Contents

1. Structural Change of Japanese Automobile Industry

2. Profit Strategy of Carmakers

3. Synthesis of the Profit Strategy and its adequacy of Carmakers

1.1 Growth trend of Japanese Auto-Industry

[Graph showing the growth trend of Japanese automobile industry with data from JAMA]
Globalization of Production

1.2 Structural Change of Domestic Market
1.3 Variety of Performances in 1995-2007

Growth of Japanese Carmakers from 1995 to 2007

<table>
<thead>
<tr>
<th></th>
<th>Toyota Group</th>
<th>Nissans</th>
<th>Hondas</th>
<th>Mazdas</th>
<th>Suzukis</th>
<th>Mitsubishis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>29.8%</td>
<td>-31.2%</td>
<td>37.7%</td>
<td>29.0%</td>
<td>41.3%</td>
<td>-36.3%</td>
<td>13.7%</td>
</tr>
<tr>
<td>Sales</td>
<td>18.4%</td>
<td>-25.4%</td>
<td>44.2%</td>
<td>-0.5%</td>
<td>48.9%</td>
<td>-62.6%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>Exports</td>
<td>107.5%</td>
<td>8.0%</td>
<td>62.9%</td>
<td>82.3%</td>
<td>101.9%</td>
<td>13.1%</td>
<td>72.8%</td>
</tr>
</tbody>
</table>

Data: JAMA, and Financial Reports of carmakers.

- Growth of Suzuki is remarkable in all fields, and became a member of the second group.
- Toyota and Honda also improved their position in Japan.
- Nissan and Mitsubishi suffered from the reduction of their domestic sales, but Nissan looks covered the domestic loss by overseas production, whereas Mitsubishi encountered the difficulty also in its overseas production.
Profit Strategy of Carmakers

2.1 Determinants of the Strategy

The Strategy of the Firm \( i \) \((S_i)\) is determined by:
\[
S_i = (s_{pi}, s_{qi}, s_{ri}, s_{li})
\]

Product Strategy: \( s_p = (v_{SV}, v_K, v_M, v_{HV}, v_{EV}) \)

Production Strategy: \( s_q = (q_{DP}, q_{DP}) \)

Regional Strategy: \( s_r = (r_j, r_{NA}, r_{EU}, r_{AS}) \)

Employment Strategy: \( s_l = (l_j, l_{OV}) \)

2.2 Product Strategy: \( s_p = \left( v_{SV}, v_K, v_M, v_{HV}, v_{EV} \right) \)

\( v_{SV} \): Standard Vehicles
\( v_K \): Kei Cars/Trucks
\( v_M \): Imported Cars
\( v_{HV} \): Hybrid Vehicles
\( v_{EV} \): Electric Vehicles

\[
v_j = \left( \frac{p_{j2012}}{\sum p_{k2012}} - \frac{p_{j2000}}{\sum p_{k2000}} \right)
\]

\( P_j = \text{Sales volume of the product } j \)

\( j, k \in \{SV, K, M, HV, EV\} \)

<table>
<thead>
<tr>
<th></th>
<th>( v_{SV} )</th>
<th>( v_K )</th>
<th>( v_M )</th>
<th>( v_{HV} )</th>
<th>( v_{EV} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOYOTA</td>
<td>-31.4%</td>
<td>1.4%</td>
<td>0.4%</td>
<td>29.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>NISSAN</td>
<td>-28.1%</td>
<td>19.1%</td>
<td>6.7%</td>
<td>6.6%</td>
<td>1.7%</td>
</tr>
<tr>
<td>HONDA</td>
<td>-20.7%</td>
<td>14.4%</td>
<td>-1.3%</td>
<td>20.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>SUZUKI</td>
<td>5.5%</td>
<td>-5.7%</td>
<td>0.2%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>MAZDA</td>
<td>-9.3%</td>
<td>9.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>MITSUB.</td>
<td>-8.9%</td>
<td>-0.1%</td>
<td>6.5%</td>
<td>0.0%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Data: \textit{Financial Reports} of each firm.

Evolution of Product Strategy:
Change of Sales Weight in the Past 12 Years

TOYOTA and HONDA
Shift from the Standard Vehicles (SV) to the HV

NISSAN
Shift from the SV to the Kei and Imported Cars

SUZUKI
Slight Shift from the Kei Cars/Vehicles to the SV

MAZDA
Slight Shift from the SV to the Kei Cars/Vehicles

MITSUBISHI
Slight Shift from the SV to the Imported Cars
HV and EV

HV market has taken off especially remarkable diffusion of the Prius and the Aqua of Toyota, and the Fit HV of Honda.

EV market doesn’t take off yet, even seems failed in.

Nissan has decided to develop and commercialize its HV. Mitsubishi continues to place its future in EV.

Data: http://hybrid-eco.net (September, 2013)

Domestic Sales of Cars produced abroad

Overseas Transfers of car-production are observed at Nissan and Mitsubishi.

