Slower, Lower, Weaker:
The Post-Crisis Vehicle Sales Outlook for Russia

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Overview

- Prior to the 2009 recession, it was believed that Russia would become the #1 market for new vehicle sales in Europe within the current decade

- Assessing the pre- and post-crisis economic fundamentals reveal significant structural vulnerabilities in the Russian economy

- Near-term risks are likely to exacerbate the economic and industry growth projections toward the downside

- The relationship between vehicle density and real GDP per capita provides a useful analytical tool to measure how long-term growth trends impact new vehicle sales
The economic system of Russia has undergone such rapid changes that it is impossible to obtain a precise and accurate account of it … . Almost everything one can say about the country is true and false at the same time.

John Maynard Keynes, 1925
Two Perspectives of Economic Developments During 2000-08

2000-08 Positive Developments

• Real GDP per capita increased 88% from 1999 to 2008
  – Supported growth of the middle class

• Implementation of tax reforms
  – A 13% flat tax was implemented in 2001
  – In 2002, a decline in the corporate tax rate from 35% to 24% was implemented

• An accumulation of foreign exchange reserves totaling
  – Foreign exchange reserves increased from USD8.5bn at the end of 1999 to a peak USD582.3bn in July 2008

• Government external debt greatly reduced
  – From 68.4% of GDP in 1999 to 1.8% in 2008

2000-08 Negative Developments

• Energy price boom was unsustainable – exacerbating Russia’s dependency on the energy sector
  – Russia became the #1 natural gas producer and the #2 oil producer

• Economic inefficiencies and corruption persists

• Wealth remained highly concentrated

• Real GDP barely above levels that existed during the breakup of the Soviet Union
Russian vehicle market is vulnerable to economic boom and bust cycles.

Russia: New Vehicle Registrations

2008: Oil prices climb to record-high USD145/bbl; start of Global Financial Crisis; import taxes increased
2012: Russia joins WTO
2009: Oil prices collapse; economy enters recession
1998: Russian default
2001: 13% Flat Tax implemented

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Registrations</th>
</tr>
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<tbody>
<tr>
<td>2000</td>
<td>USA</td>
<td>17.9</td>
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<td>2006</td>
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<td>2007</td>
<td>USA</td>
<td>18.4</td>
</tr>
<tr>
<td>2008</td>
<td>USA</td>
<td>20.1</td>
</tr>
</tbody>
</table>

World Total 2000: 58.2
Top 10 % of Total: 72.7%

World Total 2008: 70.4
Top 10 % of Total: 67.2%

World Total 2009: 66.7
Top 10 % of Total: 71.4%

World Total 2013: 86.5
Top 10 % of Total: 71.7%

Source: Polk; Calculations: General Motors Company
Russian experience was in sharp contrast to China, Brazil, and India.

**Russia: New Vehicle Registrations**

- **2000**
  1. **USA** 17.9
  2. **JAPAN** 6.0
  3. **GERMANY** 3.7
  4. **ITALY** 2.7
  5. **FRANCE** 2.6
  6. **UK** 2.5
  7. **CHINA** 2.1
  8. **SPAIN** 1.7
  9. **CANADA** 1.6
  10. **BRAZIL** 1.5

- **2008**
  1. **USA** 13.5
  2. **CHINA** 9.8
  3. **JAPAN** 5.1
  4. **GERMANY** 3.4
  5. **RUSSIA** 3.1
  6. **BRAZIL** 2.9
  7. **FRANCE** 2.6
  8. **UK** 2.5
  9. **ITALY** 2.4
  10. **INDIA** 2.0

- **2009**
  1. **USA** 10.5
  2. **JAPAN** 4.6
  3. **GERMANY** 4.0
  4. **BRAZIL** 3.2
  5. **FRANCE** 2.7
  6. **ITALY** 2.4
  7. **UK** 2.3
  8. **INDIA** 2.3
  9. **RUSSIA** 1.5
  10. **CANADA** 1.8

- **2013**
  1. **CHINA** 21.3
  2. **USA** 15.8
  3. **JAPAN** 5.4
  4. **BRAZIL** 3.8
  5. **GERMANY** 3.3
  6. **INDIA** 3.1
  7. **RUSSIA** 2.9
  8. **UK** 2.6
  9. **FRANCE** 2.2
  10. **CANADA** 1.8

Source: Polk; Calculations: General Motors Company
Based on a real GDP per capita of USD6,958 as of 2013, Russia’s vehicle ownership level has reached 322 per 1,000 people – roughly double the 162 vehicle ownership level in 1999.

