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The Geography of the Global Super-Rich

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The Geography of the Global Super-Rich

Richard Florida[1] and Charlotta Mellander[2]

Abstract: Over the past decade or so, there has been increasing concern over rising inequality and the growth of the 1 percent of super-rich people who sit atop the global economy. While studies have charted the super-rich by industry and nation, there is very little research on their location by city or metro area. Our research uses detailed data from Forbes (2015) on the world's billionaires to test a series of hypotheses about the location of the super-rich across the world's cities and metro areas. We find that the super-rich are concentrated in a small number of metros around the world and that their location is primarily related to the size of metros: Large metros offer more people bigger markets, more diversified industries and more opportunity that help produce and attract billionaires. The location of the super-rich is more modestly associated with living standards (measured as economic output per capita) and less so with the presence of finance and tech industries, and city competitiveness. Their location is not related to quality of life, which is somewhat surprising in light of the level of mobility the super-rich enjoy, as well as research that finds that affluent and talented people are attracted to higher quality, higher amenity places.

Keywords: Super-rich, billionaires, 1 percent, geography, size, quality of life, competitiveness, spatial division of labor

JEL: R12, O15

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Introduction

Over the past decade or so, there has been increasing concern over rising inequality and the growth of the 1 percent of super-rich people who sit atop the global economy (Freeland, 2012; Hardoon, 2015; Hay, 2013; Piketty, 2014; West, 2014). Piketty (2014) has identified the returns to capital held by the super-rich as a key source in rising wealth inequality. A study by Oxfam International (Hardoon, 2015) suggests that the world's 62 richest individuals hold wealth that is equivalent to that of the entire bottom half of the world's population. Freeland provides a host of qualitative information on the rise of the super-rich around the world (Freeland, 2012). Beaverstock and Hay collect a variety of studies on the growth and geography of the super-rich across the globe – but a main point of the volume is that the super-rich are not just a class in and of themselves, but also take on a particular geography or spatial patterning across and within cities (Beaverstock and Hall, 2016).

For all the concern expressed about the rise of global super-rich, there is very little empirical research on them. While several recent studies have charted the location of the super-rich by nation and explored other of their characteristics (Freund and Oliver, 2016; Hay, 2013), there is very little research on their location by city or metro area.

Our research uses detailed data from Forbes (Forbes, 2015) on the world's billionaires to examine the geography of the super-rich across the world's cities and metro areas. It looks in detail at the source of that wealth – the degree to which it is self-made versus inherited – and maps the major industries and sectors that define the super-rich across these global metros. It also explores the concentration of wealth within global metros, charting the share of total economic output that the super-rich control and

comparing the wealth of the super-rich to the economic status of the average person across global cities.

Several studies use the Forbes data to examine various dimensions of the world's billionaires. Freund and Oliver compiled these data over two decades to chart billionaire trends across nations and industries (but not across cities or metros), identifying the substantial increase in billionaires in the United States and emerging economies, the growth of billionaires in specific industries, notably finance and tech, and the rise of self-made billionaires in the United States and Europe compared to the inherited wealth in Europe (Freund, 2016; Freund and Oliver, 2016). Piketty (2014) also uses the Forbes data along with data from many other sources to chart the increase in wealth inequality across nations. Kaplan and Rauh use the Forbes data for various years from 1987 to 2011 to compare U.S. billionaires to billionaires across the rest of the world, examining the sources of their wealth across industry and whether that wealth is self-made as opposed to inherited (Kaplan and Rauh, 2013). They find that the rise of American billionaires uniquely reflects the rise of high tech industry, the broader shift toward skills-biased technological change, and the super-profits derived by tech superstars like Apple, Microsoft, Google and others. Bagchi and Svejnar (2015) use Forbes data to look at the effects of two types of billionaire wealth on national economic growth – wealth that is politically-connected and wealth that is unconnected from politics. They find that unconnected wealth is not associated with economic growth while politically-connected wealth is negatively associated with economic growth (Bagchi and Svejnar, 2015). Other studies have used the Forbes data to chart the rise in billionaires in other nations and parts of the world: Gandhi and Walton (2012) for India and Guriev and Rachinsky (2005) on the role of oligarchs in Russia's transition to capitalism.

Our research takes shape around five core hypotheses. The first and most basic one is that the location and geography of the super-rich will be a function of the size of metro areas. Larger metros have more people, bigger markets, more talent or human capital, a more diverse set of industries and inputs, and more competition, all of which are likely to both produce and attract more of the super-rich (Florida, 2002; Glaeser, Kolko and Saiz, 2001; Gyourko, Mayer, and Sinai, 2006). We also know that the geographic structure of the global economy has become more concentrated, skewed and spiky with the largest cities and metros attracting a larger share of talent and advanced industries (Florida, 2005; Florida, Gulden and Mellander, 2008).

The second hypothesis is that the location of the super-rich will be associated with metros with higher living standards. Here, we expect that it is not just overall size, but living standards as well, that will affect the location of the super-rich. Metros with a larger middle class will generate greater demand for the kinds of industries and companies that produce billionaires. Metros with higher living standards would also benefit from better educational institutions that would produce talent and lead to more advanced tastes and preferences.

The third hypothesis is that the location of the super-rich will be associated with certain kinds of industry and industry structures. Freund and Oliver (2016) identify the rise in the super-rich over the past two decades as being associated with the increasing returns to two industries in particular: finance and high-tech. We would thus expect metros with larger concentrations of these two industries to be home to larger numbers of billionaires.

The fourth hypothesis is that the location of the super-rich will be associated with more economically competitive cities and metro areas. A wide body of literature suggests that higher levels of economic growth and development are closely associated with

competitiveness, defined as honest and transparent government, high quality educational institutions and infrastructure, reasonable tax regimes, effective government provision of services and other related factors.

The fifth hypothesis is that the location and geography of the super-rich will be associated with higher quality, higher amenity, and more livable places. A large and growing body of literature (Albouy, 2009; Glaeser et al., 2001; Lloyd and Clark, 2001) notes the preference of the skilled and the affluent for higher amenity as well as higher productivity locations. The super-rich are highly mobile and can afford to live in beautiful places that offer high quality of life. Even smaller places with limited industry like Monaco, Jackson Hole, or Palm Beach are noted locations for the super-wealthy. We would thus expect to see some fraction of the super-rich drawn to such high-amenity, high quality of life places (Boschma, 2004; Maskell and Malmberg, 1999; Porter, 1998, 2008).

To examine these hypotheses, our research uses the Forbes data to chart the location and geography of billionaires across the world's cities and metro areas. (The next section describes our methodology for doing so). Following other studies, it looks at the location of these billionaires by global metro, by industry, and by source of wealth – self-made versus inherited. It also conducts a statistical analysis of the factors that shape the geographic distribution of the super-rich based on the size of metros, their living standards, finance and tech industries, competitiveness and quality of life. We find that the location of the super-rich is generally most closely associated with the size of metros. Living standards play a more modest role in location, with the presence of finance and tech industries and competitiveness being more weakly associated with the location of the super-rich. We find little effect for quality of life and this effect is often

negative. We conclude that the location of the super-rich is primarily driven by the size of global metros.

The next section outlines the data, variables, and methods used in our analysis. The bulk of the article summarizes the key findings of our descriptive, mapping, and statistical analyses. We summarize our main findings and discuss some of their implications in the concluding section.

Data, Variables, and Methodology

We base the analysis on data from Forbes' Billionaires List for 2015 (Forbes, 2015). It covers 1,826 billionaires globally and includes information on a number of factors such as their net worth, country of origin, citizenship, location of primary residence, age, marital status, industry, if their fortunes are inherited or self-made, and how their fortunes are trending over time,. One caveat: only billionaires whose money was accumulated through legal means are included in the Forbes data; those whose fortunes are tied to corruption, drugs, or other similar illegal activity are excluded from the list.

Forbes provides information about primary residence and we matched the billionaires to global cities or metropolitan areas based on this. To do so, we use the global metro definitions identified by Brookings Institution for the world's 300 largest metros (Brookings, 2014) including their primary cities and surrounding suburbs. If the city of primary residence falls within a Brookings metro, it is assigned to that metro. If it falls outside any known metro boundary, it is kept as the initial city of residence.

We ultimately match 99 percent (1,809 of 1,826) of the billionaires to metros. We were unable to match 17 of them to a specific location. These 17 billionaires account for one percent of total billionaire wealth or $67.7 billion dollars. Three reside in France,

two in Finland, and one each in Germany, Italy, Switzerland, and the Philippines. We could not definitively identify countries of residence for eight others, although their citizenship is German. Ultimately, we matched and mapped these 1,809 billionaires across 395 metros or regions.

We chart the geography of the global super-rich by their number and by their total wealth. We also chart the geography of the global super-rich by major industry sector. Here, we aggregated a number of the industry categories in the Forbes data, combining finance and investments; technology and telecom; oil and energy; metals and mining; automotive and manufacturing; medicine and health care; fashion and retail; and sports and gaming. The data also identify the extent to which their wealth is self-made versus inherited.

We developed two measures of the concentration of super-rich wealth by metros: a ratio of billionaire wealth to total metro economic output and a ratio of billionaire wealth to the economic output per capita. We limit both to metros with ten or more billionaires. Here we note that our measures compare the level of wealth of the super-rich, which may have accrued over long periods, to the economic output of metros for one year. Additionally, since the super-rich are mobile, their wealth may have been brought with them from other places.

To better understand the factors that are associated with the location of the global-super-rich, we conduct both a bivariate correlation analysis and a regression analysis. The variables we use in the statistical analysis area as follows:

Dependent Variables

Billionaires: We employ two alternative measures for billionaires by metro:

- *Number of Billionaires:* This is the number of billionaires per metro.
- *Billionaire Wealth:* reflects the total wealth held by billionaires in that metro.

