MGI approach identifies company and industry level factors behind productivity performance

<table>
<thead>
<tr>
<th>External factors</th>
<th>Industry dynamics</th>
<th>Company managerial &amp; operational factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macroeconomic environment</td>
<td>Exposure to global best practice</td>
<td>Product/format mix</td>
</tr>
<tr>
<td>Product and land market barriers</td>
<td>Domestic competitive intensity</td>
<td>Technology</td>
</tr>
<tr>
<td>Capital and labor market barriers</td>
<td>Non-level playing field/informality</td>
<td>Operations (Capacity utilization, supplier management, organization of functions and tasks)</td>
</tr>
<tr>
<td>Regulatory environment and enforcement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PERFORMANCE PRESSURE**
Wealth of accumulated knowledge over 25 years

**Number of MGI has studied a sector**
- Retail: 18
- Retail banking: 15
- Automotive: 14
- Housing construction: 13
- Telecom: 11
- Dairy processing: 10
- Software: 8
- Steel: 8
- Confectionery: 7
- Electronics: 6
- Meat processing: 6
- Electric utilities: 6
- Health care: 4
- Airlines: 3
- Cement: 3
- Hotels: 3
- Semiconductors: 3
- Agriculture: 2
- Apparel: 2
- Beer: 2
- Road freight: 2
- Wheat milling: 2
- Furniture: 1
- Machine equipment: 1
- Oil: 1
- Public transportation: 1
- Soap and detergent: 1
- Wholesale: 1

**Number of sectors studied by country**

<table>
<thead>
<tr>
<th>Country</th>
<th>Developed countries</th>
<th>Number of sectors studied</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>India</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Russia</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Turkey</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Germany</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Brazil</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Japan</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Korea</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Australia</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>France</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Thailand</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Sweden</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Myanmar</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Mexico</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>China</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Poland</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

SOURCE: McKinsey Global Institute
Productivity growth is an evolving sector story

There are large opportunities across all industries to raise productivity growth

What can catalyze future productivity growth spurts?
In the 1990s, productivity growth was driven by a virtuous cycle of jobs growth and increasing value added.

Compound annual growth rate, 1990–2000, %

Employment growth

Size represents productivity contribution

- Negative
- Positive

1. Productivity contribution calculated using Moody’s Economy.com data.

SOURCE: US Bureau of Economic Analysis; Moody’s Economy.com; McKinsey Global Institute Sunrise Productivity Model
In the 1990s, productivity growth was driven by a virtuous cycle of jobs growth and increasing value added.

**Compound annual growth rate, 1990–2000, %**

**Employment growth**

- Agriculture and mining
- Accommodation/food services
- Real estate
- Government
- Construction
- Management
- Administration
- Health care
- Professional services
- Transport
- Information
- Retail
- Wholesale
- Finance/insurance
- Manufacturing
- Retail
- Utilities
- Education
- Arts/recreation
- Other services

**Value-added growth**

- Machinery
- Agriculture and mining
- Utilities

1 Productivity contribution calculated using Moody’s Economy.com data.

**Source:** US Bureau of Economic Analysis; Moody’s Economy.com; McKinsey Global Institute Sunrise Productivity Model
Wal-Mart directly and indirectly raised retail productivity growth

Sales share
Nominal $ Millions, percent

<table>
<thead>
<tr>
<th>Year</th>
<th>Wal-Mart</th>
<th>Remainder of market</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>9</td>
<td>91</td>
</tr>
<tr>
<td>1995</td>
<td>27</td>
<td>73</td>
</tr>
<tr>
<td>1999</td>
<td>30</td>
<td>70</td>
</tr>
</tbody>
</table>

Productivity levels
Indexed to 1995 remainder of the market = 100

<table>
<thead>
<tr>
<th>Year</th>
<th>Wal-Mart</th>
<th>Remainder of market</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>114</td>
<td>79</td>
</tr>
<tr>
<td>1995</td>
<td>148</td>
<td>100</td>
</tr>
<tr>
<td>1999</td>
<td>181</td>
<td>128</td>
</tr>
</tbody>
</table>
Between 2000-2008, large productivity improvements came from efficiency gains that often were accompanied by job losses.

