

Where in the World Is the Market?

Real World Meets Math—and Math Wins

The Lund Lecture by Staffan Canback

May 2024



TELLUSANT

Streamlining Corporate Decision Making

Agenda

- 1 **Introduction**
- 2 Where in the World Is the Market?—The Macro View
- 3 Where in the World Is the Market?—The Market View
- 4 Breakout session
- 5 Q&A

Personal details



WORK

Swedish Army Soldier 1977–1978
ABB Systems Development Engineer 1980–1981
McKinsey & Co Partner 1984–1994
Monitor Company Partner 1994–2002
Canback Consulting Managing Director 2003–2020
Tellusant Chairman 2020–

EDUCATION

KTH-Royal Institute of Technology Msc EE 1975–1979
Harvard Business School MBA 1981–1983
Henley Business School DBA 1996–2002

AWARDS

Fulbright Scholar 1981
Wallenberg Scholar 1996
First Prize, EDAMBA European Doctoral Dissertation Competition 2003

ACADEMIC PUBLICATIONS (found, e.g., at SSRN)

- Toward an Integrated Strategy Development Framework
- The Growth Tesseract
- Where in the World Is the Market? *with F D'Agnesse*
- Do Diseconomies of Scale Impact Firm Size and Performance? *with P Samouel & D Price*
- Does Corporate Size Matter?
- A Lightweight Note on Success in Mergers and Acquisitions
- Bureaucratic Limits of Firm Size *DBA Dissertation*
- The Logic of Management Consulting, Parts I & II
- The Industrial Company in the Year 2027 (Predictions Made in 1992)

WHAT IS TELLUSANT?

Find patterns where others see chaos

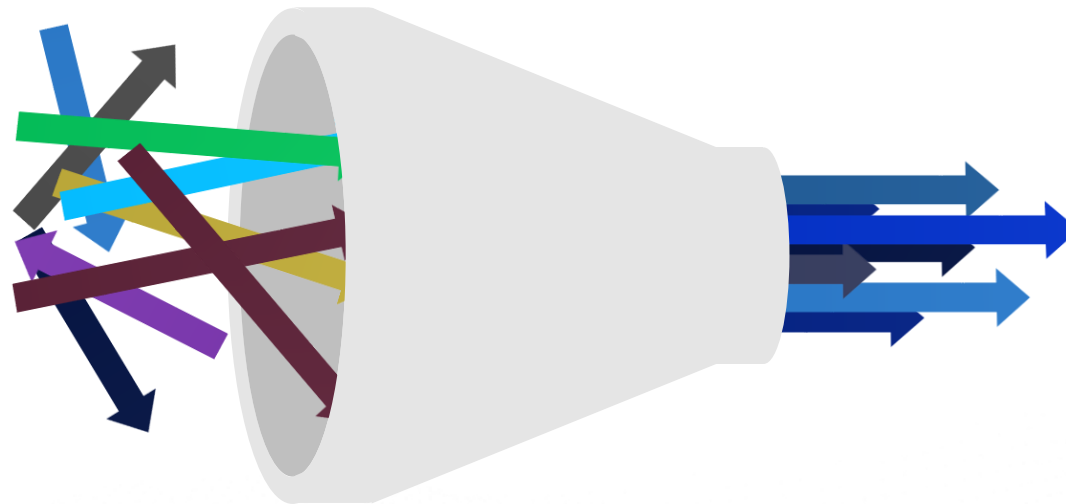
Today...



Corporate strategic planning
is manual and disjointed



This means wasted time
and inefficient solutions



With Tellusant...

**Quantitative strategic prediction
platforms with AI make strategy**



Faster



More accurate



Consistent

Founded in Boston in 2020, we represent the next generation of big ideas

WHAT IS TELLUSANT?

Our team



Dr. Staffan Canback
CO-FOUNDER AND
EXECUTIVE CHAIRMAN

Co-founder and Managing
Director,
Canback Consulting
Partner at McKinsey and Monitor
MBA from Harvard Business
School; DBA from Brunel U.; MSc
from KTH



Philip Burgin-Young
CO-FOUNDER AND CHIEF
EXECUTIVE OFFICER

Senior Engagement Manager,
Canback Consulting
BA from Dartmouth College



Bobo Shen
CHIEF PRODUCT
OFFICER

Senior Engagement
Manager,
Canback Consulting
BA from Boston University
MA from Boston University
in Computer Science

Over 60 years combined experience in
management consulting and data products
for global corporations, with focus on CPG

Know strategic processes and their flaws
through hundreds of projects on the ground in
80 countries

Experts in combining predictive analytics and
macroeconomics with strategic advice

**Leadership team have long-term
working relationship**



**Francisco
Maciel**
Region Head,
Mexico



**Carlos
Alzate**
Region Head,
Andean Zone



**Kennet
Radne**
Advisor



**Sharat
Mathur**
Advisor



WHAT IS TELLUSANT?

Team meeting in Mexico City



Office on Reforma

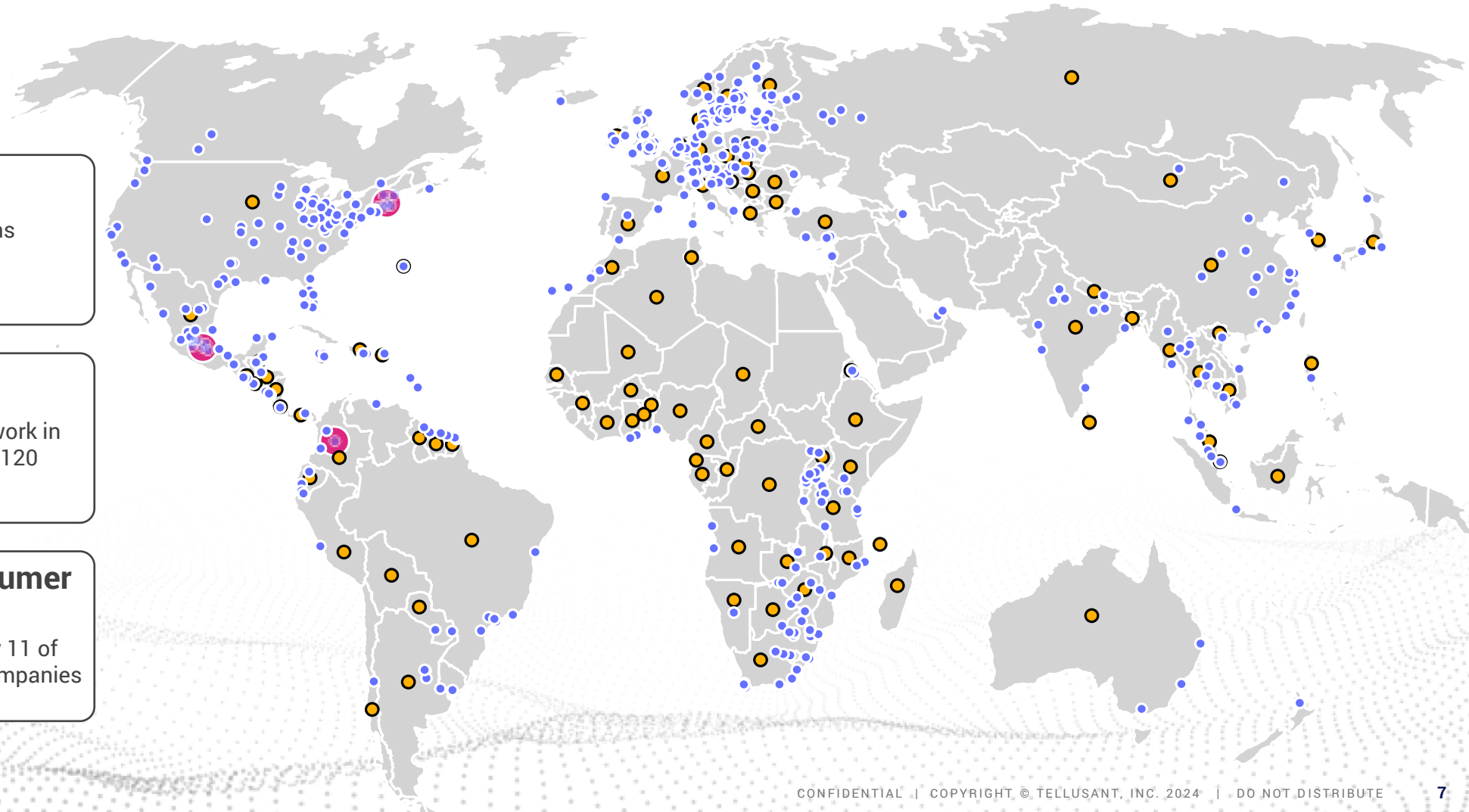


Boston & Mexico team (Bogota missing)

WHAT IS TELLUSANT?

Global Experience

- Local work (on the ground)
- Country projects
- Tellusant offices



Over 300 strategic solutions delivered



92 countries

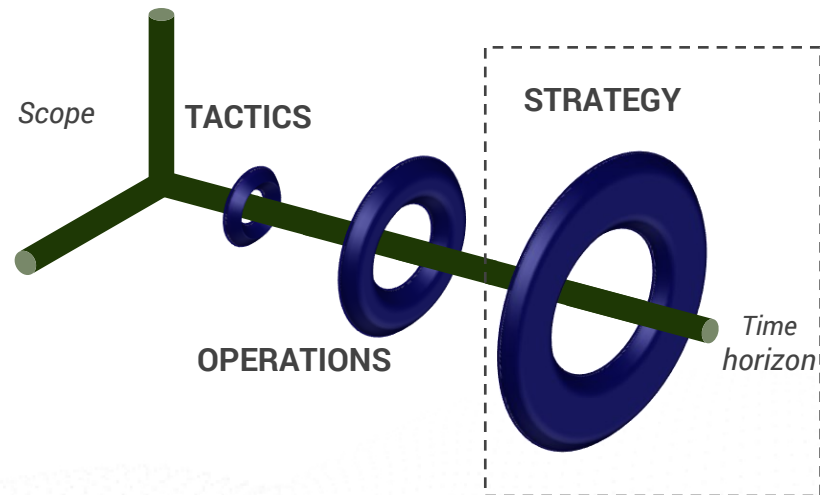
On-the-ground expertise from work in 82 countries, with work in over 120 countries



11 of 20 largest consumer goods companies

Worked with and are trusted by 11 of the top 20 consumer goods companies in the world

Focus



Agenda

- 1 Introduction
- 2 **Where in the World Is the Market?—The Macro View**
- 3 Where in the World Is the Market?—The Market View
- 4 Breakout session
- 5 Q&A