Independent Variables

We employ the following independent variables in our analysis:

Size: We use two measures for size: *Population Size,* based on population and *Economic Size,* based on economic output to capture the overall size and market size of the metro area. *Population Size* is total metro population in 2014 as per the Brookings Metro Monitor report (Brookings, 2014). *Economic Size* is total metro economic output, also from Brookings (2014). We matched both size variables for 182 metros with billionaires.

Living Standards: We use economic output per capita to capture the living standards of metro populations. The data is for 2014 and comes from Brookings (Brookings, 2014). We matched this data for 182 metros as well.

Tech: Freund and Oliver (2016) show the rise in billionaires to be related to high-tech industry. We use venture capital investments (expressed in millions of dollars) in high-tech startups to reflect that rise. The variable is from Florida and King (2016), based on data from Thompson Reuters. We matched it for 124 metros.

Finance: Freund and Oliver (2016) also show the rise in billionaires to be related to the finance industry. We measure this via the Global Financial Centres Index developed by the Z/Yen Group for the year 2015 (Yeandle and Mainelli, 2015). This index includes measures related to the financial power of global cities including their overall business environment, financial sector development, financial infrastructure, talent base, and reputation. We matched this data for 58 metros.

City Competitiveness: We use a measure from The Economist Intelligence Unit and Citigroup (Economist Intelligence Unit, 2013) which includes indicators of economic strength, physical capital, financial maturity, institutional character, human capital,

global appeal, social and cultural character, and environment and natural hazards. We matched these data for 87 metros.

Quality of Life: There is a considerable literature that suggests that more affluent people are drawn to locations that offer a higher quality of life and more amenities, which are in turn reflected in higher housing prices (Albouy, 2009, 2015; Glaeser, Kolko and Saiz, 2001; Roback, 1982). We include a measure of the Quality of Life variable to capture this. The Quality of Life variable is based on the Economist Intelligence Unit's Livability Index (Economist Intelligence Unit, 2012) which includes data on political stability, healthcare, culture and environment, education and infrastructure. We matched this data to 85 metros.

Table 1 lists the descriptive statistics for all the variables used in the analysis.

(Table 1 about here)

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Billionaires (Number)	182	1	116	8	14
Billionaire Wealth (Billions of dollars)	182	1	537	32	64
Population Size	182	609,470	37,027,800	5,997,809	6,284,816
Economic Size (Millions of dollars)	182	32,014	1,616,792	190,522	210,995
Living Standards	182	4,036	83,088	39,447	18,079
Tech (Millions of dollars)	124	5	6,471	244	690
Finance	58	536	786	666	53
City Competitiveness	87	38	76	55	9
Quality of Life	85	53	98	83	13

In the correlation and regression analysis, we only include metros with billionaires present, in other words, metros without billionaires are excluded from the analyses. Due to the skewed distribution, we log the following explanatory variables: the

Number of Billionaires and Billionaire Wealth as well as Population Size, Economic Size, and Tech.

In light of our theory and hypotheses, the regression analysis considers the location of the super-rich (both Billionaires and Billionaire Wealth) as a function of Size measured both as Population Size and Economic Size, and several other factors or metro qualities including: Living Standards, Industry Structure (especially Finance and Tech), City Competitiveness, and Quality of Life. We use a standard OLS estimation technique to estimate the equation. Our basic model is as follows:

$$\ln \text{Billionaires}_r = \alpha + \beta_1 \ln \text{Size}_r + \beta_2 \text{Living Standards}_r + \beta_3 \Sigma \text{Metro Qualities}_r + \varepsilon$$

where Billionaires is represented either by the number of billionaires or their total metro wealth. It is important to note that data limitations lead to missing observations for several key variables. When we include all variables in the model, we end up with matching data for just 40 metros. To deal with this, we include one variable at a time in the regression analysis, controlling for market size. We also repeat the regressions, replacing the missing observations with mean values.

Findings

We now turn to the findings of our analysis. We begin with basic descriptive data and maps that provide an overview of the global location of the super-rich, then turn to the findings of the statistical analysis.

Characteristics of the Global Super-Rich

We begin with the key descriptive characteristics of the global super-rich. The world's 1,826 billionaires make up just 0.00003 percent of the world's population, but hold an incredible amount of wealth. With a combined wealth of more than $7 trillion in 2015, their fortunes are comparable to Japan's entire economy – the world's the third largest – and make up nearly 10 percent of the total global economic output. The world's 50 wealthiest billionaires control $1.6 trillion, more than Canada's economy, while the top 10 control $556 billion, roughly the economic size of Algeria or the United Arab Emirates.

The United States is home the world's largest number of billionaires, with 541, 30 percent of the total. China is second with 223 or 12 percent. Next in line are India and Russia, with 82 billionaires (4.5 percent) each. Germany is fifth with 78 billionaires (4.3 percent). The United Kingdom is sixth with 71 (3.9 percent). Switzerland has 58 (4.3 percent), Brazil 50 (2.7 percent), France 39 (2.1 percent), and Italy 35 (1.9 percent). Freund and Oliver (2016) note the sharp rise in billionaires in emerging economies between 1996 and 2014.

Not surprisingly, the world's billionaires are overwhelmingly male. Women make up roughly 10 percent (10.8 percent), and control a similar share (10.9 percent) of total wealth. Billionaires are on average 61 years of age. More than 40 percent (43.9 percent) are 65 or older. Just 2.5 percent (45 of them) are under 40 years of age, and just 0.2 percent (three of them) are under 30. Nearly three-quarters of billionaires (1,367) are married, while just 3 percent (3.5 percent, 63) are single and 7 percent (6.7 percent, 123) are divorced or separated.

The data also allow us to look at the share of billionaires whose wealth is inherited versus those who are self-made. According to Freund and Oliver (2016), the share of self-made wealth has increased substantially over the past two decades, rising

from 45 percent in 1996 to nearly 70 percent in 2015. There is a significant geographic divide here. Billionaires in Europe are far more likely to have inherited their wealth compared to billionaires in the United States and China. As of 2014, more than half of European billionaires inherited their wealth compared to just a third of billionaires in the United States. European fortunes are also much more likely span multiple generations, as the chart below shows. Over 20 percent of Europe's inherited fortunes were four or more generations old, compared to less than 10 percent in the United States (Freund and Oliver 2016). The self-made billionaire wealth in the United States comes from two sources: tech companies, and even more so from the financial sector. The U.S. has a greater number of self-made tech billionaires, 56 billionaires or 12 percent, compared to 17 billionaires or just 5 percent from Europe. More than 40 percent of the U.S. billionaires can be attributed to the financial sector s – many of whom derive their wealth from hedge funds – compared to 14 percent in Europe and 12 percent in other advanced countries.

As Figure 1 shows, this varies considerably by metro. (The blue bars indicate the percentage of billionaires whose wealth is self-made, while the purple bars show those billionaires whose wealth is inherited.)

(Figure 1 about here)