Sources: Polk, United Nations, National Statistical Agencies, Haver Analytics; Calculations: General Motors Company
How we assess the long term new vehicle sales potential

• Forecast long-term economic growth
  – Combined with long-term population projections, we can forecast real GDP per capita outlook

• Estimate the historical relationship between real GDP per capita and vehicle parc per capita
  – Relationship is used to project the long-term growth of the vehicle parc

• Long-term vehicle parc projections allows us to forecast vehicle sales in terms of new demand and replacement demand
  – New demand = change in vehicle parc
  – Replacement demand = “trend” scrappage rate * previous year vehicle parc
The pace of economic growth and development will determine, in part, the level of vehicle ownership in Russia

- Other factors include the road infrastructure, congestion, urbanization, and population density

Sources: Polk, United Nations, National Statistical Agencies, Haver Analytics; Calculations: General Motors Company
Russia: Slower economic expansion versus 1998 crisis

Post-1998 Growth Drivers
- Synchronized global growth
- High risk appetite
- Weak real ruble
- High oil prices
- Significant labor market slack; High pent-up demand
- Strong growth of middle class

Post-2008 Growth Drivers
- Uneven global recovery
- Increased risk aversion; Capital outflows
- Overvalued ruble
- High dependency on oil sector
- Near full employment; Partially exhausted pent-up demand
- Slower expansion of middle class

Sources: State Committee of the Russian Federation, Haver Analytics
Calculations: General Motors Company
BRIC economies reflect diverging trends; Russia posting the weakest expansion relative to China, Brazil, and India

Normalized Real GDP with Pre-Crisis Peak = 100 at Quarter = 0

Sources: National Statistics Agencies, Haver Analytics
Calculations: General Motors Company
Prior to the Global Financial Crisis of 2008-09, real GDP growth was broadly synchronized and robust; since then, growth has been weaker and largely uneven.

Sources: World Bank, Haver Analytics
Calculations: General Motors Company
Since 2000, consumer spending has been the major contributor to economic activity

- Since 2000, and through 2013, consumer spending as a percent of GDP increased by 20 ppt – from 36% to 56% – and, to a large extent, was satisfied by imports
- Contribution from investment spending added 7 ppt from 15% in 2000 to 22% as of 2013
Through 2008, imports accounted for a rising share of Russian new vehicle sales; share of foreign brand sales reached 79% in 2013, with 45% of foreign brands produced within Russia.
While consumption can outpace aggregate growth in the short term as pent-up demand is satisfied, it cannot do so in the long term.

Economic activity from 2001 to 2008 was supported by consumption-led growth … … which has continued since the 2009 recession.

Sources: State Committee of the Russian Federation, Haver Analytics
Calculations: General Motors Company
Expansion of the middle class supported rapid growth of vehicle sales from 2000-2008; since 2008, increase in the middle class has slowed.

**Annual Household Income Distribution, Real USD**

% of Households Within Income Band

<table>
<thead>
<tr>
<th>Income Band</th>
<th>2000</th>
<th>2008</th>
<th>2009</th>
<th>2013</th>
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<tr>
<td>Up to USD3,000</td>
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<td>USD3,000 - 5,000</td>
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<td>USD5,000 - 7,500</td>
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<td>USD7,500 - 10,000</td>
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<td>USD10,000 - 12,500</td>
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<td>USD12,500 - 15,000</td>
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<td>USD15,000 - 20,000</td>
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<tr>
<td>USD20,000 - 30,000</td>
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<td>USD30,000 - 40,000</td>
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<tr>
<td>Over USD40,000</td>
<td></td>
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</tbody>
</table>

**Minimum household income level**
where affordability is supportive of new vehicle purchases

Calculations: General Motors Company
Growth during the period 2000-08 was largely attributed to the recovery from the deep economic decline starting with the dissolution of the Soviet Union and ending with the Russian debt default.

- With real GDP falling to 56% of its 1989 level in 1998, the rapid growth during the period 2000-08 was achieved by the re-employment of existing capacity, the reduction of unemployment, and rise in energy prices.
- The unemployment rate fell from a peak 14.6% in February 1999 to 5.4% in May 2008, with 9.3 million jobs created during this period.

Once the economy returned to 1989 levels, maintaining a high rate of growth would require improvement in long-term structural growth drivers.

It was not until 2007 when real GDP exceeded the level achieved in 1989.

Real GDP growth averaged 7.0% from 2000-08.

Sources: World Bank, Haver Analytics
Calculations: General Motors Company
Russia’s economic competitiveness has deteriorated from the pre-recession period – negatively impacting capital flows

• Insufficient investment spending
  – Sutela* (2003) indicated that investment in the 20-30% of GDP range – absent an improving external environment – is consistent with 2-3% annual real economic growth

• Lack of economic competitiveness
  – Competitive ranking has weakened since the 2009 crisis

• Increased risk aversion
  – Post-crisis period distinguished risks among emerging markets

• Low investment grade credit ratings
  – S&P: BBB with “stable” outlook
  – Moody’s: BAA1 with “stable” outlook
  – Fitch: BBB with “negative” outlook

* Sutela, Pekka (2003), The Russian Market Economy, Kikimora, Helsinki.
Russia’s demographic profile is largely unfavorable

• **Decline in working age population**
  – Broad-based immigration policy would provide an offset
  – Lack of fixed investment limits productivity growth from also providing an offset to the declining working age population
  – By 2024, 35% of the population is expected to be 50 years of age or older and 23% under the age of 20

Sources: United Nations, Haver Analytics
Calculations: General Motors Company
Government revenues highly dependent on energy sector