Photos from Latam



Buenos Aires, Argentina



Guayaquil, Ecuador



Lima, Peru



Itaipu Dam, Paraguay & Brazil

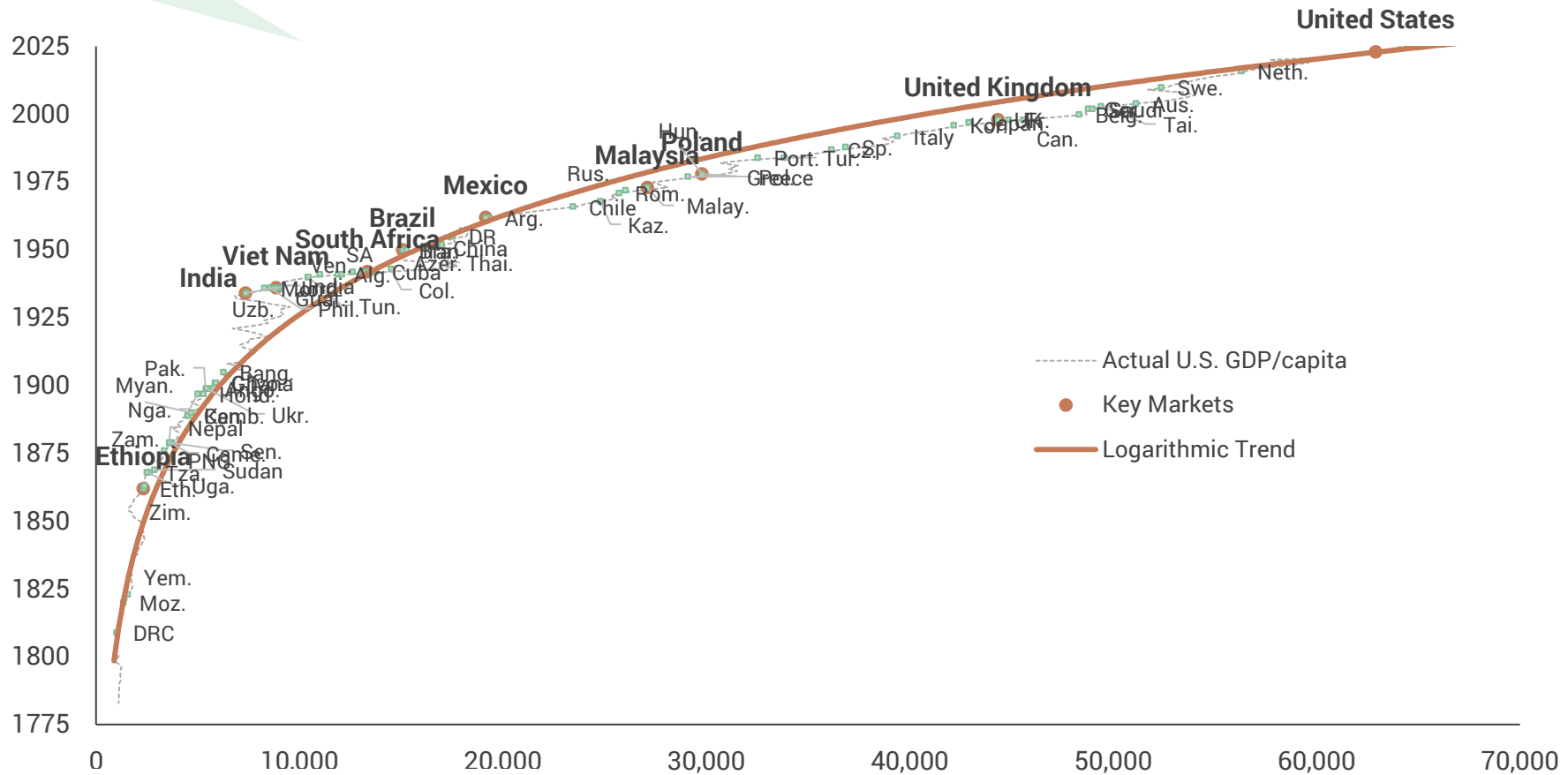


Iguazu Falls, Argentina

Time / income relationship

How to interpret: Mexico GDP per capita is the level of the U.S. in 1964

ECONOMIC STAGE OF DEVELOPMENT
Countries compared to U.S. GDP per capita

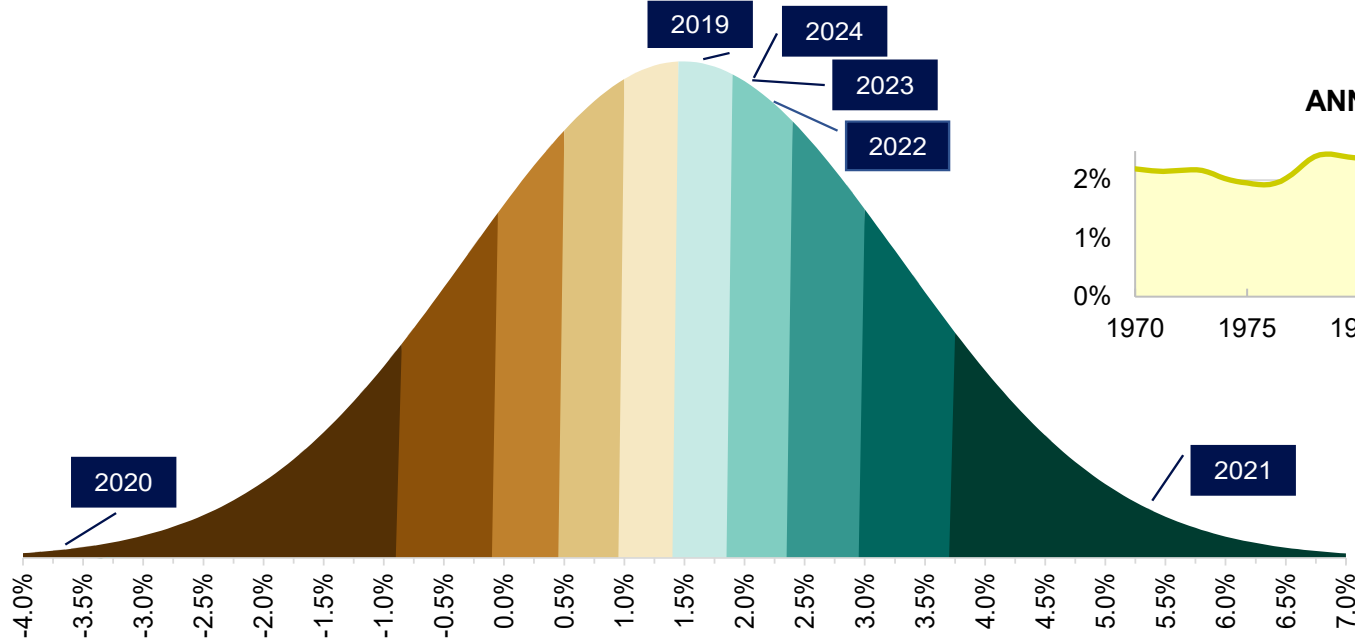


Source: WHO; TelluBase; Tellusant analysis

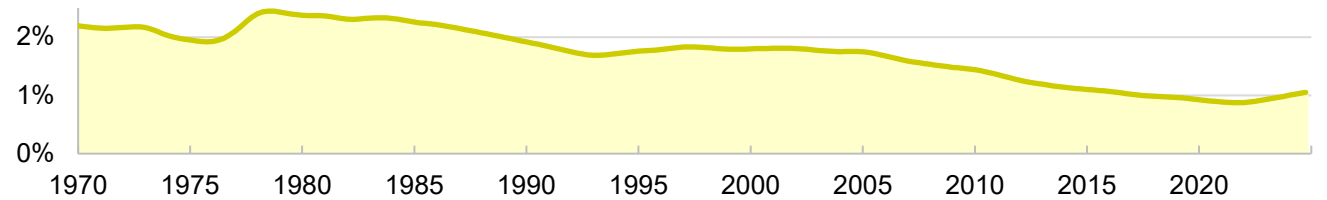
2024 macro performance

GLOBAL ECONOMIC GROWTH DISTRIBUTION
Annual growth in GDP / working-age population 1970-2024

■ Decile10 ■ D9 ■ D8 ■ D7 ■ D6 ■ D5 ■ D4 ■ D3 ■ D2 ■ D1

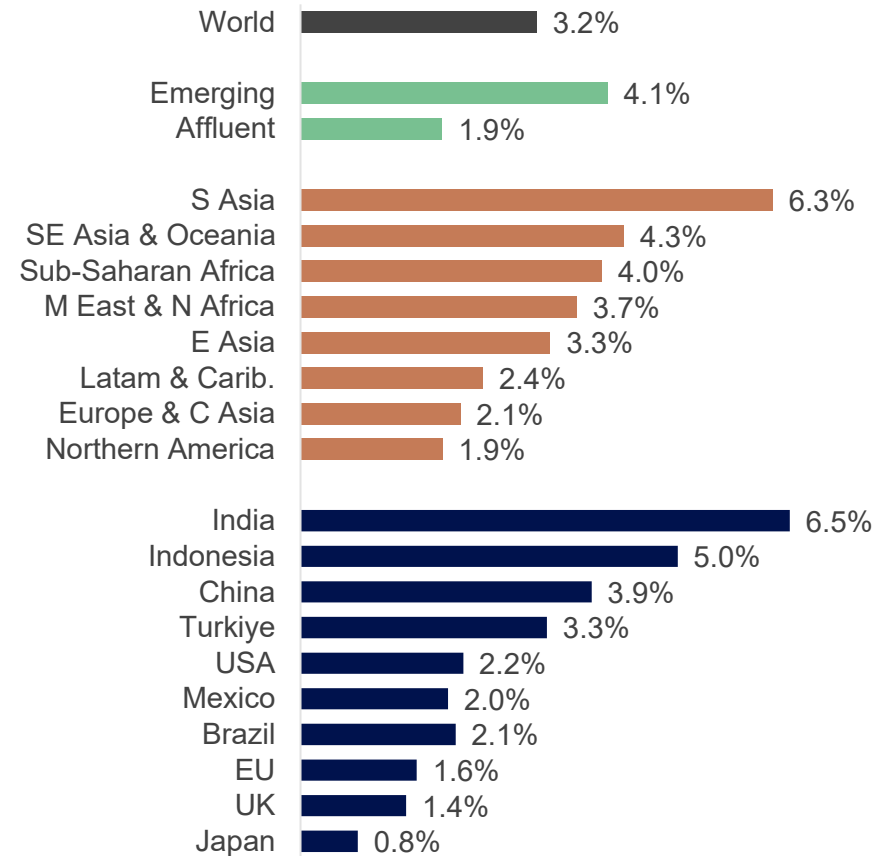


ANNUAL GROWTH OF GLOBAL WORKING-AGE POPULATION

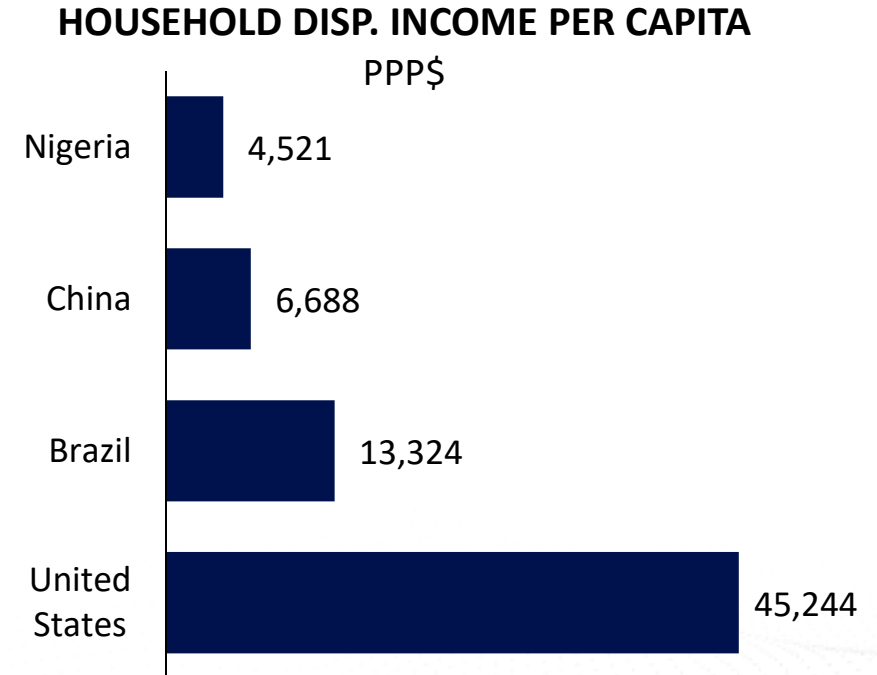
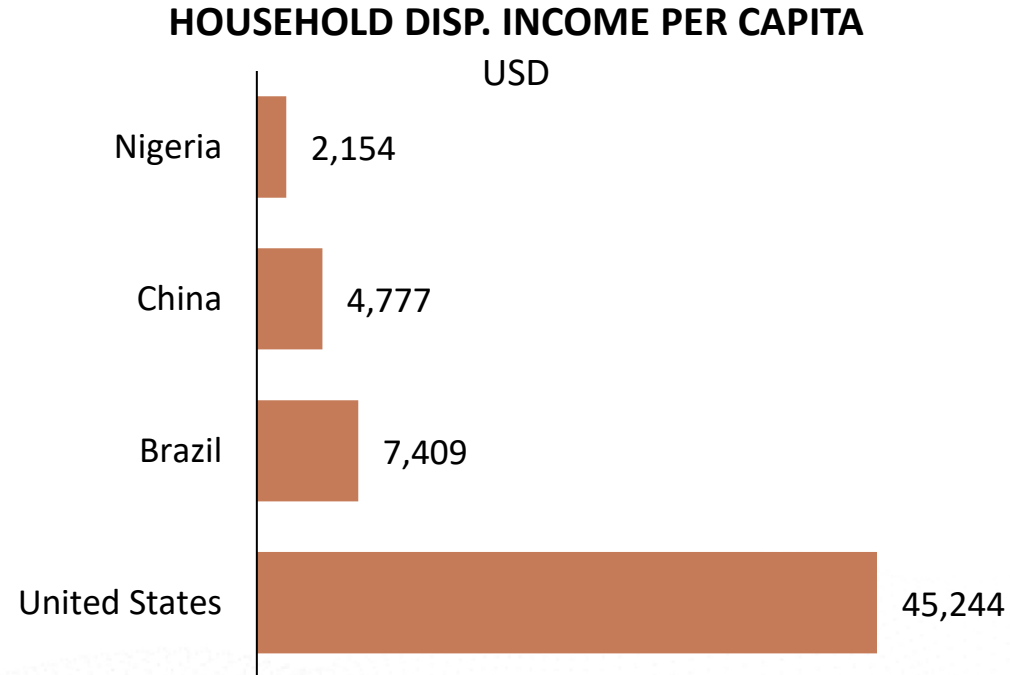