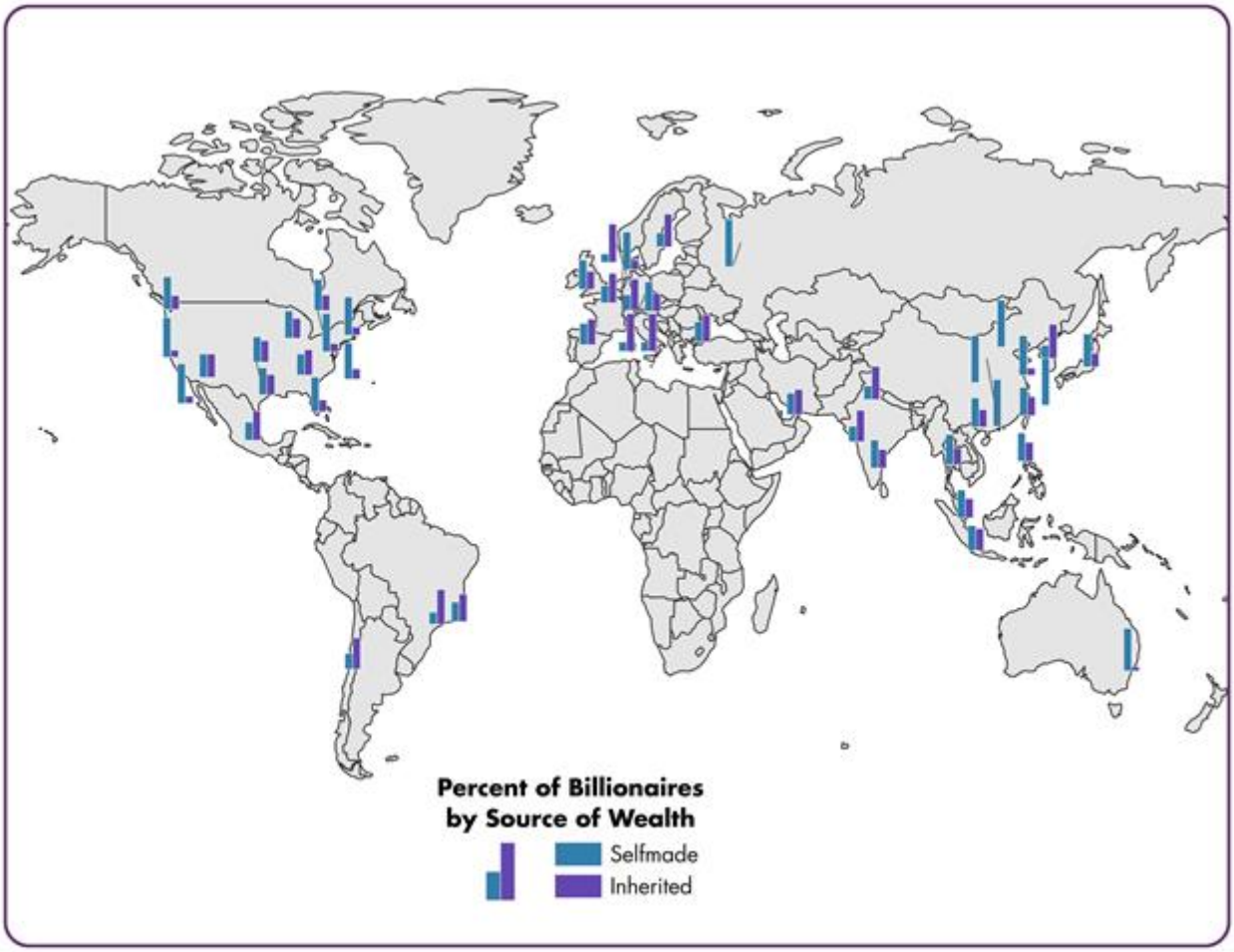

Figure 1: Inherited versus Self-Made Wealth across Global Metros

Metros in the United States and Asia, especially China, have the largest shares of self-made wealth, while those in Europe and South America have more inherited wealth. The 10 leading metros for self-made wealth include Beijing, Shenzhen, Guangzhou, and Hangzhou in China, Moscow, San Francisco, Los Angeles, Boston, and Sydney. The leading metros for inherited wealth are mainly in Europe, South America, and India and include Bielefeld-Detmold, Germany, Monaco, Sao Paulo, Seoul, Delhi, Stockholm, Mumbai, Zurich, Santiago, and Paris.

The Super-Rich across Global Cities and Metros

We now turn to the results of our geographic analysis of the locations of the super-rich across the world's cities and metro areas.

(Figure 2 about here)

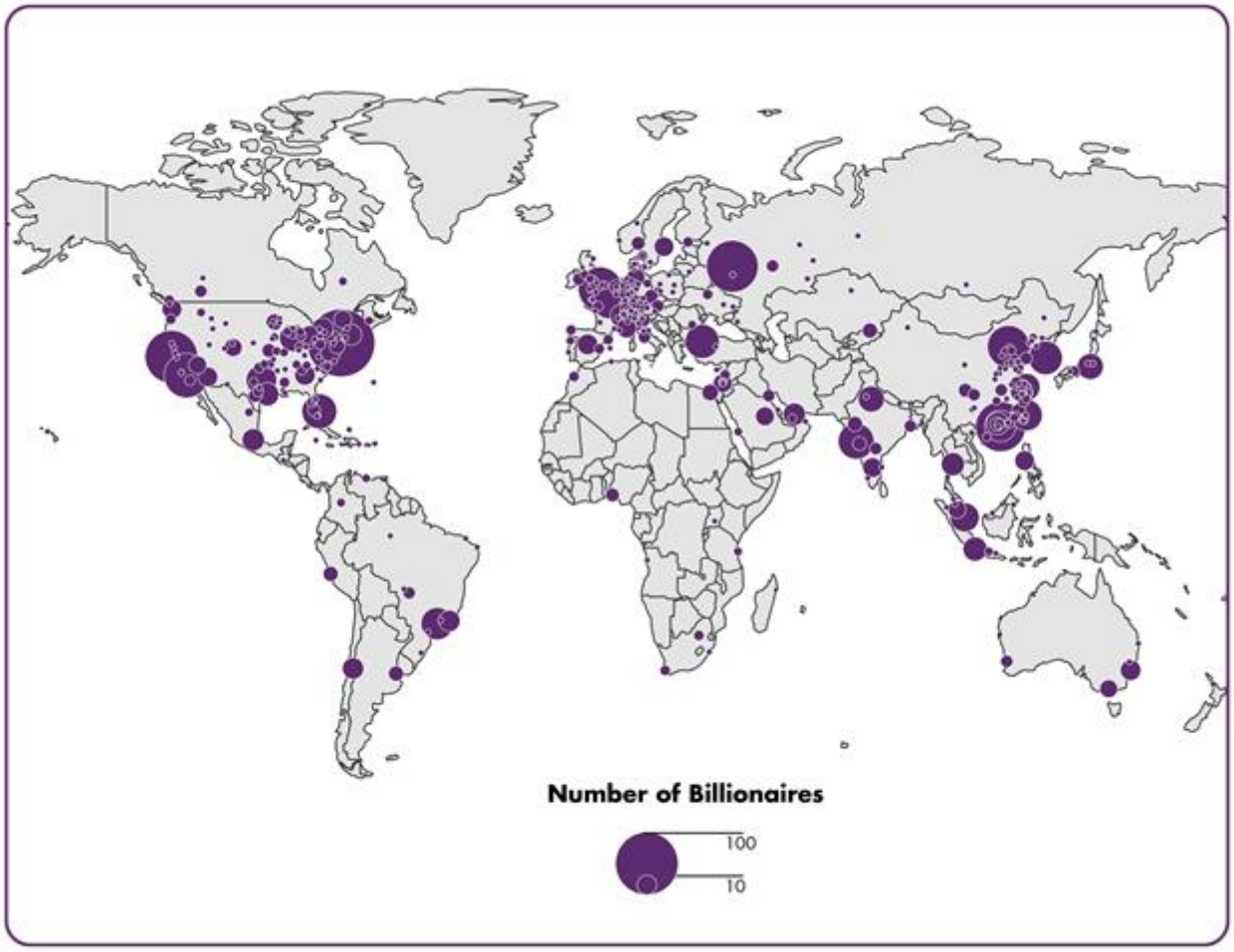

Figure 2: The Global Super-Rich by Major Global City and Metro

Figure 2 maps the number of billionaires by metro. New York tops the list with 116 billionaires or 6.4 percent of the world's billionaires. The San Francisco Bay Area is second with 71 (3.9 percent), Moscow third with 68 (3.7 percent), and Hong Kong fourth with 65 (3.5 percent). Three additional metros have between 2 and 3 percent of the global super-rich: Los Angeles (2.8 percent), London (2.7 percent), and Beijing (2.5 percent). Each remaining city in the top 20 accounts for between 1 and 2 percent of the world's

billionaires. Four of the top 10 global cities for the super-rich and six of the top 20 are in the United States.

We now chart the total wealth held by the super-rich across the cities and metros of the world (see Figure 3).

(Figure 3 about here)

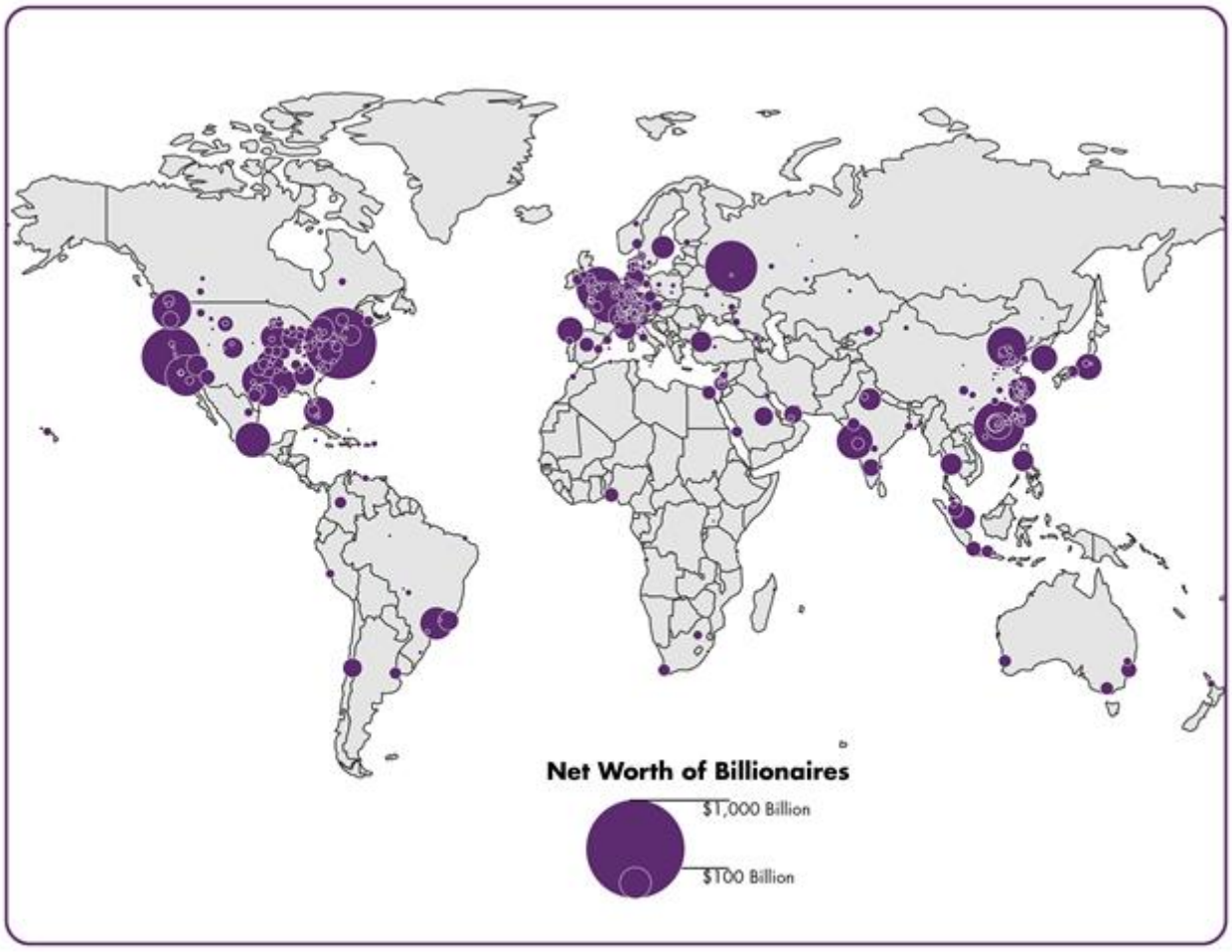

Figure 3: Super-Rich Fortunes by Global City or Metro

New York again tops the list with $537 billion or 7.6 percent of all global billionaire wealth. San Francisco is second with $365 billion or 5.2 percent; Moscow third with $290 billion or 4.1 percent; Hong Kong fourth with $274 billion or 3.9 percent; and London is fifth with $213 billion or 3.0 percent. Los Angeles ($175 billion, 2.5

percent), Beijing ($171 billion, 2.4 percent), Paris ($167 billion, 2.4 percent), Seattle ($164 billion, 2.3 percent), and Dallas ($156 billion, 2.2 percent) complete the top ten. The United States has five metros in the top 10 and 9 in the top 20 on this metric.

