

# The Effect of the Volkswagen Scandal (A Comparative Case Study)

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## Abstract

The latest scandal with the German car manufacturer can bring potential devastating losses to both the company and the German economy. In order to make a closer analysis we will compare the Toyota pedal scandal from 2010 and the current Volkswagen situation. Besides, the effect on the company, we will analyze the effect on the total German economy and the potential losses that both the company and the country might be facing. Additionally we'll look at the role that Volkswagen is playing for the total German economy and the potential systemic risk that could burden one of the largest German industries.

**Keywords:** Company Scandals, Volkswagen scandal, Toyota, Volkswagen, Car Industry, German Economy, Impact of scandals on companies.

## 1. Company Introduction – A guide to the scandal

Volkswagen is the largest German car manufacturer and second in the world. In 2014, they sold 9.92 million cars worldwide. In the last several months, the company is in a major pollution scandal. In order to make their diesel cars the company installed software that would show lower pollution during car tests. Because of the pollution control systems these cars would pass the test but would spew much higher level of pollutants on motorways and in regular traffic. This was made only for Diesel cars, because they produce more energy per liter of gasoline but also emit more nitrogen oxides.

With this software, the company is breaking the Kyoto protocol on global warming. The purpose of the protocol is to target five gasses including carbon dioxide that can trap heat inside the atmosphere and who is blamed for the global warming and raising of the average temperatures on the Earth (Hanson, 2011).

In addition, this is against European policies on restricting CO2 emissions, and the environmental policies of the European Union (European Commission, 2015), and United States Environmental Protection Agency vehicle standards and regulations (Agency, 2015).

Volkswagen ended the year as the second biggest car manufacturer behind Toyota, and was on the verge becoming the leading world car manufacturer. In the first 6 months of 2015, Volkswagen sold 200.000 vehicles more than Toyota (Bomey, 2015). Volkswagen sold 5.04 million vehicles worldwide, although a slight fall of 0.5 % in sales for the same period.

Figure 1 – Volkswagen Changes of Financial Data (Company's Balance Sheet)

|                | Financial data in million € |         |             |
|----------------|-----------------------------|---------|-------------|
|                | 2014                        | 2009    | Change      |
| Revenue        | 202,458                     | 100,303 | <b>102%</b> |
| Net income     | 9,093                       | 960     | <b>847%</b> |
| Current assets | 131,102                     | 77,776  | <b>69%</b>  |
| Assets         | 351,209                     | 177,177 | <b>98%</b>  |
| Total debt     | 130,514                     | 77,599  | <b>68%</b>  |
| Net Debt       | 93,035                      | 58,513  | <b>59%</b>  |

Source- Company financial data

After the world financial crisis in 2008, the company worked on its reputation of being one of the largest car manufacturers in the world. In the last 5 years, the company doubled its sales and almost 10 times increased the profits of the company.

The effect of the cheating made by the company affects 11 million cars worldwide. From this number majority are in Europe (8 million) (Roddick, 2015).

## 2. The effect of the scandal on the company future

In order to analyze the potential negative effect we will look at two other financial scandals and the effect they had on their companies. Probably the closest to the Volkswagen issue is the Toyota scandal. Toyota had to recall above 8 million cars worldwide because of a mistake on the acceleration pedal (David, Geddes, & Flory Felix, 2011). As a result of this scandal Toyota had to withdraw 6.5 million cars from the U.S market and additional 1.8 from the European market. (Feng, 2010). This influenced Toyota sales and finance in a major way. Sales declined in total by 4.4 % (330 thousands of units). Largest decline of sales as presumed happened in United States where Toyota sold 550.000 vehicles less than previous years. In addition, sales in Europe were lower for 110.000. Sales totaled 7.2 million units (Toyota, 2010).

Toyota paid a fine of 16.4 million \$, which at that moment represented the largest fine issued by the

NHTSA. Some calculation estimated that Toyota losses mounted up to 5 bn \$ (Sanchanta & Takanashi, 2010). The company revenue shrunk by almost 10 % (from 109.000.000 € to 100.000.000 €). But the effect was even worse on the net income. The company's losses mounted up to 3.104 billion €, and net debt increased by 10 billion €.

Figure 2 - Companies Financial Data for Volkswagen and Toyota (in millions of €)

| <b>Financial data for Volkswagen and Toyota</b> |            |         |      |          |
|---|------------|---------|------|----------|
| 2008  |            |         |      |          |
|   | Net income | Revenue | D/E  | Net debt |
| Volkswagen                                      | 4,753      | 109,451 | 1.98 | 58,513   |
| Toyota  | 10,637     | 162,783 | 1.03 | 67,085   |
| 2009  |            |         |      |          |
|   | Net income | Revenue | D/E  |          |
| Volkswagen                                      | 960        | 100,303 | 2.2  | 55,879   |
| Toyota  | -3,104     | 145,822 | 1.25 | 77,684   |
| 2013  |            |         |      |          |
|   | Net income | Revenue | D/E  |          |
| Volkswagen                                      | 21,712     | 197,007 | 1.31 | 78,768   |
| Toyota  | 9,053      | 207,602 | 1.16 | 90,150   |
| 2014  |            |         |      |          |
|   | Net income | Revenue | D/E  |          |
| Volkswagen                                      | 9,093      | 202,458 | 1.45 | 93,035   |
| Toyota  | 13,584     | 191,430 | 1.13 | 95,138   |

Source- Company's income statements

Besides the direct expenses the company had financial losses due to repairing the cars, stock market value dropping down, suspending of production, litigation cost. In addition, Toyota suffered damage to its brand name, image and reputation (Dolphin, 2004).

