# The Geography of the Global Middle Class:

## Where They Live, How They Spend

VISA

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# Executive Summary

Few forces in the global economy pack a bigger punch than the growing middle class. The democratization of consumption has happened with such dramatic speed that close to two-thirds of the world's population will have joined its ranks by 2030.[1] This global expansion of the middle class has had a measurable impact on the geography of consumption.


Only a century ago, John Maynard Keynes wrote about the affluent classes in England before the First World War: "The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth, in such quantity as he might see fit, and reasonably expect their early delivery upon his doorstep." [2] Keynes could today be describing households in any number of cities in the world: just replace telephone with computer or mobile phone, and put the shopper on an e-commerce platform.

Globalization helped to foster a growing urban middle class, unleashing an economic force that is reshaping the planet.

The remarkable transformation of living standards around the world owes much to globalization. The relatively free flow of goods, services, technology, capital, and—to a lesser extent—people that characterized the late 20th century saw multitudes rise from subsistence living into the market economy. Globalization helped to foster a growing urban middle class, unleashing an economic force that is reshaping the planet.

Just as the wave of globalization that Keynes observed differed from the wave that carried us into the 21st century, the next wave in globalization is currently rolling

[1] Kharas, Homi, "The Unprecedented Expansion of the Global Middle Class: An Update," Global Economy & Development Working Paper 100, February 2017, Brookings Institution, 14. UN World Population Prospects.

[2] Keynes, John Maynard, "The Economic Consequences of the Peace," London, Macmillan & Co., Ltd., 1919. p. 6.

forward. Digital technologies now connect inhabitants from far-flung corners of the earth at speeds and with capabilities unimaginable only a few generations ago, with consequences we are just beginning to understand. To gain insight into this new wave of globalization and its impact on the growing global middle class,[3] Visa and Oxford Economics looked at middle class spending patterns through several lenses, creating new tools for quantifying the remarkable shifts in global commerce.

Among these new tools is the Visa Globalization Index,[4] which allows the comparison of cities and countries across five pillars of globalization: the size of the middle class population, the number of foreign visitors, trade volume, the prevalence of digital payments, and spending on global brands. The index looks at the differences among cities based on these pillars and how less globalized cities might evolve in the future. New international business opportunities are likely to emerge as these cities close their "globalization gap" through continued growth and development. In addition, countries with many highly globalized cities may be more economically resilient than those with fewer global cities, thanks to their diversified sources of growth and exposure to foreign markets.

In addition to the Globalization Index, the study explores middle class consumer spending, both on bankcards using real, anonymized VisaNet data, and more broadly using macroeconomic data from Oxford Economics, forecasting this spending out to 2030. Research for the study focused on 103 of the world's cities spread over 22 countries, representing one-quarter of global consumer spending and covering a range of income and economic development levels. **This study and the tools provided can be used by business leaders to predict sector-specific trends in consumption, the impact of an aging population on these trends and possible demographic scenarios that will affect global cities**. Put simply, it is essential that business and policy leaders understand the wide-ranging effects of a more affluent global population to ensure economic success and to prepare for the future.

New international business opportunities are likely to emerge as these cities close their "globalization gap" through continued growth and development.

## Key highlights of the study include:

**Aggregate consumer expenditures** of the 22 countries included in the study will increase by an estimated $15 trillion in constant dollars by 2030, with middle class households accounting for more than 60 percent of that increase. The bulk of the growth in consumer expenditures by 2030 will occur in cities in the mid-range of globalization today, which highlights the profitable opportunities global firms have to further expand into markets where they currently may have a limited presence.

**The distribution of the global middle class encompasses a much wider geographic spread** today versus just 10 years ago. There are now hundreds of millions more consumers whose purchasing power extends beyond their basic needs. They are both able and willing to buy the best the world has to offer. The study provides examples of the changes that occur in consumers' budgets as their incomes grow—such as shifts in food expenditures as new amenities of the middle class lifestyle (e.g. restaurant spending) are added to the family budget.

[3] Those with incomes of $12 to $117 per day per household, adjusted for purchasing power parity.
[4] See Appendix A for Globalization Index methodology.

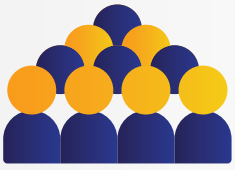
## Key highlights of the study include (continued):

**As globalization marches on and more people join the middle class, consumer-spending patterns are also slowly converging over time**. Historically, these spending patterns have varied according to local and national policies, preferences, development levels, and customs. However, in the world's most global cities, variations are less pronounced. Particularly between developed and developing countries, the differences are gradually narrowing in what consumers spend on food, hotels, restaurants, and personal services.

**Globalization's reach extends deeper than national aggregates would suggest, especially when measured at the city level**. The distance between newly emerging centers of the middle class and the most global cities like London, Singapore, or Dubai is much shorter than the difference between countries would indicate.

**The spread of digital payments has enabled the dramatic expansion of new consumer-centric commerce platforms** that can seamlessly connect a consumer to a seller halfway around the world with just a tap or a swipe on a mobile phone. New trends emerging in one part of the world gain rapid global adoption. In 2015, San Francisco was the only city globally where at least 20 percent of Visa-branded cards were used on a sharing economy platform. Fast forward to 2017, the number of cities had risen to over 80, including Bangalore, Tijuana, Cairo, London, Singapore, and Sydney.

**Global brands are gaining traction with middle class consumers around the world.** Visa-branded payment card data was analyzed to understand whether and how much middle class consumers shop at global brands in the focus cities. The data shows that across all of the cities covered, the more affluent a consumer, the more likely he is to shop at global brands. Surprisingly, the strength of this relationship between household income and global brands is even tighter in less globalized cities. In other words, global brands can be aspirational for consumers entering the middle class. However, when it comes to how much a consumer spends at a global brand, other factors beyond income play a bigger role, such as what they are buying and where they live. Understanding these nuances can help global brand managers position themselves in new markets and make the most effective payments, supply chain, and product lifecycle management decisions.



**Technology and population aging are two important drivers** shaping the global urban landscape. The study constructs two alternative scenarios to the baseline on how these two forces in combination could impact the world. In the first scenario, cities diverge demographically, with young, productive workers moving to cities with above-average growth, while cities with sub-par growth hollow out and experience a population decline. In the second scenario, cities converge in their spending patterns toward the most global cities in their demographic group.

# 1. Globalization extends beyond national borders, driven by cities

## 1.1 Globalization Index

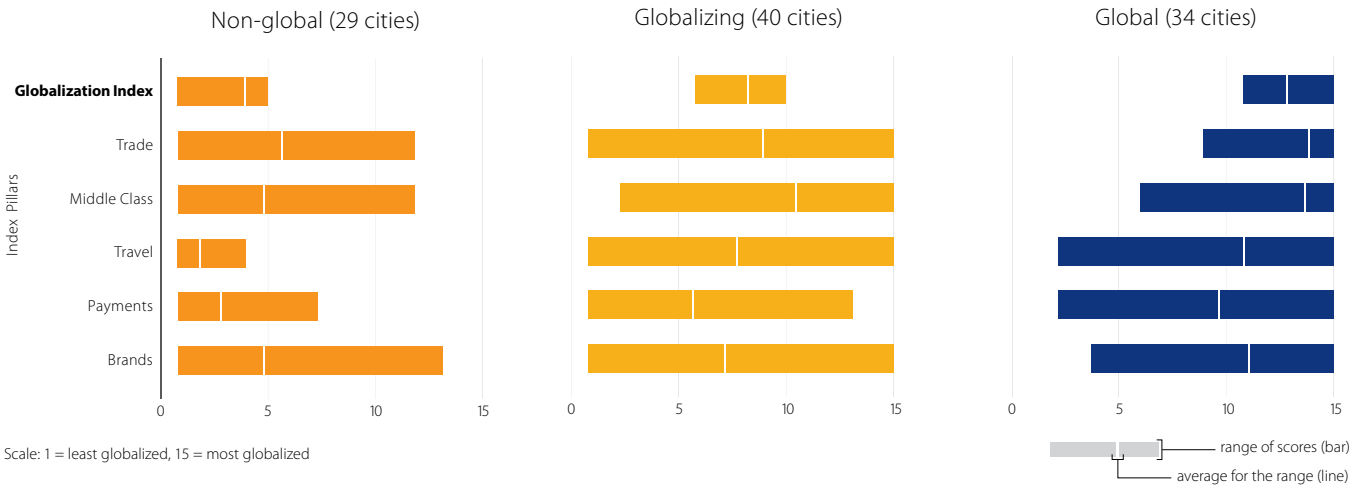
# Nowhere is globalization's impact more visible than in cities. Fifth Avenue in New York, the Champs-Élysées in Paris, and Tokyo's Ginza have long hosted flagship stores of the biggest global brands, but the reach of these brands now extends well beyond.


Armed with computers and smartphones, urban consumers—whether they're in Europe, Asia, Africa, Latin America, or North America—are following the same food, fashion, and entertainment news on global digital platforms and social media, where a shopping trend can go viral in the blink of an eye.

To better gauge how globalized an area is, the Visa Globalization Index scores countries and cities for the five pillar traits (mentioned earlier) that are critical to supporting a global culture and economy.[5] The index draws on anonymized transaction data from Visa-branded cards at the city and country levels, as well as Oxford Economics' Global Cities 2017 database of

[5] See Appendix A for Globalization Index methodology.

**Fig. 1: Globalization Index (2017, total and pillar scores)**
Source: Visa Business and Economic Insights, Oxford Economics




macroeconomic data and other official sources to provide a new, more granular take on globalization. The index ranges from 1 to 15, with 1 representing the least globalized. Based on these scores, we have grouped geographies as non-global, globalizing, and global.

## Categorizing Globalization

### Non-Global (total scores 1-5)

Areas that are at the edges of the global economy. Their consumer markets and the size of their middle class may be in a nascent stage of development. The level of integration with the global digital economy may be limited due to lack of full financial inclusion and relatively underdeveloped payment systems.