Table 2 shows the concentration of the super-rich across the world's cities and metro areas.

(Table 2 about here)

Table 2: The Geographic Concentration of the Global Super-Rich

	Top 10 Metros	Top 20 Metros	Top 50 Metros
Number of Billionaires:			
Number	560	795	1,152
Share	30.7%	43.5%	63.1%
Wealth (billions)	$2,307	$3,183	$4,710
Share	32.7%	45.1%	66.8%
Share of World Population	1.8%	3.5%	7.2%
Billionaire Wealth			
Number	527	687	1,096
Share	28.8%	37.6%	60.0%
Wealth (billions)	$2,511	$3,437	$4,983
Share	35.6%	48.7%	70.6%
Share of World Population	1.6%	3.5%	6.9%

The top 10 metros account for nearly a third (30.7 percent) of the world's super-rich, while making up just 1.8 percent of the world's population. The top 20 account for more than 40 percent (43.5 percent), while making up just 3.5 percent of the world's population. The top 50 metros account for nearly two-thirds (63.6 percent) of the world's billionaires, while making up just 7 percent (7.2) percent of the world's population.

The wealth of the super-rich is even more concentrated than their numbers. The top ten metros control $2.5 trillion dollars, more than the total GDP of Brazil, Italy, or India. The top 20 metros account for $3.4 trillion, equivalent to the GDP of Germany, the world's fourth largest economy. And the top 50 account for almost $5 trillion, equivalent to the world's third largest economy, after the United States and China, and accounting

for more than 70 percent of all billionaire wealth. Ultimately, the number of billionaires and their total wealth is closely associated across global metros, with a correlation of 0.87.

(Figure 4 about here)

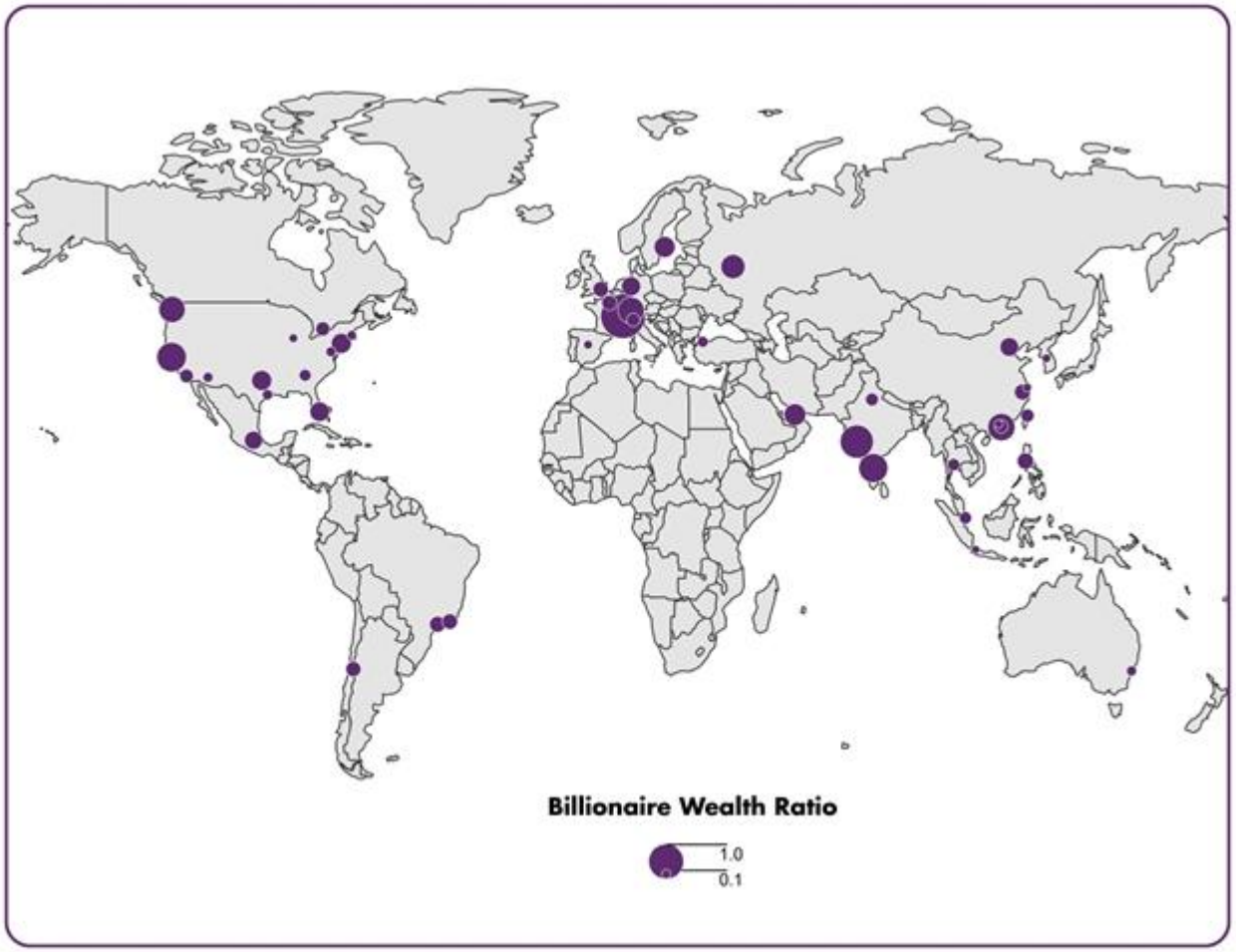

Figure 4: Ratio of Super-Rich Wealth to Metro Economic Output

Figure 4 takes a different tack on the concentration of billionaire wealth, comparing the wealth held by the super-rich to the total economic output of their respective metros (we limit this analysis to metros with more than ten billionaires). Across the world, the fortunes of the super-rich are equivalent to a significant portion of the total economic output of the entire cities and metro areas in which they reside. The wealth of the super-rich in London or Sao Paolo is equivalent to about a quarter of their

total annual economic output. In Mexico City and Beijing it is equivalent to about a third of annual economic output. In New York and Stockholm it is about 40 percent, and in Seattle it is around half. In Hong Kong it is 70 percent and in San Francisco roughly three-quarters. In Geneva, a small city with many wealthy people, the fortunes of the super-rich are equivalent to more than 150 percent of annual economic output. Ultimately, this ratio tends to reflect the wealth of billionaires with correlation of .47.

(Figure 5 about here)

Figure 5: Ratio of Super-Rich Wealth to Economic Output per Person

Figure 5 maps the ratio of billionaire wealth to economic output per person by metro. (We limit this analysis to metros with ten or more billionaires.) The magnitude of the gap is staggering, with the fortunes of the super-rich ranging from 100,000 to more

than 600,000 times greater than the economic conditions of the average person in the 20 metros with the largest overall wealth gaps. Most of these cities are in the relatively less developed nations of the Global South, where the middle class is much smaller, poverty is substantially greater, and average incomes are much lower than in the advanced economies. In fact, 14 of these 20 cities are in the Global South. Bangalore tops the list, followed by Mumbai and Mexico City. Manila, Jakarta, Delhi, Bangkok, Hangzhou, Beijing, Shanghai, Rio de Janeiro, Sao Paulo, Santiago, and Dubai all number among the top 20 cities with the largest super-rich wealth gaps. Six cities in advanced nations number among the top 20 as well: Seattle, Dallas, Paris, Stockholm, Toronto, and Tokyo.

The Super-Rich by Industry

Now that we have looked at the overall geography of the super-rich, we turn to their geography across key industries. Table 3 lists the top ten industries where the super-rich derive their fortunes.

(Table 3 about here)

Table 3: Leading Industries for Super-Rich Wealth

Industry	Billionaire Wealth (billions)	Share of Total Billionaire Wealth
Fashion and Retail	$1,100	15.6%
Technology and Telecom	$989	14.0%
Finance and Investment	$962	13.6%
Resources (Oil, Energy, Metals and Mining)	$623	8.8%
Automotive and Manufacturing	$561	7.9%
Food and Beverage	$542	7.7%
Diversified	$539	7.6%
Real Estate	$526	7.5%
Media	$355	5.0%
Medicine and Health care	$308	4.4%

One might think of finance, high-tech, and energy as leading sources of wealth, but Fashion and Retail tops the list with over a $1 trillion, more than 15.6 percent of total billionaire wealth. This sector includes billionaires associated with companies like Wal-Mart, H&M, Nike, L'Oréal, and Chanel. Technology and Telecom is second, with $989 billion, 14 percent of the total. Finance and Investment is third with $962 billion, (13.6 percent). Resources is fourth with $623 billion (8.8 percent) and Automotive and Manufacturing is fifth, with $561 billion (7.7 percent). The top four sectors account for over half of all billionaires, while the top five account for 60 percent.

