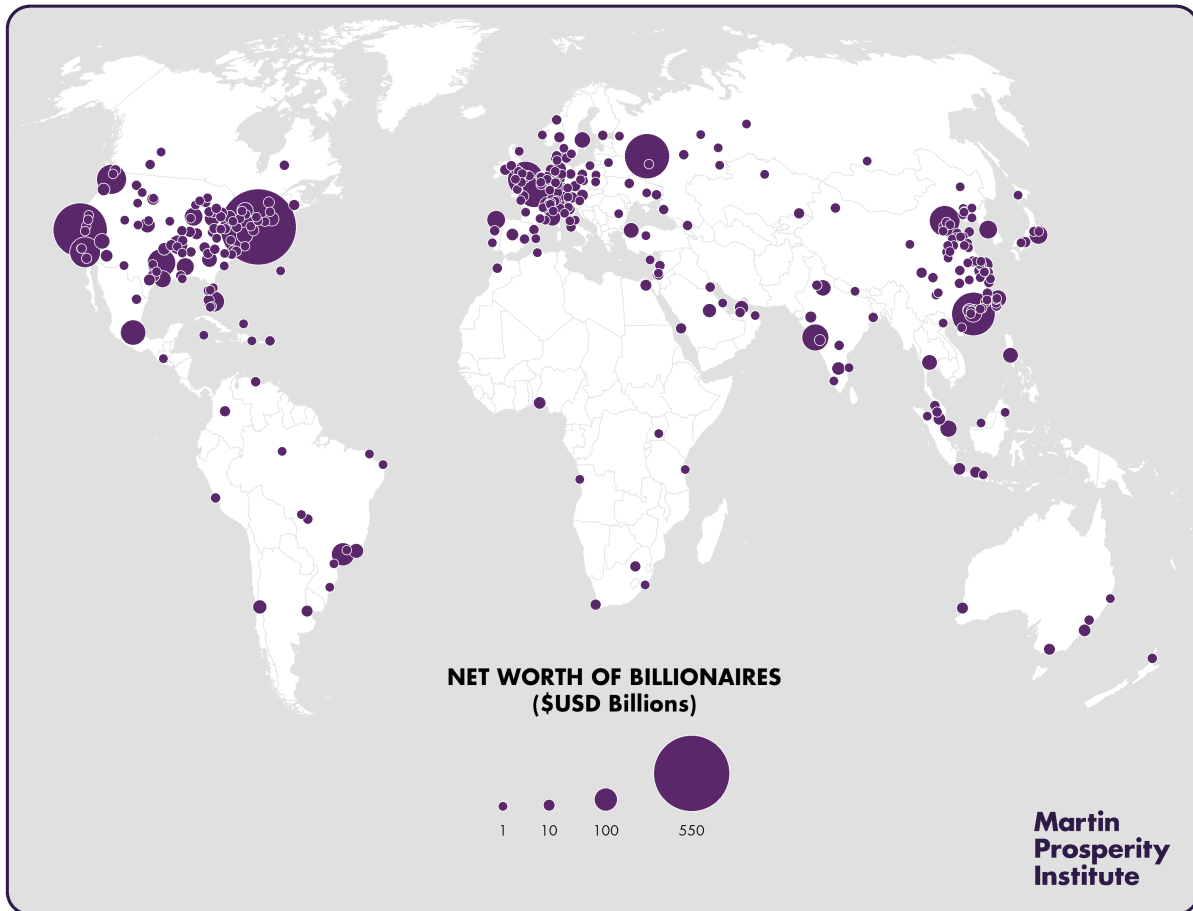
NET WORTH OF BILLIONAIRES
($USD Billions)

1   10   100   550

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Figure 5: The Global Distribution of Super-Rich Wealth
Source: Florida et al. 2016