### Globalizing (total scores 6-10)

Areas that are converging with the core. Strong economic growth and expansion of their middle classes contributes to their becoming increasingly important to international tourism and expansion of global brands.

### Global (total scores 11-15)

Areas that are highly globalized and are central to international commerce, have large and vibrant consumer markets, and are at the leading edge of the development of the global digital economy.

Globalization's reach today across cities around the world, whether it be through trade, technology, or travel, is quite wide and pervasive, as shown in Fig. 1.[6] The bars in Fig. 1 mark the range of scores for cities within each group, and the thin white line in the middle shows the average for the group of countries. As these charts show, while the total scores provide relatively clean breaks between the three groups, more blending occurs at the sub-index (pillar) level. Global brands, for example, are as important to the middle class consumer experience in Seattle (global) as they are in Delhi and Cape Town (globalizing). What distinguishes global cities from the rest is their greater affluence and integration with global networks of trade and commerce. For non-global cities, the differences largely lie in their ability to attract international travelers and the relative under-development of their digital payment industries. Globalizing cities could easily close their gap with global cities over time with continued expansion of their middle class and payments industry.

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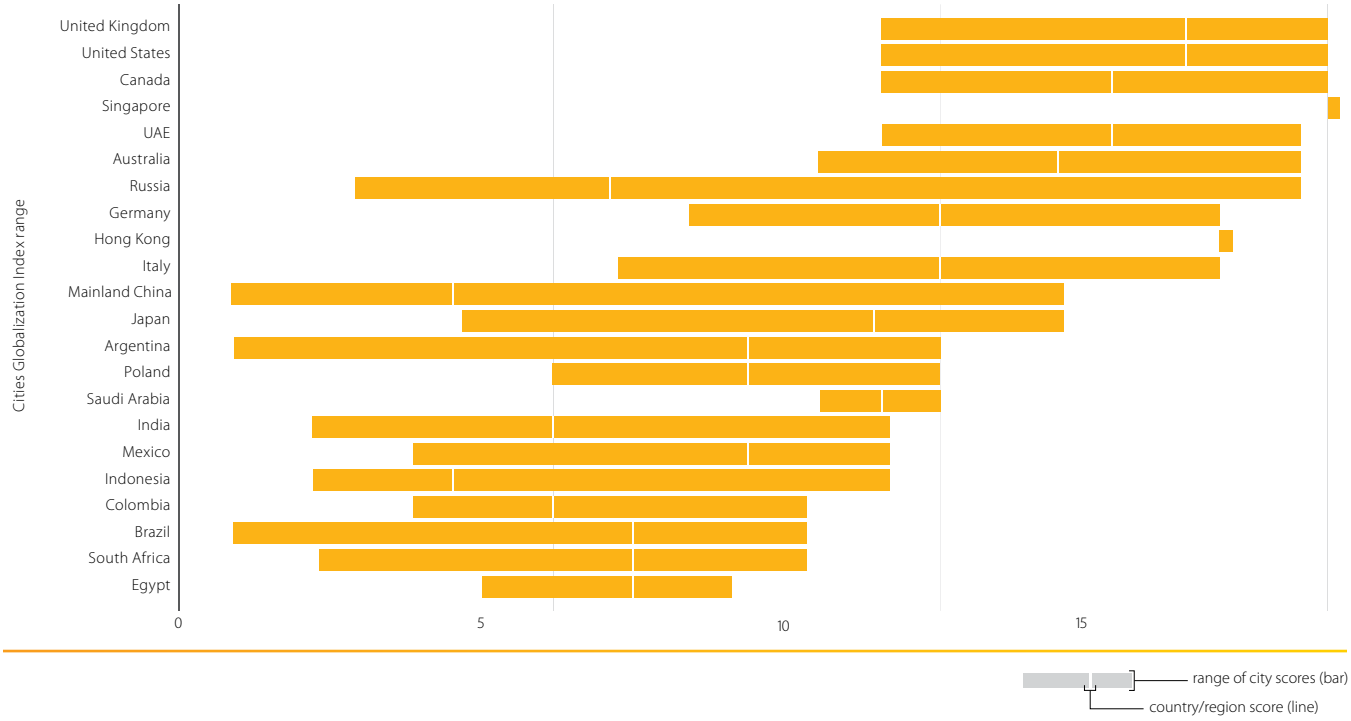
[6] See Appendix B for the complete scoring of cities.

**Fig. 2: Degree of urban globalization (2017, by market)[7]**
Source: Visa Business and Economic Insights, Oxford Economics




What this means is that the distance between newly emerging centers of the middle class and the most global cities on the index like London, Singapore, or Dubai is much shorter than the difference between countries would indicate.

The increasing global integration among cities is also blurring the traditional boundaries separating countries by their economic development levels. Convergence among cities renders such dichotomies as "First World/ Third World," "Industrialized/Developing Countries," and "Advanced/Emerging Markets" increasingly anachronistic and obsolete. Except for city-states such as Singapore, most economies covered in our study straddle at least two globalization scoring ranges (see the bars bounded by the maximum and minimum city scores per country/region in Fig. 2). What this means is that the distance between newly emerging centers of the middle class and the most global cities on the index like London, Singapore, or Dubai is much shorter than the difference between countries would indicate.

The white vertical lines in this case indicate where the country/region as a whole would score on the globalization index. For example, Mainland China would be the least globalized country/region included in our study. However, Shanghai, its leading city, is as globalized as at least some cities in the U.K., the U.S., Canada, Australia, Italy, Germany, Russia, and the UAE.

Viewed through this prism, the challenge in closing the current "globalization gap" is as much about convergence among cities in the major emerging markets as it is convergence between countries. These markets have room to run in terms of globalization, which could contribute to faster economic growth. Opportunities for international businesses are likely to abound as the developing nations close their globalization gap with developed countries through the continued growth and development of their cities. In addition, countries with many highly globalized cities may be more economically resilient than those with fewer global cities, thanks to their diversified sources of growth and exposure to foreign markets.



[7] The UAE's high-scoring cities reflect its specialized economy, deliberately designed to be global. As city-states, Singapore and Hong Kong have ranges that display as points rather than bars.

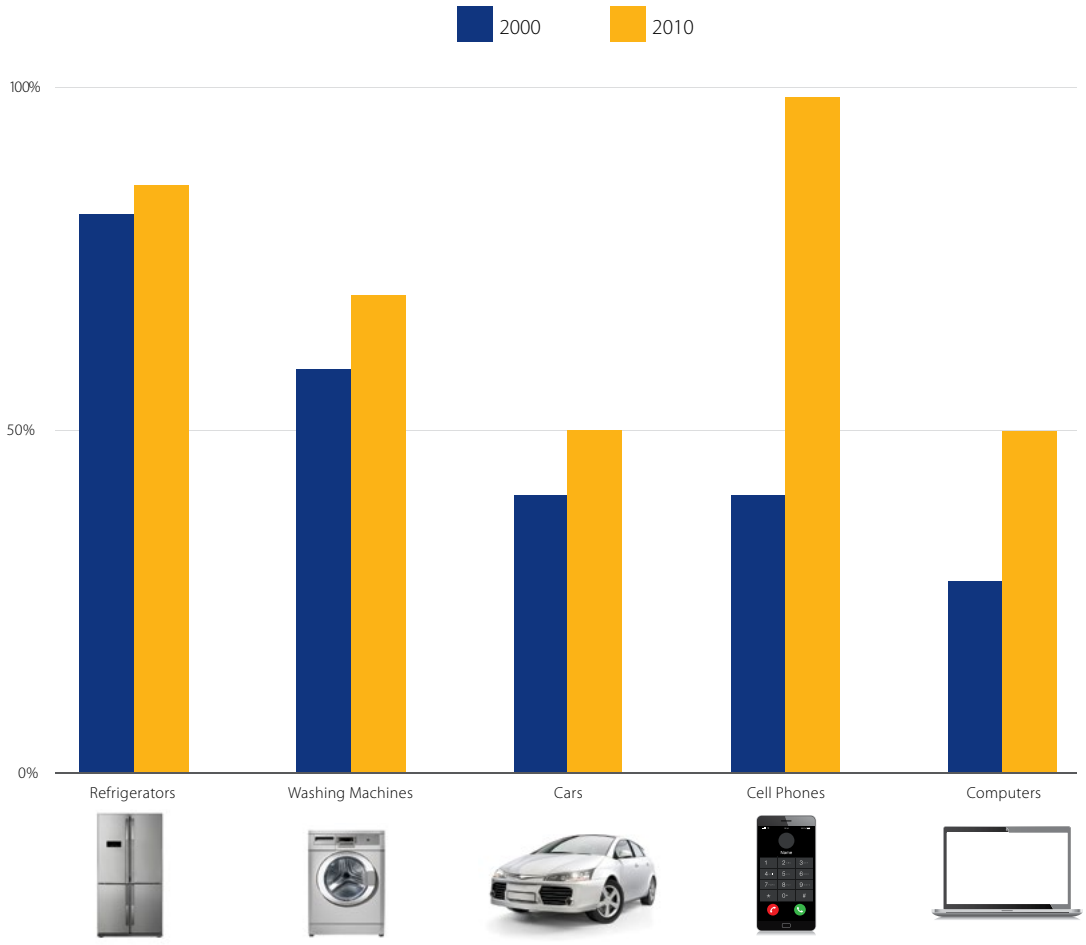
## 1.2 Household goods ownership

The globalization of consumption blurs the boundaries between households across countries at the most basic of levels: what we have in our houses. Consider the humble washing machine, a quintessential 20th-century appliance that saves households both time and labor, helping to raise living standards. At the start of the millennium, only 30 percent of Brazil's urban households owned a washing machine. A decade later, washing machine ownership was approaching nearly half of households, and ownership in Florianópolis in Brazil was on par with that in San Jose, California.

