

#### Inclusive Growth Score<sup>™</sup> Methodology

#### INTRO

The Inclusive Growth Score is a public-access, web-based service that enables users to learn about measures of inclusion and growth within census tracts across the United States. The Score is a means by which users can benchmark existing levels of inclusion and growth within census tracts, and by which they can measure whether actions, policies, and investments increased or decreased measures of inclusive growth.

The map presents an Inclusive Growth Score for each census tract. The Score is based on 18 metrics from multiple data sources, including census data, firmographic data from 3rd parties, and anonymized and aggregated Mastercard transaction data (see <u>DATA SOURCES</u> for more details). The Score ranks a given census tract in comparison to census tracts across the country, within the same state, and the same level of urbanization as measured by the USDA Urban-Rural Continuum (see <u>BENCHMARKING</u> for more details). The higher a census tract's Inclusive Growth Score, the greater the composite parts of inclusion and growth (see <u>SCORE</u> <u>METHODOLOGY</u> below for more details)

#### SCORE METHODOLOGY

The Inclusive Growth Score is composed of three pillars: Place, Economy, and Community. Pillars are composed of Growth (level of change) and Inclusion (rate/distribution) metrics. The measures of Growth provide detailed views into how communities are changing over time. While measures of inclusion are static figures speaking to the accessibility of resources or community assets. For more details on which metrics classify as Growth and Inclusion, please see <u>PILLARS / METRICS</u> below.

The Inclusive Growth Score, Pillars, and underlying metrics are transformed into percentile ranks (0-100) relative to a user selected base (see <u>BENCHMARKING</u> for more details). To calculate the ranks, all census tracts are rank ordered according to the metric value. The Score is calculated by taking the tract's relative position, divided by the total number of tracts in the benchmark, and multiplied by 100. An illustrative example of the calculation –

Track 1, Metric A's rank = 500 Total number of tracts in Track 1's State = 1000 Score = 500/1000 \* 100 = 50



The average score, as in the illustrative example above, is 50. Per metrics, the distribution of values varies greatly. Across the 18 metrics powering the Inclusive Growth Score, some metrics have even distributions, wide variation, and tight distribution.

The Place, Economy, and Community Pillar values are the average value of the pillar's six metrics. The Inclusion and Growth Metric Type values are the average value of each of the underlying corresponding metrics. The average of the metric percentiles across the two metric types (Inclusion and Growth) produces the Inclusive Growth Score. Scores are distributed equally on the map into 5 equal color bins from red (lowest score) to green (highest score). Each color bin has an equal (1/5th) number of census tracts represented.

For Inclusion metrics the Score follows the ranking calculation detailed above. For Growth metrics, the score is a weighted average of the ranking in the base year (2017) and the ranking in the recent year.

$$Growth = \frac{1}{3} * Rank for Base Year + \frac{2}{3}Rank(\frac{Recent Year - Prior Year}{Prior Year})$$

The weighting of the base year helps account for magnitudes of growth based on census tracts varying 'starting points' in recent years, beginning with IGS's starting year (2017). For example, census tracts with very little commerce will exhibit high magnitudes of growth (on the scale of +100%) as the starting level of commerce is so small, whereas more commerce heavy tracts will likely show slower progression. This calculation enables a measure of relative improvement, with a common anchor used for each new year of data available. As a result of this calculation, it is common to see Growth measures with metric values greater than the benchmark, but a Score lower than 50; this is a direct consequence of the baseline weighting detailed above. For example, per the screenshot below, Personal Income in St. Louis tract 29510126600 grew 41.3% from 2018 to 2019, in comparison to the 9.6% average growth across the United States. The Personal Income Score is 35 – this indicates that though this community in St. Louis has seen substantial growth, the starting personal income was low.





For each of the 18 metrics, there is a Score as well as the underlying data, presented in the units of the measure.

The Inclusive Growth Score is constructed to deliver a yearly release. For metrics with missing years, data is pulled from the adjacent prior year. For ACS survey metrics, multi-year aggregation is applied to normalize the survey data and scores applied to the year following the latest survey date. For Mastercard data, metrics reflect the year selected (See <u>METRIC</u> <u>FORMULAS</u> for more information).