The following maps dive deeper into how billionaires break out across the three leading industries for billionaire wealth: Fashion and Retail, Tech and Telecom, and Finance and Investment.

(Figure 6 about here)

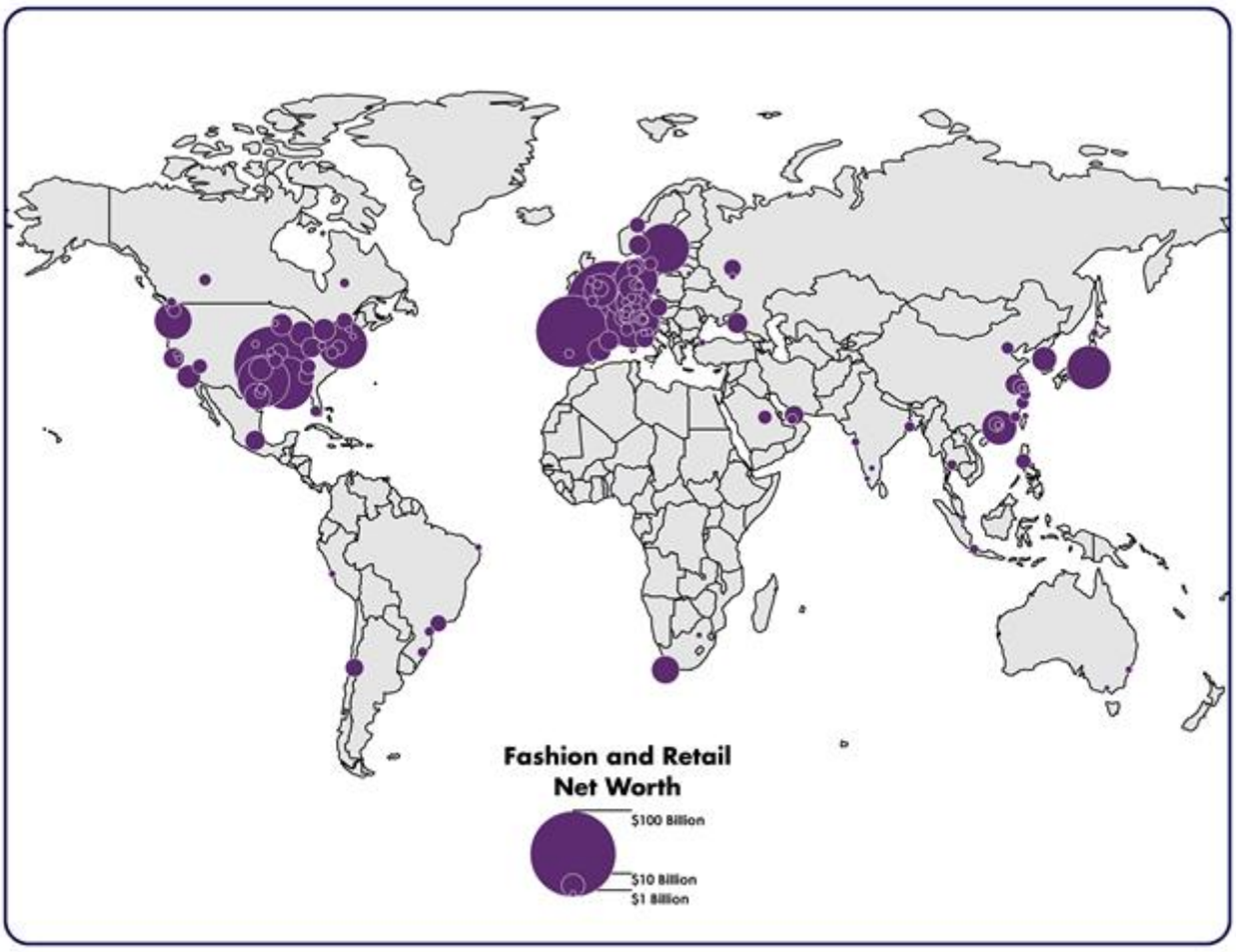

Figure 6: The Geography of Fashion and Retail Billionaires

Figure 6 maps the geography of billionaire wealth for the fashion and retail industry. There are large dots across the United States and much of Europe, and much smaller dots in Asia, the Middle East, and South America. Paris tops the list, followed by Bentonville (home to Wal-Mart), Milan, Jackson, Wyoming (home to one of the members of the Walton/Wal-Mart family), Dallas (also home to one of the members of the Wal-Mart/ Walton family), New York, Tokyo, Hamburg and Dusseldorf. London ranks 15th with seven Fashion and Retail billionaires worth a combined $18.2 billion dollars.

(Figure 7 about here)

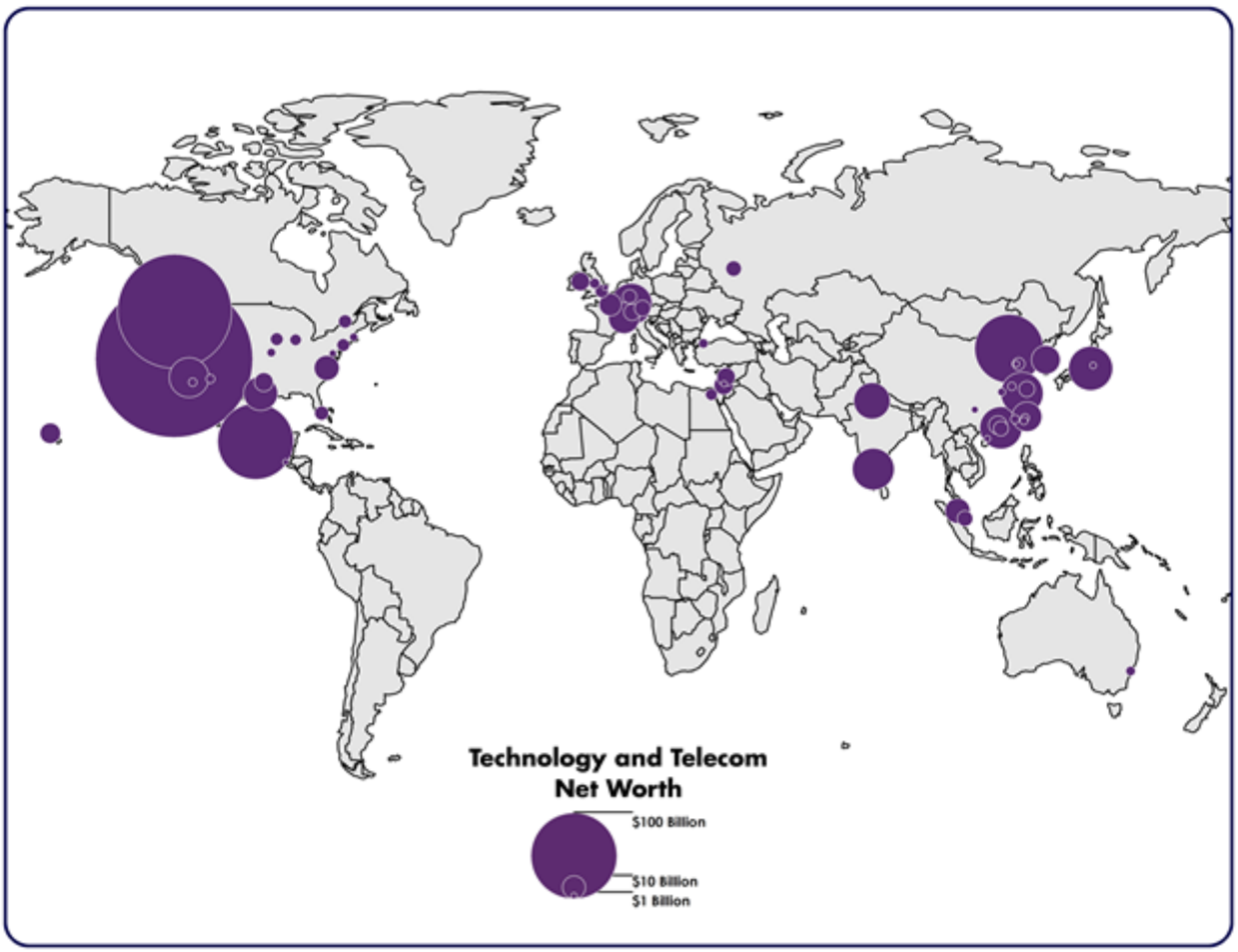

Figure 7: The Geography of Tech and Telecom Billionaires

Figure 7 maps the pattern for Technology and Telecom. There are large dots in the United States, especially the West Coast, and Asia, especially China. There are much smaller dots in Europe and the Middle East, and virtually none in South America. Not surprisingly, San Francisco tops the list, followed by Seattle home to Microsoft, Amazon and other leading tech companies. Mexico City is next, the result of one fortune: Carlos Slim, who is ranked second among global billionaires. Beijing is fourth and Tokyo fifth. Shenzhen, Hangzhou, Bangalore, Karlsruhe, and Los Angeles round out the top 10.