### 3. The potential effect on the Volkswagen future

Based on simple mirroring of the numbers Toyota had after the crisis, the effect of the crisis should be a decline in sales in the area of around 3.5 - 5 %. The largest decline in sales should come in the United States, where Toyota lost about 10 % of all sales from previous year. The difference between the impacts on the two car manufacturers should come in Europe, where the brand of Volkswagen is significantly stronger, and probably will not have a decline in sales in this part of the world. Volkswagen revenue had its history high in 2014, in which revenue mounted up to 202 billion €. If the decline is exact as the Toyota's than revenues should be at about 180 bn €. Besides revenue, the company can expect a decline in net income and increase in debt. Net income declined by 13 bn €, and net debt increased by 15 %. Toyota finished 2009 with a loss of over 3 bn €.

Figure 3 - Toyota Effect of the Crisis

| <b>Toyota Scandal effects</b> |         |         |          |
|-------------------------------|---------|---------|----------|
|                               | 2008    | 2009    | Change % |
| Net income                    | 10,637  | (3,104) | -129%    |
| Revenue                       | 162,783 | 145,822 | -10%     |
| D/E                           | 1.03    | 1.25    | 21%      |
| Net debt                      | 67,085  | 77,684  | 16%      |

Source- Company's income statements

Toyota's losses inflated by the financial crisis and the fact that Toyota cars were not projected as safe anymore. Toyota paid 1.2 bn \$ fine to the US Department of Justice, and there are nearly 400 wrongful-death and personal-injury lawsuits (Douglas & Fletcher, 2014). This is where the two scandals will defer. While Volkswagen cars will still be considered safe (but less green), Toyota brand reputation as one of the safest cars was severely impacted by the scandal. Thus, this notion means that the effect of the scandal will be far smaller than the effect on Toyota.

Figure 4 – Volkswagen Effect of Crisis

| <b>Volkswagen Scandal (projected effects)</b> |         |                  |          |
|---|---------|------------------|----------|
|   | 2014    | 2016 (projected) | Change % |
| Net income                                    | 9,093   | 4,547            | -50%     |
| Revenue                                       | 202,458 | 188,286          | -7%      |
| D/E   | 1.45    | 1.60             | 10%      |
| Net debt                                      | 93,035  | 102,339          | 10%      |

Source- Author's calculations

The Volkswagen scandal should include the recall of 11 million cars worldwide. The company has put aside 6.5 bn €, as direct costs for recalling the vehicles. The majority of these recalls (8 millions) will come in Europe where Volkswagen has a strong brand reputation (Connet, 2015). Probably the biggest problem for the company will be the potential fines of 15.8 bn €. As a direct result of the scandal the company already announced a change in its costs. Initially, the company announced cuts from its research and development budget by one bn €. Then they decided to convert all their future development cars on electric cars. The company now plans to develop a new scalable electric architecture dubbed MEB for new generation of electric vehicles with ranges between 250-500 km (Pollard, 2015).

#### 4. Systemic Risk and Potential Spillover Effect on the German Economy

Volkswagen is the largest employer in Germany in total it employs 270.000 people in Germany, and many more connected to the industry (Lauer & Heller, 2015). This represents 1/3 of the employs in the automotive industry. The total contribution is 2.7 % of the total German GDP. Although German cars are the most successful German export, the industry employs 770.000 people. Total car exports were 225 billion in 2014 (Jones, 2015).

The modern car has thousands of electric parts, which makes it easy to show larger and smaller malfunctions. One thing that people now are not paying attention is that almost every larger car manufacturer has made smaller and larger recalls of vehicles; although none will be larger than Volkswagen recalls which should mount up to 12 million cars. Moreover, this will affect only diesel motor cars.

Figure 5 - Recalls by Major Automakers after October 2009

|               | Number of Vehicles | Reason for recall  |
|---------------|--------------------|--|
| Toyota Motors | 8.5 million        | Gas pedal height, Gas pedal return, brake control o hybrid cars    |
| Nissan Motors | 860.000            | Brake pedal, fuel system   |
| Honda         | 1.5 million        | Air bag, brake-related problem                                     |
| GM            | 1.3 million        | Power steering-related problem                                     |
| Ford          | 4.5 million        | Vehicle speed control system, brake related problem of hybrid cars |

Source - Impact of Toyota Recall on Corporate Reputation (Sakurai, 2010)

This is the main reason why the Volkswagen scandal won't have an impact on the entire car manufacturing industry. The total effect of the exports of the German manufacturing industry is 160 billion \$, which is 22 % of the total world car exports. Some estimates are suggesting that foreign appetite for cars are impacting 3.6 percent of the nation's GDP. A drop of 10 % in total demand for cars would impact the nation's economy maximum 0.4 %. On a long run the loss of profit might hurt future research and development, and it might have some effect on future GDP increase on a short run. With the IMF projecting growth for 2015 of 1.6 and 1.7 in 2015 and 2016, the effect of the crisis won't be larger than 0.1 to 0.2 of the total economic output.

#### 6. Conclusion

While many are predicting the doom of Volkswagen as a leader in automotive industry the truth is far less dramatic. The company will have large expenses for recalls and fines in the following years. They re-oriented towards electric cars, which will make them the leaders in this field. That this scandal will create short term losses for the largest German car manufacturer it is without a doubt. One thing that differs the two scandals is that there is a gas- emission cheating in the case of Volkswagen, which is far less of a problem than being responsible for over 400 car accidents. The company will suffer from its brand reputation, but will still finish as the second largest world car producer.

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