Macro outlook

GLOBAL ECONOMIC GROWTH GDP growth per annum 2024-2029

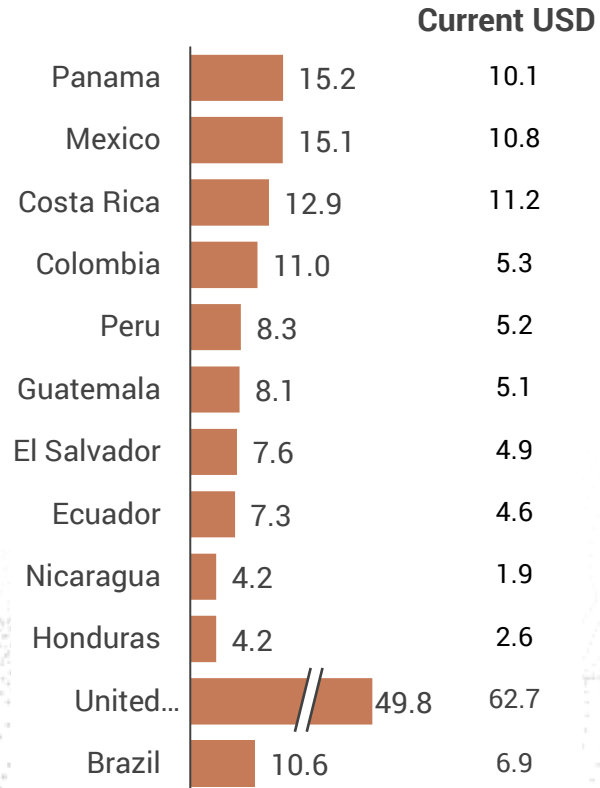


Purchasing Power Parity Examples

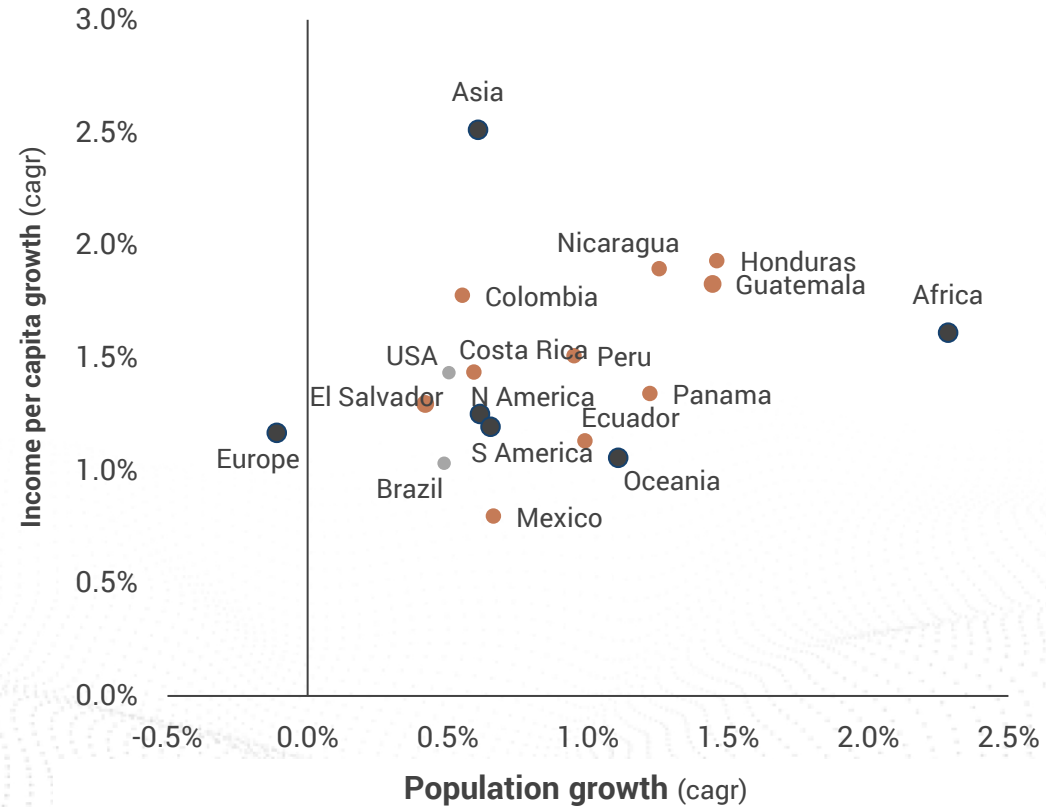


Dimensions of macro growth

DISPOSABLE INCOME PER CAPITA
Constant 2015 PPP\$, '000, 2023



PER CAPITA DISPOSABLE INCOME GROWTH VS POPULATION GROWTH
2023-2030



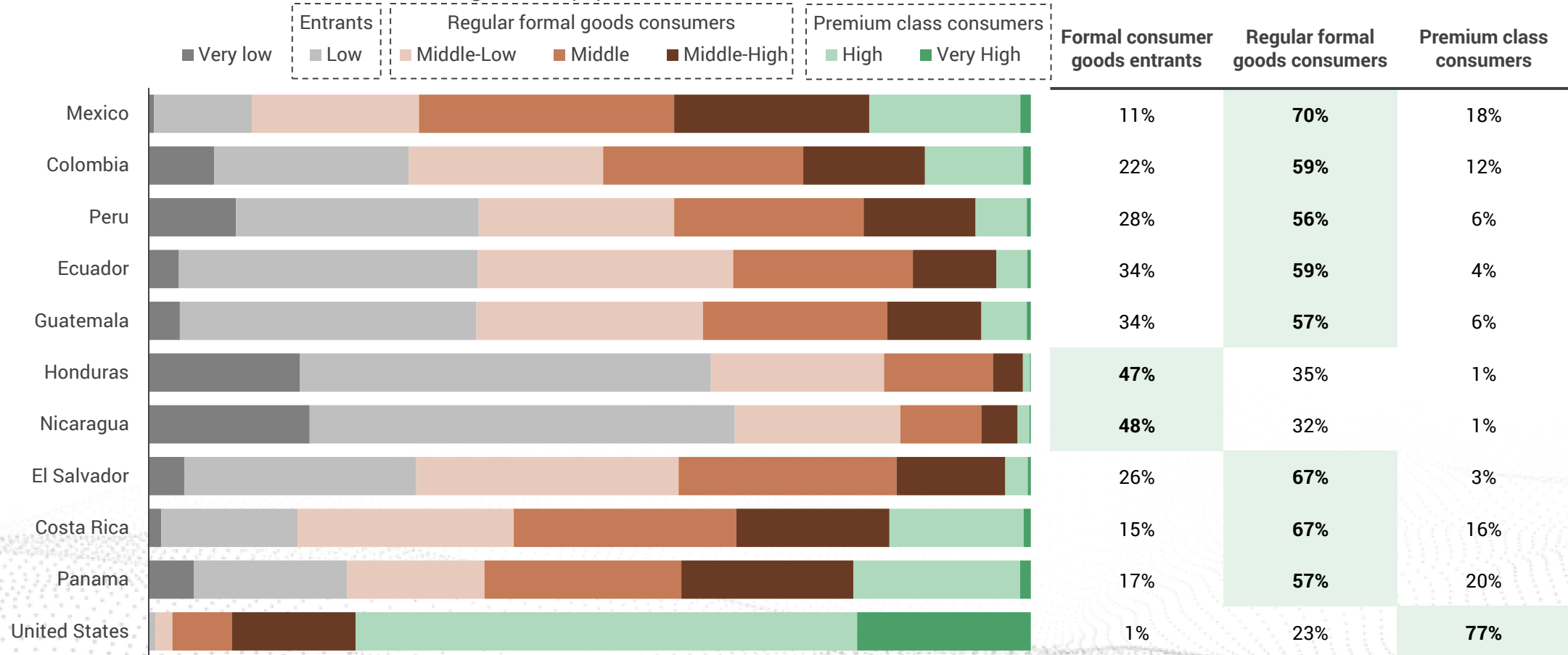
Global Income Level Standard

Income level standard	Description
<p>Very High <i>Corresponding to the top 1% of globally-equivalent spending power population</i></p>	 <ul style="list-style-type: none"> • Individuals who can save income more regularly • Consume luxury goods
<p>High <i>90%-99% of globally-equivalent spending power population</i></p>	 <ul style="list-style-type: none"> • Individuals save income • Consume occasional luxury goods
<p>Middle-High <i>80%-90% of globally-equivalent spending power population</i></p>	 <ul style="list-style-type: none"> • Individuals are able to often save income • May consume premium goods
<p>Middle <i>60%-80% of globally-equivalent spending power population</i></p>	 <ul style="list-style-type: none"> • Individuals are able to occasionally save income • May consume premium goods
<p>Middle-Low <i>40%-60% of globally-equivalent spending power population</i></p>	 <ul style="list-style-type: none"> • Able to meet primary needs • Consistently can afford branded consumer goods
<p>Low <i>10%-40% of globally-equivalent spending power population</i></p>	 <ul style="list-style-type: none"> • Barely have money to meet primary needs • Occasional (not regular) branded goods consumption
<p>Very Low <i>0%-10% of globally-equivalent spending power population</i></p>	 <ul style="list-style-type: none"> • Barely have money to meet primary needs • Incredibly rare branded goods consumption

Latam socioeconomic levels

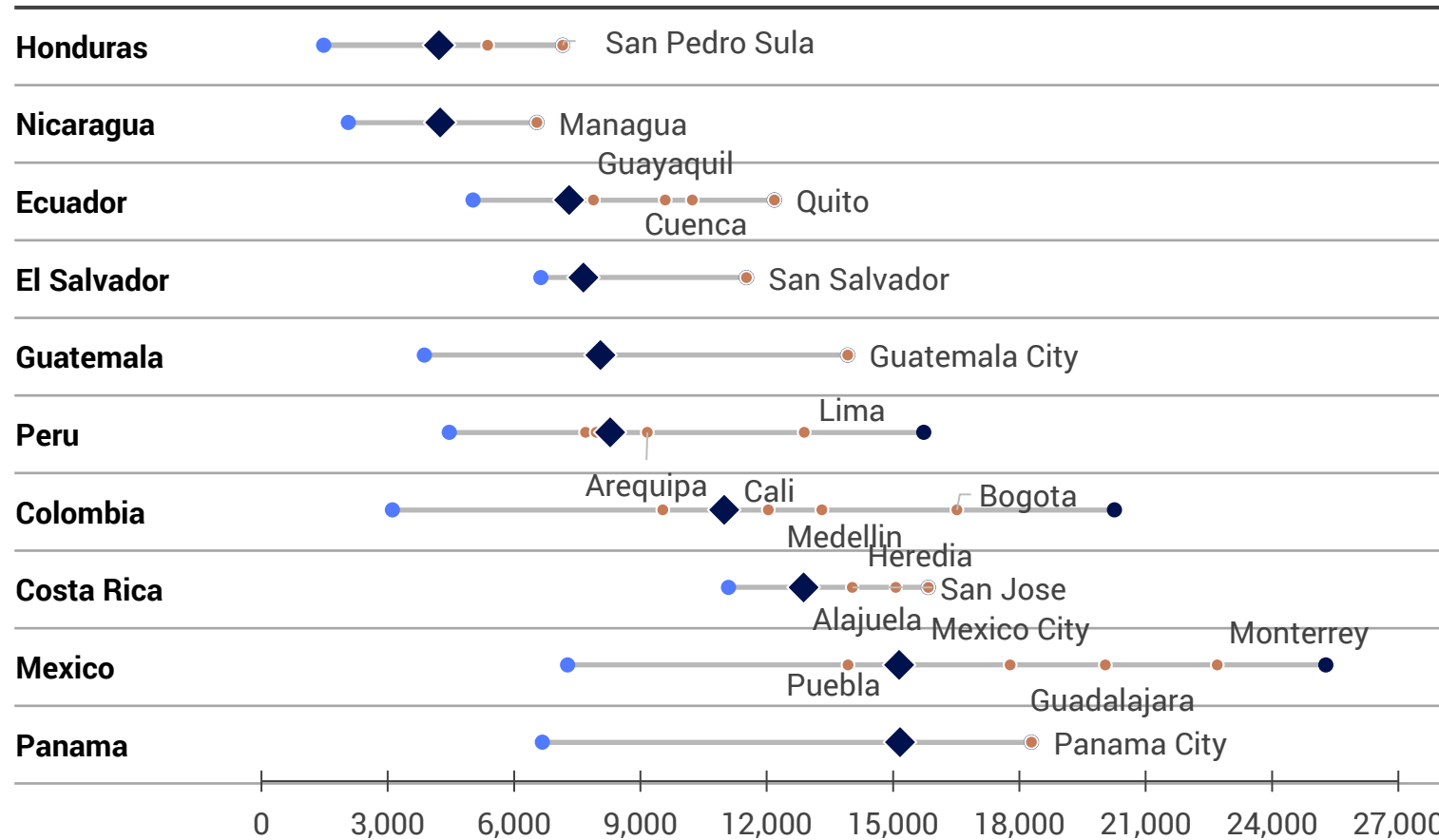
INCOME FRACTILES BY COUNTRY

Percentage of total population, 2023



Cities vs countries I

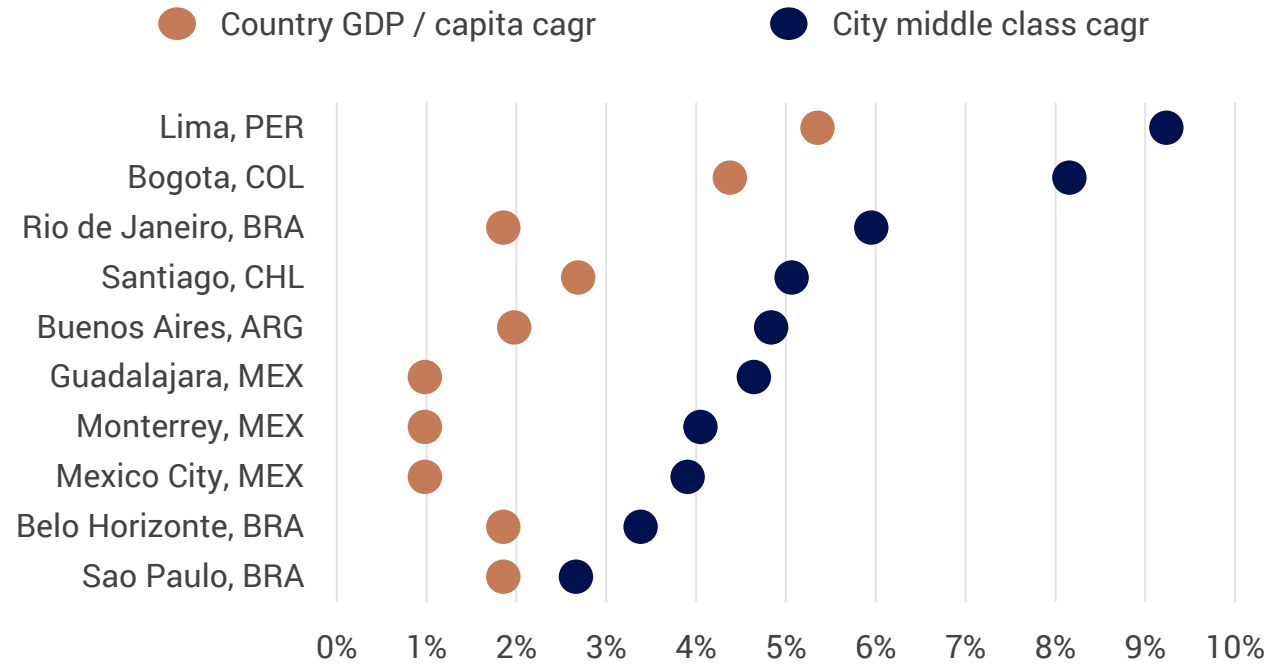
INCOME PER CAPITA VARIATION BY COUNTRY
Constant 2015 PPP, 2023