Rising rates of appliance ownership have not just been restricted to washers (see Fig. 3). As more people can afford them, time- and labor-saving machines like refrigerators and automobiles are steadily improving living standards around the world. Between 2000 and 2010, the share of cities where a majority of households own a washing machine rose from 61 percent to 70 percent. For cars, it rose from 40 percent to 50 percent.

However, the biggest and perhaps more important jump has been in ownership of mobile phones and computers—devices that speed the spread of information and facilitate online shopping. For instance, in 2010, nearly all of the cities included in this study had majority households owning cell phones—up from 41 percent in 2000. Within just a decade, households in places like Cartagena, Colombia, overtook their counterparts in global centers such as Toronto or Vancouver in their likelihood of owning a mobile phone.

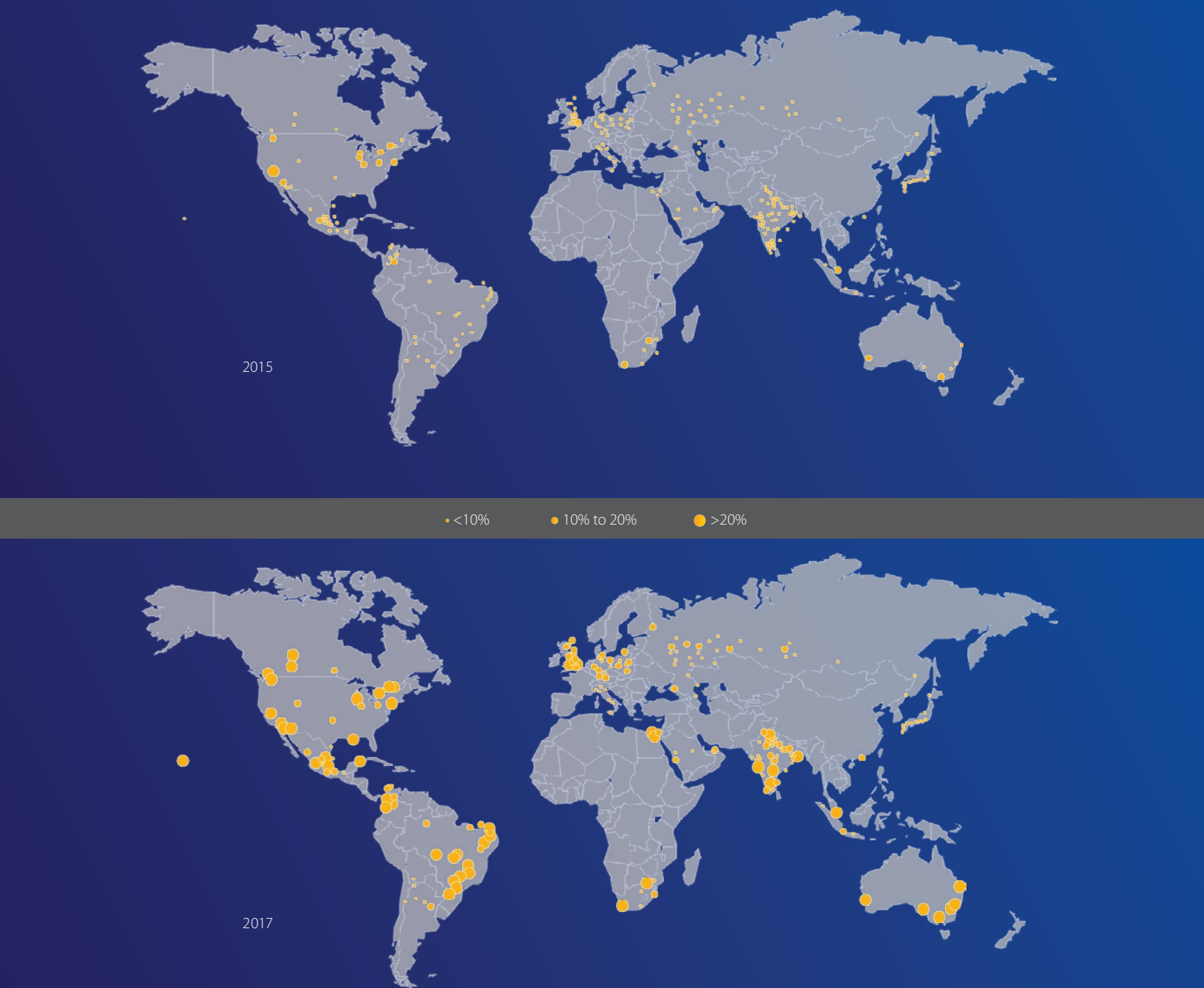
**Fig. 3: Number of cities where most households own appliances, 2000 and 2010**
Source: Decennial national censuses and population surveys from 14 countries and covering over 300 cities, 2000-2010



## 1.3 The sharing economy

The spread of "sharing economy" apps (such as ride sharing and other services with peer-to-peer business models) around the world epitomizes how new technologies, digital payments, and globalization together can lead to rapid and revolutionary shifts in consumer behavior. Back in 2015, outside of the West Coast of the U.S.—where many of the companies commonly associated with the sharing economy were located—consumer bankcard engagement[8] in the sharing economy was fairly low (Fig. 4). Fast forward to only two years later and the phenomena had clearly spread across the globe.

**Fig. 4: Participation in the sharing economy by active Visa-branded cardholders**
Source: Visa Business and Economic Insights analysis of VisaNet data




[8] The study used anonymized cardholder data from VisaNet to measure how many Visa-branded cardholders had engaged in the sharing economy.
Note: Cities depicted above are a sample of cities within the 22 countries included in the study, and are not meant to be an exhaustive representation of all cities globally.

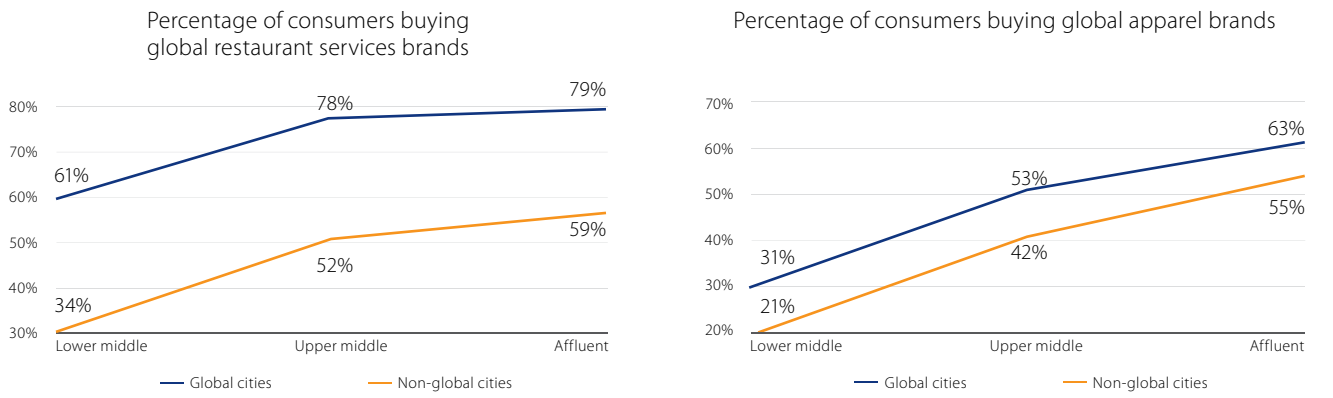
## 1.4 The reach of global brands

Many travelers have had the experience—disconcerting for some, comforting for others—of seeing familiar coffee shops, restaurants, and clothing stores in a destination halfway around the world. These businesses are representative of the global economy. Companies whose goods and services have been a hit in their home markets look abroad for revenue growth, and the most successful brands resonate with consumers across cultures.

The data shows that convergence is not only happening in what urban consumers are buying and how they are shopping, but also where they are shopping. On Visa-branded bankcards, stores and restaurants[9] associated with global brands account for nearly one out of four purchases within their respective categories. The reach of these brands extends well into most global and globalizing cities.

Among the global brands, most purchases are currently happening at companies that played a dominant role in shaping the current wave of globalization that began after the end of World War II. Typically, these companies are headquartered in countries such as the U.S., U.K., Germany, France, Canada, and Italy. However, when it comes to the brands of the future, companies from other parts of the world—whether they are already emerging global champions, or local or regional chains just starting on their expansion—could easily also become part of the global urban retail landscape. This is especially the case in non-global cities where the field remains largely open, with fewer than one in 10 sales occurring at global brands. Additionally, in these cities the brands that dominated the mid-20th century have a much narrower lead over other global brands.

**Fig. 5: Appetite for global brands: A pattern of convergence, 2017**
Source: Visa Business and Economic Insights



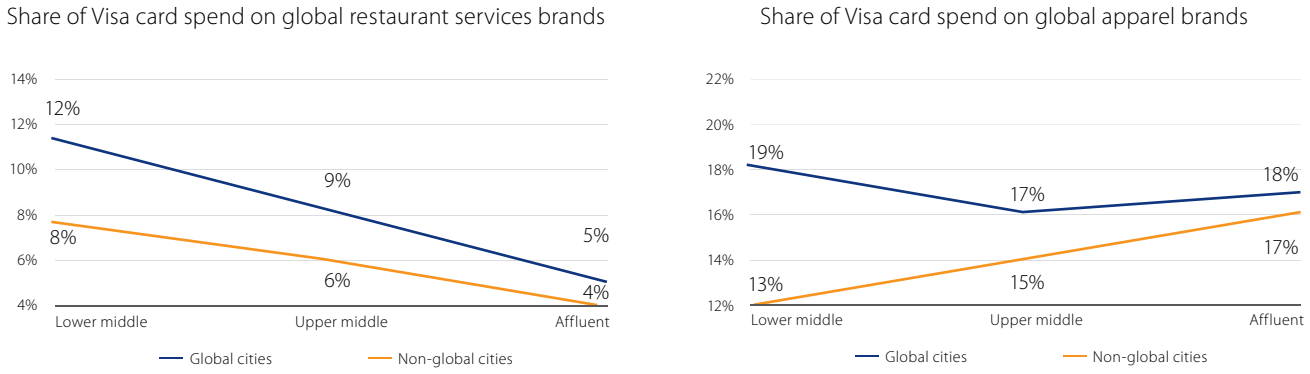

As income rises, people are more likely to spend money on global restaurant and apparel brands, according to the analysis,[10] and this holds true for both the most and the least global cities on the list (Fig. 5). Considering global restaurant brands in global cities, 61 percent of lower-middle-income consumers spend money on a global restaurant brand, but among affluent consumers, 79 percent do. In non-global cities, nearly twice as many affluent as lower-middle-income people buy global restaurant brands (59 percent vs. 34 percent).