Data: Japan Automobile Importers Association

2.3 Production Strategy: $s_q = \left( q_{DP} \cdot q_{OP} \right)$

$q_{DP}$: Domestic Production
$q_{OP}$: Overseas Production

$q_j$ is the average annual growth rate of Domestic Production or Overseas Production in the past 13 years.

$$q_j = \left( \frac{J_{2012}}{J_{2000}} \right)^{\frac{1}{13}} - 1$$

$j \in (DP, OP)$

Data: Financial Reports of carmakers
Evolution of Production Strategy: Globalisation in the Past 12 Years

TOYOTA, SUZUKI, and MAZDA
Keeping and/or Increasing the domestic production, and increasing the overseas production

NISSAN and HONDA
Shift from the domestic production to the overseas production

MITSUBISHI
Decreasing both, the domestic and overseas productions

TOYOTA
Increased both, but overseas production more than exports. Only TOYOTA lost both from 2006 to 2008 (bottom of OP in 2008, that of exports in 2009).

NISSAN, HONDA and SUZUKI
Increased both until 2006, but the shift from exports to overseas production after 2008.

MAZDA
Increased exports more than overseas production.

MITSUBISHI
Reduced both until 2008, and after that, slightly increased both, but overseas production more than exports.

2.4 Regional Strategy: \( s_r = \left( r_J, r_{NA}, r_{EU}, r_{AS} \right) \)

\( r_J \): Production in Japan

\( r_{NA} \): Production in North America

\( r_{EU} \): Production in Europe

\( r_{AS} \): Production in Asia

Evolution of a regional production from 2005 to 2012:

\[ r_J = \left( \frac{r_J^{2012}}{r_J^{2000}} \right) - 1 \]

\( j \in \{ J, NA, EU, AS \} \)

Annual Growth Rate from 2005 to 2012 (\%)

<table>
<thead>
<tr>
<th></th>
<th>Japan</th>
<th>North America</th>
<th>Europe</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOYOTA</td>
<td>-1.16</td>
<td>0.48</td>
<td>-8.95</td>
<td>10.24</td>
</tr>
<tr>
<td>NISSAN</td>
<td>-3.54</td>
<td>-2.61</td>
<td>6.96</td>
<td>25.18</td>
</tr>
<tr>
<td>HONDA</td>
<td>-4.88</td>
<td>3.02</td>
<td>-1.52</td>
<td>10.99</td>
</tr>
<tr>
<td>SUZUKI</td>
<td>-1.16</td>
<td>0</td>
<td>0</td>
<td>9.64</td>
</tr>
<tr>
<td>MAZDA</td>
<td>-0.54</td>
<td>-9.27</td>
<td>0</td>
<td>12.39</td>
</tr>
<tr>
<td>MITSUBISHI</td>
<td>-5.18</td>
<td>-8.51</td>
<td>-20.7</td>
<td>1.83</td>
</tr>
</tbody>
</table>

Data: Financial Reports of each firm.
Evolution of Regional Strategy

TOYOTA
Decrease in Japan and Europe, increase in North America and Asia

NISSAN
Decrease in Asia and North America, increase in Europe and Asia (China)

HONDA
Decrease in Japan and Europe, increase in North and Asia (China)

SUZUKI
Decrease in Japan, increase in Asia (India); no presence in North America and Europe

MAZDA
Decrease in Japan and North America, increase in Asia (Thailand and China); no presence in Europe

MITSUBISHI
Decrease in Japan, North America and Europe, Decrease in Asia (Thailand)

2.5 Employment Strategy:

\[ s_i = (l_j, l_{OV}) \]

\( l_j \): Domestic Employment
\( l_{OV} \): Overseas Employment

The Vectors represent the growth rate from 2000 to 2012 of each carmaker. For example, SUZUKI increased its domestic employees by 28% and its overseas employment by 120% from 2000 to 2012.

Data: Financial Reports of each firm.

Employment Strategy

TOYOTA and SUZUKI
Increased domestic employment and overseas employment.

NISSAN and HONDA
Reduced domestic employment, and increased overseas employment

MAZDA
Increased domestic employment, and reduced overseas employment

MITSUBISHI
Reduced both domestic and overseas employments even in a large scale.
Wages and Remunerations in 2013
(Thousand of Yen for remunerations and Wages)