Cities vs countries II

MIDDLE CLASS ANNUAL GROWTH RATE 2003-2023

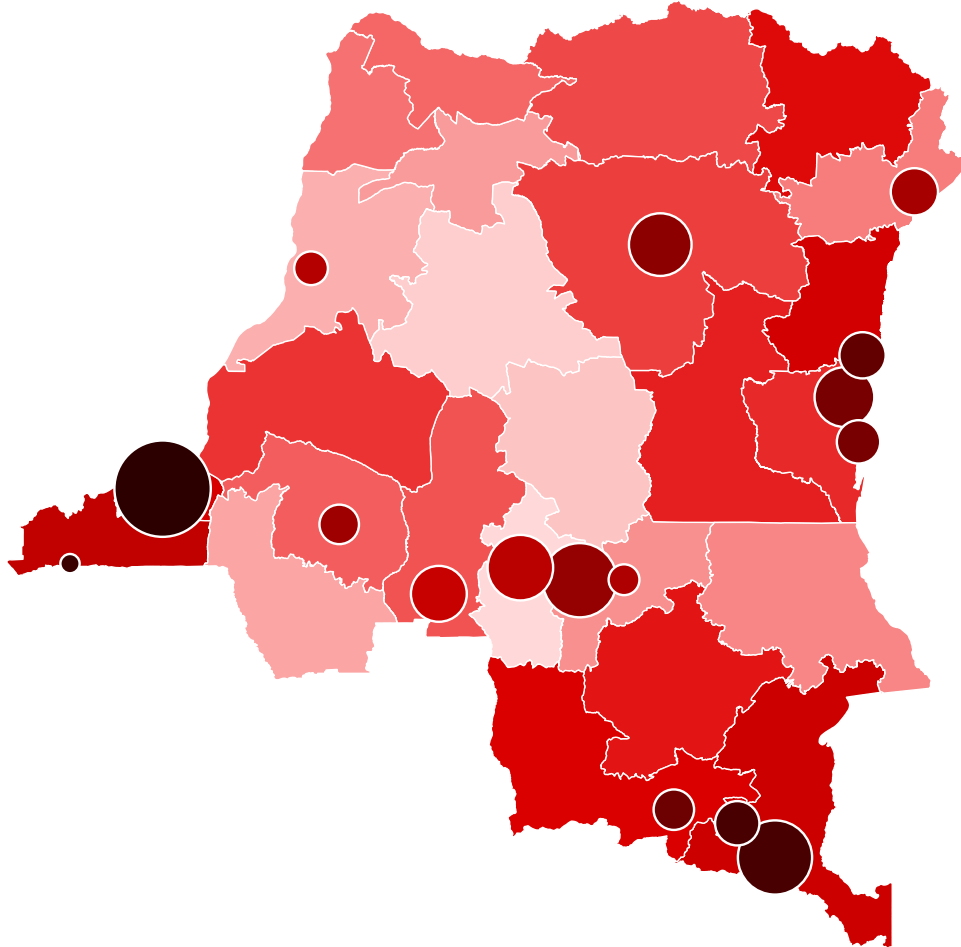
10 largest Latin American cities



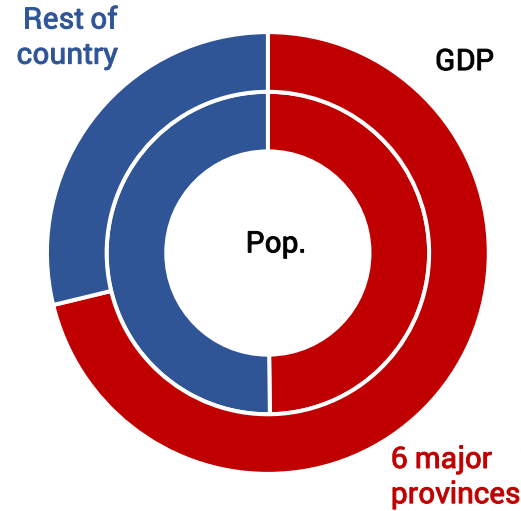
DRC Case

DEMOCRATIC REPUBLIC OF THE CONGO INCOME LEVELS

Cities and rural part of provinces colored by income/capita



SHARE OF CONGOLESE ECONOMY



DRC ANNUAL GDP GROWTH '10-'22



DRC GDP PER CAPITA



Source: UNHDR, MICS and MPI reports; Tellusant analysis



Congolese Market, Luanda, Angola



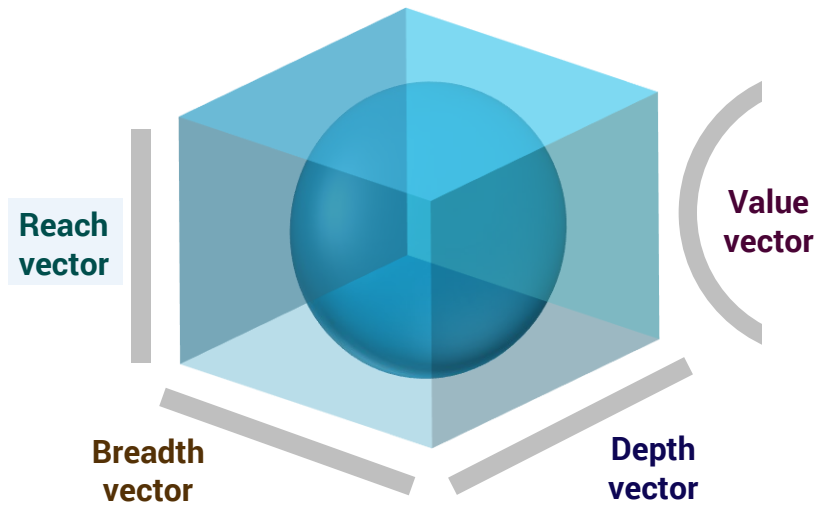
Congolese truck in Rwanda

Agenda

- 1 **Introduction**
- 2 Where in the World Is the Market?—The Macro View
- 3 **Where in the World Is the Market?—The Market View**
- 4 Breakout session
- 5 Q&A

Growth Tesseract

THE GROWTH TESSERACT



Reach vector

- Expand geographically*
- Optimize channels*
- Increase distribution coverage*
- Find new demand spaces*

Breadth vector

- Create line extensions*
- Expand portfolio*
- Enter adjacent categories*
- Diversify*

Depth vector

- Integrate forward*
- Integrate backward*

Value vector

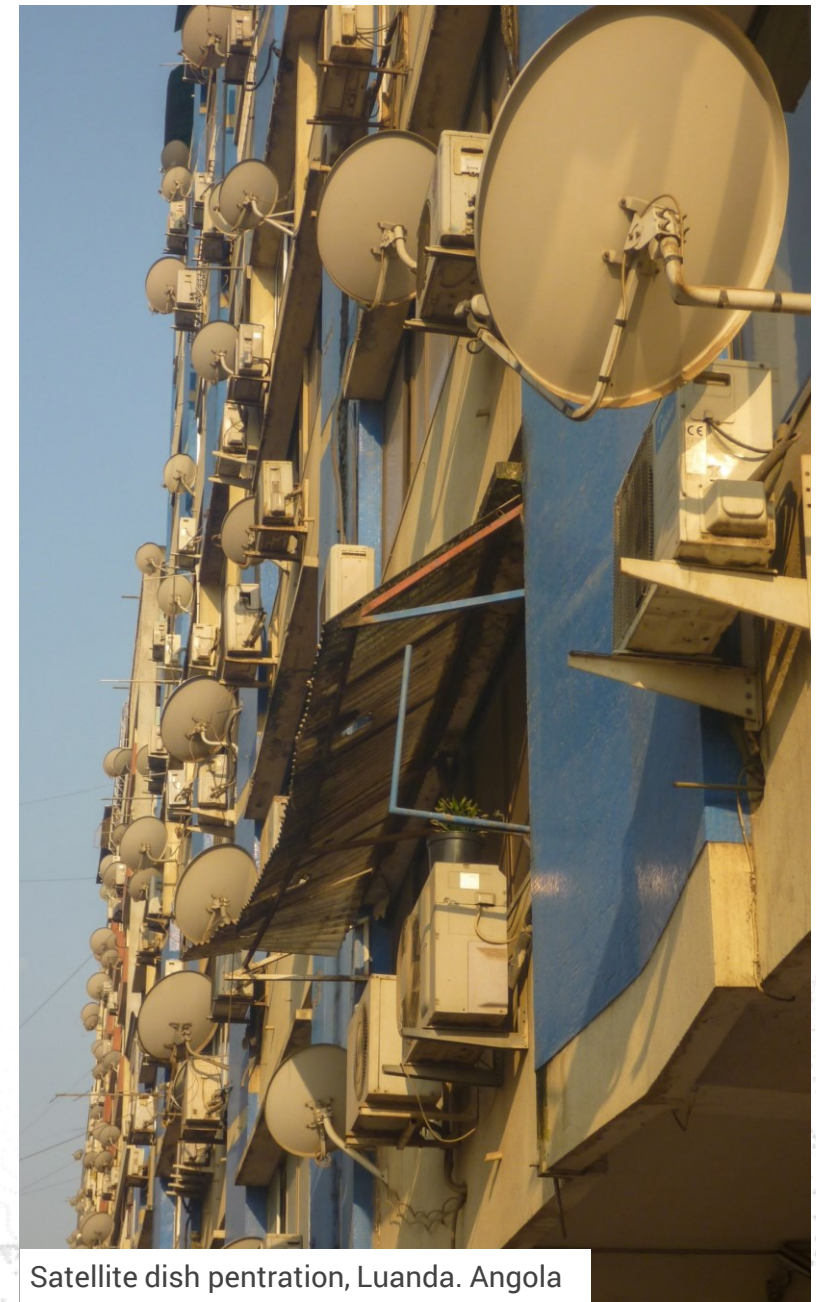
- Premiumize*
- Optimize prices*
- Change brand perceptions*