New York tops the list $537 billion in billionaire wealth, 7.6 percent of the world's total (WQ=28)(see Table 4). San Francisco is second with $365 billion or 5.2 percent (WQ=84), Moscow is third with $290 billion or 4.1 percent (WQ=25), Hong Kong is fourth with $274 billion or 3.9 percent (WQ=39), and London is fifth with $213 billion or 3.0 percent (WQ=15). Taken together these top 20 global cities account for nearly half (48.6 percent) of the wealth held by the global super-rich while accounting for 9.5 percent of global economic output and 3.6 percent of global population. The top 10 accounts for more than a third (35.7 percent) of super-rich wealth compared to 5.5 percent of global economic output and 1.6 percent of global population. And the top five account for nearly a quarter (23.9 percent) of global super-rich wealth compared to 3.1 percent of global economic output and 0.8 percent of global population. Three of the top 20 cities for super-rich wealth have WQs above 80, and four have WQs between 25 and 50.

Table 4: Top 20 Global Cities for Super-Rich Wealth

Global City	Wealth (billions of US dollars)	Share	WQ	City Category
New York	$537	7.65%	28.0	Alpha ++
San Francisco	$365	5.20%	83.6	Alpha -
Moscow	$290	4.13%	25.1	Alpha
Hong Kong	$274	3.90%	39.5	Alpha +
London	$213	3.03%	15.2	Alpha ++
Los Angeles	$175	2.49%	13.8	Alpha
Beijing	$171	2.43%	8.2	Alpha +
Paris	$167	2.38%	14.0	Alpha +
Seattle	$164	2.33%	46.7	Beta -
Dallas	$156	2.22%	23.5	Beta +
Mumbai	$139	1.98%	6.8	Alpha
Mexico City	$131	1.87%	6.6	Alpha
Sao Paulo	$113	1.60%	5.7	Alpha
Miami	$94	1.34%	16.6	Alpha -
Omaha	$76	1.09%	88.1	Not listed
Seoul	$76	1.08%	3.2	Alpha
Tokyo	$74	1.06%	2.1	Alpha +
Shenzhen	$69	0.98%	6.7	Beta
Genève	$67	0.96%	84.6	Beta
Zurich	$67	0.95%	36.3	Alpha -

Source: Florida et al. 2016, WQ calculations by authors

Discussion and Conclusions

This chapter has examined the rise of winner-take-all urbanism and winner-take-all cities. To illustrate this, we examined the distribution and concentration of economic output, innovation, and super-rich wealth compared to the global distribution of population.

Table 5: Top Cities by Category

	Economic Output		Venture Capital Investment		Super-rich Wealth	
	Share	WQ	Share	WQ	Share	WQ
Top 3	3.4%	3.5	37.8%	247.3	17.0%	34.0
Top 5	4.8%	3.2	47.6%	78.5	23.9%	30.0
Top 10	7.5%	3.0	60.1%	47.1	35.7%	22.5
Top 20	11.3%	2.6	73.5%	26.8	48.7%	13.7

Table 5 summarizes this winner-take-all pattern, comparing the geographic distributions of the major economic factors - economic output, venture capital investment, and super-rich wealth — across leading global cities. The table is organized by the global cities that account for the largest shares of each of the three major factors.

For economic output, the three leading global cities in terms of economic output account for roughly 3 percent of global output (WQ = 3.5), the top five for 5 percent (WQ = 3.2), the top 10 for 7.5 percent (WQ = 3.0), and the top 20 for approximately 11 percent (WQ = 2.6). In other words, their share of economic output is roughly three times greater than their share of global population.

Both super-rich wealth and especially venture capital investment are far more concentrated in the leading global cities. For super-rich wealth, the top three cities account for almost a fifth (17 percent) of all super-rich wealth, with a WQ of 34.0; the top five cities account for roughly a quarter (24.5 percent) with a WQ of 30.0; the top 10 more than a third (35.7 percent), with a WQ of 22.5; and the top 20 almost half (48.7 percent) with a an WQ of 13.7. Depending on the category of global city, super-rich wealth is between 13 and 34 times greater than the distribution of population.

When it comes to venture capital investment, the winner-take-all pattern is even more concentrated and skewed toward the leading global cities. The three leading global cities for venture capital investment account for nearly 40 percent of all venture capital investment globally, a WQ of 247, illustrating the striking concentration of all venture capital investment in these cities, nearly 250 times greater than their share of global population. The top five account for nearly half (47.6 percent) of global venture capital investment, with a WQ of 78.5; the top 10 roughly 60 percent, with a WQ of 47.6; and the top 20 nearly three-quarters with a WQ of 26.8.

