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# VW impact on the German economy

## *The economic consequences are highly uncertain, and anything but negligible*

The recent Volkswagen (VW) scandal sent immediate shockwaves into global financial markets, but the implications on the German economy may take longer to be felt. Assessing this impact runs into two major difficulties. First, the scope of the shock: it seems clear that VW will bear financial and reputation costs that will affect its prospects for a long time. But is it just a shock to VW? Or is it a shock to the diesel technology in general? Will global consumers walk away from the entire German car industry? Or worse, is the whole 'made in Germany' brand under threat? Only time will tell what lasting changes this scandal will have initiated. The second difficultly is measuring how this impact will be transmitted from the car industry to the wider economy. The automotive sector is central to the entire industrial sector and uses most other industries as suppliers, making amplifying effects particularly large.

To deal with these issues, we start from input-output tables that capture the relationships between sectors. Remarkably, **we find a multiplier of 1.6 for the German car industry**, meaning that any shock in that sector is amplified by 60%. Such an approach confirms how misleading it may be to just consider that the car industry accounts for less than 3% of the economy. We then envisage three theoretical scenarios: a first '**VW shock**' scenario implies a steep decline in VW sales in Germany and abroad (10% and 20% respectively), but a large share of the loss is channelled to other German carmakers. Unsurprisingly, this scenario remains benign to the German economy, amounting eventually to a loss worth 0.1% of GDP. A second scenario simulates a '**German car industry shock**' where the decline in demand for VW cars spreads to all German carmakers and only benefits foreign competitors. Such a scenario would amount to a negative shock amounting to 0.4% of GDP. Finally, a third '**Made in Germany shock**' scenario implies that not only cars but also machinery equipment exports are affected. In that case, the shock to the economy proves much larger, at 1.1% of GDP (*Exhibit 1*).

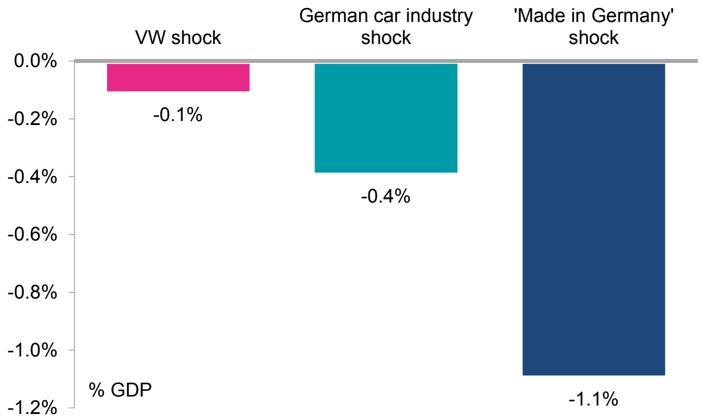
The **scenario of a 'diesel shock'**, whereby consumers gradually move away from that technology and force a rapid adjustment from carmakers, is likely, in our view. This process should be accelerated by regulation, expected to tighten significantly by 2018-20. As more than 50% of current car sales in the EU use diesel (source: ACEA), this shock will probably have a negative impact on the European car industry, either temporarily or permanently. But we choose to refrain from quantification given the large uncertainties about the speed and ability of European carmakers to adapt and maintain market shares through alternative technologies (hybrid, electric).

Obviously the centrality of the car industry is not just a German feature. In Germany alone, **about 25% of the sector's inputs are imported**. Neighbouring economies are therefore likely to feel the impact of a shock: top suppliers are France and the Czech Republic, closely followed by Austria and Spain. But German carmakers also have major suppliers in Italy, the UK, Hungary and Poland.

A final word of caution: the impact of the shock is not only uncertain in its magnitude, but also in its timing. What financial markets have priced over several days may only work its way through the economy over several years. Also, our numbers are likely to underestimate the true impact of the VW scandal for two reasons. First, they do not take into account the international spill-overs described above. Second, they ignore second-round effects due to possible job and income losses.

*Exhibit 1*

**Impact of varied shock scenarios after the VW scandal**

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