(Figure 8 about here)

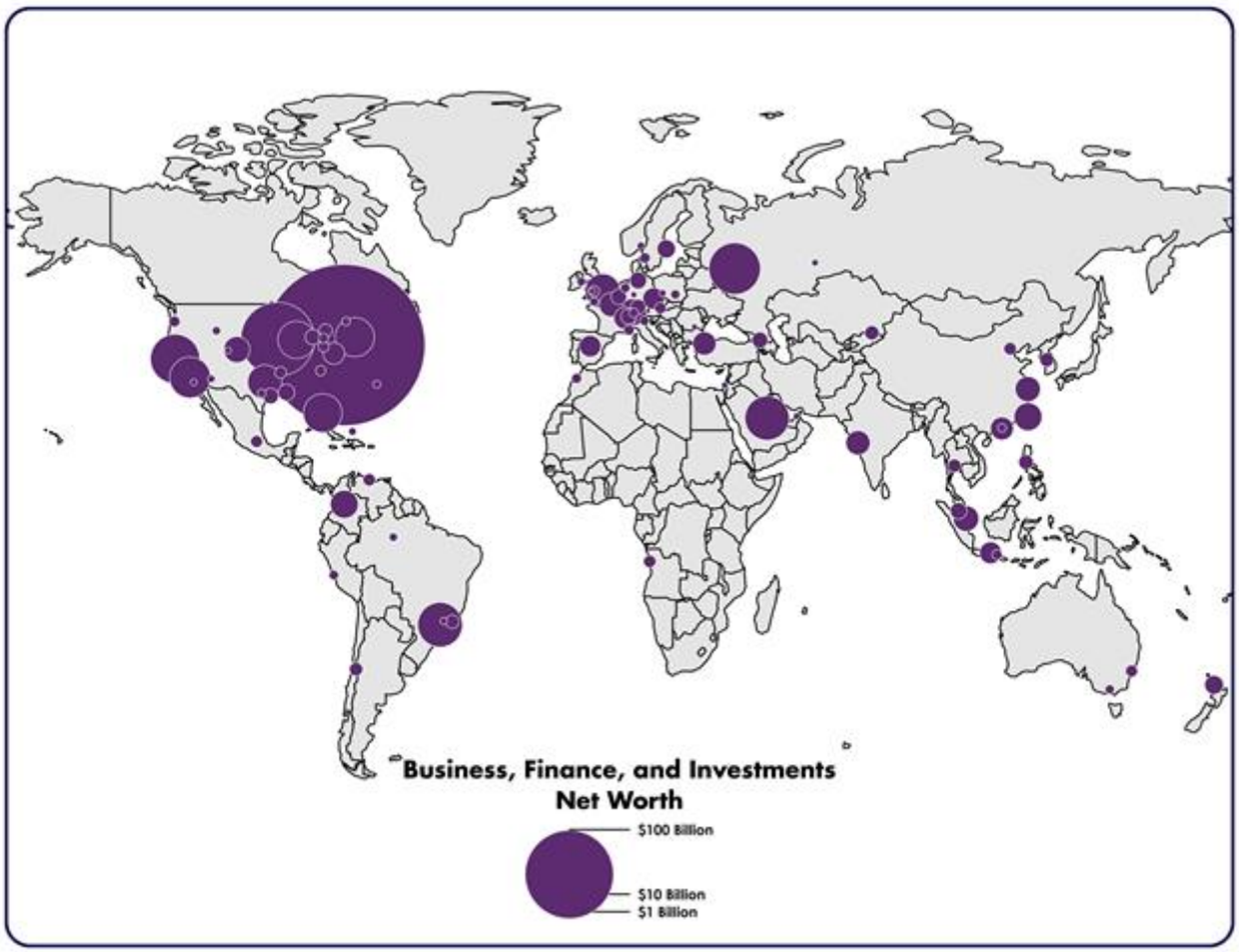

Figure 8: The Geography of Finance, and Investment Billionaires

Figure 8 maps the geography of billionaire wealth in Finance and Investment. There are large dots in the United States, especially on the East Coast, but there are also dots spread across the world from Western Europe and South America to Asia and the Middle East. Unsurprisingly, New York takes the top spot by far, followed by Omaha (home to Warren Buffett), Moscow and the San Francisco Bay Area (a reflection of the high level of venture capital investment there), Sao Paolo, Riyadh, Los Angeles, Boston, Miami (home to a large volume of foreign investment capital especially from Latin America), and Chicago round out the top 10. London ranks 11th and Hong Kong is 22nd. Freund and Oliver (2016) note that finance has played a disproportionate role in the growth of extreme wealth in the United States, pointing out that more 80 percent of all

hedge fund billionaires are from the United States. “Over 40 percent of the growth in the total US billionaire population is attributable to growth in financial sector billionaires, as compared with 14 percent in Europe and 12 percent in other advanced economies,” according to the report. “Within the US financial industry, hedge funds have played an especially large role in creating extreme wealth. This group made up less than 10 percent of American financial sector wealth in 2000 and 22 percent in 2015.” (Freund and Oliver 2016: p. 11)**.**

Statistical Analysis

Now that we have covered our descriptive analysis and mapping of the geography of the super-rich, we turn to our statistical analysis. We begin with the findings of the correlation analysis before turning to the results of the regression models.

Correlation Analysis

In light of our five key hypotheses, we examine the correlations between both the number of billionaires and their total wealth, and the following key variables: Population Size, Economic Size, Living Standards (measured as economic output per capita), Tech (measured as venture capital investment in high-tech startups), Finance (via the Global Financial Centre Index) Competitiveness, and Quality of Life. The table below summarizes the results (see Table 4):

(Table 4 about here)

Table 4: Correlation Analysis

	Number of Billionaires	Billionaire Wealth
Billionaires	-	0.917**
Billionaire Wealth	0.917**	-
Population Size	.559**	.438**
Economic Size	.684**	.610**
Living Standards	.059	.146*
Tech	.435**	.440**
Finance	.490**	.517**
Competitiveness	.473**	.514**
Quality of Life	-.130	-.072

*indicates significance at the 5 percent level, **at the 1 percent level.

The correlations for both billionaire variables – the number and wealth of billionaires – are very similar in terms of both strength and significance. This is not surprising given that these two variables are highly correlated, at 0.917.

Size: Recall that we hypothesize the location of the super-rich to be a function of the market size and opportunities offered by larger metros. The correlations for Economic Size are the highest of any in our analysis, 0.684 for Billionaires and 0.610 for Billionaire Wealth. The correlations for Population Size are also relatively high (0.559 for Billionaires and 0.438 for Billionaire Wealth). It is important to note that these correlations do not imply causality, but only point to an association between these variables. It may be that billionaires are more likely to emerge in larger economies, and it may be that their activities make those economies larger. It is more likely, however, that both are going on to some degree.

Living Standards: We also hypothesize that the location of the super-rich would not only follow the size of metros but also their overall living standards. The logic here is that places with higher living standards would have consumers with more spending power that could generate and support the economic activities and industries of billionaires. To get at this, we look at the connection between the super-rich and our indicator of Living Standards based on economic output per capita, a straightforward

indicator of the average wealth per person. Surprisingly, there is no statistically significant association at all between Living Standards and Billionaires, and only a very weak association between it and Billionaire Wealth (0.146). This may reflect the fact that there are many large but relatively poor metros with low Living Standards such as Mumbai, Bangalore, Kolkata, and Hyderabad, which are home to quite a few billionaires. It is also worth noting that there are also relatively affluent cities that have relatively fewer billionaires.

Tech: Following Freund and Oliver (2016), we further hypothesize a connection between the tech industry and the location of global super-rich. Recall that our proxy for high-tech startups is venture capital investment flowing to high-tech startups in metro areas. We find a positive association between Tech and both Billionaires (0.435) and Billionaire Wealth (0.455).

Finance: Following Philippon (2008) and Freund and Oliver (2016), we hypothesize a connection between finance and the location of the super-rich and metros, which are global banking and financial centers. To get at this, we utilize the Global Financial Centres Index, a measure of the financial power of global cities. We find Finance to be closely correlated with both Billionaires (0.490) and Billionaire Wealth (0.517).

Competitiveness: We would also expect the global super-rich to be more highly clustered in more competitive cities with better business climates, better infrastructure, and lower taxes. To search for this correlation, we utilize a relatively well-known measure of economic competitiveness developed by the Economist Intelligence Unit (2013) as described above. Both Billionaires (0.473) and Billionaire Wealth (0.514) are associated with this measure of City Competitiveness.

Quality of Life: We also hypothesize that billionaires are more likely to be found in global cities and metros that offer higher amenities and quality of life. To get at this, we employ a Quality of Life Index developed by The Economist Intelligence Unit (2012), also described above. This variable is not significantly related to either Billionaires or Billionaire Wealth.

In sum, our analysis suggests that the geographic distribution of billionaires follows mainly from the size of global metros, measured by population, and even more so by economic output. It is also related to their finance and tech industries (proxied by venture capital investment) and competitiveness, but less so by living standards and not at all by quality of life.. Next, we move on to the findings from our multivariate regression analysis, which better controls for the factors that are associated with the location and geography of the super-rich.

Regression Analysis

We now turn to the results of the regression analysis. As noted above, we developed our strategy for this regression analysis to test five key hypotheses regarding the role of metro size, living standards, finance and tech industry, city competitiveness and quality of life in the location and geography of the super-rich. Table 5 summarizes the results of the regression model: Part A is the original estimation with the actual number of observations and Part B is estimation with missing observations replaced by means.

