Global Economic Outlook and Growth Generators

William Lee
Citi Investment Research and Analysis
Central Global Scenario: Doing a bit better than expected a year ago

World Real GDP Growth (%)

<table>
<thead>
<tr>
<th>Forecast/estimate date</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar-10</td>
<td>3.5 (4.2)</td>
<td>3.4 (4.0)</td>
</tr>
<tr>
<td>Mar-11</td>
<td>4.0 (4.9)</td>
<td>3.6 (4.3)</td>
</tr>
</tbody>
</table>

PPP exchange rate based forecasts in brackets

- Global growth eases (about 0.5%) in 2011
  - Emerging Market (EM) economies slow
  - Advanced Economies (AE) holding their own (Europe, Japan)

- 2010 global performance reflects robust EM growth and weaker AEs

Source: Citi Investment Research and Analysis.
Central Scenario: New Mix of Global, Regional, and National forces

Increases in commodity prices play a key role

- Future oil supply interruptions likely to boost oil prices further
- Rising food prices may stir political problems in EMs (food riots, political instability)

Monetary policy in AEs complicated by headline vs. core inflation trends

- Monetary authorities respond differently (Fed vs ECB)
- EM monetary tightening under way

Fiscal Policy in AE continue to be constrained by looming sovereign debt sustainability concerns.
Global Growth: Uneven Recovery Continues

Cumulative Rise in Real GDP Across Advanced and Emerging Market Economies (1997=100)

Source: IMF.
Advanced Economies Are Still Significant Influences

• How Big are the Advanced Economies?
• How Important are the Advanced Economies to Global Trade?
• Where are their “Economic Spheres of Influence”? 
Nominal GDP as a Share of Global GDP 2009

Advanced Economies are less than 50% of world GDP at PPP exchange rates, just over 60% at market exchange rates.

Source: IMF
Worst-performing countries (US, Japan, EU) no longer rule global trade flows

Source: IMF
AEs still “punch above their weight” in the financial world

Source: WFE
US Dollar remains the Dominant global reserve currency

Source: IMF
Emerging Market Asia Becomes Global Locomotive


Exports to EMs from AEs (% of GDP)

Sources: IMF and Citi Investment Research and Analysis.
China: credit-dependent and lopsided growth

Financial deepening is fine, but not when it is too rapid

Investment share seems stretched (especially property); Consumption too low

The Structure of China’s GDP

Source: Haver Analytics; Citi Investment Research and Analysis.

Source: CEIC and Citi Investment Research and Analysis.
Asia’s reliance on China has increased by varying amounts.

**Asia’s Exports to China, % of Total Exports**

- 2003, 2007, 2H 2009 to 1H 2010

**Historical Beta to China GDP Growth vs. Exports to China and HK (% of GDP)**

- $R^2 = 0.78$

Note: We look at historical beta since 2005. Sources: CEIC and CIRA.
Policy Paralysis Plagues Advanced Economies

Fiscal policy:

- **Bad news:**
  - expansionary fiscal policy has been emasculated:
    - Debt sustainability concerns threaten adverse market response to the use of fiscal stimulus
    - Needed fiscal consolidation will likely have spill-over effects on households & enterprises

- **Good news:**
  - fiscal tightening at this time has small multiplier impact on GDP
    - Initial public debt burden/deficit is high – confidence effects
    - Initial household leverage is high – Minsky neutrality
## 1. Advanced Economies: The State of Public Finances and Debt-Stabilizing Primary Balances

(In percent of GDP)

<table>
<thead>
<tr>
<th>Country</th>
<th>IMF Staff Projections, 2010</th>
<th>Country-Specific i-g, 2011–2015 Average</th>
<th>Debt-Stabilizing PB</th>
<th>Debt-Stabilizing PB after 50% haircut</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gross Debt</td>
<td>Primary Balance</td>
<td>Cyclically Adjusted PB</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>84.2</td>
<td>-6.0</td>
<td>-4.6</td>
<td>-0.1</td>
</tr>
<tr>
<td>Greece</td>
<td>115.1</td>
<td>-8.6</td>
<td>-10.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Ireland</td>
<td>78.8</td>
<td>-10.0</td>
<td>-6.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Italy</td>
<td>118.6</td>
<td>-0.8</td>
<td>0.9</td>
<td>1.4</td>
</tr>
<tr>
<td>Japan</td>
<td>227.1</td>
<td>-8.3</td>
<td>-6.5</td>
<td>-0.1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>64.2</td>
<td>-4.1</td>
<td>-3.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Portugal</td>
<td>86.6</td>
<td>-5.6</td>
<td>-4.1</td>
<td>1.8</td>
</tr>
<tr>
<td>Spain</td>
<td>66.9</td>
<td>-8.7</td>
<td>-5.8</td>
<td>1.7</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>78.2</td>
<td>-8.8</td>
<td>-5.4</td>
<td>-0.9</td>
</tr>
<tr>
<td>United States</td>
<td>92.6</td>
<td>-9.2</td>
<td>-7.6</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>101.2</strong></td>
<td><strong>-7.0</strong></td>
<td><strong>-5.3</strong></td>
<td><strong>0.9</strong></td>
</tr>
</tbody>
</table>

Source: IMF desk economists’ projections, and authors’ estimates.