For global apparel brands, the rise is even steeper as consumers climb the income curve. In global cities, 63 percent of affluent consumers spend some money at global apparel brands vs. 31 percent of lower-middle-income consumers. In non-global cities, the percentage soars from 21 percent to 55 percent. It should be noted that the data does not capture how often consumers spend money on global brands, or how much they spend. In fact, the story is different when we consider the share of restaurant and apparel spending at global brand merchants (as shown in the next section).

[9] Restaurants in this study encompass caterers, restaurants, bars, taverns, quick-service restaurants, specialty food stores, and other eating places.

[10] Using anonymized Visa payment card data, a list of top international restaurant and apparel brand merchants was identified. The analysis determined the percent of consumers spending money at these international brands, the share of consumer spending in these categories at global brands, and how these shares vary by income band in the global and non-global cities. Cities within the European Union are excluded from this analysis due to the General Data Protection Regulation (GDPR).

**Fig. 6: Share of consumer spending on global brands**
Source: Visa Business and Economic Insights




While consumers are more likely to spend some money at global brands as income rises, the share of their restaurant spending at global brands actually falls as incomes rise (Fig. 6). This decline is steeper in global cities (12 percent of restaurant spending for lower-middle income vs. 5 percent for affluent) than in the non-global cities (8 percent vs. 4 percent, respectively).

The implication appears to be that shopping at global apparel brands is aspirational for consumers in less globalized cities, and continues to rise with income. On the other hand, for consumers in more globalized cities, apparel spending shifts toward boutique, unbranded stores as incomes rise. Consumers continue to spend more on global apparel brands as they move from

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Overall, this is not surprising considering that most global restaurant brands tend to be fast food brands. This suggests that when people become affluent, dining in global food service outlets gives way to dining in specialty restaurants.

The apparel story is more complex than the restaurant one. In global cities, the share of apparel spending at global branded merchants is within a narrow 2 percent range. At the same time, this share rises with income in non-global cities (from 13 percent to 17 percent, respectively). Interestingly, affluent consumers are more similar across city types than their less affluent counterparts.

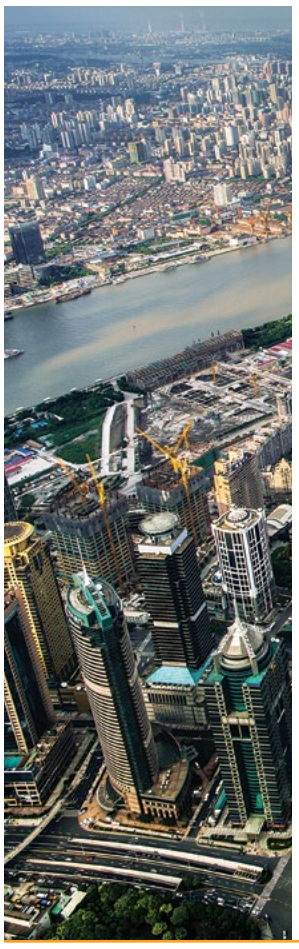
upper-middle to affluent income levels. Perhaps this is because non-global cities do not yet have a boutique-filled equivalent of New York's Madison Avenue. Yet for apparel as well as restaurants, differences between households in global vs. non-global cities narrow as incomes rise. That suggests there is a predictable share of total payment card spending that we can expect affluent urban consumers to devote to global brands.

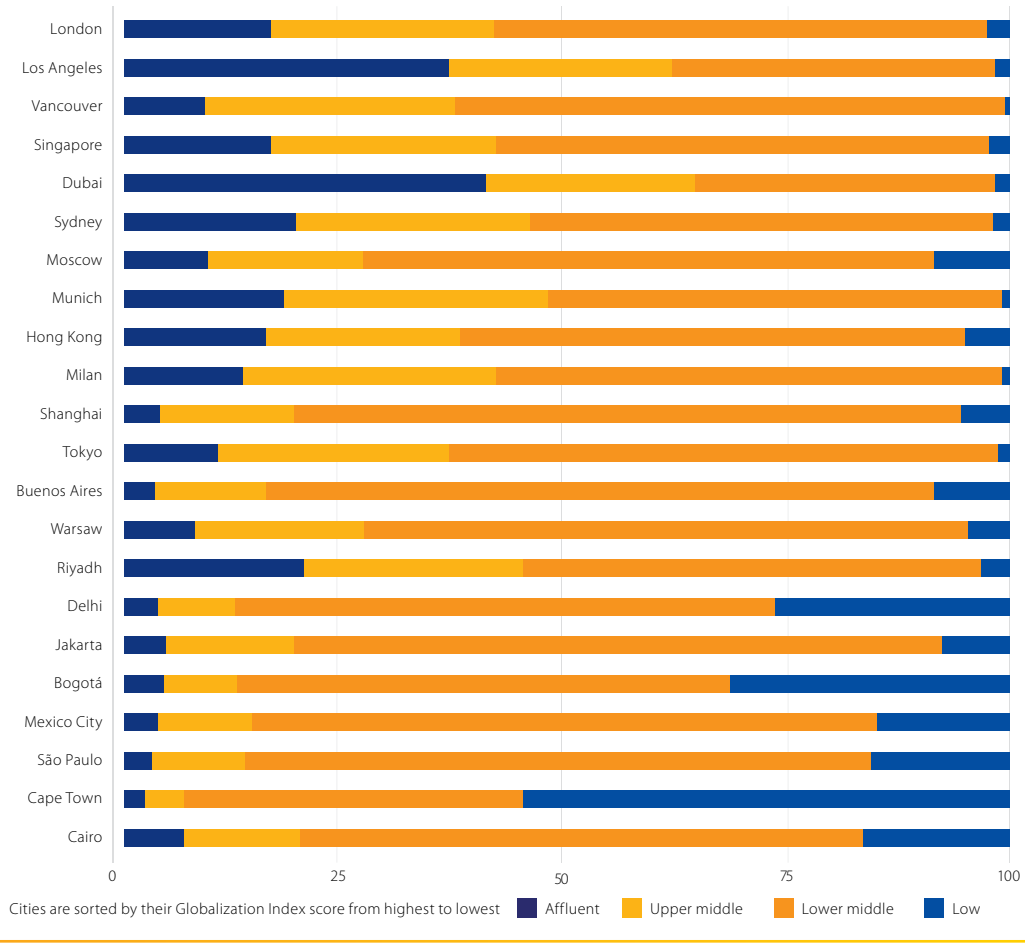
# 2. The expansion of the middle class should continue to foster greater global integration across cities

# Globalization's march forward came in lock step with the steady expansion of the global middle class. In this study, we estimate the middle class's current and potential impact on globalization, and size new market opportunities based on current growth expectations and trends.

Consider the leading city in each country. In nearly all of these cities, at least half of the population is either in the middle class or above (Fig. 7). India, for example, demonstrates cities' role as gateways to globalization: In Delhi, the middle class (upper and lower) accounts for 70 percent of the population vs. only 40 percent of the country as a whole.

**Fig. 7: Population by income segment and globalization level (2017, percent of total)**
Source: Visa Business and Economic Insights, Oxford Economics





Today, people living in global cities tend to skew toward the affluent to upper-middle class income ranges, whereas lower-middle income tends to dominate in non-global cities. As cities in the emerging markets continue to benefit from national and global economic growth, their middle class should continue to expand. Our baseline forecasts show that by 2030, income distribution in cities like Shanghai and Jakarta will match that in London today. Whether these cities will be as central to the global economy as London depends in part on the policies and investments they make today, such as opening up market opportunities for global and domestic businesses.

According to the baseline forecast for the 22 countries of focus in the study, annual consumer spending will rise by $15 trillion in constant dollars between 2016 and 2030. Global middle class household spending will drive more than 60 percent of this increase.

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## What does it mean to be in the middle class today?

While there are many approaches to segmenting populations by income, this study defines the middle class as those earning $12-$117 per day per household depending on where they live (adjusted for purchasing power parity).[11] These thresholds provide a simple, globally consistent standard and help to capture the majority of individuals who make up the global consuming class. They are also generally lower than the $20,000 per household per year cut-off used in a previous Visa study.[12] That previous threshold, while appropriate for understanding cross-border travel, would have excluded many active consumers in countries with lower domestic price levels and was not as useful for the purposes of this study.

The study forecasts middle class spending to grow at a compound annual growth rate of 2 percent between 2016 and 2030. This means that middle class households in the 103 cities included in this study will be spending $2 trillion more annually by 2030. Middle class spending in non-global cities should grow the fastest (Fig. 8). However, in terms of volume, the gains will be greatest among the globalizing cities, which will account for 44 percent of the incremental gains in spending, according to the forecast.

**Fig. 8: Growth of urban middle class consumer spending (2016-2030 by globalization level, compound annual growth rates in constant dollars)**
Source: Visa Business and Economic Insights, Oxford Economics


[11] See Appendix C for a more detailed discussion on the thresholds and how they were used to determine counts and spending by people in the various income segments.
[12] Visa, "Mapping the Future of Global Travel and Tourism," 2016 visa.com/travelinsights, p.2.

