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The 1999 green tax reform in Germany

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Summary:

This comment explains the 1999 eco-tax package with respect to its original objective to stabilize the German social security system and labor costs. It then proceeds to review its effects on environmental and energy policy objectives as well as labor market and innovation effects. This, however, requires to look at wider energy policy since the 2000/2002 nuclear exit and at some aspects of innovation policy in the context of the decentralized structure of government and the strength of the German Mittelstand. Empirical and quantitative evidence of the eco-tax package effects is limited.

1. The origin of the German eco-tax: the macro-economic context.

The eco-tax package enacted in Germany between 1999 and 2003 has to be seen in the context of the macro-economic situation in the final 1990s.

The rising costs of reunification started to hit severely German public finances during the 1990s. Chancellor Kohl had first attempted to finance reunification and in particular East German rents and pensions with credits increasing the public debt. The Bundesbank counteracted this policy by sharply rising interest levels and thereby revaluating the Deutschmark. On the European level, this had severe effects on public finances in Scandinavian countries, UK and France. In Germany, it forced chancellor Kohl to shift the burden of unification costs on the West German social security system.

This move resulted immediately in an increase in social security charges on labor by almost 12%. Consequently, labor costs exploded which in turn reduced the competitiveness of the German economy. Together with additional globalisation effects, unemployment exploded.

In this turbulent situation, the new red-green government of chancellor Schröder decided to counteract with new concepts. It enacted in 1999 a package of so-called eco-taxes.

2. The 1999 eco-tax package: main characteristics

The 1999 eco-tax package redesigned some existing taxes such as motor vehicle and mineral oil taxes to reduce sulphur, lead and particle-dust emissions. In addition, the reform introduced as the only new tax an electricity consumption tax, following earlier examples in Denmark, Netherlands and Austria.

The first broad objective of these reforms was to protect the environment, make a more efficient use of energy and promote innovation in clean technologies. Secondly,

90% of the additional tax revenue was to be used to counter-finance in the Federal budget funds to stabilize the social security system (about 8 milliard Euro), thereby reducing the social security burden on labor cost borne by companies and employees . The eco-tax has been conceived in this context as a “social eco-tax”.

The eco-tax package foresaw a number of important tax exemptions and reductions. They concerned on the one hand electricity generated by clean energies such as water, wind, solar, geothermal energy, bio-, landfill and sewage gas. With respect to international competitiveness, energy-intensive manufacturing companies were exempted.

While the electricity tax was risen on a yearly basis from 1999 to 2003, its share of GDP did not increase further . In 2007, Germany decided not to raise the electricity tax anew to further stabilize to social security costs. The decision was taken to avoid rising energy costs for the German industry. Instead, the value added tax was increased and converted into a “social VAT” (“TVA sociale”) to stabilize social security charges and labor costs.

Adding up all energy taxes and charges, the energy tax burden for non-energy-intensive industrial electricity consumers climbed from 0,16 ct/kWh in 1999 to 1,44 ct/kWh in 2009 (Frontier Economics/EWI p.39) . Only in 2010, the Merkel government increased anew the electricity tax. This, however, was not done to stabilize social security charges and labor costs.

3.: Energy and environmental effects

The energy and environmental effects of the eco-tax package, and in particular the electricity tax, have to be seen in the context of a wider array of energy policy measures of the Schröder government. In 2000, the eco-tax package was complemented by the Renewable Energy Law (EEG). This law reinforced a law of 1991 which had introduced priority for clean energies in the electricity net and a minimum price guarantee for clean energy producers.

The Renewable Energy Law complemented the red-green decision in 2000/ 2002 to replace nuclear (within 10 years) and fossil energies (within 40 years) by electricity from renewable sources. It charges a levy on electricity consumers. This levy is supposed to balance out the difference between the market price and higher costs of clean electricity generation. It is passed on by the network operators from electricity consumers to clean energy producers. The price paid to the clean energy producers guarantees 7% interests on investment for 20 years. The levy is not a federal tax. It is not meant to stabilize the social security system and labor costs.

The electricity tax and the Renewable Energy Law had an important effect on the growth of clean energies in Germany. In the 2nd half of 2012, clean energies have reached a 27 % market share of the electricity market and are expected to arrive at 40% with ten years. A number of German member-states have much more ambitious objectives which would lift the clean energy share in Germany at close to 100% by 2040.

The eco-tax package did also have the well-known impact on the quality of mineral oil and on motor-car technology.

But the reduction of CO₂ emissions was estimated by a DIW study (DIW/Ecologic 2005) at just 3%. This study estimates that the 2003 electricity tax increase and the simultaneous reduction of the number of tax-exempted firms did not improve environmental effects. The explanation given is that some firms were induced to increase energy efficiency, others not. The study concludes that there is no perfect formula to design tax exemptions which simultaneously minimize negative economic effects and avoid damaging results for the environment.

These limited effects on CO₂ emissions the COMETR-Project (cf. Andersen 2010) have been confirmed for the 1994-2004 period in seven countries. Too many exemptions for energy-intensive firms may explain the findings.

Some companies are totally or partially exempted from the electricity tax and still save social security charges. Thus they even profit from the eco-tax scheme. Other companies are extremely energy-intensive, but not labor-intensive. As they pay higher energy taxes than they could save in terms of social security charges, they were granted a subsidy to make up for 90% of the difference. The EU agrees to this kind industrial subsidy only if the privileged company can demonstrate in return effective gains in energy efficiency which should be higher than the trend gains of 1,3% in the German economy.