Notes: The data refer to the general government. Cyclically adjusted primary balances (CAPB) are reported in percent of nominal GDP. The debt-stabilizing primary balance is set to stabilize a country’s 2012 gross debt ratio. Illustrative scenarios for Japan are based on its net debt. Data for Greece in the first three columns are with respect to 2009. For Portugal and Spain, the figures do not reflect additional deficit reduction plans announced May 10. For the United States, the CAPB excludes losses from financial sector support. Country-specific interest-growth differentials for 2011–15 are based on WEO projections. For the “haircut” scenario, the 2012 debt ratio is reduced by 50 percent and stabilized at this level.

Revenues and Outlays of the Federal Government as a Percent of GDP

Sources: Congressional Budget Office and Office of Management and Budget.
United States: Fiscal Crisis Risk

Public Debt as a Share of GDP, 1790-2030F

Note: Debt as a share of GDP includes two separate CBO scenarios. Source: Congressional Budget Office.
Gross Debt Levels Remain High In Advanced Economies

Total Non-financial Sector Gross Debt in 2009
(Percent of GDP)

Note: Government refers to general government.
Source: Eurostat, Fed Board Flow of Funds, Bank of Japan
Global Bond Vigilantes Shift Focus to Developed Economies

EM Creditworthiness improves; Some AE Deteriorate

*(Comparing 5yr CDS spread)*

Source: Bloomberg
10-year Sovereign Debt Spreads vs. Bunds since 1995

Source: Datastream

Bond Market Vigilantes also at work in Euro Area periphery

- Portugal
- Ireland
- Italy
- Greece
- Spain

Source: Datastream
Sovereign Crisis is Spreading to Banks and Non-Financial Sector

Selected Euro Area Countries – Banks’ Use of ECB Open Market Operations as a Share of Tot. Assets

Bank Lending Rates To Non-Financial Corporations (New Loans Up to EUR 1 mln), 2003-2010

Sources: Eurosystem and Citi.
Euro Area Bank Lending Recovers Gradually

Loans To Non-Financial Companies and Households, Monthly Flow (3-M Avg)

Loans To Non-Financial Private Sector, % YY (3M Avg)

Sources: ECB and Citi.
ECB Liquidity Correction Largely Complete

Euro Area — ECB Open Market Operations Components (EUR Bn.)

Sources: ECB and Citi.
Fed and ECB Have Divergent Liquidity Policy Stances

US — Fed Balance Sheet Components

US, Euro Area, UK — Central Bank Balance Sheets in Billion

Sources: Haver and Citi Investment Research and Analysis
Banking System Presents Headwinds For U.S. Monetary Policy

Cumulative Change in Bank Credit and Monetary Base, 2008-3 Apr 11

Note: Bank credit is break adjusted for a March 31, 2010 rule change to on-balance sheet assets.
Sources: Federal Reserve Board and Citi Investment Research and Analysis.
Lingering Credit Restraint for Small Firms

United States


Small Business Credit Conditions and Borrowers with Unmet Borrowing Needs (Three-Month Moving Average), 1986-Mar 11

Note: Credit conditions is the percent reporting credit was harder to get minus percent expecting credit conditions to ease. Shaded regions denote periods of Fed easing.
Source: National Federation of Independent Business.
Monetary Policy Drivers

• Exogenous (Energy, Commodity, and FX) Price Pressures

• Get Ahead of Inflation

• Managing Inflation Expectations

• Headline versus Core Inflation

• [Employment and Economic Growth]?
Strong EM Growth Puts Pressures On Commodity Prices

Real HWWI Raw Material Prices (2000 = 100, Deflated By OECD CPI)

20-year long downtrend in real commodity prices

Source: Citi Investment Research and Analysis
Some Imported Price Pressure…

Import and Consumer Prices (Pct. YY)

Sources: Eurosystem and Citi.