## 2.2 A tale of two groups of cities

Visa's index further paints a picture of how far various countries have traveled along the globalization path. Below is a list of the top 10 and bottom 10 cities according to the Globalization Index, limiting each group to one city per country from the 22 focus countries included in the study.[13]

The mass migration of people from poverty into the middle class will drive consumer spending in the coming decade, as households can afford more non-essential goods and services. As a result, middle class consumer spending in the most and least global cities in the index will look more similar in 2030 than it does today (see Fig. 10). Combining spending across a variety of categories into four key groups, the 6 percentage-point gap between the top 10 and bottom 10 cities' spending on essentials like food, clothing, housing, and transport shrinks to 4 percentage points in 2030. Additionally, the nine-point difference in spending on service luxuries (recreation, hospitality, and things like personal care) narrows to seven. The convergence is slow, to be sure, but it is happening.

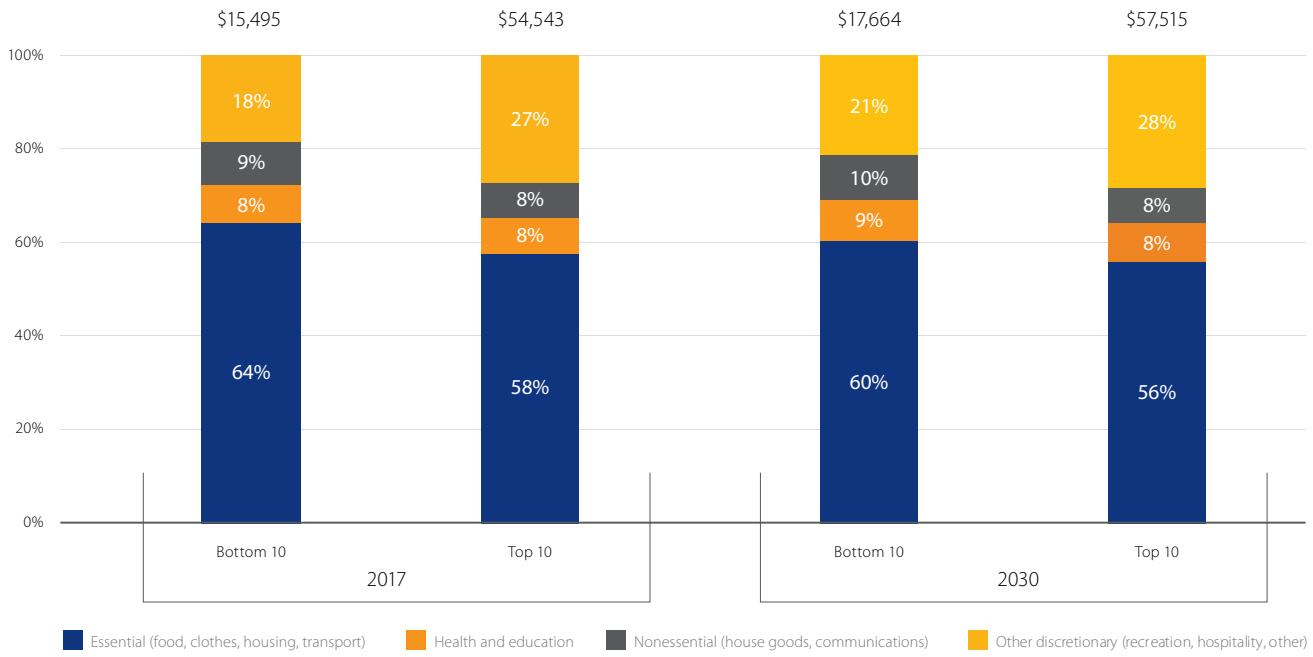
**Fig. 9: List of most and least global cities, 2017**
Source: Visa Business and Economic Insights, Oxford Economics

| Bottom 10 | Top 10* |
|---|---|
| Chongqing (China) | London (U.K.) |
| Yogyakarta (Indonesia) | Los Angeles (U.S.) |
| Natal (Brazil) | Vancouver (Canada) |
| Omsk (Russia) | Singapore |
| Visakhapatnam (India) | Dubai (UAE) |
| Port Elizabeth (South Africa) | Sydney (Australia) |
| Port Said (Egypt) | Moscow (Russia) |
| Barranquilla (Colombia) | Munich (Germany) |
| León (Mexico) | Hong Kong (China) |
| Córdoba (Argentina) | Milan (Italy) |

* Limited to one top city and one bottom city per country from the 22 focus countries included in the study.

[13] Some of the Globalization Index results may appear counter-intuitive. For example, New York and Beijing are global finance and business centers, yet according to the Index, they are slightly behind Los Angeles and Shanghai, respectively. This is because the Index measures how residents live in these cities. If a resident of one highly global city were to visit another, he or she would feel at home. One defining aspect of middle class living in the 21st century is the spread of electronic payments. On this metric, New York and Tokyo are behind other global cities, but both are working to close the gap by enabling cashless transactions.

**Fig. 10: Middle-income annual consumer spending (by category)[14]**
Source: Visa Business and Economic Insights, Oxford Economics




The forecast for specific goods and services paints an even more concrete picture of rising affluence in globalizing cities. For example, food's share of the middle class budget in the bottom 10 cities will be 15 percent smaller in 2030 than it is today. Conversely, spending on eating out will rise by 10 percent. The share of spending devoted to personal care will grow by 12 percent.

Spending shifts less dynamically in the top 10 cities of the Visa Globalization Index, where living standards are already high. Yet even in these cities, the forecast shows higher spending on hotels, recreation, household appliances, and other amenities of a middle class lifestyle in 2030 than today.

That is because consumers in these cities are getting richer, too. The percentage of high-income households in the 10 most global cities on the Index is forecast to reach 28 percent by 2030, from 22 percent in 2017, while middle-income households fall to 71 percent from 76 percent. Rising global prosperity does not just lift the poor into the middle class; it allows middle class consumers to join the ranks of the affluent.

As more people join the middle class in developing countries, their spending patterns will gradually come to resemble those in developed countries. In fact, over the past three years, the most significant shifts in spending among middle class consumers in the focus cities have occurred in the developing markets.

## Middle class consumption and age

As globalization proceeds, consumption patterns in emerging economies could look more and more like those in wealthy countries such as the U.S., the U.K., Canada, and Australia. Underlying the forecasting work was an analysis of spending patterns by age in these four developed markets, where household spending data by

As more people join the middle class in developing countries, their spending patterns will gradually come to resemble those in developed countries.

[14] Spending is categorized according to the United Nations' Classification of Individual Consumption According to Purpose (COICOP) system, which has 12 top level categories.

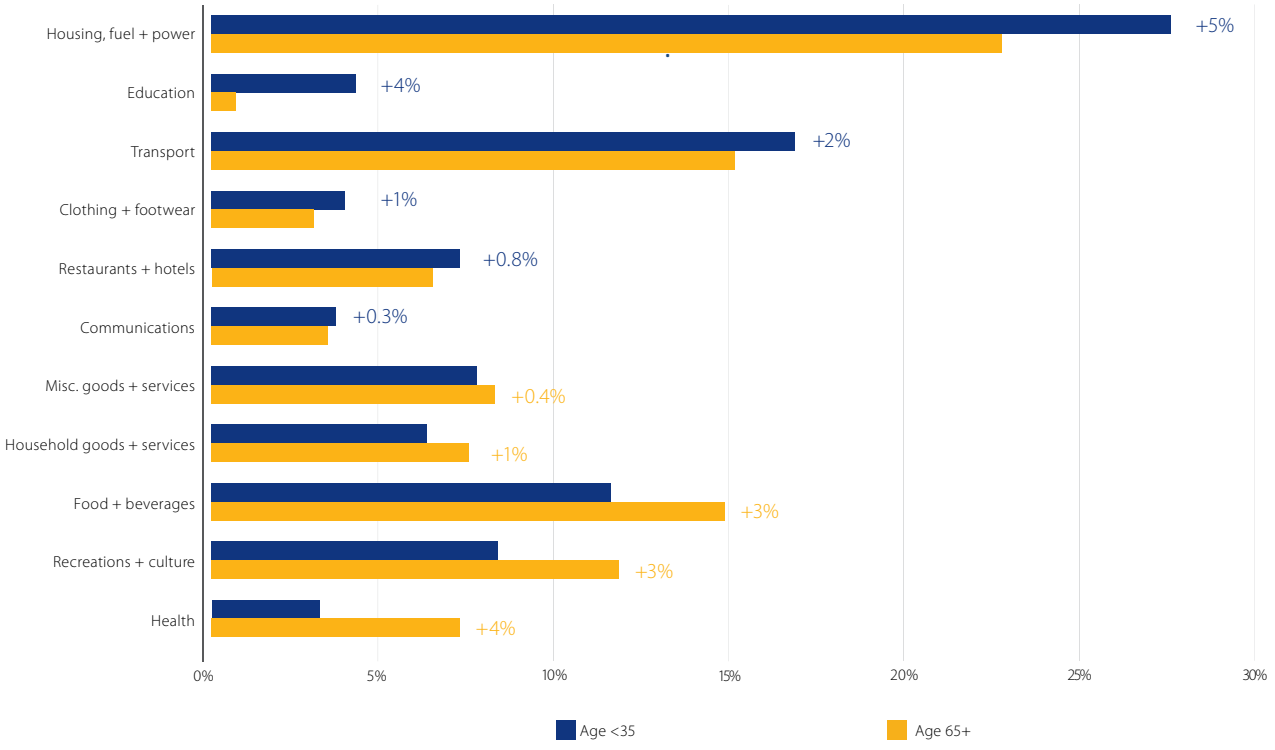
age and income are readily available. This analysis shows clear trends by age group that hint at how emerging-market consumers in different age groups will be spending their growing wealth several years from now.

> The most dramatic shift in spending as people age occurs in the housing and utilities category.

How do people's spending habits change as they get older? The most recently available data from these four countries confirm trends that seem intuitive: Middle class consumers over 65 spend a greater share of their income compared to younger people on health care, recreation, culture, food, and miscellaneous goods and services. Those under 35 spend a bigger chunk of income than older people on housing, education, clothing, restaurants, and hotels (see Fig. 11).

