GLOBAL GROWTH PATTERNS:
LEVEL, STABILITY, SUSTAINABILITY

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JUNE 13, 2016
ISEO
Key Elements

• Demand
• Deflation
• Debt
• Distribution
• Digital technology
• Structure
• Productivity
• Monetary Policy
  – Only Game in Town
• Sovereign debt
• Savings
• Extreme Uncertainty
• Investment
Middle Income Transition is Difficult
Emerging Economies

• Middle Income Transition
• Traditional Growth Agenda
• Insulating economy from external distortions and volatility
• Low growth in developed economies/major markets
• Digital Technology and comparative advantage
DEVELOPED COUNTRIES GROWTH SINCE 2008 CRISIS

Real GDP
Percentage Change from 2008 Q1, Seasonally Adjusted

-5 0 5 10


United States
Euro Area (17 Countries)
Japan
UK

Source: OECD Main Economic Indicators, GDP Constant Prices

Econsnapshot.com
Nominal unit labour costs, whole economy (2000=100)
China Grew with Little Growth in Major External Markets

That is about a 63% increase
MGI: World is not Deleveraging

Exhibit E1
Global debt has increased by $57 trillion since 2007, outpacing world GDP growth

Global stock of debt outstanding by type
$ trillion, constant 2013 exchange rates

<table>
<thead>
<tr>
<th></th>
<th>2000–07</th>
<th>2007–14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound annual growth rate (%)</td>
<td>7.3</td>
<td>5.3</td>
</tr>
</tbody>
</table>

- Household: 8.5, 2.8
- Corporate: 5.7, 5.9
- Government: 5.8, 9.3
- Financial: 9.4, 2.9

Total debt as % of GDP:

- 2Q07: 269
- 2Q14: 286

1. 2Q14 data for advanced economies and China; 4Q13 data for other developing economies.
   NOTE: Numbers may not sum due to rounding.

SOURCE: Haver Analytics; national sources; World economic outlook, IMF, BIS; McKinsey Global Institute analysis
Exhibit 33

China's debt reached 282 percent of GDP in 2014, higher than debt levels in some advanced economies.

Debt-to-GDP ratio

% Government Non-financial corporate Financial institutions Households

China

<table>
<thead>
<tr>
<th>Year</th>
<th>Government</th>
<th>Non-financial corporate</th>
<th>Financial institutions</th>
<th>Households</th>
<th>Total Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.1 trillion</td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.4 trillion</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28.2 trillion</td>
</tr>
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</table>

By country, 2Q14

<table>
<thead>
<tr>
<th>Country</th>
<th>Government</th>
<th>Non-financial corporate</th>
<th>Financial institutions</th>
<th>Households</th>
<th>Total Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>55</td>
<td>65</td>
<td>125</td>
<td>38</td>
<td>282</td>
</tr>
<tr>
<td>South Korea</td>
<td>44</td>
<td>56</td>
<td>105</td>
<td>81</td>
<td>286</td>
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<tr>
<td>Australia</td>
<td>31</td>
<td>61</td>
<td>69</td>
<td>113</td>
<td>274</td>
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<tr>
<td>United States</td>
<td>89</td>
<td>96</td>
<td>67</td>
<td>77</td>
<td>269</td>
</tr>
<tr>
<td>Germany</td>
<td>80</td>
<td>70</td>
<td>54</td>
<td>54</td>
<td>258</td>
</tr>
<tr>
<td>Canada</td>
<td>70</td>
<td>25</td>
<td>60</td>
<td>92</td>
<td>247</td>
</tr>
</tbody>
</table>

NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Country Debt database; McKinsey Global Institute analysis
Monetary Easing is Becoming the Norm and the Dominant Policy Response - Globally

The Global Monetary Policy Spectrum

Source: Morgan Stanley Research
Advanced Economies Output Gap
Global low inflation

Headline CPI: Number of countries with low inflation rates (out of 55 countries)