Producer and Consumer Prices for Cereals and Global Wheat Price (Pct. YY),

Sources: Eurosystem and Citi.
... But Little Domestic Price Pressure Directly Influencing Core Inflation

Sources: Eurosystem and Citi.
ECB Has Begun to Hike Rates

Euro Area — ECB Rates vs. Taylor Rule

Sources: ECB and Citi.
Rising Oil Prices Have Not Affected U.S. Inflation Expectations

Price of Energy Relative to all Other Consumer Prices and Inflation Expectations

Excess Capacity Contributed to Disinflation

United States

Actual and Potential Real GDP, 2000-4Q 10

12-Month Dallas Trimmed-Mean PCE, Unit Labor Costs (Two-Year Smoothed, Annualized Percent Change) and Sticky Consumer Prices (Year-to-Year Percent Change), 1978-4Q 10

Note: Shaded regions denote recessions.
U.S. Alternative Paths For Monetary Policy

Alternative Monetary Policy Rules, 1997-2013E

Source: Citi Investment Research and Analysis.
Roadmap for US Monetary Policy

- Large-scale asset purchases and other liquidity-provision measures need to be wound down.

- Discussion in the FOMC focuses more on evidence of strengthening and sustained momentum to the recovery.

- Measures of inflation expectations will have to rise.

- Active draining of bank liquidity must begin
  - Federal Funds rate rises above the interest rate the Fed pays for reserve deposits
Key Points About the Outlook

- Global growth better than expected last year
- Global Growth is Bi-Polar: growth robust in EMs and lagging AEs
- Fiscal policy effectively neutralized by high debt levels and “Bond-Market Vigilantes.”
- Sovereign debt turmoil in Europe continues in 2011 and beyond; may be concerns for the United States and Japan in the near future.
- Global monetary policy tightening has begun in many EM economies.
- The ECB raised rates even though wage and core inflation remains moderate.
- The Fed has yet to act — and we think will not likely raise rates before March 2012
- Watch for telltale signs of Fed tightening to come.
Global Growth Generators
Historical Perspective on Global GDP Growth

Global Growth Outlook: Why is This Time Different?

Game Changers

- **Globalization and Technology** lower cross-border barriers
  - lower transportation and communication cost.
  - Social media (e.g., SMS, Facebook and Twitter) and mobile communications integrate societies

- “**Convergence Growth**” among smaller countries
  - Higher average growth rates as smaller economies “leap frog” stages of growth
Projections of GDP growth to 2050

Assume Convergence Growth:
Smaller Economies Grow Faster

\[ y = -1.6x + 18.677 \]
\[ R^2 = 0.8802 \]

Sources: Haver and Citi Investment Research and Analysis.
Size Does Not seem to Matter:
Convergence Growth Is NOT Obvious in the Data

\[ y = -0.07x + 2.6 \]
\[ R^2 = 0.0031 \]

Sources: Conference Board TED (Jan 2011); Citi Investment Research and Analysis.
For *poor countries with large young populations*, growing fast should be easy:

- **Open up**
- **Create market economy**
- **Invest**: human capital, physical capital (infrastructure)

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- **Be lucky** (avoid natural disaster and wars)
- **Don't blow it** (internal conflict, populist assaults on incentives to work, save and invest; macroeconomic mismanagement) (Zimbabwe, Venezuela, Ivory Coast)

Catch-up and convergence will then do the rest.
For more *mature countries closer to the frontier*, the quality of institutions and government policies matter more:

- Strengthen the rule of law (independent judiciary)
- Ensure property rights
- Develop financial markets (and regulatory capabilities)
- Encourage competition
Global Economy’s Center of Gravity Shifts East (2010-2050)