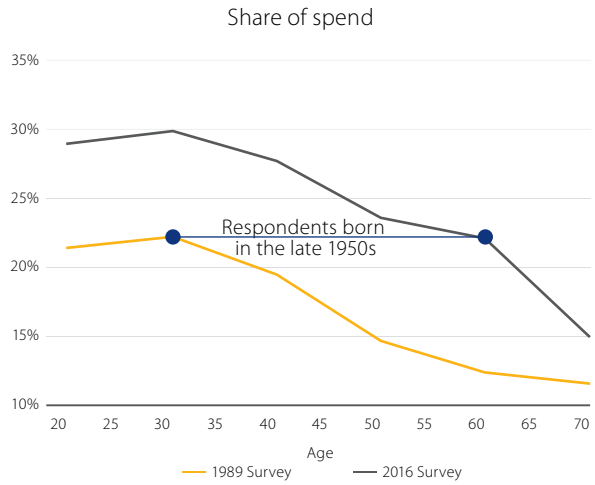
The most dramatic shift in spending as people age occurs in the housing and utilities category, in which spending falls from 28 percent for those under 35 to 23 percent of total spending for those over 65. A common perception is that as individuals age, they become more secure in their housing arrangements, and as they become empty nesters and/or approach retirement, they downsize to a smaller home.[15] However, holding income levels constant over time and looking at these older individuals' share of spending over time reveals a much different picture.

**Fig. 11: Share of middle class spending (2015/16 by age and category in the U.S., U.K., Canada, and Australia, percent difference)**
Source: Oxford Economics, national government sources




[15] The housing spending in Fig. 10 and Fig. 11 is intended to include implicit rent, i.e. annual "rent" payments that homeowners make to themselves reflecting the market value of their homes. However, the analysis is based on underlying national statistical sources that don't always take this into account. The Australia-specific analysis in Fig. 12 specifically does not include implicit rent, but rather actual housing payments, including rent and mortgage interest.

**Fig. 12: Australian middle class housing spending (by approximate birth year)**
Source: Australia Bureau of Statistics




Rising real estate prices drive up housing's share of total spending over time

Housing's share of total spending remains steady over a person's lifetime, especially for homeowners

To try to distinguish between declining housing spending as individuals age and increasing housing costs over time, Fig. 12 plots the same data from two different periods of the same Australian household expenditure survey, 1989 and 2016. Data from Australia had a sufficiently long time series to support this complete generational analysis. Data from the U.S. and Canada, although shorter in length, did corroborate the following findings. To control for shifts in income distribution and other changes, the analysis only looks at trends in housing costs for middle-income households (defined as those in the middle quintile by income in the survey).

Fig. 12 shows an unmistakable decline in housing spend share over the age profile. For example, in 1989, housing accounted for 21 percent of total spending for those in their 20s and 17 percent for those in their 70s. The survey from 2016 is almost a parallel shift upward from 1989 and shows the same declining trend: older respondents spend less on housing as a share of the total than younger respondents do. However, these two lines also show that middle class household budgets for housing as a share of total spending change very little over a lifetime, contrary to conventional wisdom.

Consider a person born in the late 1950s. In 1989, they would have been in their 30s and, according to the survey of that year, spent around 22 percent of their budget on housing. Fast forward to 2016, the same cohort would now be nearing their 60s, and the share of spend on housing would be 22 percent. It's not just at these two end-points that their share of spending was steady. In the intervening surveys conducted in 1999 and 2010, the share of spending on housing fluctuated only slightly between 19 and 22 percent.

These results are consistent with a story of expectation-setting, where young individuals form a view of how much housing should cost and then continue to spend that much over time. It appears that if a person buys a first home, where expenses eat up 35 percent of household spending, that cost level becomes an anchoring expectation throughout life. People may trade up to a bigger house in midlife, during their peak earning years and when their families grow, and then downsize in retirement when they shift to a fixed income and/or become empty nesters.

This trend is not unique to Australia, as a similar pattern can be observed in the U.S. and likely other advanced economies as well. Since housing costs are rising in the world's most global cities, these expenses are likely to keep squeezing consumers.

## 2.3 Two alternative futures for the global middle class

The baseline forecast of this study predicts a future of slow but steady convergence, in which, by 2030, middle-class spending in the world's most and least global cities looks more similar than it is today. However, the history of urban development over the last century has shown that not all cities necessarily converge. Aging populations—a powerful demographic force—combined with the concentration of job opportunities in a few cities could push some cities into decline over the forecast period, while others become hotbeds of innovation. On the other hand, the spread of information technologies, faster dissemination of ideas, and innovation could support faster convergence among cities. These two possibilities serve as the inspiration for two alternative scenarios to the baseline.

### Divergence

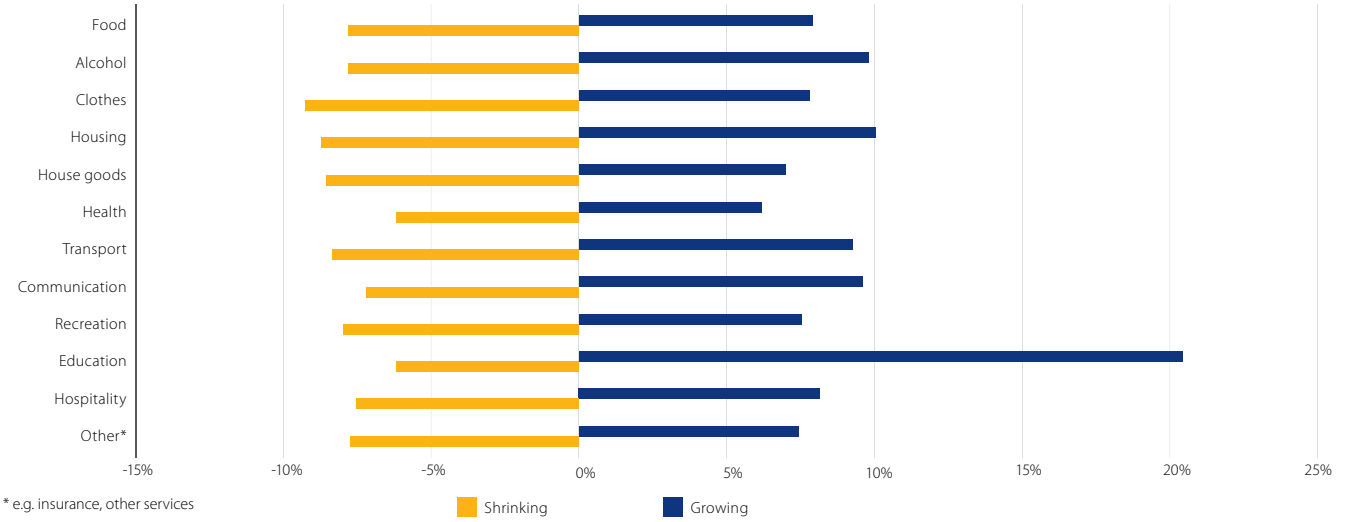
In this scenario, the focus cities are split into three groups. Thanks to factors including employment and housing, one group experiences a boom in young, working-age households, the second group suffers an outflow of such households, and the third group has no change at all. As a result, cities in the first group enjoy dynamic economic growth, while those in the second group shrink. A total of 64 cities fall within these two groups.

Essentially, this scenario assumes that by 2030, global urban centers will include those that are clearly growing above and below average, referred to as "growing" and "shrinking" cities, respectively.

Under the divergence scenario, the growing cities (39) include developing-country cities like Guadalajara (Mexico) and Chengdu (China), as well as developed-country cities like Berlin (Germany) and Brisbane (Australia). Shrinking cities—25 cities experiencing an outflow of working-age households—also cover both developed and developing economies, e.g. Cali in Colombia and Cincinnati in the U.S.[16] Fig. 13 shows average changes in 2030 consumption in growing and shrinking cities, compared with our baseline forecast. The largest increase in growing cities is in education (20 percent more than baseline), followed by housing and alcohol (10 percent each). Decreases in shrinking cities show more consistency, but the largest declines relative to the baseline are in clothing (9 percent) and housing.

A sobering takeaway from this scenario is that in some spending categories, the shrinking cities lose more than the growing cities win. For example, recreation spending by middle class consumers dwindles by more than 8 percent relative to the baseline in shrinking cities, but increases by over 5 percent in growing cities.

**Fig. 13. Divergence Scenario: Changes in middle class consumption for growing and shrinking cities in 2030 (relative to the baseline scenario)**
Source: Oxford Economics




* e.g. insurance, other services

[16] Please see Appendix D for a complete list of cities.