<table>
<thead>
<tr>
<th>Remuneration for</th>
<th>Toyota</th>
<th>Nissan</th>
<th>Honda</th>
<th>Suzuki</th>
<th>Mazda</th>
<th>Mitsubishi</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO</td>
<td>159,000</td>
<td>145,000</td>
<td>(a)</td>
<td>151,000</td>
<td>(a)</td>
<td>(a)</td>
<td>The Nikkei, June 28, 2013</td>
</tr>
<tr>
<td>COO</td>
<td>184,000</td>
<td>145,000</td>
<td>(a)</td>
<td></td>
<td>(a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Wage</td>
<td>38.6</td>
<td>42.6</td>
<td>44.3</td>
<td>37.9</td>
<td>39.7</td>
<td>39.6</td>
<td></td>
</tr>
<tr>
<td>Average Age</td>
<td>15.5</td>
<td>20.5</td>
<td>23.0</td>
<td>15.6</td>
<td>15.8</td>
<td>15.8</td>
<td></td>
</tr>
<tr>
<td>Average Service Years</td>
<td>5.730</td>
<td>4.710</td>
<td>4.890</td>
<td>4.570</td>
<td>4.420</td>
<td>4.570</td>
<td>SankeiBiz, April 14, 2013</td>
</tr>
<tr>
<td>Annual Earnings of an employee at</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 years old</td>
<td>7,511</td>
<td>6,997</td>
<td>7,215</td>
<td>5,816</td>
<td>5,728</td>
<td>6,281</td>
<td></td>
</tr>
<tr>
<td>40 years old</td>
<td>9,750</td>
<td>8,020</td>
<td>8,320</td>
<td>7,990</td>
<td>7,520</td>
<td>7,780</td>
<td></td>
</tr>
<tr>
<td>50 years old</td>
<td>7,650</td>
<td>6,450</td>
<td>6,700</td>
<td>5,900</td>
<td>6,260</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: (a) means the remuneration of less than 100 million of yen.

Carlos Ghosn earns 140 times as much as the average wage of his employees, and 122 times as much as the average wage of his employee at 50 years old. Akio Toyota earns 24 times as much as the average wage of his employees, and 19 times as much as the average wage of his employee at 50 years old. However, an employee of NISSAN earns only 82% of the wage of his/her colleague of the same age at TOYOTA, if we believe the estimation, made by SankeiBiz.

3. Synthesis of the Profit Strategy and its adequacy of Carmakers

<table>
<thead>
<tr>
<th>Sp</th>
<th>Sq</th>
<th>Sr</th>
<th>Sl</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>TOYOTA</td>
<td>HV</td>
<td>SV</td>
<td>OV</td>
</tr>
<tr>
<td>NISSAN</td>
<td>K, M, EV</td>
<td>SV</td>
<td>OV</td>
</tr>
<tr>
<td>HONDA</td>
<td>HV</td>
<td>SV, M</td>
<td>OV</td>
</tr>
<tr>
<td>SUZUKI</td>
<td>SV</td>
<td>K</td>
<td>D, OV</td>
</tr>
<tr>
<td>MAZDA</td>
<td>K</td>
<td>SV</td>
<td>D, OV</td>
</tr>
<tr>
<td>MITSU</td>
<td>M, EV</td>
<td>SV, K</td>
<td>D, OV</td>
</tr>
</tbody>
</table>

Note: We take into account only the items varying at a rate larger than 1% in absolute value.

TOYOTA: Successful Balanced & Sustainable Globalization?

In the long run, shift from SV to HV; Increasing overseas production in North America and Asia, by keeping domestic production and employment.

Despite of accidents in 2007-11: the contraction of American market, the Toyota bashing in the USA, the Tohoku earthquake and tsunami, and the Thailand floods in 2011, its strategy works well with increasing production and sales of HV.

Only problem reside in its European Operations.

NISSAN: Incoherent Globalisation at the cost of domestic employment?

In the long run, shift from SV to K., M., EV; Increasing overseas production and employment in Europe and China by reducing domestic production and employment.

Globalization strategy makes its consolidated result profitable, but its domestic operations became vulnerable to appreciation of the yen: deficits in 2010-11.

This strategy seems far from bringing its expected results: the operating profit rate in European operations expanded remains very low: 0.2% in 2012. Sales of imported cars (March/Micra) and Kei-cars supplied by Suzuki and Mitsubishi don’t ameliorate its position in domestic market.
HONDA: Successful & Sustainable Globalisation at the cost of domestic employment?
In the long run, shift from SV to HV; Increasing overseas production and employment in North America and Asia by reducing domestic production and employment.
Except the unconsolidated profit rate in 2008, it remains profitable in the consolidated as well as unconsolidated results. So, its globalisation strategy looks work well, and its product strategy on domestic market hopeful.

SUZUKI: Successful Localisation (JAPAN and India)?
In the long run, shift from K to SV; Increasing overseas (India) and domestic productions and employments; supplying K. to Nissan, Mazda.
Profitable even in 2008, its localisation strategy based on Japan and India is successful.

Appendix

• SUBARU:
Suffering from slow sales on domestic market from 2006, it decided in 2009 to specialise in the production of SV by outsourcing the Kei cars to Daihatsu, and enforcing productive cooperation with TOYOTA.

• ISUZU:
Its strategy focused on Trucks & Bus production and diesel engines after 2002, though producing SUV in Thailand for Thailand and Indonesian market, looks successful. But its alliance strategy remains confused, especially in relations with Toyota (shareholder of 5.89% of equity) and GM.