Table 6: Distribution of Population and Economic Activity by Type of Alpha City

Type	Population	Economic Output		Venture Capital Investment		Super-Rich Wealth	
	Share	Share	WQ	Share	WQ	Share	WQ
Alpha++ (n=2)	0.5%	1.9%	4.1	8.1%	17.1	10.7%	22.6
Alpha + (n=7)	1.5%	3.7%	2.5	5.2%	3.4	12.0%	7.9
Alpha (n=19)	3.1%	5.9%	1.9	11.8%	3.9	18.7%	6.1
Alpha – (n=21)	2.1%	3.9%	1.9	23.6%	11.4	15.3%	7.4

Global economic activity is also highly clustered in the global alpha cities, as Table 6 shows. The two alpha ++ cities, New York and London, are home to less than one percent of the world's population, but account for roughly 2 percent of global economic output (with a WQ of 4.1), 8 percent of global venture capital investment (WQ = 17.1), and more than 10 percent of the wealth held by the world's super-rich

(WQ = 22.6). The seven alpha + cities are home to 1.5 percent of the world's population, roughly 4 percent of all economic activity (WQ = 2.5), 5 percent of global venture capital investment (WQ = 3.4), and 12 percent of super-rich wealth (WQ = 7.9). The 19 alpha cities are home to roughly 3 percent of the world's population, produce 6 percent of global economic output (WQ = 1.9), 12 percent of global venture capital investment (WQ = 3.9), and nearly 20 percent of super-rich wealth (WQ = 6.1). The 21 alpha – cities account for roughly 2 percent of the world's population, produce 4 percent of global economic output (WQ = 1.9), nearly a quarter of global venture capital investment (WQ =11.4), and 15 percent of super-rich wealth (WQ = 7.4).

Table 7: Cumulative Share of Population and Economic Activity by Type of Alpha City

Type	Population	Economic Output		Venture Capital Investment		Super-rich Wealth	
	Share	Share	WQ	Share	WQ	Share	WQ
Alpha ++ (n=2)	0.5%	1.9%	4.1	8.1%	17.1	10.7%	22.6
Alpha + (n=9)	2.0%	5.7%	2.8	13.3%	6.7	22.7%	11.4
Alpha (n=28)	5.1%	11.5%	2.3	25.1%	5.0	41.4%	8.2
Alpha – (n=49)	7.1%	15.5%	2.2	48.7%	6.8	56.7%	7.9

Taken together, these 49 alpha cities account for 15 percent of global economic output (WQ = 2.2), roughly half of global venture capital investment (WQ = 6.8), and 57 percent of super-rich wealth (WQ = 7.9) while housing just 7 percent of the world's population (see Table 7).

In short, the further we go up the value-chain of economic activity the more skewed its distribution becomes. Both venture capital investment and the distribution of super-rich wealth are far more skewed than economic output, conforming to a more pronounced winner-take-all pattern. The alpha cities that sit atop the global urban hierarchy account for more than twice as much economic output as their population size would predict, while both venture capital investment and super-rich wealth are about seven times larger than their population size would suggest. For the world's 20 largest global cities or metro areas (measured by economic size), economic output is roughly 2.6 times larger than their population size would predict, while super-rich wealth is nearly 14 times larger and venture capital investment more than 25 times larger.

 The implications of this pattern and process of winner-take-all urbanism and winner-take-all cities are profound and profoundly disturbing. On the one hand, winner-take-all urbanism is the product of the basic clustering of talent and other economic assets that increasingly drives innovation, productivity, and economic growth (Jacobs, 1969; Lucas, 2001). On the other hand, this clustering of talent and economic assets also helps to shape the growing economic gap and spatial inequality between the world's superstar

cities and the rest. The cleavage is significant for economic output and even more so for the concentration of innovation and venture capital investment and the distribution of super-rich wealth. As economic clustering is the basic economic mechanism that powers both innovation and productivity growth, there is little to suggest that the winner-take-all city pattern will abate; indeed spatial inequality appears to be hard-wired into the economic geography of the global economy.