China the Largest Economy by 2030, but Overtaken by India 2050

The Top 10 Largest Economies in the World (in trillion 2010 PPP USD)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>2010</th>
<th>Rank</th>
<th>Country</th>
<th>2030</th>
<th>Rank</th>
<th>Country</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>US</td>
<td>14.12</td>
<td>1</td>
<td>China</td>
<td>38.49</td>
<td>1</td>
<td>India</td>
<td>85.97</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>9.98</td>
<td>2</td>
<td>US</td>
<td>24.62</td>
<td>2</td>
<td>China</td>
<td>80.02</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>4.33</td>
<td>3</td>
<td>India</td>
<td>23.27</td>
<td>3</td>
<td>US</td>
<td>39.07</td>
</tr>
<tr>
<td>4</td>
<td>India</td>
<td>3.92</td>
<td>4</td>
<td>Japan</td>
<td>5.55</td>
<td>4</td>
<td>Indonesia</td>
<td>13.93</td>
</tr>
<tr>
<td>5</td>
<td>Germany</td>
<td>2.91</td>
<td>5</td>
<td>Brazil</td>
<td>5.28</td>
<td>5</td>
<td>Brazil</td>
<td>11.58</td>
</tr>
<tr>
<td>6</td>
<td>Russia</td>
<td>2.20</td>
<td>6</td>
<td>Russia</td>
<td>4.82</td>
<td>6</td>
<td>Nigeria</td>
<td>9.51</td>
</tr>
<tr>
<td>7</td>
<td>Brazil</td>
<td>2.16</td>
<td>7</td>
<td>Indonesia</td>
<td>4.28</td>
<td>7</td>
<td>Russia</td>
<td>7.77</td>
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<tr>
<td>8</td>
<td>UK</td>
<td>2.16</td>
<td>8</td>
<td>Germany</td>
<td>4.05</td>
<td>8</td>
<td>Mexico</td>
<td>6.57</td>
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<td>9</td>
<td>France</td>
<td>2.12</td>
<td>9</td>
<td>UK</td>
<td>3.67</td>
<td>9</td>
<td>Japan</td>
<td>6.48</td>
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<tr>
<td>10</td>
<td>Italy</td>
<td>1.75</td>
<td>10</td>
<td>Mexico</td>
<td>3.20</td>
<td>10</td>
<td>Egypt</td>
<td>6.02</td>
</tr>
</tbody>
</table>

Note: GDP measured in 2010 PPP USD

Source: Citi Investment Research and Analysis
Rich Nations Remain Rich in 2050

GDP per capita (2010 PPP USD) 2050

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Singapore</td>
<td>137,710</td>
</tr>
<tr>
<td>2</td>
<td>Hong Kong</td>
<td>116,639</td>
</tr>
<tr>
<td>3</td>
<td>Taiwan</td>
<td>114,093</td>
</tr>
<tr>
<td>4</td>
<td>South Korea</td>
<td>107,752</td>
</tr>
<tr>
<td>5</td>
<td>US</td>
<td>100,802</td>
</tr>
<tr>
<td>6</td>
<td>Saudi Arabia</td>
<td>98,311</td>
</tr>
<tr>
<td>7</td>
<td>Canada</td>
<td>96,375</td>
</tr>
<tr>
<td>8</td>
<td>UK</td>
<td>91,130</td>
</tr>
<tr>
<td>9</td>
<td>Switzerland</td>
<td>90,956</td>
</tr>
<tr>
<td>10</td>
<td>Austria</td>
<td>90,158</td>
</tr>
</tbody>
</table>

Note: GDP per capita measured at 2010 PPP USD

Source: Citi Investment Research and Analysis
<table>
<thead>
<tr>
<th>Country</th>
<th>2010 GDP per capita</th>
<th>% of US GDP per capita</th>
<th>Average growth 2010 - 2050</th>
<th>3G Index Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>1735</td>
<td>4</td>
<td>6.3</td>
<td>0.39</td>
</tr>
<tr>
<td>China</td>
<td>7430</td>
<td>16</td>
<td>5.0</td>
<td>0.81</td>
</tr>
<tr>
<td>Egypt</td>
<td>5878</td>
<td>13</td>
<td>5.0</td>
<td>0.37</td>
</tr>
<tr>
<td>India</td>
<td>3298</td>
<td>7</td>
<td>6.4</td>
<td>0.71</td>
</tr>
<tr>
<td>Indonesia</td>
<td>4363</td>
<td>10</td>
<td>5.6</td>
<td>0.70</td>
</tr>
<tr>
<td>Iraq</td>
<td>3538</td>
<td>8</td>
<td>6.1</td>
<td>0.58</td>
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<tr>
<td>Mongolia</td>
<td>3764</td>
<td>8</td>
<td>6.3</td>
<td>0.63</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2335</td>
<td>5</td>
<td>6.9</td>
<td>0.25</td>
</tr>
<tr>
<td>Philippines</td>
<td>3684</td>
<td>8</td>
<td>5.5</td>
<td>0.60</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>4988</td>
<td>11</td>
<td>5.5</td>
<td>0.33</td>
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<tr>
<td>Vietnam</td>
<td>3108</td>
<td>7</td>
<td>6.4</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Note: GDP per capita measured at 2010 PPP USD. Average growth is average growth in our forecasts of real GDP per capita measured at 2010 PPP USD. See the main text of “Global Economics View - Global Growth Generators: Moving beyond ‘Emerging Markets’ and ‘BRIC’” for a description of the 3G Index.