Sources: IMF, Global Data Source; and IMF staff calculations.
Deflationary pressures widespread
CRUDE OIL
COPPER
Growth Acceleration In Late 18\textsuperscript{th} Century

**FIGURE 11**

Worldwide Growth in Real GDP per Capita, 1000–Present

Population Growth


Note: There is usually a lag between the invention of a process or a machine and its general application to production. “Beginning” means the earliest stage of this diffusion process.
Developing Countries Convergence

- Before the Industrial Revolution – little growth by modern standards
- 200 years of divergence 1750-1950
- Post World War II: Reversal of the Divergence Pattern

- Now mid-way through a century of convergence of developing and advanced economies

- The convergence process is causing a massive increase in the size of the global economy
  - Likely to triple in size in the next 25 years
Why the Pattern Reversal

- After WW I vs. After WW II
- Post war recovery including the vanquished
- Cold War in the Background
- GATT
- Multi-fiber agreement
- Colonial Empires Dismantled
- Transportation, communications and logistics technology and cost
Two Centuries of Divergence

**FIGURE 1.4**

*Fraction of World Inequality Accounted for by Differences across Countries*

![Graph showing the fraction of total inequality due to differences across countries from 1800 to 2000. The graph shows an upward trend over time, with two lines representing Theil coefficient and Mean ln deviation. The graph is sourced from Bourguignon and Morrison 2002.*

*Source: Bourguignon and Morrison 2002.*
Different Growth Trajectories More Recently

**FIGURE 1.3**
Regional Perspectives on Growth in the 1990s

*Source: WDI 2003.*
Why Do We Focus on Growth?

• It is not an objective or an end - just a statistic
• Sustained high growth
• Per capita GDP and growth are means to ends
• Ends have more to do with the chance to be productively employed, creativity, educate children, health
• Nearly Universal Value
  • Expanding opportunity for children and grandchildren and future generations
  • Requires high levels of investment and saving to finance the investment
Necessary and Sufficient Conditions

- In early stage developing countries, growth is a necessary but not sufficient condition for poverty reduction.
- Generally measured inequality rises.
- In middle and high income countries, growth is neither necessary nor sufficient for reducing inequality.
- But it does help with the political economy – redistribution with no or low growth creates losers as well as gainers and hence resistance.
Economists’ Forecasts
China: GDP per capita and Poverty Reduction
Income Inequality: China

China: Total Growth and Growth Rate: Per Capita Income: 1995-2004

Growth Factor

Income per capital
Bottom 5%
Bottom 10%
Low
Lower Middle
Middle
Upper Middle
High
Top 10%

Growth Rate

0.00 2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00

Growth
BRAZIL: AVERAGE ANNUAL REAL GROWTH RATE OF HOUSEHOLD PER CAPITA INCOME, 1999-2009

Taxa média anual de crescimento da renda real domiciliar per capita, por décimos da distribuição de renda, 1999-2009 (%)
Global and Local Inequality

- While global inequality has been falling, country level inequality has been rising
- Starting in the mid 1970’s
- Prior to that, distributional aspects of globalization were relatively benign
- In tandem with (more or less)
  - Scale of developing country entry into global economy
  - Digital Technology
  - Abandonment of micro management of economies in the Reagan Thatcher era
  - This last may have shifted power away from labor in determining labor capital shares
Digital Technology

- Labor saving dimension
  - Automation
  - AI
- Labor inclusion dimension –
  - think of global supply chains
  - Trade in services
Figure 1. Cross-Country Average Labor’s Share in National Income
(Ratio of labor income to national income)

Source: OECD, Structural Analysis Database.
Average and Median Income
Figure 4: Employment in Occupational Groups: 1967 – 2011

Non-Routine Cognitive

Non-Routine Manual

Routine – Manual and Cognitive
USA Data By Type of Job

Figure 3: Percent Change in Employment Shares by Occupation Group

- Non-Routine Cognitive: 29% to 39%
  - 1981-1991: 8.6%
  - 1991-2001: 10.6%
  - 2001-2011: 9.2%