Westgate Mall, Harare, Zimbabwe



New town, Luanda. Angola



Satellite dish penetration, Luanda. Angola



Keren, Eritrea



FIAT Tagliero petrol station, Asmara, Eritrea



Melotti Brewery, Asmara, Eritrea



Traditional trade, Victoria Island, Lagos, Nigeria

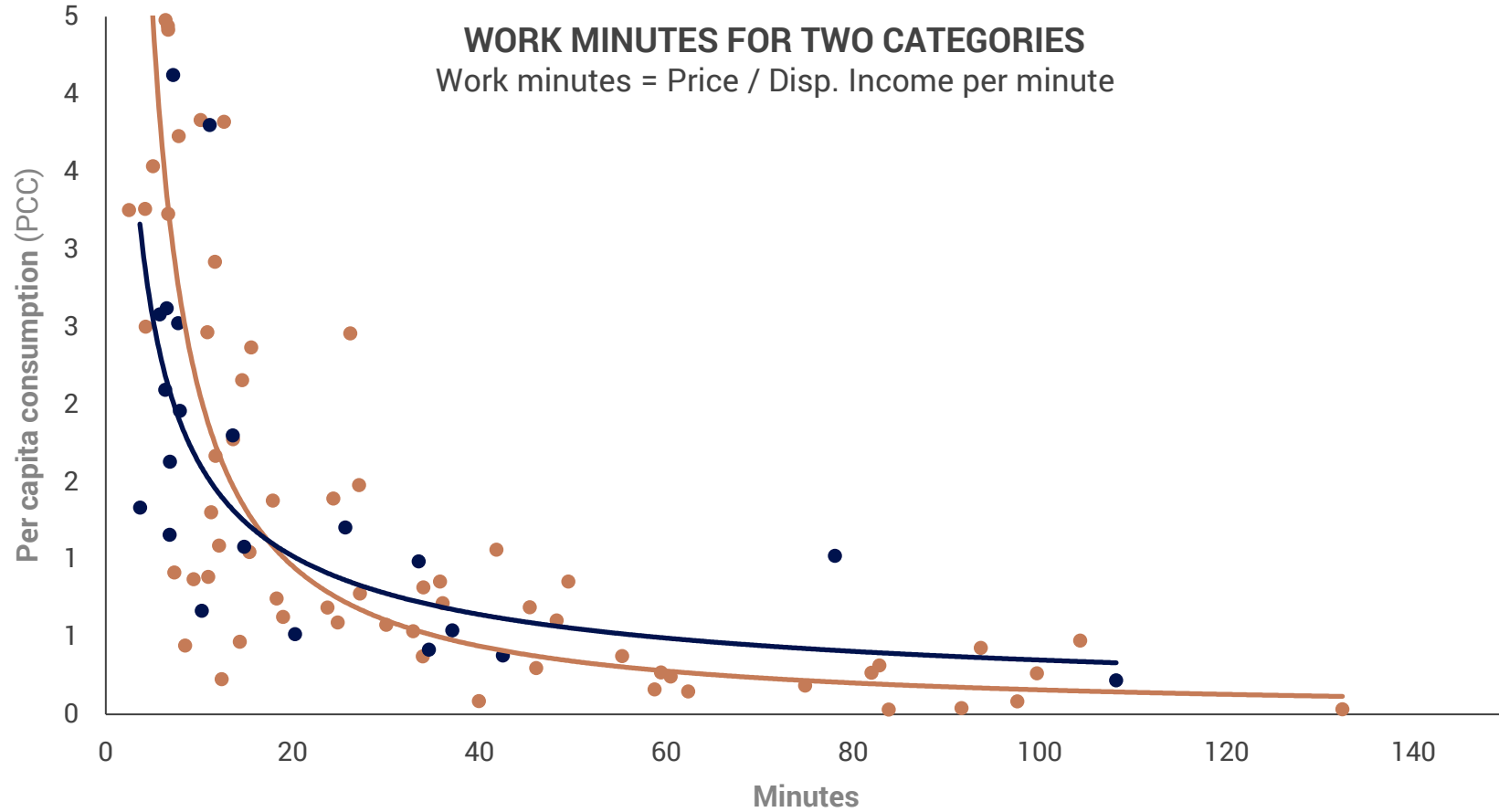


Modern trade, Mainland, Lagos, Nigeria

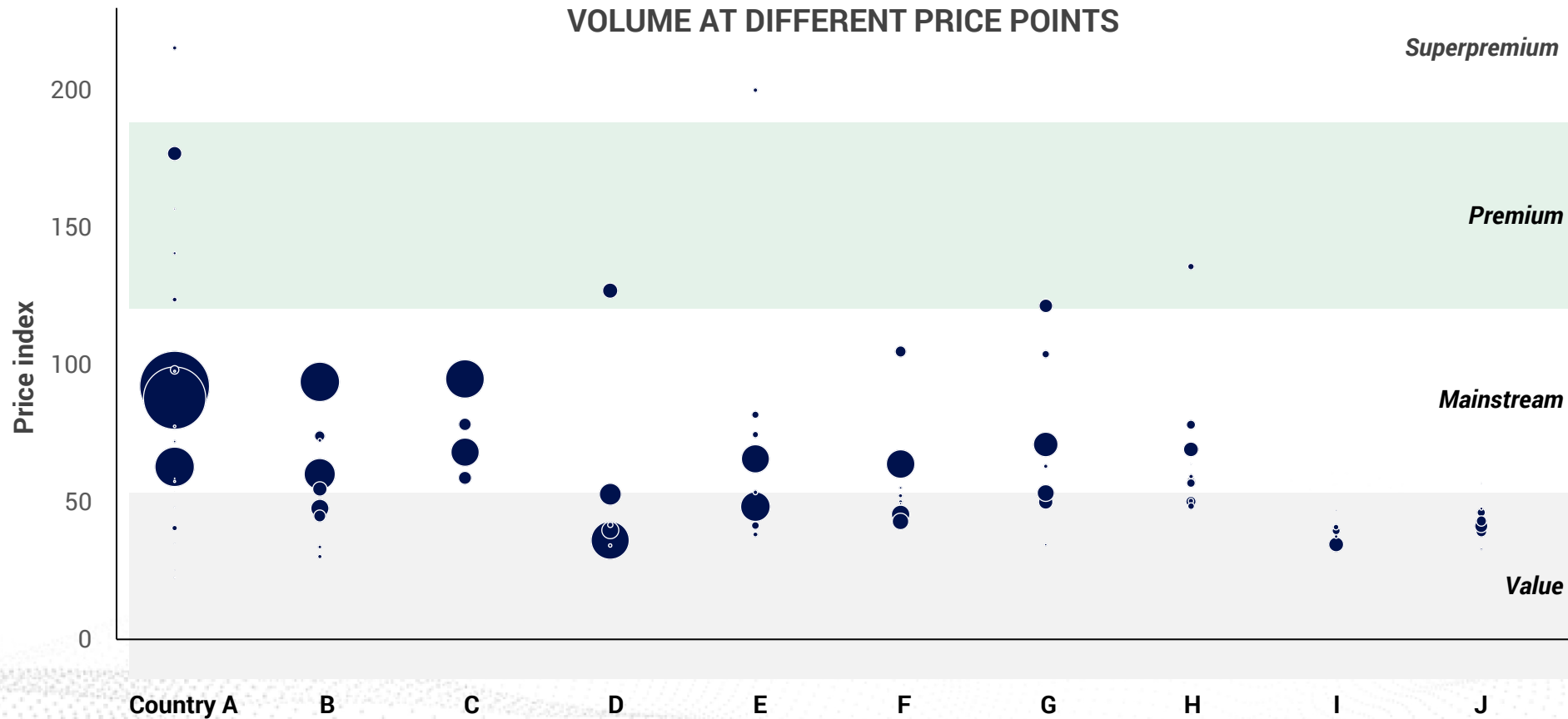


Old Lagos, Nigeria

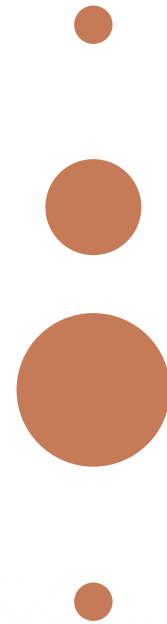
Work minutes



Price ladder



Ideal. perhaps



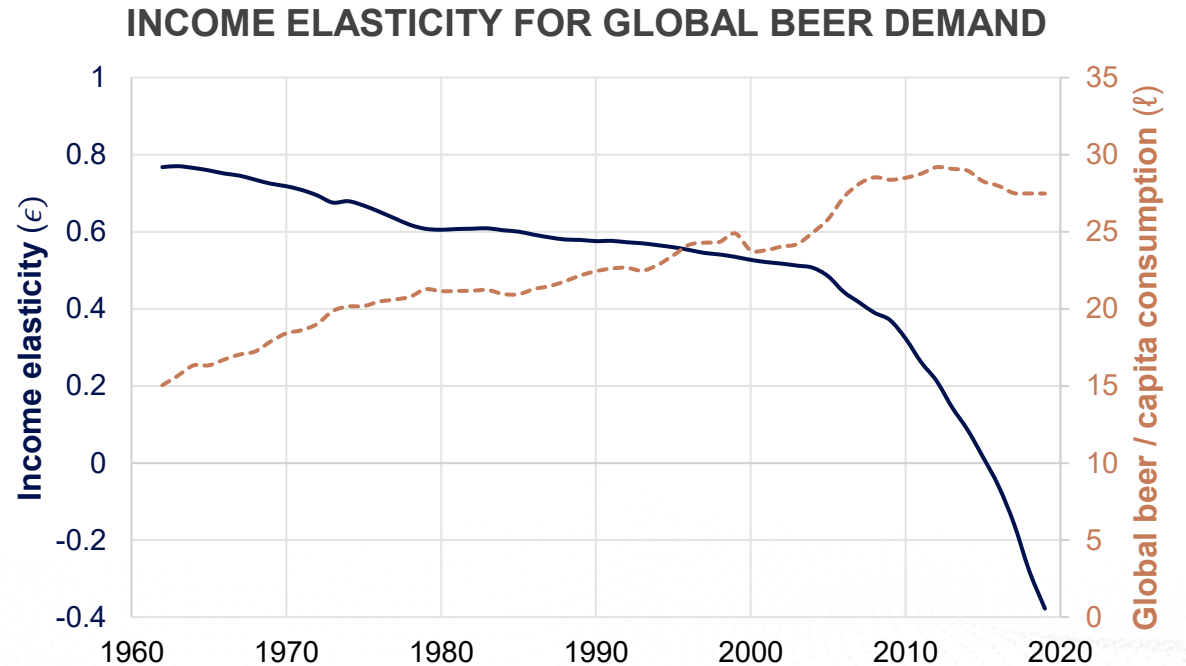
Decreasing market share in country



Income elasticity

Income elasticity = $\frac{\% \text{ change in demand}}{\% \text{ change in income}}$

$$\epsilon_I = \frac{\Delta D / D}{\Delta I / I} = \frac{dD}{dI} \cdot \frac{I}{D}$$



Source: WHO alcoholic beverages database; TelluBase; Tellusant analysis

Differential equations

UNDAMPED INCOME ELASTICITY

$$dy = \epsilon \frac{y}{x} dx$$

Solution to diff eq

$$y = Cx^\epsilon$$

DAMPED INCOME ELASTICITY

If PCC is high, the propensity to consume declines

$$dy = \eta \frac{y}{x} dx - \delta y$$

Solution to diff eq

$$y(x) = Ce^{-\delta x} x^\eta$$

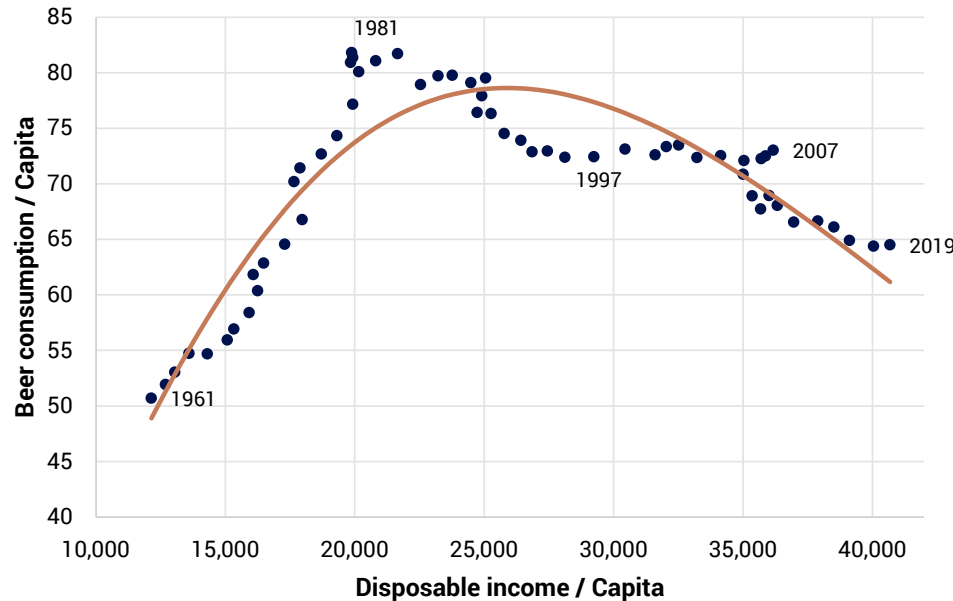
$$\epsilon = \eta - \delta x$$

x = Beer PCC

y = Disposable income / capita

UNITED STATES BEER CONSUMPTION VS INCOME

Actual vs diff. eq. model with damping for high consumption; 1961-2019

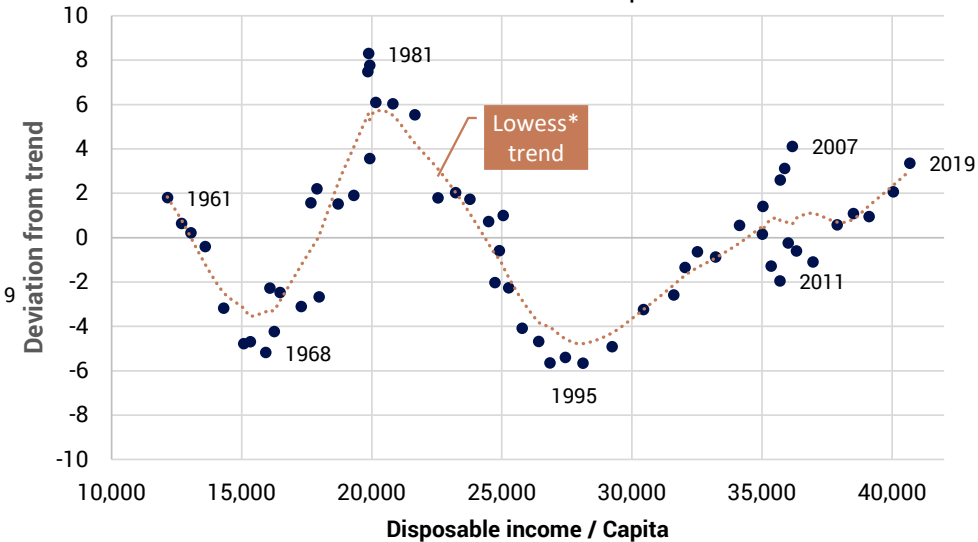


Income drives demand as people can afford beer

Income leads to new consumer preferences that drive demand down

U.S. LONG-CYCLE ERAS

Difference between actual and predicted



* Lowess = locally estimated scatterplot smoothing

Forecasting I

GOLDER TELLIS PREDICTIVE MODEL



Golder Tellis Forecasting Model

$$demand = k \cdot (di)^{\beta_1} \cdot (cs)^{\beta_2} \cdot (p)^{\beta_3} \cdot (ms)^{\beta_4} \cdot (mp)^{\beta_5} \cdot e^{\epsilon}$$

Volume

Disposable Consumer
income sentiment

Price

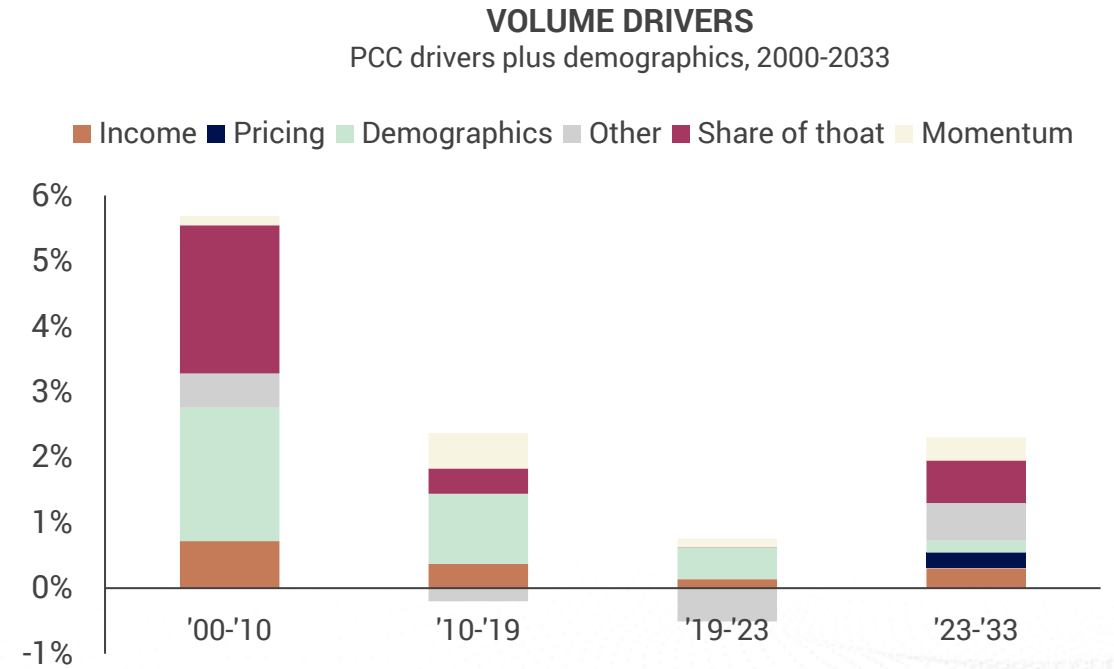
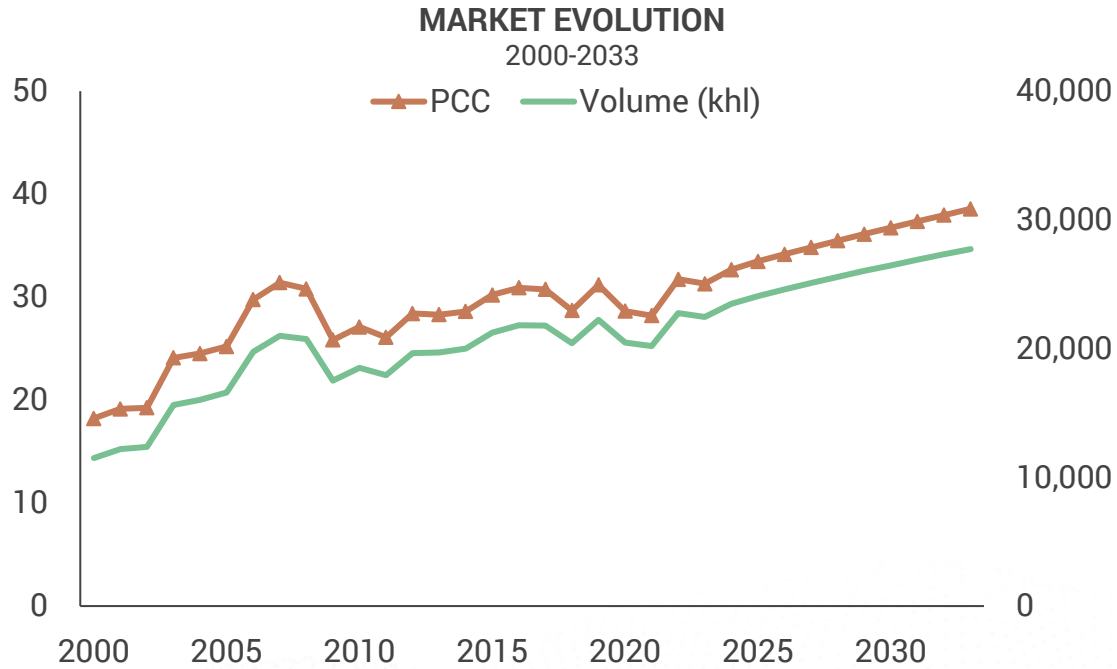
Marketing
spend

