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The German Economic Model – Decline or Second Economic Miracle?

What is the future of Germany's economic model? The Russian attack on Ukraine has triggered a debate about the further development of prosperity in Germany. There are growing concerns about economic decline. Rising energy prices, the high costs of climate protection, an increase in geopolitical conflicts, and a shrinking workforce could put an end to the successes of the German economic model. Current decisions by energy-intensive companies to relocate investments to the United States and China seem to confirm this. Optimists counter that the growing global interest in clean technologies ought to benefit the capabilities of German companies. German Chancellor Olaf Scholz even talks about Germany facing a period of high growth rates, similar to the years of the German economic miracle in the 1950s, because of investments in decarbonization.

So, is Germany facing economic decline or a second economic miracle? One should not hope for miracles, but how prosperity actually develops will depend to a considerable extent on how economic policy sets the course for the coming years.

What Makes the German Economic Model Work

What do people mean when they talk about the German economic model? First, it includes the strong orientation toward international trade. Germany's dependence on China is often emphasized here. For individual industries, this market is indeed of great importance. German car companies now sell around one in every three of their cars in China. However, Germany's international trade as a whole is much more diversified. China's share is around 10 percent.

Second, manufacturing plays an important role in Germany. Its share of value added is currently 18.3 percent, significantly higher than in countries such as Italy, at 15.2 percent, or France, at 9.2 percent.

Third, Germany is heavily dependent on fossil fuels, a significant proportion of which were imported from Russia until recently. Climate-neutral energy, i.e., nuclear energy and renewables, accounted for only 22 percent of Germany's primary energy consumption in 2021. If nuclear energy, which will be shut down this year, is excluded, the share drops again. The remainder is accounted for by oil, coal, and natural gas.

Fourth, since the end of the Cold War, Germany has reduced the share of defense spending in its budget and diverted the money to more pleasant uses. It relies on the U.S. to defend Europe in the event of war.

The Epochal Change Has Direct Consequences for Germany's Prosperity

This economic model faces two challenges. The first predates the current crises and is a result of longer-term changes such as digi-

talization, demographic change, and global warming. Second, the Russian attack on Ukraine has changed the economic situation in a fundamental manner. This epochal change has direct consequences for prosperity in Germany, but also for the way to deal with the aforementioned longer-term changes.

How successful has Germany been so far in dealing with digitalization, demographic change, and global warming? In the area of digitalization, the challenges range from providing the right infrastructure and digitalizing public administration to shaping the conditions for digital business models and data markets. It is also crucial to educate and train the workforce in digital skills. According to international comparative studies and rankings on digitalization, Germany is in the middle of the pack overall.

Weaknesses exist in the digitalization of the public sector and healthcare, as well as due to a lack of openness to digital business models. Just think of the resistance to companies like Uber, Airbnb, or online pharmacies. Added to this is unfortunate European data protection legislation that hinders data use rather than making it more secure. It is not surprising that no new world-class digital company has emerged in Germany in the fifty-plus years since SAP was founded.

No Convincing Answer to Demographic Change

To date, Germany's response to demographic change has hardly been more convincing. Reforms are urgently needed to encourage people to work and to ease the financial burden on social security systems, especially pension insurance. Instead, with the pension from 63, the maternity pension, and generous pension increases, policymakers have in recent years ensured that people retire earlier and that the financial burden on pension insurance has grown. The tax and transfer system favors part-time rather than full-time employment.

Only in the area of immigration have recent years brought liberalizations, making it easier for foreign skilled workers to immigrate. Since 2010, net immigration to Germany has been around 500,000 people per year. However, these migration movements are not solely the result of systematic recruitment of skilled workers. A significant proportion of them are asylum seekers who came to Germany primarily in the refugee waves of 2014 to 2016.

Decarbonization Requires Profound Changes

Germany's climate policy is also insufficient. Over the past three decades, Germany has reduced its CO₂ emissions by around 39 percent compared with 1990. This was facilitated by the fact that East German industry had extremely high CO₂ emissions. The closure of this industry in the 1990s did much to reduce emissions. So, the

low-hanging fruit has already been harvested. Measured against the reduction targets for greenhouse gases to which Germany has committed itself, however, the 39 percent achieved is too little. A further 26 percentage points would have to be added by 2030, and CO₂ emissions would then have to be reduced to zero by 2045. Today, it seems unrealistic that these targets will be achieved.

In any case, the further path of decarbonization requires profound changes in important sectors of the German economy. One example is the automotive industry. In the shift to electromobility, a key building block of decarbonization, it is not the German auto industry but the US company Tesla that has driven developments. In the meantime, German manufacturers have changed their ways and shown that they want to play an important role in the world of electromobility. Nevertheless, many suppliers, especially those who specialized in combustion technologies, have a dying business model, at least in Europe.