Source: Citi Investment Research and Analysis
### Good Performance, But Not Quite 3G

<table>
<thead>
<tr>
<th>Country</th>
<th>2010 GDP per capita</th>
<th>% of US GDP per capita</th>
<th>Average annual growth forecast 2010 - 2050</th>
<th>3G Index Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>10980</td>
<td>24</td>
<td>3.5</td>
<td>0.41</td>
</tr>
<tr>
<td>Chile</td>
<td>14956</td>
<td>33</td>
<td>3.4</td>
<td>0.22</td>
</tr>
<tr>
<td>Colombia</td>
<td>9302</td>
<td>20</td>
<td>3.8</td>
<td>0.41</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>12121</td>
<td>27</td>
<td>4.2</td>
<td>0.24</td>
</tr>
<tr>
<td>Korea</td>
<td>29538</td>
<td>65</td>
<td>3.0</td>
<td>-0.29</td>
</tr>
<tr>
<td>Mexico</td>
<td>13689</td>
<td>30</td>
<td>3.0</td>
<td>0.27</td>
</tr>
<tr>
<td>Peru</td>
<td>9470</td>
<td>21</td>
<td>4.0</td>
<td>0.40</td>
</tr>
<tr>
<td>Russia</td>
<td>15701</td>
<td>34</td>
<td>3.7</td>
<td>-0.29</td>
</tr>
<tr>
<td>South Africa</td>
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<td>23</td>
<td>3.8</td>
<td>-0.05</td>
</tr>
<tr>
<td>Thailand</td>
<td>8638</td>
<td>19</td>
<td>4.4</td>
<td>0.33</td>
</tr>
<tr>
<td>Turkey</td>
<td>13063</td>
<td>29</td>
<td>3.5</td>
<td>0.05</td>
</tr>
<tr>
<td>Ukraine</td>
<td>6606</td>
<td>15</td>
<td>4.4</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Note: GDP per capita measured at 2010 PPP USD. Average growth is average growth in our forecasts of real GDP per capita measured at 2010 PPP USD. See the main text of “Global Economics View - Global Growth Generators: Moving beyond ‘Emerging Markets’ and ‘BRIC’” for a description of the 3G Index.

Source: Citi Investment Research and Analysis
### Some Additional High Growth Countries (Go To list)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average for GT(other countries)</strong></td>
<td>4.1</td>
<td>4.2</td>
</tr>
<tr>
<td>UAE</td>
<td>4.4</td>
<td>5.8</td>
</tr>
<tr>
<td>Panama</td>
<td>4.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>6.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>3.4</td>
<td>4.7</td>
</tr>
<tr>
<td>Singapore</td>
<td>3.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Poland</td>
<td>4.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Argentina</td>
<td>2.8</td>
<td>3.3</td>
</tr>
<tr>
<td>Australia</td>
<td>3.6</td>
<td>3.2</td>
</tr>
<tr>
<td>Algeria</td>
<td>3.6</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Sources: Conference Board TED (Jan 2011); Citi Investment Research and Analysis.
Additional Links with Growth

What About Role of Money/Finance and GDP Growth?
What financial variables are linked to growth?
Are the links stronger in larger and more mature economies?

- Equity Markets to Raise Capital
- Banks to Intermediate Savings
- Fixed Income Markets to Augment/Substitute for Banks
Economic growth is measured as the compounded growth rate of GDP over the 10-year period ending in 2009 (horizontal axis). Stock Mkt capitalization is measured as a ratio GDP (vertical axis).

Sources: Conference Board TED (Jan 2011); Citi Investment Research and Analysis.
Economic growth is measured as the compounded growth rate of GDP over the 10-year period ending in 2009 (horizontal axis). Bank intensity (liability side) is measured as a ratio of M2 to GDP (vertical axis).

Sources: Conference Board TED (Jan 2011); Citi Investment Research and Analysis.
Economic Growth and Bank Intensity (Bank Credit)*

- Economic growth is measured as the compounded growth rate of GDP over the 10-year period ending in 2009 (horizontal axis). Bank intensity (liability side) is measured as a ratio of bank credit extended to GDP (vertical axis).

Sources: Conference Board TED (Jan 2011); Citi Investment Research and Analysis.
Economic growth is measured as the compounded growth rate of GDP over the 10-year period ending in 2009 (horizontal axis). Credit intensity is measured as the ratio of private sector debt to GDP (vertical axis).

Sources: Conference Board TED (Jan 2011); Citi Investment Research and Analysis.
The Main Growth Drivers

- Promote Openness
- Create a Market Economy
- Invest in Human Capital
- Encourage Capital Formation and Infrastructure Investment:
  - Improve Quality of Institutions and Policy Framework
- Convergence to the Frontier
Appendix A-1

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