## Convergence

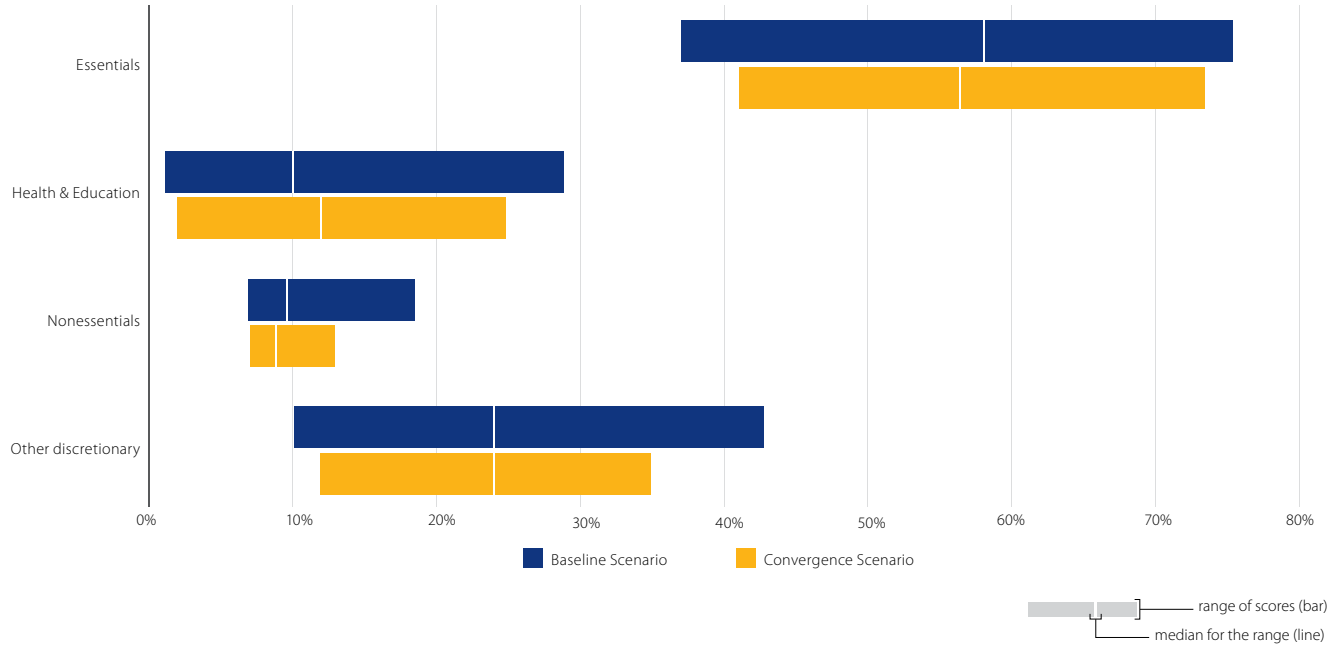
In this scenario, cities are first separated into five demographic groups reflecting their age profile. Within each group, the consumption patterns converge to match the most global cities (according to the Index) within each group. This scenario focuses on what people spend on; overall levels of income and spending remain unchanged.

By contrast, in the convergence scenario, spending in all categories comes to resemble the patterns seen in our most global cities. Fig. 14 shows how the distribution of spending in the 64 cities tightens, relative to the baseline forecast. While there is convergence (meaning a narrower range of values), there is also a general increase in health and education spending (as evidenced by the rightward shift of the median value), with smaller declines in median spend shares in each of the other categories, especially essentials.

As might be expected, the least global cities in the index stand to gain the most from convergence. For example, in the baseline forecast, the bottom 10 cities from the index will devote 63 percent of spending to essentials in 2030; under the convergence scenario, that percentage falls to 56 percent. For the most global cities, spending on essentials stays level at 57 percent. Similarly, the least global cities spend much more on health and education under the convergence scenario (13 percent) than in our baseline forecast for 2030 (5 percent).

While the baseline results remain the most likely outcome, the possibility of a future resembling the divergence or convergence scenario will likely come down to technology's role in continuing to connect cities around the globe. Will this progress make location ever more meaningless, so that workers in current non-global cities can aspire to the productivity, and with it the consumption habits, of those in the core; or does it result in agglomeration of the most productive workers and industries in Silicon Valley-like hot spots, with the remaining shrinking cities left to wither? Which of these possibilities comes to pass in the future will be the difference between whether Keynes' home shopper, sipping tea in bed while ordering goods from far-off lands, can be expected only in a few top metropolises, or in every corner of the world.

**Fig. 14. Convergence Scenario: Distribution of 2030 household spending shares***
Source: Oxford Economics. * Spending is categorized according to the United Nations' Classification of Individual Consumption According to Purpose (COICOP) system, which has 12 top level categories.



# Appendix

# Appendix A: Globalization Index Methodology

The Visa Globalization Index draws on anonymized transaction data from Visa-branded cards at the city and country levels, as well as Oxford Economics' global cities database of macroeconomic data and other official sources.[17] The index was built on five pillars, each with one to four metrics. These metrics were normalized among the cities in our 22 focus countries, so that 0 represents the 5th percentile and 100 the 99th percentile scores. The pillars and their weightings are:

- **Middle class (25 percent).** A vibrant middle class and urban affluence create larger and stronger markets. Cities, because of the potential for scale, allow people to work more productively and earn higher wages than they would in less dense, rural areas. The link between population density and earnings is particularly strong in cities with large export-oriented industries that sustain a big middle class, which is why a city's size of middle class is included as one metric of its globalization level.

- **Travel (25 percent).** Cities that attract large numbers of tourists benefit from faster economic and job growth. This globalization pillar includes both the number and diversity of foreign visitors to the focus cities as key metrics, leveraging Visa's VISIT data.[18]

- **Trade (20 percent).** Cities more connected to global trade have greater growth opportunities, and companies based there can more easily spread costs across global markets. The economies of scale are even stronger with digital goods (goods that are stored, delivered, and used in an electronic format), where fixed costs are high but marginal costs are low. Therefore, this globalization pillar uses a city's size of trade, storage, and Information and Communications Technologies industry as a key metric, measured as a share of a city's employment and its gross output.

- **Digital payments (20 percent).** Digital payments facilitate adoption and spread of new technologies and new forms of commerce. These extend retailers' reach beyond the existing infrastructure, which can in turn speed the convergence of smaller cities with world capitals. We use Visa data to measure three metrics of payments connectivity, including the density of payment card transactions, share of purchases that take place online, and the intensity of card usage by cross-border visitors.

- **Brands (10 percent).** Visa data was used to measure the percentage of payment card spending on global brands in apparel stores and restaurants as another metric for globalization, with greater prevalence of multinational brands indicating a more globalized city. Brands were defined as being global if they operated in at least three countries and in no single country did their sales exceed 85 percent of their total sales.

The resulting averages were then mapped onto an index ranging from 1 to 15 for each pillar, where an index value between 1-5 represents cities that received a score equal to or lower than a third that of the best city, 6-10 represent scores within one-third and two-thirds of the top score, and 11-15 represents top ranking cities whose average scores fell within a third of the highest score. Each point increment on the index then roughly corresponds to a 5-point difference in the average pillar score.

[17] Government data from national statistical agencies was used to calculate the area size of cities in each country. Complete list of agencies available upon request.

[18] Visa International Travel (VISIT) platform combines Visa's anonymized cardholder data with publicly-available cross-border arrival statistics to provide a comprehensive view into high-frequency cross-border travel flows. VISIT combines unique counts of Visa cardholders that register a face-to-face transaction at a merchant outside their home country in a given calendar month with other transaction data, such as average spend per cardholder, card usage patterns at lodging merchants, and others. Visa uses this data to econometrically model official arrival statistics compiled by various government sources and to generate estimates that fill in the large gaps existing in the cross-border travel data.

# Appendix B: Globalization Index scores (2017, by globalization sub-indices and total)

## Global

| Country | City | Overall | Trade | Middle Class | Travel | Payments | Brands |
|---|---|---|---|---|---|---|---|
| United Kingdom | London | 15 | 15 | 15 | 15 | 14 | 13 |
| United States | Los Angeles | 15 | 15 | 15 | 15 | 15 | 12 |
| Canada | Vancouver | 15 | 15 | 15 | 12 | 15 | 15 |
| Singapore | Singapore | 15 | 13 | 15 | 15 | 11 | 12 |
| Canada | Toronto | 15 | 15 | 15 | 11 | 14 | 15 |
| United States | New York | 15 | 15 | 15 | 15 | 12 | 11 |
| United States | Las Vegas | 15 | 12 | 15 | 15 | 12 | 12 |
| United States | Miami | 15 | 15 | 15 | 15 | 9 | 14 |
| UAE | Dubai | 14 | 13 | 15 | 15 | 7 | 11 |
| United States | San Francisco | 14 | 15 | 15 | 12 | 11 | 10 |
| Australia | Sydney | 14 | 15 | 15 | 12 | 15 | 10 |
| United States | Washington D.C. | 14 | 15 | 15 | 8 | 14 | 12 |
| Russia | Moscow | 14 | 14 | 13 | 15 | 10 | 13 |
| United States | Chicago | 13 | 15 | 15 | 8 | 11 | 13 |
| Germany | Munich | 13 | 14 | 14 | 15 | 4 | 14 |
| United States | Seattle | 13 | 15 | 15 | 5 | 14 | 11 |
| China | Hong Kong | 13 | 13 | 15 | 14 | 9 | 10 |
| Italy | Milan | 13 | 15 | 14 | 15 | 3 | 10 |
| United States | Salt Lake City | 13 | 15 | 15 | 3 | 14 | 10 |
| Germany | Frankfurt | 12 | 15 | 13 | 13 | 5 | 14 |
| Italy | Rome | 12 | 15 | 12 | 15 | 2 | 9 |
| Australia | Melbourne | 12 | 11 | 15 | 8 | 15 | 9 |
| United States | Atlanta | 12 | 15 | 15 | 4 | 9 | 11 |
| United States | Dallas | 12 | 15 | 15 | 3 | 11 | 12 |
| China | Shanghai | 11 | 15 | 7 | 15 | 6 | 10 |
| Germany | Berlin | 11 | 13 | 9 | 15 | 4 | 13 |
| Canada | Calgary | 11 | 13 | 15 | 2 | 11 | 13 |
| UAE | Abu Dhabi | 11 | 9 | 15 | 12 | 4 | 9 |
| Japan | Tokyo | 11 | 14 | 12 | 15 | 6 | 3 |
| Russia | St. Petersburg | 11 | 11 | 9 | 15 | 7 | 8 |
| Canada | Montréal | 11 | 14 | 13 | 6 | 10 | 12 |
| China | Beijing | 11 | 15 | 6 | 15 | 5 | 9 |
| United States | Austin | 11 | 12 | 15 | 2 | 13 | 10 |
| United States | Detroit | 11 | 14 | 15 | 3 | 10 | 9 |