Question marks also hang over the future of other industrial sectors. This applies above all to the energy-intensive parts of the chemical industry. Their migration to locations with lower energy costs, such as the US, is probably unstoppable.

The electrification of transport, building heating, and industrial production requires a massive expansion of electricity production and power grids. However, Germany currently produces 40 percent of its electricity from nuclear power and coal. Nuclear power plants will be shut down this spring, and coal-fired generation is scheduled to end by 2030. This leaves 60 percent of 2022's power generation capacity intact, but electricity demand growth means well over 100 percent is needed. The remaining capacity must therefore be roughly doubled within seven years. By 2045, the expansion must go far beyond this.

There is an important role for an accelerated expansion of wind and solar energy here. However, occasional *Dunkelflaute* events – periods of weak wind and overcast weather – must be taken into account, meaning the entire power supply must be provided at least temporarily from sources other than wind and solar. The expansion of capacity must be correspondingly larger. In the future, in addition to battery storage, the use of green hydrogen in particular is supposed to compensate for fluctuations in wind and solar energy.

Whether this will ever work on the scale required is debatable. But there is a consensus that it will take many years, perhaps decades, to convert the German economy's entire energy supply to climate neutrality. To bridge this time, the plan so far has been to build large numbers of gas-fired power plants that can later be converted to run on hydrogen.

The increased use of gas during the expansion of renewable energy is an example of plans that need to be reconsidered in light of the Russian attack on Ukraine. Gas imports from Russia will

cease for the foreseeable future. It is unclear whether the necessary gas can be procured via liquefied natural gas imports. At the very least, the costs will rise significantly.

International Trade under Pressure

The Ukraine war also has consequences for international trade. The growing geopolitical tensions between China and the US are putting pressure on German-Chinese economic relations. As the risk of conflict-related trade disruptions increases, many companies will have to tap other sales markets and diversify sources of supply, leading to higher costs. These frictions will be exacerbated by the fact that the US will increasingly put pressure on Germany to restrict relations with China.

Last but not least, the new geopolitical situation requires Germany to spend more on armaments. Assuming that at least the target agreed within NATO long before the Ukraine war of devoting 2 percent of gross domestic product to armaments is to be achieved, an additional EUR 25 billion or so will have to be spent each year. Combined with higher public spending on climate action, this will result in considerable burdens for government budgets, which are already under pressure from other factors such as demographic change.

Against this backdrop, how should we assess the thesis that major investments in the decarbonization of the economy are about to unleash a second economic miracle? Unfortunately, this miracle will fail to materialize thanks to the multiple burdens of permanently higher energy prices and frictions in international trade, the shrinking of the labor force, and an even more fundamental reason. Transforming the energy system, with heavy investment, to deliver the same output as it does now, only with fewer CO₂ emissions, will take a significant amount of resources that will no longer be available for the production of other goods. This wouldn't be a problem if there were sufficient spare production capacity to accomplish this transformation without eliminating other activities. However, given the labor shortage, this is not the case. Moreover, since the investments replace existing capacity rather than adding capacity, they will create hardly any additional growth potential. The economic miracle will therefore fail to materialize. Prosperity, measured in terms of consumption of goods and services, will tend to decline.

What Economic Policy Can Do

What can economic policy do in this situation? It cannot eliminate the burdens of the upcoming transformations, but it can help prevent them from becoming greater than is inevitable. Reforms of the tax and transfer system, childcare, the retirement age, and

immigration laws can strengthen labor supply. More digitalization can boost productivity and thus ease labor shortages. New trade agreements can help compensate for frictions in relations with China.

Germany could improve its energy supply by producing its own gas and further extending the operating lives of nuclear power plants. In the area of decarbonization, it is urgently necessary to rely more strongly than before on the carbon price as a central climate policy instrument. Economic interventions such as bans on internal-combustion engines or oil-fired heating systems and obligations to renovate buildings to make them more energy-efficient make decarbonization unnecessarily expensive.

The expansion of power grids is a top priority. Regulatory reform should enable the development of a platform economy in the energy sector in which all companies and private households are consumers and suppliers of electricity. Industrial transformation

should rely on competitively awarded funding for research, development, and industrial innovation. If climate protection standards are introduced, this should primarily relate to the consumption and use of goods in Europe, so that competition between suppliers from the EU and third countries is not distorted.

Economic policy will not be able to produce a second economic miracle, but it certainly has ways of helping prevent economic decline.

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Published under the title "Wirtschaftsmodell Deutschland – Niedergang oder zweites Wirtschaftswunder?", Handelsblatt, March 17, 2023