Furthermore, such growing spatial inequality appears to be a primary force in generating the deepening political and cultural divides and growing populist backlash that has occurred in the United States, United Kingdom, Europe and other nations. As a basic feature of knowledge-based economies, it is hard to see how this winner-take-all dynamic of cities and geography can be mitigated and thus how the divides which characterize the world economy and nations within it can be addressed.

In this way, winner-take-all urbanism may be both a basic feature, and a fundamental contradiction of the economic geography of capitalism today and for the foreseeable future.

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Appendix: Summary of Alpha Cities

City	Alpha Ranking	Billionaires Wealth (Billions of US dollars)	Total VC Investment (Millions of US dollars)	GDP (Billions of US dollars)	Population
New York	Alpha ++	$537	$2,106	$1,403	20,073,847
London	Alpha ++	$213	$842	$836	14,620,396
Beijing	Alpha +	$171	$758	$506	21,639,034
Dubai	Alpha +	$37	$0	$83	3,332,542
Hong Kong	Alpha +	$274	$29	$416	7,267,958
Paris	Alpha +	$167	$449	$715	12,492,444
Shanghai	Alpha +	$56	$510	$594	24,683,358
Singapore	Alpha +	$62	$57	$366	5,472,721
Tokyo	Alpha +	$74	$94	$1,617	37,028,032
Amsterdam	Alpha	$10	$205	$321	7,082,735
Brussels	Alpha	$1	$67	$254	5,493,261
Chicago	Alpha	$49	$688	$563	9,568,101
Frankfurt	Alpha	$49	$78	$230	4,453,190
Istanbul	Alpha	$49	$44	$348	14,023,445
Jakarta	Alpha	$25	$0	$321	32,182,993
Johannesburg	Alpha	$10	$0	$83	5,065,241
Kuala Lumpur	Alpha	$26	$18	$172	6,118,108
Los Angeles	Alpha	$175	$1,450	$860	13,221,044
Madrid	Alpha	$23	$35	$262	6,677,230
Mexico City	Alpha	$131	$12	$403	20,976,194
Milan	Alpha	$60	$39	$312	7,585,195
Moscow	Alpha	$290	$318	$553	12,080,388
Mumbai	Alpha	$139	$497	$151	21,535,046
Sao Paulo	Alpha	$113	$29	$431	20,847,942
Seoul	Alpha	$76	$156	$846	24,622,500
Sydney	Alpha	$27	$46	$223	4,820,753
Toronto	Alpha	$57	$628	$276	6,036,857
Warsaw	Alpha	$3	$0	$141	2,898,379

Bangkok	Alpha -	$52	$0	$307	15,567,876
Barcelona	Alpha -	$10	$28	$171	4,730,260
Bogota	Alpha -	$15	$0	$160	9,135,852
Buenos Aires	Alpha -	$16	$0	$316	13,381,556
Dublin	Alpha -	$14	$103	$90	1,756,406
Guangzhou	Alpha -	$31	$45	$380	13,106,225
Lisbon	Alpha -	$2	$0	$96	2,968,552
Luxembourg	Alpha -	$0	$10	$62	1,185,208
Manila	Alpha -	$50	$250	$183	12,856,279
Melbourne	Alpha -	$18	$20	$178	4,432,760
Miami	Alpha -	$94	$84	$263	5,905,958
New Delhi	Alpha -	$54	$277	$294	23,035,773
Riyadh	Alpha -	$39	$0	$163	7,384,073
San Francisco	Alpha -	$365	$6,471	$331	4,572,786
Santiago	Alpha -	$40	$21	$171	7,164,361
Stockholm	Alpha -	$59	$148	$143	2,541,387
Taipei	Alpha -	$62	$5	$327	7,099,367
Tel Aviv	Alpha -	$24	$250	$153	3,597,339
Washington	Alpha -	$54	$834	$442	6,056,288
Vienna	Alpha -	$14	$15	$184	3,784,287
Zurich	Alpha -	$67	$36	$109	1,924,699

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