(Table 5 about here)

Table 5: Regression Results for Number of Billionaires

PART A:	**Eq.1**	**Eq. 2**	**Eq. 3**	**Eq. 4**	**Eq. 5**	**Eq. 6**	**Eq. 7**	**Eq. 8**

Economic Size (log)	0.881**	0.974**		0.906**	0.750**	0.667**	0.875**	0.440*
	(7.315)	(12.586)		(8.285)	(3.858)	(3.973)	(5.252)	(2.126)
Population Size (log)	0.092		0.974**					
	(0.879)		(12.586)					
Living Standards (log)		-0.092	0.881**					
		(-0.092)	(7.315)					
Tech (log)				0.126*	0.063	0.091	0.125	0.049
				(0.126)	(0.696)	(1.206)	(1.628)	(0.559)
Finance					0.005			0.009*
					(0.696)			(2.585)
City Competitiveness						0.021		0.025
						(1.388)		(0.760)
Quality of Life							-0.019	-0.052**
							(-1.957)	(-3.377)
R2 Adj	0.464	0.464	0.464	0.473	0.395	0.363	0.420	0.510
N	182	182	182	124	43	65	63	40
				Missing observations replaced by mean values				
PART B:	**Eq.1**	**Eq. 2**	**Eq. 3**	**Eq. 4**	**Eq. 5**	**Eq. 6**	**Eq. 7**	**Eq. 8**
Economic Size (log)	0.881**	0.974**		0.892**	0.865**	0.862**	0.888**	0.792**
	(7.315)	(12.586)		(8.285)	(10.598)	(10.294)	(11.110)	(9.585)
Population Size (log)	0.092		0.974**					
	(0.879)		(12.586)					
Living Standards (log)		-0.092	0.881**					
		(-0.092)	(7.315)					
Tech (log)				0.129*	0.119*	0.116*	0.141**	0.114*
				(0.126)	(2.263)	(2.172)	(2.675)	(2.212)
Finance					0.004			0.005*
					(1.827)			(1.994)
City Competitiveness						0.015		0.030*
						(1.302)		(2.237)
Quality of Life							-0.015*	-0.030**
							(-2.129)	(-3.667)
R2 Adj	0.464	0.480	0.464	0.479	0.492	0.481	0.489	0.518
N	182	182	182	182	182	182	182	182

*indicates significance at the 5 percent level, **at the 1 percent level. t-values within parentheses.

We begin by looking at the effects of Size alone. Equation 1 examines the location of billionaires in light of two variables: Economic Size and Population Size. Economic Size is positive and significant, while Population Size is insignificant. (Part A and Part B are the same since these regressions include all 182 observations).

We now turn to a regression including Living Standards in combination with Size. Equation 2 combines Living Standards with Economic Size, while Equation 3 replaces Economic Size with Population Size. The Size variables are positive and significant in each model. Living Standards is positive and significant alongside Population Size, but insignificant alongside Economic Size.

It is worth noting that Economic Size generates roughly the same R2 Adjusted value as Population Size and Living Standards together, explaining approximately 46 percent of the variation of the location of billionaires across global metros. Thus, the following regressions (Equations 4 through 8) include Economic Size and discard Population Size and Living Standards.

We now examine the role of Tech. Recall our hypothesis that the location of the super-rich is related to the rise in tech wealth. Equation 4 adds Tech alongside Economic Size. Both variables are positive and significant. This model includes 124 observations and the results are similar when we replace the missing values with means.

Equation 5 adds Finance, alongside Economic Size. Recall our hypothesis that the location of the super-rich will be shaped in part by the rise in finance billionaires. We add Finance to the model alongside Economic Size and Tech. Finance is insignificant in both versions of the regression with actual observations (n=43), and using means to replace these missing values. Economic Size remains significant in both versions of the model and Tech, which is insignificant in the model with actual observations (Part A), becomes significant in the model with mean values replacing the missing observations (Part B).

Recall we hypothesized that more competitive metros would be home to more billionaires. Equation 6 adds City Competitiveness, alongside Economic Size and Tech.

City Competitiveness is insignificant in both versions of the model with actual observations (n=65) and when the missing observations are replaced with mean values. Economic Size is positive and significant in both versions of the model and Tech, which is insignificant in the model with actual observations (Part A), turns significant in the regression where missing observations are replaced by mean values (Part B).

Recall our hypothesis that the super-rich will prefer high amenity cities that offer greater livability and quality of life. Equation 7 adds Quality of Life alongside Economic Size and Tech. Quality of Life is insignificant in both versions of the model, based on actual observations (n=63) and when we replace missing observations with mean values. Economic Size remains positive and significant in both versions. Tech is again insignificant with actual observations (Part A), but significant in the model where we replace missing observations with means replacing the missing observations (Part B).

Equation 8 includes all the variables. We end up with a reduced number of observations (n=40), and no variables are significant (Part A) save for Quality of Life which is negative and significant. However, when we extend the sample by replacing missing observations with mean values (Part B), Economic Size, Living Standards, Tech, Finance, and City Competitiveness all turn significant and positive, while Quality of Life remains negative and significant. This version of the model generates an Adjusted R2 of 0.518.

We also ran the same regressions using Billionaire Wealth as the dependent variable (see Appendix 1). The results are similar to those reported above, which is not surprising given the close correlation between the numbers of billionaires and billionaire wealth across metros, noted above. In general, the R2 Adjusted values are somewhat lower for the regressions using Billionaire Wealth as the dependent variable. Economic

Size remains closely associated with Billionaire Wealth. Tech is relatively stronger in some cases, going from a 5 percent to a 1 percent significance level in Equations 4B and 5B. However, the overall results remain the same, with a strong association to Economic Size, more modest positive associations to Living Standards and Tech, and weaker positive associations with Finance and City Competitiveness. Quality of Life is either insignificant or negative and significant.

The results from these models inform a number of key conclusions. The location of the super-rich (measured either as a number or by their wealth) appears to be by far most strongly associated with economic and population size. This confirms our hypothesis that the location of the super-rich is related to metro size, including, but not limited to, market size, industry diversity, and opportunities associated with larger metro areas. There are a number of other factors that are associated with the location of the super-rich, though their effects are considerably weaker than size. The location of the super-rich is more modestly associated with living standards. This confirms our hypothesis that metros where the living standards of the population are higher will have more billionaires. When it comes to industry sectors, the location of the super-rich is more closely associated with the high-tech industry than with the finance and banking sector. This stands in contrast to previous research that identified finance as the leading cause of the recent growth in the super-rich (See Freund and Oliver, 2016). But this may simply also reflect the fact that the Tech variable is a better measure than Finance and covers more metro areas.

The location of the super-rich is only weakly associated with the competitiveness of global cities and metro areas. This may reflect the fact that many of the locations with large levels of the super-rich like New York, San Francisco, and London, not to mention northern European and Scandinavian metros, have high rates of taxation and high costs

of business. Surprisingly, given theory and research on the role of quality of life in attracting the talented and the affluent, and our expectation that highly mobile billionaires might prefer nicer places to live, the location of billionaires is either insignificant or negatively related to quality of life. We have reason to believe that there may be two things going on here. The first is that our variables for size may be capturing some of the effects that derive from quality of life (more amenities, higher quality housing that are available in larger cities and metros) and also from industry structures, especially finance and tech industries, which are closely associated with larger superstar cities like New York, London, and Tokyo. That said, relatively low variance inflation factor scores (around 1) indicate that there is no multicollinearity issue when Quality of Life and Economic Size are combined in the same model**.** The second is a broader caveat that has to do with the small number of observations and the potentially lower quality of some of these measures due to limited survey data. Ultimately, the location of the super-rich across global metros appears to be largely a function of the size of metro areas, with other variables like living standards and industry structure, particularly tech, playing a more limited role.

Conclusion

Our research has examined the location of the super-rich in light of five key hypotheses related to the size, living standards, industry structure, competitiveness and quality of life of global cities and metro areas. We developed unique data on the location of the super-rich based on detailed data from Forbes on more than 1,800 billionaires across the globe, and matched to indicators of population and economic size, living standards (economic output per capita), finance and tech industries, city competitive and quality of life. Our research informs the following key findings based on our descriptive and statistical analyses.

Based on our descriptive analysis, we find that the super-rich are concentrated in a small number of metros around the world. The top 50 metros account for nearly two-thirds of the total; the top 20 account for more than 40 percent, and just the top 10 account for more than 30 percent. The wealth of the super-rich is even more concentrated than their numbers. The top 10 metros are home to 36 percent of total billionaire wealth, the top 20 account for nearly half, and the top 50 hold over 70 percent of billionaire wealth. New York tops the list on billionaire wealth, followed by the San Francisco Bay Area, Moscow, Hong Kong, London, Los Angeles, Beijing, Paris, and Dallas. The United States has five metros in the top 10 and nine in the top 2 metros for billionaire wealth.

There is also descriptive evidence of a spatial division of labor of the global super-rich by industry. In addition to these global centers, Milan tops the list on Fashion and Retail, besting New York, London, and Paris. San Francisco tops the list on Tech, followed by Beijing, with Los Angeles, Bangalore, Seoul, Shenzhen, and Seattle, all of which best New York and London on that score. New York, not surprisingly, tops the list on Finance and Investment, followed by the San Francisco Bay Area, Moscow, Los Angeles, and Miami, all of which best London. Even though the geography of the super-rich follows the size of global cities, we find many relatively smaller cities and metros occupying long-established and path dependent niches in the global spatial division of the super-rich.

Our descriptive analysis also sheds light on the concentration of super-rich wealth in global cities and metros. The wealth of the super-rich in cities like London, New York, Hong Kong, and San Francisco is equivalent to anywhere from a quarter to 70 percent of total economic output in one year in these metros. More staggering still, the wealth gap between the super-rich and the metro GDP per capita (measured in terms of economic

output per person) ranges from 100,000 to 600,000 times in the top 20 metros with the highest ratios.

Our statistical analysis, particularly the findings from the regression analysis, helps to better clarify the factors that are associated with the location of the super-rich across global cities and metros areas. We estimated these regressions two ways – based on observed variables and using mean values to replace the large numbers of missing variables for some measures.