- Lack of economic diversification
  - Government failed to use strong growth during 2000-08 to diversify the economy
  - High dependence on energy sector: energy sector contributes roughly 25% to the overall economy, approximately 50% to government revenues, and more than 50% of total exports
    - Higher oil prices – in the range of USD100-110 per barrel – needed to support balanced budget
  - While Europeans purchase a disproportionately large amount of Russian oil and natural gas, their dependence on Russia as a source for energy is declining
  - Russia's lack of diversification leaves the economy vulnerable to boom-bust cycles
Short-term risks biased toward the downside

- Ukraine conflict increases downside economic risks
  - Increased risk that the Russian economy could enter recession
  - Further deterioration of the current account – perhaps induced by economic sanctions – could exert RUB weakness and require higher interest rates to reduce upside inflation risk
  - To the extent that the Russian economy deteriorates in the short term – absent potential “catch-up” growth – there will be a permanent loss of income longer term

Sources: Federal State Statistics Service, State Committee of the Russian Federation, Central Bank of Russia, Haver Analytics; Calculations: General Motors Company
Eurasian Economic Union would isolate Russia from the economic forces that would otherwise advance its growth and development

Compared to economies of the European Union, Eurasia Union members, on balance,

• are at a lower level of economic development
• are less competitive
• are more corrupt
• reflect less economic freedom

<table>
<thead>
<tr>
<th>Index of Economic Competitiveness 2013-14</th>
<th>Corruption Perceptions Index 2013</th>
<th>Index of Economic Freedom 2014</th>
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</thead>
<tbody>
<tr>
<td>Germany (4)</td>
<td>Germany (12)</td>
<td>Germany (14)</td>
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<tr>
<td>UK (10)</td>
<td>UK (14)</td>
<td>UK (18)</td>
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<td>France (23)</td>
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<tr>
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<td>Armenia (94)</td>
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<td>Belarus (123)</td>
<td>France (70)</td>
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<td>Armenia (79)</td>
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<td>Kyrgyzstan (150)</td>
<td>Russia (140)</td>
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<td></td>
<td>Belarus (150)</td>
<td>Belarus (150)</td>
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</tbody>
</table>

Blue text = European Union members
Red text = Eurasian Economic Union members
Lower index reflects higher competitiveness, less corrupt, and greater freedom
Sources: World Economic Forum, Transparency International, Heritage Foundation

<table>
<thead>
<tr>
<th>Real GDP, Bil. 2005USD</th>
<th>Population, Millions</th>
<th>Real GDP per Capita, 2005USD</th>
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</thead>
<tbody>
<tr>
<td>European Union (14,648)</td>
<td>509</td>
<td>28,751</td>
</tr>
<tr>
<td>Eurasian Union (1,149)</td>
<td>185</td>
<td>6,197</td>
</tr>
</tbody>
</table>

Sources: World Bank, United Nations, Haver Analytics; Calculations: General Motors Company

Eurasian Union – planned for 2015 – includes Russia, Belarus, Kazakhstan, Armenia, Kyrgyzstan, and Tajikistan
Consensus long-term real GDP growth outlook has been progressively downgraded.

**Consensus Economics: Real GDP Growth Forecasts**

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</tbody>
</table>

Source: Consensus Economics (various issues)
The downgrading of the real GDP growth outlook from the Sep 2008 Consensus Forecast to the March 2014 Consensus Forecast results in a cumulative loss of real GDP of nearly USD500 billion

- Short-term risks can have longer term consequences on real GDP
- The risk that the Russian economy contracts 1.8% in 2014 – as cited by the World Bank in their high risk scenario – would, ceteris paribus, reduce real GDP by an additional USD40 billion by 2024

Sources: World Bank, Haver Analytics, Consensus Economics (various issues)
Calculations: General Motors Company
The lower post-crisis growth trajectory reduces per capita real GDP in 2024 from USD16,446 to USD9,474 – lowering vehicle density from 491 vehicles per 1,000 people to 470 vehicles per 1,000 people.

- The lower density results in an estimated forecast reduction of 3.25 million new vehicle sales during the period 2014 to 2024.

### Russia 2024

<table>
<thead>
<tr>
<th></th>
<th>Real GDP per Capita</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Crisis High Growth</td>
<td>16,446</td>
<td>491</td>
</tr>
<tr>
<td>Post-Crisis Low Growth</td>
<td>9,474</td>
<td>470</td>
</tr>
</tbody>
</table>

Sources: World Bank, United Nations, Haver Analytics, Consensus Economics (various issues)
Calculations: General Motors Company
Summary

• Post-crisis period exposed structural vulnerabilities in the Russian economy

• The downgrading of the long-term economic outlook since the 2009 recession is a limiting factor regarding industry vehicle sales growth

• To the extent that these structural weaknesses can be addressed, the economy can achieve a stronger and more sustainable pace of economic growth

• The Russian vehicle market has the potential to become the largest in Europe, but it will likely struggle to do so within the 10-year forecast horizon
Thank You for Your Attention!

GM