Market
presence
(distribution)

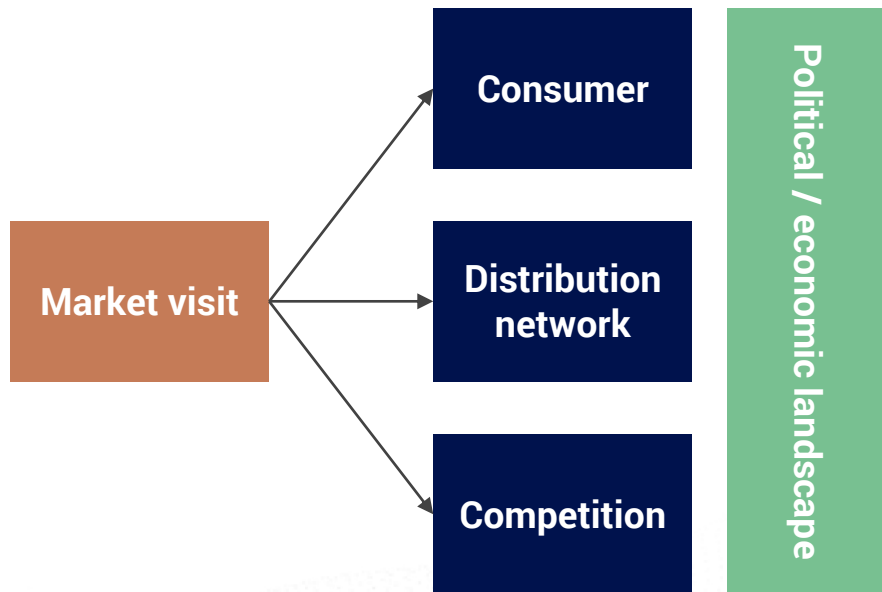
External

Internal

Forecasting II



Market visits



APPROACH

- 4-6 people. Typically, 1 week
- *Prior to visit:* Conduct preliminary analyses
- *Day 1:* Arrive in major city. Have a a “first look”
- *Day 2:* Visit modern trade outlets in the morning and traditional trade outlets in the evening
- *Days 3-4:* Split into teams and visit secondary cities, villages and rural areas
- *Day 5:* Re-convene in the major city, compare findings *Day 6:* Meet with client and discuss

The days are long. Start in the trade around 11, and continue till past midnight (with an afternoon nap)

WhatsApp is invaluable

Plan for contingencies: Robbery, violence, engine failure



Running out of gas in Mexican countryside, close to Izamal



Vung Tau – Resort town, Viet Nam



Low chairs, HCMC, Viet Nam



Street vending, Ha Noi, Vie Nam



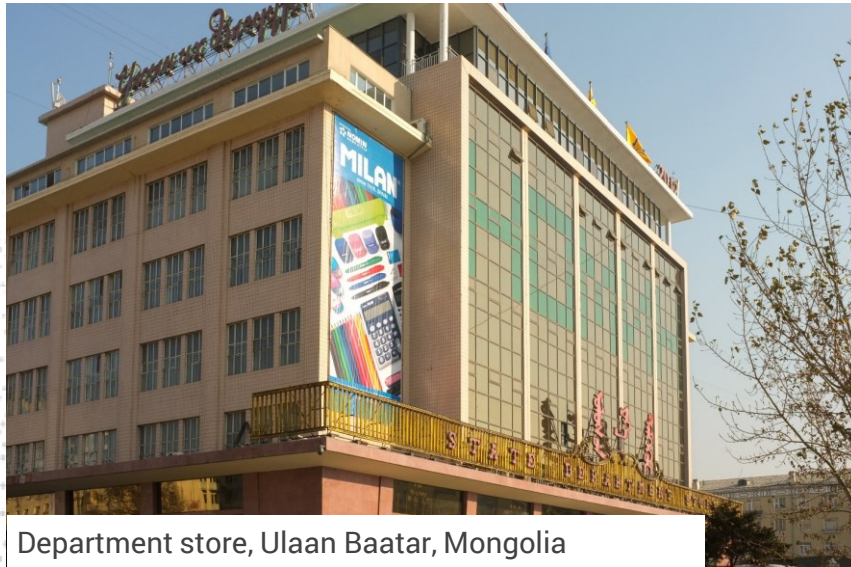
Old American Hangars, Da Nang, Viet Nam



Railway station Ulaan Baatar, Mongolia



Trade visit, Ulaan Baatar, Mongolia



Department store, Ulaan Baatar, Mongolia



Enjoying *airag* in Ulaan Baatar, Mongolia

Agenda

1

Introduction

2

Where in the World Is the Market?—The Macro View

3

Where in the World Is the Market?—The Market View

4

Breakout session

5

Q&A

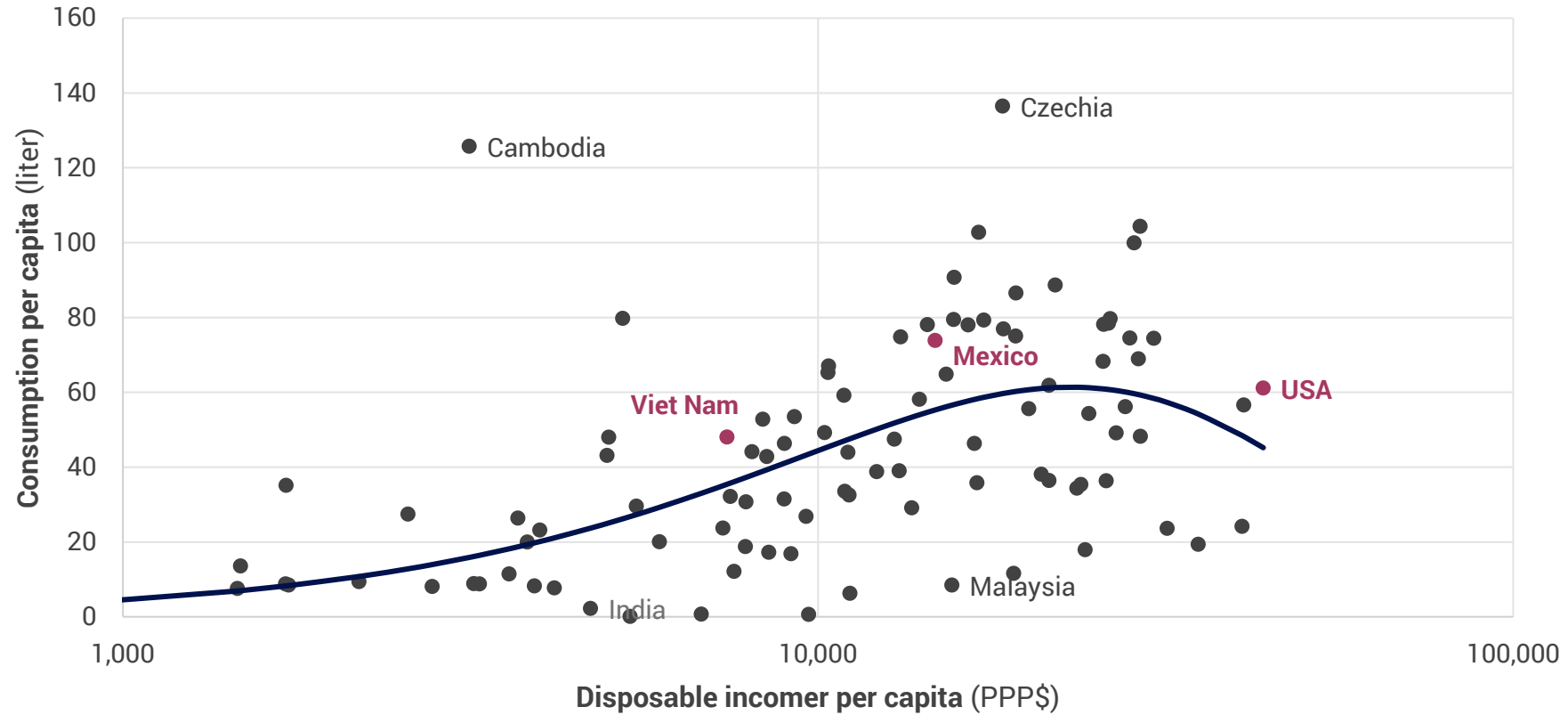
Instructions

- You get 3 slides with historical data for the global beer market and your assigned country: Mexico, the United States or Mexico
- Your task is to predict the future market growth drawing on these data, and to argue your case
- There is no correct answer

There are 3 questions on the last page

Mexico: Beer Global S-Curve

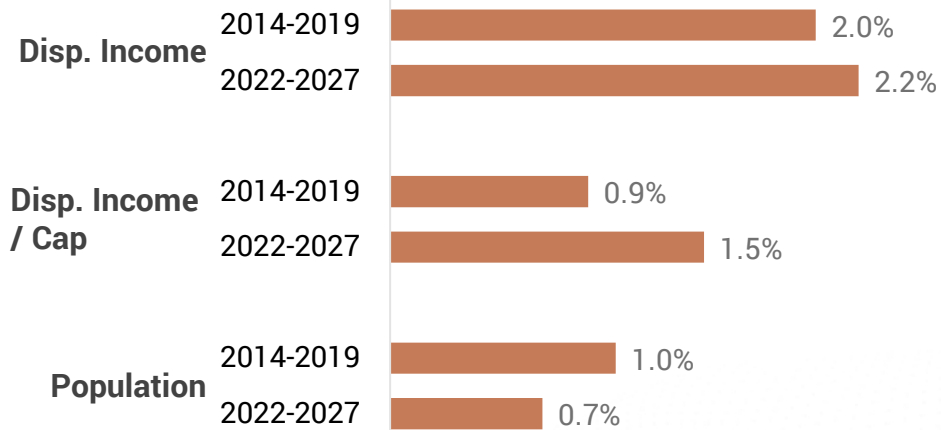
GLOBAL S-CURVE FOR BEER
Cross-sectional by country in 2019