#### BENCHMARKING

Within the platform, the 'Compare With' functionality enables three calculations of the Score: USA, State, Urban – Rural. The Score ranks a given census tract in comparison to census tracts across the country, within the same state, and the same level of urbanization as measured by the USDA Urban-Rural Continuum.

The USDA Urban – Rural Continuum is a scale of 1 through 9 measuring the population size and metro designation of each county in the US.<sup>1</sup>

- 1: Metro Counties in metro areas of 1 million population or more,
- 2: Metro Counties in metro areas of 250,000 to 1 million population,
- 3: Metro Counties in metro areas of fewer than 250,000 population,
- 4: Nonmetro Urban population of 20,000 or more, adjacent to a metro area
- 5: Nonmetro Urban population of 20,000 or more, not adjacent to a metro area
- 6: Nonmetro Urban population of 2,500 to 19,999, adjacent to a metro area
- 7: Nonmetro Urban population of 2,500 to 19,999, not adjacent to a metro area
- 8: Nonmetro Completely rural or less than 2,500 urban population, adjacent to a metro area
- 9: Nonmetro Completely rural or less than 2,500 urban population, not adjacent to a metro area

Note: Puerto Rican census tracts only have the state benchmark (relative to Puerto Rico) figures for Spend Growth and Spending per Capita metrics.

<sup>&</sup>lt;sup>1</sup> https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx

For questions, more details, or feedback, please contact inclusivegrowthscore@mastercard.com.



#### DATA SOURCES

<u>Mastercard</u> – Mastercard is a leading global payments & technology company that connects consumers, businesses, merchants, issuers & governments around the world. The Inclusive Growth Score includes insights based on Mastercard's anonymized and aggregated transaction and merchant location data

Leading POI (point of interest) data providers for firmographic data – POI providers have vital information on owner diversity and commercial diversity not publicly available or present in Mastercard's aggregated and anonymized transaction data

<u>PAD</u> – The U.S. Geological Survey Protected Areas Dataset (PAD) is America's official national inventory of U.S. terrestrial and marine protected areas that are dedicated to the preservation of biological diversity and to other natural, recreation and cultural uses, managed for these purposes through legal or other effective means. The Inclusive Growth Score limits PAD location that are Open Access, used to supplement the Trust for Public Land dataset.

<u>HUD</u> – The United States Department of Housing and Urban Development (HUD) is a Cabinet department in the Executive branch of the United States federal government. The Inclusive Growth Score uses HUD's Labor Force Engagement Index.

<u>ACS\*</u> – The American Community Survey (ACS) is the premier source for information about America's changing population, housing and workforce. The Inclusive Growth Score uses several data points from ACS including percentage of affordable housing and internet access.

FFIEC – The Federal Financial Institutions Examination Council (FFIEC) is a formal U.S. government interagency body composed of five banking regulators that is "empowered to prescribe uniform principles, standards, and report forms to promote uniformity in the supervision of financial institutions". The Inclusive Growth Score leverages a metric on the change in number of business loans.

\*Note: With the changes with census tract boundaries from 2010 to 2020 and ACS 2016 – 2020 5-year estimate data reflecting the updated boundaries, the Inclusive Growth Score continues to use 2010 census tract boundaries. ACS 2020 data was transformed to fit 2010 boundaries according to the following logic:

1. For census tracts that remain unchanged, no transformation was done



- 2. For census tracts that got grouped into a larger tract from 2010 to 2020, the 2020 'parent' value was applied to the 2010 boundary
- 3. For census tracts that got divided into a smaller number of tracts from 2010 to 2020 (or had some combination of sums and divisions), an area weighted average metric value of all 2020 tracts was applied to the 2010 boundary

Additionally, given the larger margins of error (MOE) for the 2016-2020 ACS survey, we removed data for any tracts where the coefficient of variation (calculated as MOE/(1.645\*Estimate)) was greater than 40%. The exceptions to this include the Residential Real Estate Value and the Early Education Enrollment metrics, where the threshold was set to 100% due to even higher MOE.