- Routine: 58% to 44%
  - 1981-1991: -5.6%
  - 1991-2001: -6.6%
  - 2001-2011: -11.0%

- Non-Routine Manual: 13% to 17%
  - 1981-1991: 4.6%
  - 1991-2001: 0.9%
  - 2001-2011: 16.1%
Employment Changes by Type of Work USA

Figure 2
Change in Employment by Major Occupational Category, 1979–2012
(the y-axis plots 100 times log changes in employment, which is nearly equivalent to percentage points for small changes)
Job and Income Polarization Not Unique to the USA
Value Added per Worker

US Weighted Value Added per Job, 1990-2010

Real 2005 USD


142,534.70

82,259.36

Nontradable

Tradable
Value added per Worker and Global Supply Chains

Before

USA

VA per worker = 20

After

USA

VA per worker = 10

Mexico
USA Income Distribution and Political Polarization

Income Inequality and Political Polarization
1947 - 2009

$r = 0.93$

Polarization Index

Gini Index

House Polarization

AVERAGE AND MEDIAN HOUSEHOLD INCOME USA
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>INCOME OF THE RICHEST 10% OVER THE POOREST 10%</th>
<th>INCOME OF THE RICHEST 20% OVER THE POOREST 20%</th>
<th>GINI COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>12.5</td>
<td>7</td>
<td>35.2</td>
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<td>Austria</td>
<td>6.9</td>
<td>4.4</td>
<td>29.1</td>
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<td>Belgium</td>
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<td>4.9</td>
<td>33</td>
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<td>Brazil</td>
<td>51.3</td>
<td>21.8</td>
<td>57</td>
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<tr>
<td>Canada</td>
<td>9.4</td>
<td>5.5</td>
<td>32.6</td>
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<td>China (PRC)</td>
<td>21.6</td>
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<td>46.9</td>
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<td>8.1</td>
<td>4.3</td>
<td>24.7</td>
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<td>5.6</td>
<td>3.8</td>
<td>26.9</td>
</tr>
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<td>France</td>
<td>9.1</td>
<td>5.6</td>
<td>32.7</td>
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<tr>
<td>Germany</td>
<td>6.9</td>
<td>4.3</td>
<td>28.3</td>
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<td>Greece</td>
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<td>7.9</td>
<td>39.2</td>
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<td>36</td>
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<td>3.4</td>
<td>24.9</td>
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<td>7.8</td>
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<tr>
<td>United States</td>
<td>15.9</td>
<td>8.4</td>
<td>40.8</td>
</tr>
</tbody>
</table>
3D Printing
Electronics Assembly
Robot revolution helps Adidas bring shoemaking back to Germany

James Shotter in Ansbach and Lindsay Whipp in Chicago

In a small factory in Bavaria, Adidas is about to do something that it has not tried for three decades: bring shoe production back to Germany.
Adidas share price
3 year to Jun 7

Thomson Reuters
“There’s no hiding it, it’s a race to see who can revolutionise the manufacturing process first,” says David Weiner, an analyst at Deutsche Bank in New York. “They’re all going to get there, and that means combining the automation of footwear manufacturing with localising production. It’s the Holy Grail.”

One big advantage of Adidas’s robot-led factory is efficiency. Adidas says it will need to carry out larger production runs before it can quantify the gains precisely. But the consultancy BCG estimates that by 2025 advanced robots will boost productivity by as much as 30 per cent in many industries, and lower total labour costs by 18 per cent in countries such as the US, China and Germany.
Artificial Intelligence and Machine Learning

• A major break through in the past ten years
• Leveraging computer and network speed and access to unimaginably large data bases
• Automation used to be about codifiability
• Now it is about learnability
Summary

• Globalization and digital technology
• Have dramatically alerted the structure of economies
• Made us more interdependent via specialization
• Put the labor markets out of long run equilibrium
  – Skills a human capital cannot keep up with the demand side shifts

• GLOBALLY

• Physical production (digitally enabled) will move toward the market, not toward pools of labor
• Services will continue to move to valuable and less mobile labor