BREAKOUT

Mexico: Macro Context

MEXICO MACRO GROWTH

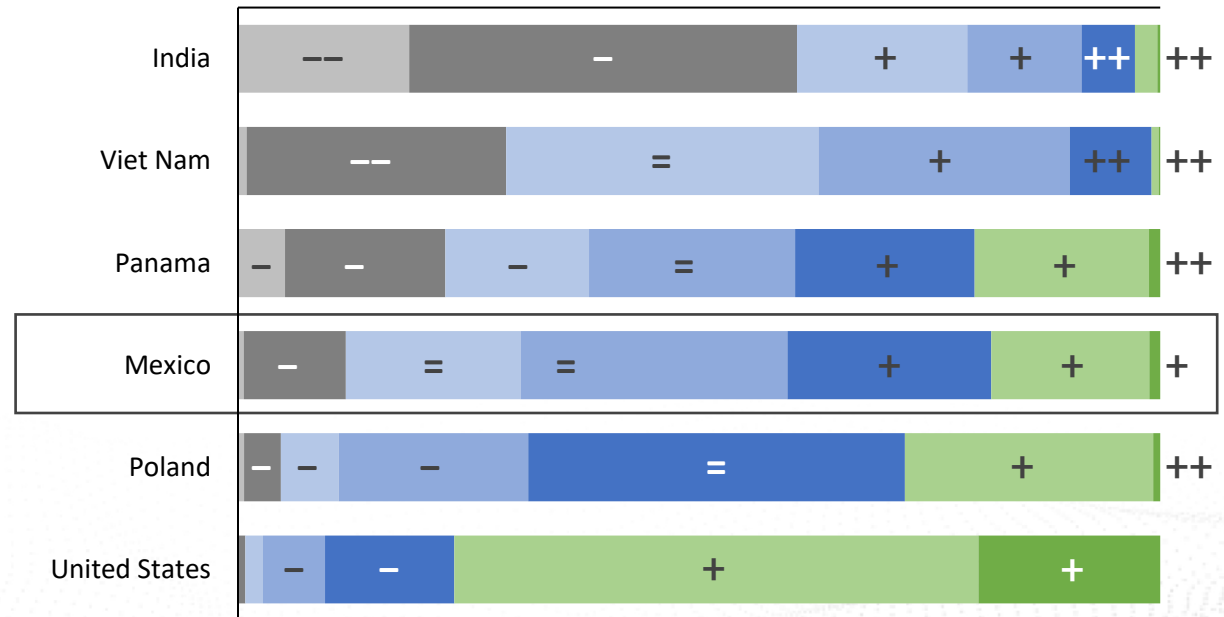


SIZE OF SOCIOECONOMIC LEVELS, 2022

+ = - show expected changes 2022-2027

Very Low Low Middle-Low Middle Middle-High High Very High

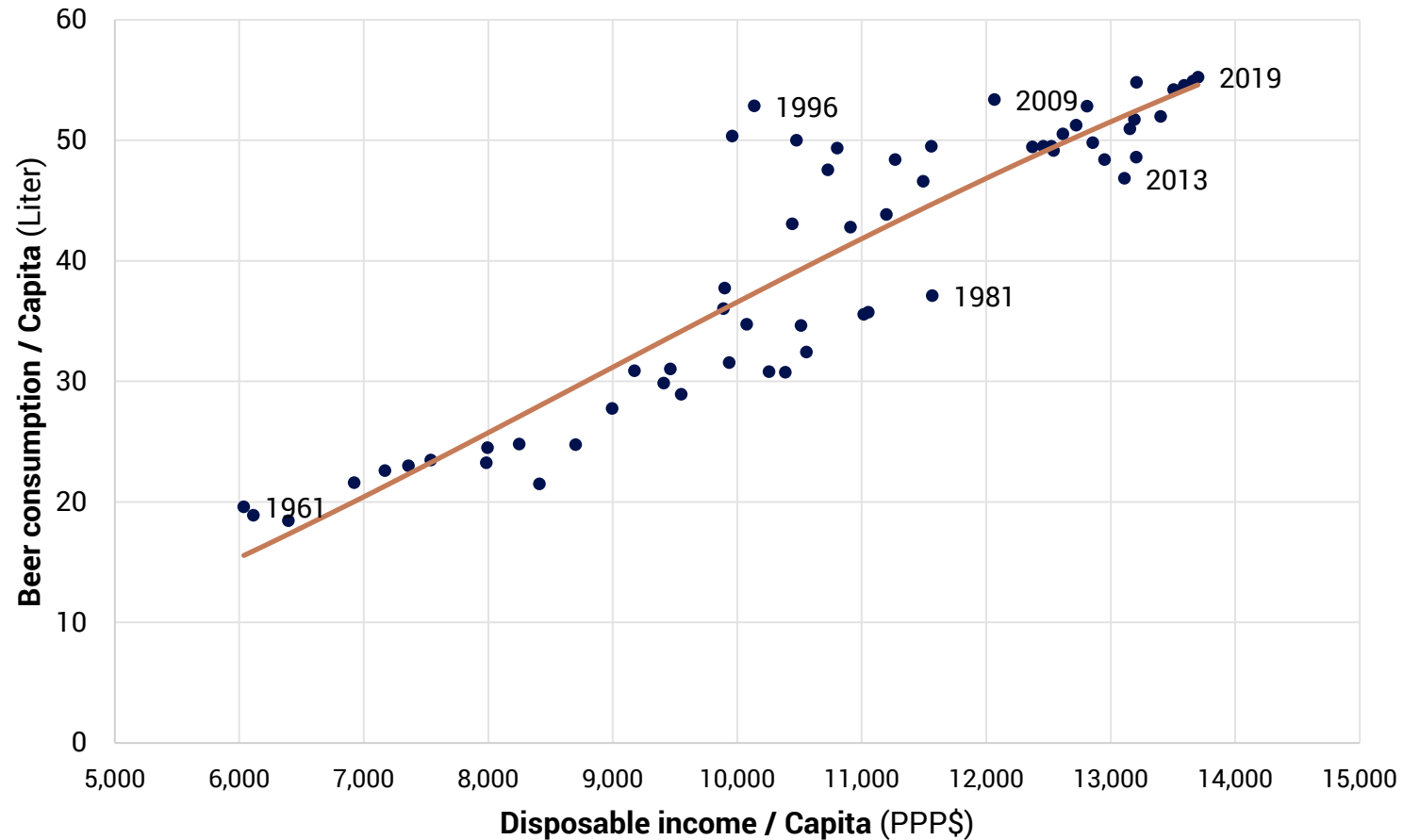
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



Mexico: Beer Market

MEXICO BEER CONSUMPTION VS INCOME (S-CURVE)

Actual vs diff. eq. model with damping for high consumption; 1961-2019

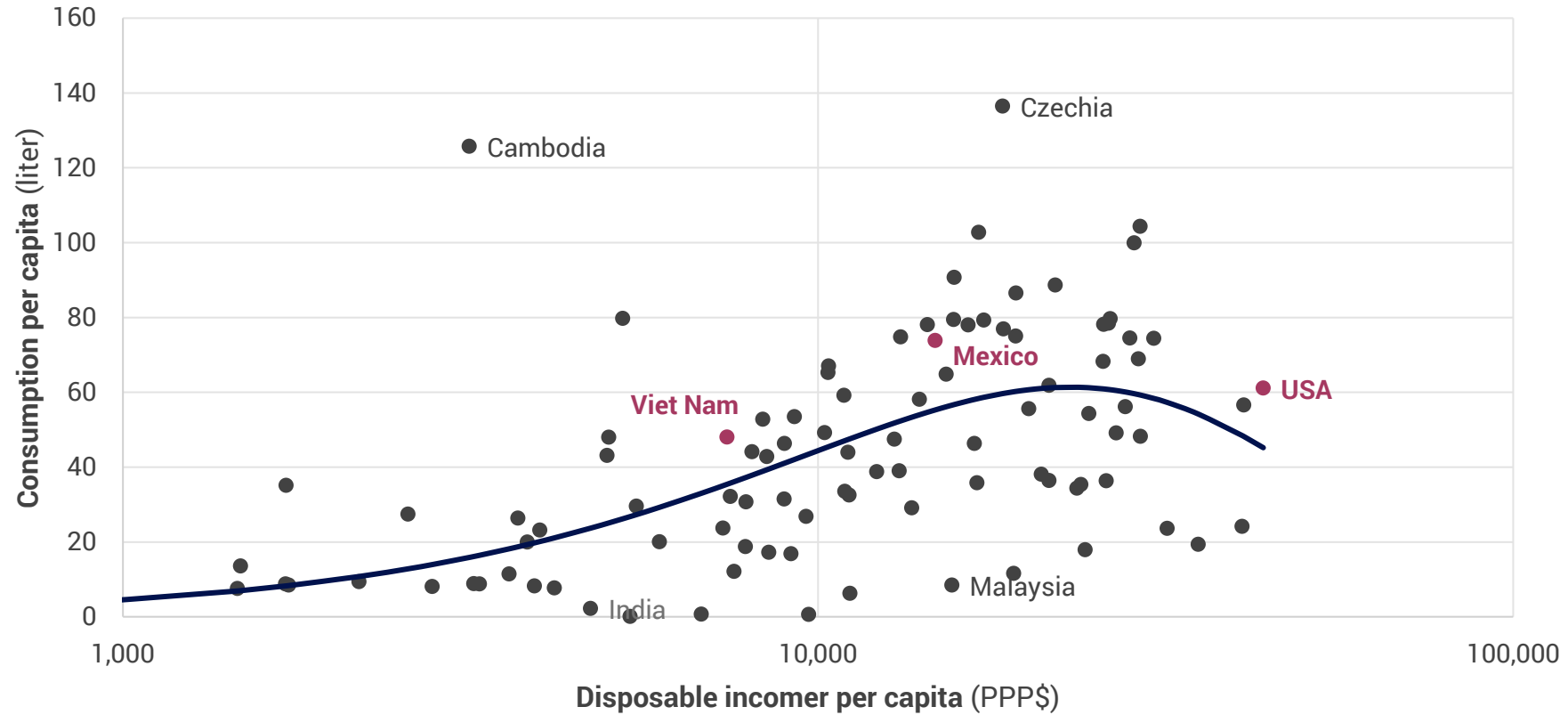


Mexico: Questions

- **Assume the pandemic was neutral on demand 2020-2021.
Down 2020 and up by the same amount in 2021**
- How much will the Mexican market grow / decline 2022-2027?
- How do you argue for this growth / decline?
- What else would like to know to make your analysis more robust?
Name up to 3 items

USA: Beer Global S-Curve

GLOBAL S-CURVE FOR BEER
Cross-sectional by country in 2019



BREAKOUT

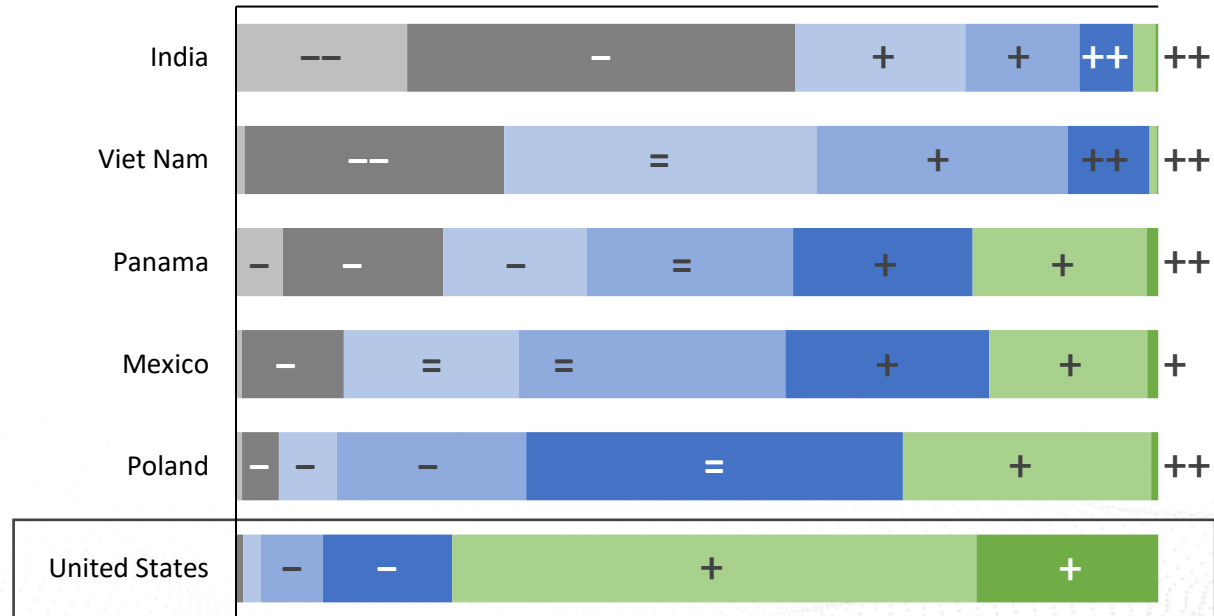
USA: Macro Context

SIZE OF SOCIOECONOMIC LEVELS, 2022

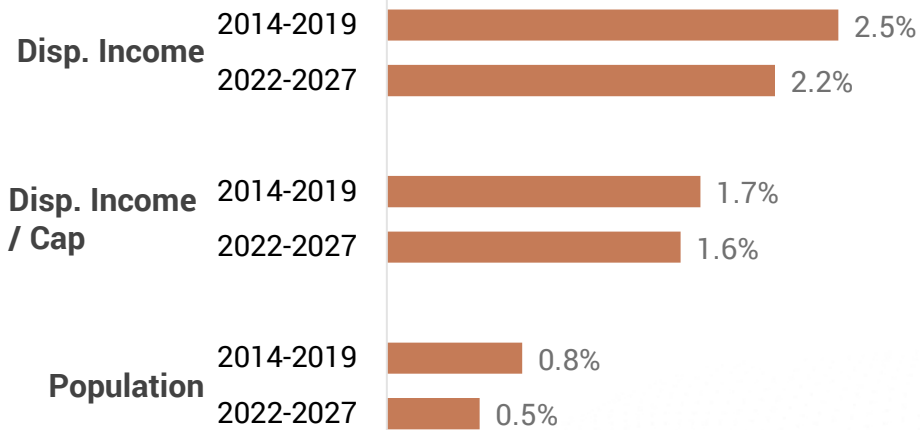
+ = - show expected changes 2022-2027

Very Low Low Middle-Low Middle Middle-High High Very High

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

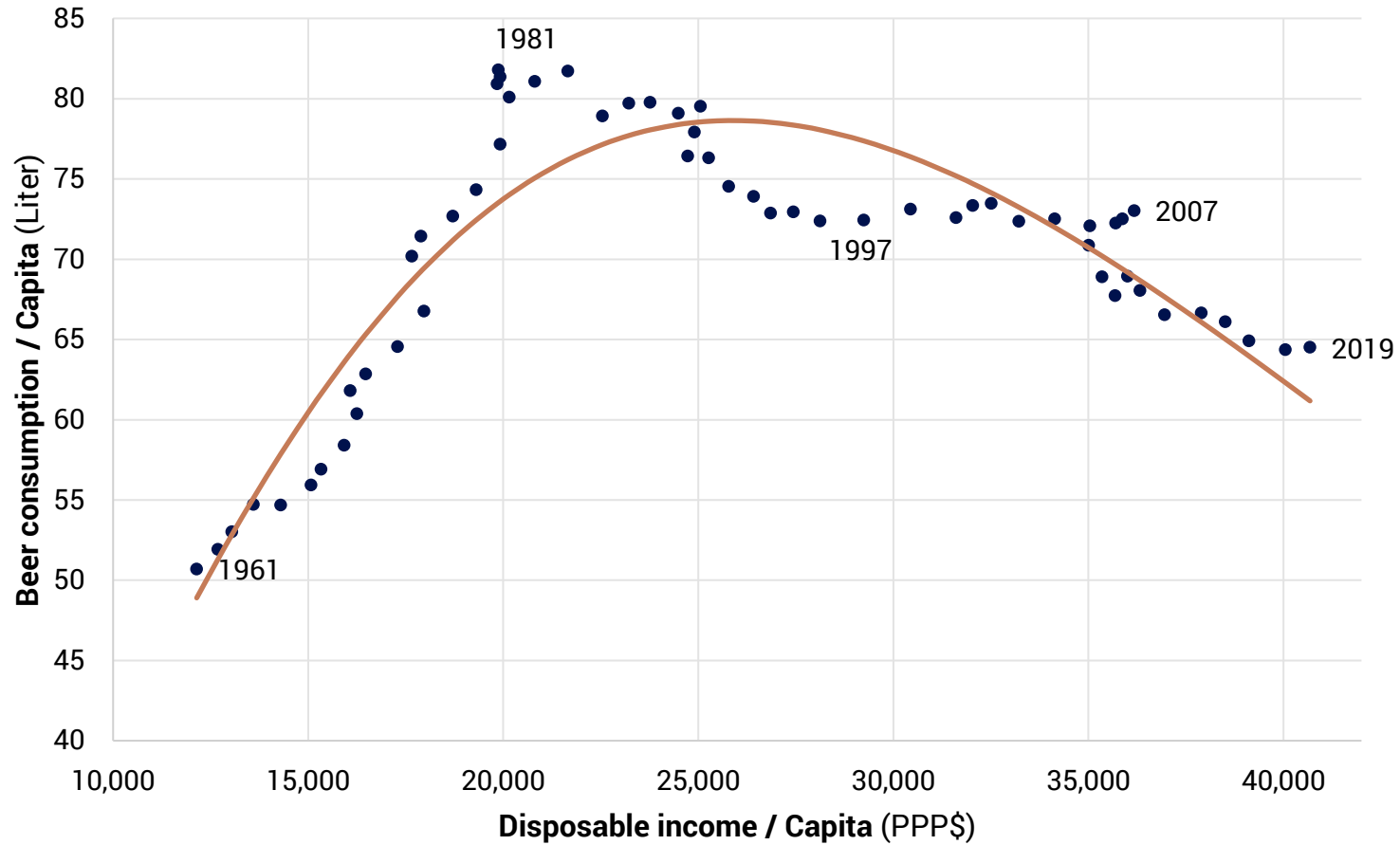


USA MACRO GROWTH



USA: Beer Market

UNITED STATES BEER CONSUMPTION VS INCOME (S-CURVE)
Actual vs diff. eq. model with damping for high consumption; 1961-2019