Please contact us at inclusivegrowthscore@mastercard.com for more details.



PILLARS / METRICS

# **PLACE**

Housing, infrastructure, and the built environment

# **NET OCCUPANCY – Growth Metric**

Percentage growth in population of renter and owner-occupied housing units Source: ACS 5-Year, Table B25008

# **RESIDENTIAL REAL ESTATE VALUE – Growth Metric**

Percentage growth of value of residential real estate Source: ACS 5-Year, Table B25082

# ACRES OF PARK LAND – Inclusion Metric

Percentage of designated tract land area that is park land Source: PAD-US-AR

#### **AFFORDABLE HOUSING – Inclusion Metric**

Percentage of renter and owner-occupied housing units where monthly costs are lower than 30 percent of income Source: ACS 5-Year, Table B25106

#### **INTERNET ACCESS – Inclusion Metric**

Percentage of households with an internet subscription Source: ACS 5-Year, Table B28011

#### **TRAVEL TIME TO WORK – Inclusion Metric**

Percentage of workers with travel time to work under 35 minutes Source: ACS 5-Year, Table B08303



# **ECONOMY**

Business growth, jobs, and spending

#### **NEW BUSINESSES – Growth Metric**

Percentage growth of net new businesses based on anonymized and aggregated location data Source: Mastercard Places

#### **SPEND GROWTH – Growth Metric**

Percentage growth of spending based on anonymized and aggregated indexed transaction data Source: Mastercard GeoInsights

#### **SMALL BUSINESS LOANS – Growth Metric**

Percentage growth of the number of small business loans Source: FFIEC

#### MINORITY/WOMEN OWNED BUSINESSES – Inclusion Metric

Percentage of minority or women-owned businesses out of all businesses Source: Commercial Data Provider

#### LABOR MARKET ENGAGEMENT INDEX – Inclusion Metric

Index representing the combined employment, labor force participation, and percentage with bachelor's degree Source: HUD, ACS 5-Year Table B23025

#### **COMMERCIAL DIVERSITY – Inclusion Metric**

Percentage of industries represented Source: POI Provider

# **COMMUNITY**

Economic and social conditions

#### **PERSONAL INCOME – Growth Metric**



Percentage growth of per capita income Source: ACS 5-Year, Table B19301

### **SPENDING PER CAPITA – Growth Metric**

Percentage growth of average spend per account based on anonymized and aggregated indexed transaction data Source: Mastercard GeoInsights

# **GINI COEFFICIENT – Inclusion Metric**

Gini coefficient of income inequality (lower coefficient denotes lower inequality) represented through a percentage Source: ACS 5-Year, Table B19083

# EARLY EDUCATION ENROLLMENT – Inclusion Metric

Percentage of population under the age of five enrolled in early education programs Source: ACS 5-Year, Tables B14001, B01001

# FEMALE ABOVE POVERTY – Inclusion Metric

Percentage of females living above the poverty Source: ACS 5-Year, Table B17001

#### HEALTH INSURANCE COVERAGE – Inclusion Metric

Percentage of the eligible population with health insurance coverage Source: ACS 5-Year, Table B27020