# Appendix B: Globalization Index scores (2017, by globalization sub-indices and total)

## Globalizing

| Country | City | Overall | Trade | Middle Class | Travel | Payments | Brands |
|---|---|---|---|---|---|---|---|
| Argentina | Buenos Aires | 10 | 9 | 7 | 15 | 8 | 10 |
| Poland | Warsaw | 10 | 15 | 9 | 15 | 1 | 9 |
| China | Guangzhou | 10 | 15 | 8 | 12 | 6 | 10 |
| Saudi Arabia | Riyadh | 10 | 1 | 15 | 15 | 1 | 5 |
| United Kingdom | Cardiff | 10 | 7 | 12 | 5 | 14 | 15 |
| United Kingdom | Glasgow | 10 | 11 | 12 | 6 | 8 | 15 |
| United Kingdom | Liverpool | 10 | 11 | 11 | 5 | 11 | 15 |
| Australia | Brisbane | 10 | 8 | 15 | 5 | 12 | 8 |
| United States | Pittsburgh | 10 | 13 | 15 | 1 | 9 | 10 |
| United States | Cincinnati | 10 | 13 | 15 | 1 | 8 | 8 |
| India | Delhi | 9 | 15 | 10 | 6 | 6 | 11 |
| Japan | Osaka-Kyoto | 9 | 8 | 12 | 15 | 3 | 5 |
| Saudi Arabia | Mecca | 9 | 1 | 15 | 15 | 1 | 1 |
| Australia | Adelaide | 9 | 6 | 15 | 3 | 13 | 6 |
| UAE | Sharjah | 9 | 11 | 15 | 3 | 5 | 5 |
| India | Bengaluru | 9 | 12 | 7 | 8 | 12 | 4 |
| China | Shenzhen | 9 | 10 | 10 | 12 | 3 | 8 |
| Saudi Arabia | Jeddah | 9 | 1 | 15 | 15 | 1 | 4 |
| Indonesia | Jakarta | 9 | 6 | 14 | 10 | 2 | 10 |
| Colombia | Bogotá | 8 | 12 | 6 | 7 | 10 | 10 |
| Mexico | Mexico City | 8 | 10 | 12 | 6 | 5 | 9 |
| Brazil | São Paulo | 8 | 12 | 9 | 6 | 10 | 3 |
| South Africa | Cape Town | 8 | 13 | 2 | 15 | 2 | 11 |
| South Africa | Johannesburg | 8 | 12 | 2 | 15 | 4 | 10 |
| Italy | Turin | 8 | 11 | 13 | 5 | 3 | 7 |
| Italy | Naples | 8 | 8 | 10 | 13 | 2 | 4 |
| India | Mumbai | 8 | 12 | 6 | 7 | 8 | 5 |
| Germany | Leipzig | 8 | 12 | 8 | 4 | 4 | 14 |
| Poland | Cracow | 7 | 7 | 7 | 14 | 1 | 9 |
| Brazil | Brasília | 7 | 10 | 13 | 2 | 6 | 2 |
| Egypt | Cairo | 7 | 7 | 10 | 9 | 1 | 9 |
| China | Suzhou | 7 | 2 | 15 | 6 | 2 | 4 |
| China | Hangzhou | 7 | 8 | 11 | 5 | 3 | 6 |
| Mexico | Monterrey | 6 | 7 | 13 | 1 | 5 | 8 |
| Brazil | Rio de Janeiro | 6 | 10 | 6 | 6 | 6 | 1 |
| Japan | Nagoya | 6 | 4 | 14 | 4 | 2 | 2 |
| China | Xian | 6 | 12 | 5 | 5 | 2 | 5 |
| India | Pune | 6 | 11 | 5 | 3 | 8 | 1 |
| India | Chennai | 6 | 11 | 2 | 5 | 9 | 1 |
| Japan | Sapporo | 6 | 6 | 9 | 4 | 3 | 4 |

# Appendix B: Globalization Index scores (2017, by globalization sub-indices and total)

## Non-global

| Country | City | Overall | Trade | Middle Class | Travel | Payments | Brands |
|---|---|---|---|---|---|---|---|
| Mexico | Puebla | 5 | 7 | 8 | 2 | 3 | 8 |
| Colombia | Medellín | 5 | 7 | 3 | 3 | 6 | 8 |
| Poland | Lódz | 5 | 6 | 7 | 4 | 1 | 9 |
| Mexico | Guadalajara | 5 | 4 | 10 | 1 | 2 | 9 |
| Russia | Nizhny Novgorod | 5 | 7 | 6 | 2 | 5 | 3 |
| Colombia | Cali | 5 | 8 | 3 | 2 | 7 | 6 |
| Egypt | Alexandria | 5 | 5 | 11 | 2 | 2 | 1 |
| Argentina | Córdoba | 5 | 12 | 2 | 2 | 1 | 9 |
| Indonesia | Surabaya | 5 | 1 | 12 | 3 | 1 | 5 |
| Brazil | Belo Horizonte | 5 | 7 | 4 | 3 | 7 | 1 |
| Mexico | León | 5 | 3 | 11 | 1 | 2 | 9 |
| China | Chengdu | 5 | 8 | 5 | 4 | 1 | 3 |
| Colombia | Barranquilla | 4 | 7 | 3 | 2 | 7 | 6 |
| Russia | Kazan | 4 | 5 | 6 | 2 | 4 | 3 |
| Indonesia | Medan | 4 | 7 | 9 | 1 | 1 | 4 |
| Egypt | Port Said | 4 | 7 | 10 | 2 | 1 | 1 |
| South Africa | Durban | 4 | 9 | 1 | 4 | 1 | 11 |
| Brazil | Pôrto Alegre | 4 | 8 | 5 | 2 | 3 | 1 |
| India | Agra | 4 | 4 | 3 | 4 | 3 | 6 |
| India | Kochi | 4 | 6 | 2 | 3 | 3 | 7 |
| South Africa | Port Elizabeth | 3 | 9 | 1 | 3 | 1 | 13 |
| India | Kolkata | 3 | 6 | 1 | 3 | 6 | 1 |
| China | Shenyang | 3 | 8 | 3 | 3 | 1 | 1 |
| Brazil | Manaus | 3 | 2 | 7 | 2 | 1 | 1 |
| Russia | Omsk | 3 | 6 | 4 | 1 | 4 | 2 |
| India | Visakhapatnam | 3 | 6 | 1 | 1 | 2 | 5 |
| Brazil | Natal | 2 | 6 | 1 | 1 | 4 | 1 |
| Indonesia | Yogyakarta | 2 | 2 | 1 | 3 | 2 | 5 |
| China | Chongqing | 1 | 3 | 1 | 2 | 1 | 1 |

# Appendix C: Methodology for baseline forecasts

Oxford Economics provided baseline forecasts for 103 cities, using its Global Cities 2017 data to estimate the number of households, income, and consumption through 2030. Oxford Economics also provided detailed forecasts of consumption by product and service category using level 1 and level 2 classifications based on the United Nations' Classification of Individual Consumption According to Purpose (COICOP) system. Where available, information from household expenditure surveys was also included in the modeling process.

Brookings Institute definitions of middle class income were used in the study: $11 to $110 per person per day using purchasing power parity for 2011, which becomes $12 to $117 per person per day in 2016 purchasing power parity terms. This range is then translated into an annual per-household spend (in local currency), using average household size from Oxford Economics data.

Oxford Economics also estimated total income and consumption for each area, using national accounts data where available. In the absence of reliable data for the components of income, Oxford applied a ratio of private savings to total private consumption. In the absence of private consumption data, Oxford derived the estimates using an equation that reflects the higher savings rate in cities with higher per capita income. Sub-national forecasts were produced within Oxford Economics' global economic modeling framework, allowing comparability between cities in different countries.

Oxford produced detailed consumption by COICOP categories and income bands (low, lower-middle, upper-middle, and affluent). Average consumption profiles were adjusted from Global Cities 2017 to produce income-specific spending profiles, using information from country-specific household expenditure surveys. Where such survey data were lacking, proxy-country assumptions were used. Consumption profiles were also adjusted to account for age. COICOP spending by income and age data from household expenditure surveys were used to estimate the impact of age on consumption by product and service.

The number of households by income band is based on a log-normal distribution.

# Appendix D: Cities assumptions for divergence scenario

| Growing | |
|---|---|
| Australia | Brisbane |
| | Melbourne |
| Canada | Toronto |
| | Vancouver |
| China | Beijing |
| | Chengdu |
| | Guangzhou |
| | Hangzhou |
| | Hong Kong |
| | Shanghai |
| | Shenzhen |
| Germany | Berlin |
| | Munich |
| India | Bengaluru |
| | Delhi |
| | Kochi |
| Indonesia | Jakarta |
| Italy | Milan |
| | Rome |
| Japan | Tokyo |
| Mexico | Guadalajara |
| | Mexico City |
| | Monterrey |
| Poland | Warsaw |
| Russia | Moscow |
| | St. Petersburg |
| Saudi Arabia | Jeddah |
| | Riyadh |
| Singapore | Singapore |
| South Africa | Cape Town |
| | Johannesburg |
| UAE | Abu Dhabi |
| | Dubai |
| United Kingdom | London |
| United States | Atlanta |
| | Austin |
| | Dallas |
| | San Francisco |
| | Seattle |

| Shrinking | |
|---|---|
| Argentina | Córdoba |
| Australia | Adelaide |
| Brazil | Pôrto Alegre |
| Canada | Montréal |
| China | Shenyang |
| | Xian |
| Colombia | Cali |
| Germany | Leipzig |
| India | Kolkata |
| Indonesia | Yogyakarta |
| Italy | Naples |
| Japan | Osaka-Kyoto |
| | Sapporo |
| Mexico | León |
| Poland | Lódz |
| Russia | Nizhny Novgorod |
| | Omsk |
| Saudi Arabia | Mecca |
| South Africa | Port Elizabeth |
| UAE | Sharjah |
| United Kingdom | Liverpool |
| United States | Chicago |
| | Cincinnati |
| | Detroit |
| | Pittsburgh |

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Additional data is available to Visa clients by request, including consumer spending forecasts by city, household income segment, and spending category under the baseline and alternative scenarios. For assistance, please contact your Visa account representative.