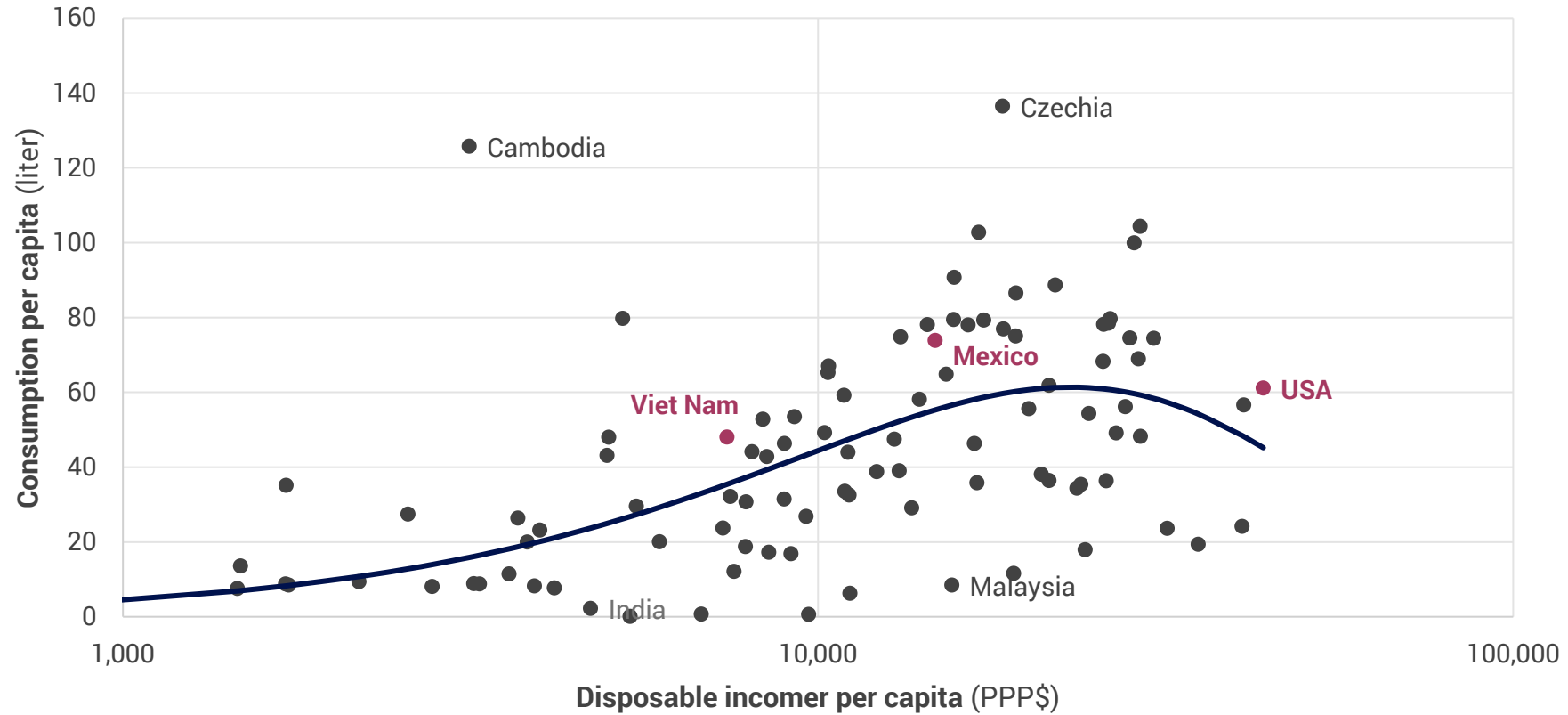


USA: Questions

- **Assume the pandemic was neutral on demand 2020-2021.
Down 2020 and up by the same amount in 2021**
- How much will the American market grow / decline 2022-2027?
- How do you argue for this growth / decline?
- What else would like to know to make your analysis more robust?
Name up to 3 items

Viet Nam: Beer Global S-Curve

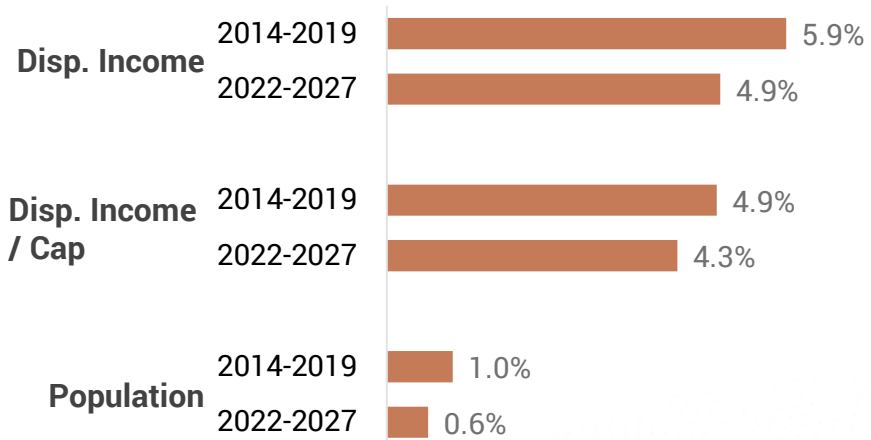
GLOBAL S-CURVE FOR BEER (S-CURVE)
Cross-sectional by country in 2019



BREAKOUT

Viet Nam: Macro Context

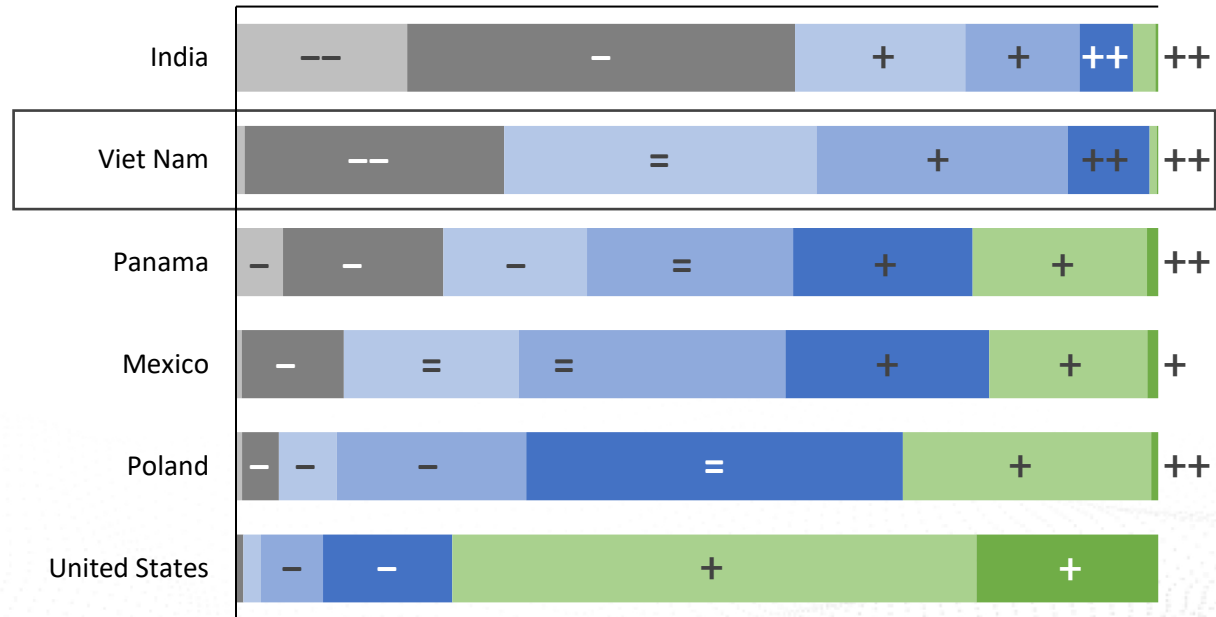
VIET NAM MACRO GROWTH



SIZE OF SOCIOECONOMIC LEVELS, 2022

+ = - show expected changes 2022-2027

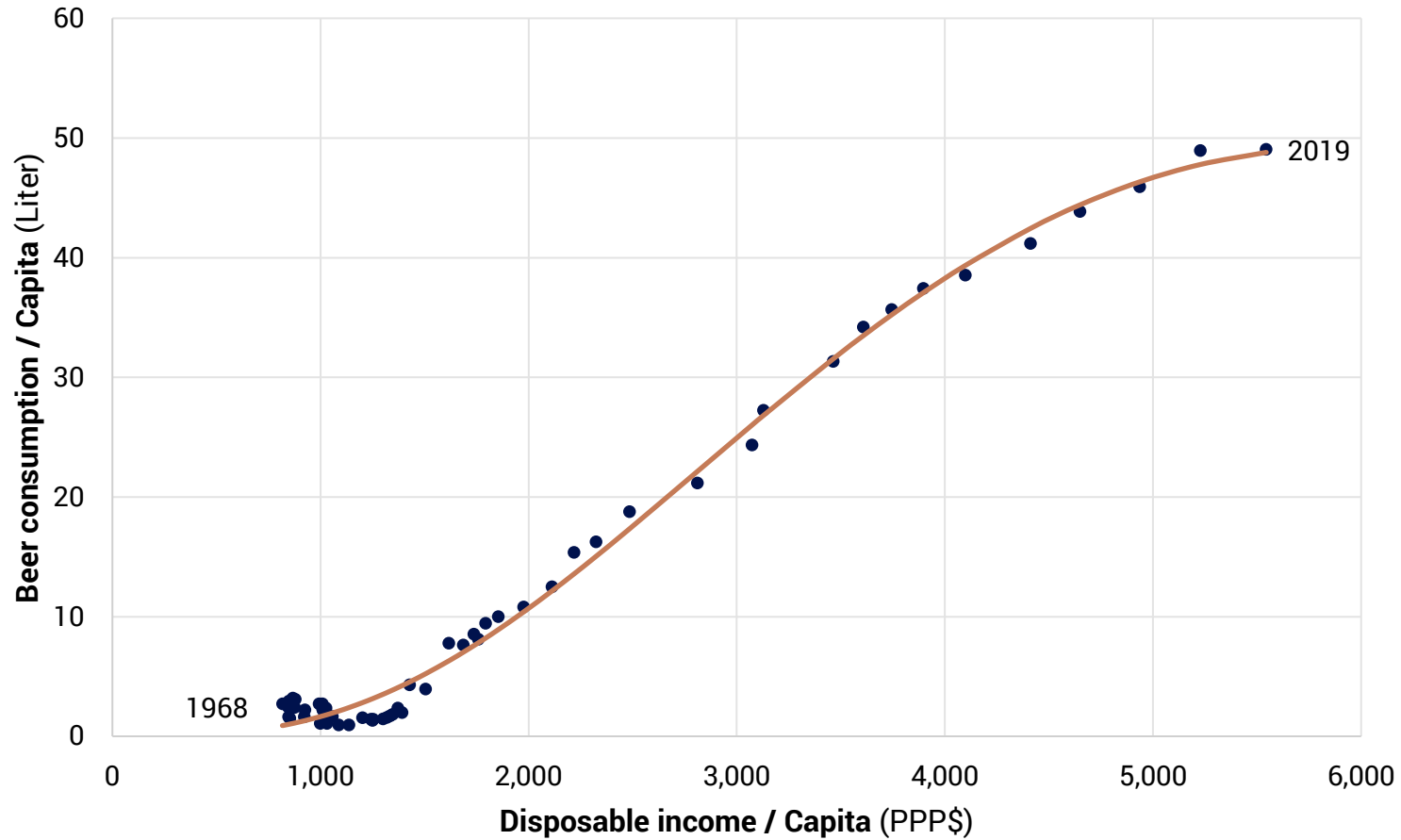
Very Low Low Middle-Low Middle Middle-High High Very High
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



Viet Nam: Beer Market

VIET NAM BEER CONSUMPTION VS INCOME

Actual vs diff. eq. model with damping for high consumption; 1961-2019



Viet Nam: Questions

- **Assume the pandemic was neutral on demand 2020-2021.
Down 2020 and up by the same amount in 2021**
- How much will the Vietnamese market grow / decline 2022-2027?
- How do you argue for this growth / decline?
- What else would like to know to make your analysis more robust?
Name up to 3 items

Agenda

- 1 Introduction
- 2 Where in the World Is the Market?—The Macro View
- 3 Where in the World Is the Market?—The Market View
- 4 Breakout session
- 5 **Q&A**



240 Elm Street, Suite 200, Somerville MA 02144
Paseo de la Reforma 509, Piso 16, Cuauhtémoc, Ciudad de México 06500, México

+1-617-394-1800