### METRIC FORMULAS

Title	Metric	2017	2018	2019	2020	2021	2022	2023
	Туре							
NEW BUSINESSES	Growth	Growth: 2018 vs 2017 Base: 2017	Growth: 2018 vs 2017 Base: 2017	Growth: 2019 2018 Base: 2017	9 vs Growth: 2020 v 2019 Base: 201	s Growth: 2021 vs 7 2020 Base: 2017	Growth: 2022 vs 2021 Base: 2017	Growth: Q4 2023 vs Q4 2022 Base: 2017
SPEND GROWTH	Growth	Growth: 2017 vs 2016 Base: 2017	Growth: 2018 vs 2017 Base: 2017	Growth: 2019 2018 Base: 2017	9 vs Growth: 2020 v 2019 Base: 201	s Growth: 2021 vs 7 2020, Base: 2017	Growth: 2022 vs 2021 Base: 2017	Growth: 2023 vs 2022 Base: 2017
MINORITY/WOMEN OWNED BUSINESSES	Inclusion	2019	2019	2019	2020	2021	2022	Q4 2023
COMMERCIAL DIVERSITY	Inclusion	2019	2019	2019	2020	2021	2022	Q4 2023
SPENDING PER CAPITA	Growth	Growth: 2017 vs 2016 Base: 2017	Growth: 2018 vs 2017 Base: 2017	Growth: 2019 2018 Base: 2017	9 vsGrowth: 2020 v 2019 Base: 201	rs Growth: 2021 vs 7 2020, Base: 2017	Growth: 2022 vs 2021 Base: 2017	Growth: 2023 vs 2022 Base: 2017
Data updated every quart	er							
NET OCCUPANCY	Growth	Growth: AVG 2014-2016 vs AVG 2011-2015 Base: AVG 2014- 2016	Growth: AVG 2015-2017 vs AVG 2012-2016 Base: AVG 2014- 2016	Growth: AVG 2016-2018 vs AVG 2013- 2017 Base: AVG 2014-2016	Growth: AVG 2017- 2019 vs AVG 2014- 2018 Base: AVG 2014- 2016	Growth: AVG 2018- 2020 vs AVG 2015- 2019 Base: AVG 2014- 2016	Growth: AVG 2019- 2021 vs AVG 2016- 2020 Base: AVG 2014- 2016	Growth: AVG 2020- 2022 vs AVG 2017- 2021 Base: AVG 2014- 2016
RESIDENTIAL REAL ESTATE VALUE	Growth	Growth: AVG 2014-2016 vs AVG 2011-2015 Base: AVG 2014- 2016	Growth: AVG 2015-2017 vs AVG 2012-2016 Base: AVG 2014- 2016	Growth: AVG 2016-2018 vs AVG 2013- 2017 Base: AVG 2014-2016	Growth: AVG 2017-2019 vs AVG 2014-2018 Base: AVG 2014- 2016	Growth: AVG 2018- 2020 vs AVG 2015- 2019 Base: AVG 2014- 2016	Growth: AVG 2019- 2021 vs AVG 2016- 2020 Base: AVG 2014- 2016	Growth: AVG 2020- 2022 vs AVG 2017- 2021 Base: AVG 2014- 2016
ACRES OF PARK LAND	Inclusion	2022 :	2022	2022	2022	2022	2022	2022
AFFORDABLE HOUSING	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
INTERNET ACCESS	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
TRAVEL TIME TO WORK	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
SMALL BUSINESS LOANS	Growth	Growth: 2016 vs 2015 Base: 2017	Growth: 2017 vs 2016 3ase: 2017	Growth: 2018 vs 2017 Base: 2017	Growth: 2019 vs 2018 Base: 2017	Growth: 2020 vs 2019 Base: 2017	Growth: 2021 vs 2020 Base: 2017	Growth: 2022 vs 2021 Base: 2017
LABOR MARKET ENGAGEMENT INDEX	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
PERSONAL INCOME	Growth	Growth: AVG 2014-2016 vs AVG 2011-2015 Base: AVG 2014- 2016	Growth: AVG 2015-2017 vs AVG 2012-2016 Base: AVG 2014- 2016	Growth: AVG 2016-2018 vs AVG 2013- 2017 Base: AVG 2014-2016	Growth: AVG 2017-2019 vs AVG 2014-2018 Base: AVG 2014- 2016	Growth: AVG 2018- 2020 vs AVG 2015- 2019 Base: AVG 2014- 2016	Growth: AVG 2019- 2021 vs AVG 2016- 2020 Base: AVG 2014- 2016	Growth: AVG 2020- 2022 vs AVG 2017- 2021 Base: AVG 2014- 2016
GINI COEFFICIENT	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
EARLY EDUCATION ENROLLMENT	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
FEMALE ABOVE POVERTY	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
HEALTH INSURANCE COVERAGE	Inclusion	AVG 2014-2016	AVG 2015-2017	AVG 2016- 2018	AVG 2017 -2019	AVG 2018 -2020	AVG 2019 -2021	AVG 2020 -2022
Data updated every year								