Our most basic finding is that the location of the super-rich is related to the size of metros. As we hypothesized, larger metros have more people, bigger markets, larger and more diverse industries, more talent, more opportunity, a bigger range of housing and more amenities, and a range of other factors that will produce and attract the super-rich. We find modest associations to living standards and tech industry in combination with size, and even more modest associations to finance and city competitiveness. We find no association and at times a negative association between quality of life and the location of the super-rich. As noted above, this may reflect the quality of data and limited number of observations for these measures. That said, we can say with a certain level of confidence that metro size is by far the most important factor in the location and geography of the global super-rich. This is in line with a broader body of literature which shows the increasing returns to metro size (Bettencourt, 2013; Bettencourt, Lobo, Helbing, Kühnert and West, 2007) and which also documents the connection between metro size and inequality (Baum-Snow, Freedman and Pavan, 2014; Baum-Snow and Pavan, 2012).

Our research contributes to the small but growing literature on the super-rich and is one of the first studies we know of to look empirically at the geography of the super-

rich across the world's cities and metros. Our research is just a start. We hope that others will use the Forbes data as well as other data to shed additional light on the geography of the super-rich and its role in advanced capitalism.

Appendix Table 1:

Regression Results for Billionaire Wealth

PART A:	**Eq.1**	**Eq. 2**	**Eq. 3**	**Eq. 4**	**Eq. 5**	**Eq. 6**	**Eq. 7**	**Eq. 8**
Economic Size (log)	1.173**	1.048**		0.914**	0.826**	0.633**	0.964**	0.401
	(7.240)	(10.075)		(6.224)	(3.452)	(3.074)	(4.548)	(1.557)
Size Population (log)	-0.125		1.048**					
	(-0.882)		(10.048)					
Living Standards (log)		0.125	1.173**					
		(0.882)	(7.240)					
Tech (log)				0.209**	0.096	0.157	0.193	0.081
				(2.736)	(0.857)	(1.700)	(1.983)	(0.784)
Finance					0.006			0.010*
					(1.808)			(2.378)
City Competitiveness						0.038*		0.040
						(2.113)		(0.987)
Quality of Life							-0.017	-0.061**
							(-1.397)	(-3.191)
R2 Adj	0.367	0.367	0.367	0.378	0.370	0.365	0.420	0.460
N	182	182	182	124	43	65	63	40
				Missing observations replaced by mean values				
PART B:	**Eq.1**	**Eq. 2**	**Eq. 3**	**Eq. 4**	**Eq. 5**	**Eq. 6**	**Eq. 7**	**Eq. 8**
Economic Size (log)	1.173**	1.048**		0.952**	0.912**	0.896**	0.949**	0.818**
	(7.240)	(10.075)		(8.820)	(8.375)	(8.034)	(8.806)	(7.340)
Size Population (log)	-0.125		1.048**					
	(-0.882)		(10.048)					
Living Standards (log)		0.125	1.173**					
		(0.882)	(7.240)					
Tech (log)				0.200**	0.186**	0.176*	0.209**	0.173*
				(2.839)	(2.641)	(2.470)	(2.958)	(2.489)
Finance					0.006*			0.006
					(2.022)			(1.842)
City Competitiveness						0.028		0.043*
						(1.857)		(2.376)
Quality of Life							-0.012	-0.033**
							(-1.265)	(-2.947)
R2 Adj	0.367	0.367	0.367	0.392	0.402	0.400	0.394	0.428
N	182	182	182	182	182	182	182	182

*indicates significance at the 5 percent level, **at the 1 percent level. t-values within parentheses.

References:

Albouy, D. (2008) "Are Big Cities Really Bad Places to Live? Improving Quality-of-Life Estimates across Cities", National Bureau of Economic Research Working Paper No. 14472, Retrieved from: http://www.nber.org/papers/w14472.

Albouy, D. (2015) "What Are Cities Worth? Land Rents, Local Productivity, and the Total Value of Amenities", *Review of Economics and Statistics*, Retrieved from: http://www.mitpressjournals.org/doi/abs/10.1162/REST_a_00550#.VwPZT_krJhE.

Bagchi, S., Svejnar, J. (2015) "Does Wealth Inequality Matter for Growth? The Effect of Billionaire Wealth, Income Distribution, and Poverty", *Journal of Comparative Economics*, 43(3), 505-530.

Baum-Snow, N., Freedman, M., Pavan, R. (2014) "Why Has Urban Inequality Increased?", Unpublished Manuscript from Duke University, Retrieved from: http://econ.duke.edu/uploads/media_items/baum-snow-nathan-urban-inequality.original.pdf

Baum-Snow, N., Pavan, R. (2012) "Understanding the City Size Wage Gap", *The Review of Economic Studies*, 79(1), 88-127.

Beaverstock, J. V., Hall, S. (2016) "Super-Rich Capitalism: Managing and Preserving Private Wealth Management in the Offshore World", In Hay, I., Beaverstock, J.V. (Eds.) *Handbook on Wealth and the Super-Rich*, Northampton, MA: Edward Elgar Publishing.

Bettencourt, L. M. (2013) "The Origins of Scaling in Cities", *Science*, 340(6139), 1438-1441.

Bettencourt, L. M., Lobo, J., Helbing, D., Kühnert, C., West, G. B. (2007) "Growth, Innovation, Scaling, and the Pace of Life in Cities", *Proceedings of the National Academy of Sciences*, 104(17), 7301-7306.

Boschma, R. (2004) "Competitiveness of Regions from an Evolutionary Perspective", *Regional Studies*, 38(9), 1001-1014.

Parilla, J., Trujillo, J. L., Berube, A., Ran, T. (2014) *The Global Metro Monitor 2014*. Retrieved from: http://www.brookings.edu/~/media/Research/Files/Reports/2015/01/22-global-metro-monitor/bmpp_GMM_final.pdf?la=en

Economist Intelligence Unit (2012) "Best Cities Ranking and Report", Retrieved from: http://pages.eiu.com/rs/eiu2/images/EIU_BestCities.pdf

Economist Intelligence Unit (2013). *Hot Spots 2025*, Retrieved from: http://www.citigroup.com/citi/citiforcities/pdfs/hotspots2025.pdf

Florida, R. (2002) *The Rise of the Creative Class*, New York, NY: Basic Books.

Florida, R. (2005) "The World is Spiky", *Atlantic Monthly, 296*(3), 48.

Florida, R., Gulden, T., Mellander, C. (2008) "The Rise of the Mega-Region", *Cambridge Journal of Regions, Economy and Society*, 1(3), 459-476.

Florida, R., King, K. (2016) *Rise of the Global Startup City: The Geography of Venture Capital Investment in Cities and Metros across the Globe*, Martin Prosperity Institute, University of Toronto, Rotman School of Management, Retrieved from: http://martinprosperity.org/content/rise-of-the-global-startup-city/

Forbes. (2015) "The World's Billionaires", *Forbes Magazine*, Retrieved from: http://www.forbes.com/billionaires/

Freeland, C. (2012) *Plutocrats: The Rise of the New Global Super-Rich and the Fall of Everyone Else*, Toronto: Doubleday.

Freund, C. (2016) "Rich People Poor Countries: The Rise of Emerging-Market Tycoons and their Mega Firms", Washington, D.C.: Peterson Institute for International Economics.

Freund, C., Oliver, S. (2016) "The Origins of the Superrich: The Billionaire Characteristics Database", Peterson Institute for International Economics, Working Paper No.16-1, Retrieved from Peterson Institute for International Economics Website: https://www.piie.com/publications/wp/wp16-1.pdf .

Gandhi, A., Walton, M. (2012) "Where Do India's Billionaires Get Their Wealth?", *Economic and Political Weekly*, 47(40), 10-14.

Glaeser, E. L., Kolko, J., Saiz, A. (2001) "Consumer City", *Journal of Economic Geography*, 1(1), 27-50.

Guriev, S., Rachinsky, A. (2005) "The Role of Oligarchs in Russian Capitalism", *The Journal of Economic Perspectives*, 19(1), 131-150.

Gyourko, J., Mayer, C., Sinai, T. (2006) "Superstar Cities", National Bureau of Economic Research Working Paper No.12355, Retrieved from: http://www.nber.org/papers/w12355.pdf?new_window=1

Hardoon, D. (2015) "Wealth: Having It All and Wanting More", OXFAM International, Retrieved from: https://www.oxfam.org/en/research/wealth-having-it-all-and-wanting-more

Hay, I. (Ed.). (2013) *Geographies of the Super-Rich*, Northampton, MA: Edward Elgar Publishing.

Kaplan, S. N., Rauh, J. D. (2013). "Family, Education, and Sources of Wealth among the Richest Americans, 1982–2012", *The American Economic Review, 103*(3), 158-162.

Lloyd, R., Clark, T. N. (Eds.). (2001) "The City as an Entertainment Machine", *Critical Perspectives on Urban Redevelopment*, 6, 357-378, .

Maskell, P., Malmberg, A. (1999) "Localised Learning and Industrial Competitiveness", *Cambridge Journal of Economics,* 23(2), 167-185.

Philippon, T. (2008) "The Evolution of the US Financial Industry from 1860 to 2007: Theory and Evidence", Working Paper, New York University, Retrieved from: http://pages.stern.nyu.edu/~tphilipp/papers/finsize_old.pdf

Piketty, T. (2014) *Capital in the Twenty-First Century,* Cambridge, MA: Harvard University Press.

Porter, M. E. (1998) "Cluster and the New Economics of Competition", *Harvard Business Review*, 76(6), 77-90.

Porter, M. E. (2008) *Competitive Strategy: Techniques for analyzing industries and competitors,* New York: Simon and Schuster.

Roback, J. (1982) "Wages, Rents, and the Quality of Life", *The Journal of Political Economy*, 90(6), 1257-1278.

West, D. M. (2014) "Billionaires: Reflections on the Upper Crust", Washington: Brookings Institution Press.

Yeandle, M., Mainelli, M. (2015) *Global Financial Centres Index*, Z/Yen Group and Qatar Financial Centre Authority, Retrieved from www.zyen.com/research/gfci.html