Compound annual growth rate, 2000–08, %

Employment growth

Value-added growth

-5 -4 -3 -2 -1 0 1 2 3 4 5 6

Size represents productivity contribution

- Negative

Positive

SOURCE: US Bureau of Economic Analysis; Moody’s Economy.com; McKinsey Global Institute Sunrise Productivity Model

1 Productivity contribution calculated using Moody’s Economy.com data.
Restructuring in large establishments led manufacturing productivity gains in the early 2000s

United States, Manufacturing (total)

Value added per occupied person
$ thousand, constant 2009 $

<table>
<thead>
<tr>
<th>Number of employees</th>
<th>&lt;10</th>
<th>10-249</th>
<th>250+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>96</td>
<td>120</td>
<td>189</td>
</tr>
<tr>
<td>2007</td>
<td>101</td>
<td>141</td>
<td>241</td>
</tr>
</tbody>
</table>

Share of employment, 2007 (%)

- <10: 4.8%
- 10-249: 51.5%
- 250+: 43.7%

Share of employment, 2002 (%)

- <10: 4.2%
- 10-249: 49.4%
- 250+: 46.4%

△ value added, CAGR 2002-07

- <10: 2.1%
- 10-249: 2.2%
- 250+: 1.8%

△ employment, CAGR 2002-07

- <10: 1.0%
- 10-249: -1.0%
- 250+: -3.0%

Most sectors contributed positively to productivity after the recession, while employment contracted in most industries.

Compound annual growth rate, 2008-2013, %

Employment growth

Value-added growth

Sources:
- US Bureau of Economic Analysis
- Moody’s Economy.com
- McKinsey Global Institute
Productivity growth is an evolving sector story

There are large opportunities across all industries to raise productivity growth

What can catalyze future productivity growth spurts?
Several opportunities to accelerate productivity growth across all deep-dive sectors

<table>
<thead>
<tr>
<th>Sector</th>
<th>Closing the gap</th>
<th>Pushing the frontier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and food manufacturing</td>
<td>Mechanization, Waste reduction, Farm consolidation</td>
<td>Operating efficiency improvements at plants, Yield increase by improved seeds, fertilizers, etc.</td>
</tr>
<tr>
<td>Auto manufacturing</td>
<td>China market consolidation, Restructuring to raise capacity utilization</td>
<td>OEMs in India catch up to market leader, Infotainment and connected car, Higher value alternate fuel tech cars</td>
</tr>
<tr>
<td>Retail</td>
<td>Shift to modern trade formats, Lean Store Ops, Merchandising best practices</td>
<td>Online retail penetration, Advanced analytics, Automation, New drugs and medical equipment</td>
</tr>
<tr>
<td>Health care</td>
<td>Reduced length of stay, Operational efficiencies, Disease management programs</td>
<td>Big data solutions, Innovative delivery models, IT-enabled efficiencies, New drugs and medical equipment</td>
</tr>
</tbody>
</table>

SOURCE: McKinsey Global Institute analysis
On aggregate, there is plenty of potential to accelerate productivity growth—and more than half in developed countries comes from catching up.

Potential productivity growth rate per annum

Percent

<table>
<thead>
<tr>
<th>Region</th>
<th>Catching up</th>
<th>Pushing the frontier</th>
</tr>
</thead>
<tbody>
<tr>
<td>G19</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Developed</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>Emerging</td>
<td>82%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Based on MGI’s sector assessment, lack of productivity opportunities is not the constraint on growth.

SOURCE: McKinsey Global Institute analysis
Productivity growth is an evolving sector story

There are large opportunities across all industries to raise productivity growth

What can catalyze future productivity growth spurts?
Potential catalysts for productivity growth spurts

- Regulatory changes
- Technology-enabled productivity growth
- Increased competition
- Other?
Twelve technologies have significant potential to disrupt

Disruptive Dozen

IT and how we use it

- Mobile Internet
- Cloud technology
- Internet of Things
- Automation of knowledge work

Changing the building blocks of everything

- Next-generation genomics
- Advanced materials

Machines working for us

- Advanced robotics
- Autonomous and near-autonomous vehicles
- 3D printing

Rethinking energy comes of age

- Energy storage
- Advanced oil and gas exploration and recovery
- Renewable energy

SOURCE: McKinsey Global Institute analysis