In Germany, the government has not been willing or able to establish an effective quid-pro-quo formula to link exemptions to effective energy efficiency gains. This may be too difficult and too costly to administer and supervise. No empirical evidence can be shown to determine whether firms do consider energy efficiency gains as compensation for energy levies. The most frequent business strategy is probably just to seek exemption.

The present government is trying to negotiate with the EU a more lenient formula which has been strongly opposed by German environmental associations. The formula implies that companies do not have to demonstrate effective energy efficiency gains but only the establishment of a professional energy management and sectoral efficiency gains of 1,3% p.a. To protect German energy-intensive industries from unfair international competition, it has been proposed to award special eco-tax privileges only to companies which produce internationally tradable goods. Earlier studies have shown that the sectors of the German economy which do produce tradable goods are often not energy-intensive.

23.000 out of 110.000 firms in the sector (and a total of 300.000 manufacturing SME) have successfully claimed exemption. All but some 1600 firms are SME. Chancellor Merkel recently has demanded to monitor the excessive list of exemptions.

4. Reducing the social security burden on labour cost

The eco-tax package was enacted at the very moment when the Deutschmark had been replaced by the Euro in 1999. As it had been a consistent though not always successful

German policy to reevaluate the Deutschmark thereby forcing companies to increase innovation efforts. This type of pressure on productivity has been reduced by the common currency at least with respect to competitive pressure from other Euro-zone countries.

With the ECB's uniform monetary policy starting in 1999, Germany lost the comparative advantage of low nominal and real interest rates. Since nominal interest rates converged whereas German inflation rates continued to be lower, real interest rates in Germany became the highest in the euro-zone. As a consequence, economic growth was lower in Germany than in almost all EMU member economies and Germany became Europe's "sick man". In responding to this deep recession, Germany could not rely on any one of the traditional instruments of macroeconomic management. The Schröder government, therefore, had to resort to supply-side policies. One decisive factor was that large industrial unions from the export sectors decided to protect existing jobs through wage restraint which allowed employers to capture most of the productivity gains. Between 2000 and 2005, the government managed to reduce taxes on company profits and capital incomes, to lower the level of employment protection.

In this extremely difficult period 2000-2005, the eco-taxes proved to be very useful. They promoted innovation in some important sectors of the economy, reduced non-wage labor costs by 8 billion Euro and increased energy efficiency thereby lowering the energy bill for Germany as an energy-import economy as well as for many individual companies. These benefits of the eco-taxes have convinced German politicians to maintain the tax package in spite of frequent attacks from some industries and political lobbies.

5. Labor market effects

The total labor market effect of the eco-tax package during the first decade of this century was estimated by the DIW/Ecologic 2005 in the order of 250.000 new jobs.

Total labor market effects of industrial innovation and production of clean energy technologies up to 2012 are estimated at 370.000 jobs. Many of these jobs have been created by German Mittelstand companies (SME and larger family-owned firms). They have contributed strongly to the positive German trade balance and the high GDP share of industrial production (around 26 %).

The tax burden, however, has been alleviated - as mentioned above - for some 23.000 manufacturing companies. They include industries such as cement, steel, aluminium, paper, glass or basic chemicals. But more and more firms of other sectors claim to be energy intensive and apply successfully for tax exemption.

It is an accepted objective of environmental taxes to internalize external costs of energy or raw material consumption. Often the external costs are difficult to calculate with precision and the tax is expected to target a larger number of external effects. The effectiveness of eco-taxes, however, does not depend on precise cost calculations and eco-taxes should not be overburdened with multiple objectives. What they are expected

to achieve is to direct investments and innovations towards more energy efficiency and renewable energy generation.

The present debate in Germany is about excessively rising energy prices. These, however, are not the consequence of the 1999 eco-tax package but rather of the EEG (2000). This law has produced over time an explosive growth of solar energy capacity and corresponding charges on the electricity consumers. Over 13 years, it has been developed into a monstrous policy scheme distorting energy markets in Germany and Europe. It has moved the German electricity system in the right direction but needs urgently to be reformed.

6. Innovation effects

How the eco-tax incentives are being translated into innovation effects depends to some degree on the innovation policies of the 16 federal states in Germany. In a decentralized system such as Germany, these innovation policies and the structure of innovative activities may vary from state to state and create different levels of receptivity for national or even European policy incentives and disincentives.

But overall, the eco-tax package as well as the Renewable Energy Law have found a receptive environment. It is important to mention some of its characteristics. Injecting the German policy mix as an input into the socio-economic system of other countries will probably produce different outputs or effects.

The German economy, when the eco-tax package was introduced, did already have an extremely strong industrial base and culture, with technology leaders in multiple sectors, with a large number of so-called hidden champions or world leaders among thousands of SME and larger family-owned manufacturing firms.

The decentralization of the government, of R&D and banking systems, of professional and lobbying organisations have created a favourable local environment for technological innovation and export-oriented activities, particularly for smaller firms (Wettmann, Mittelstand, 2012). Territorial proximity and spatial density of firms with similar experiences and strategies at home enable companies to develop their global activities abroad.

Cooperative strategies of large and smaller firms on international markets have also opened export markets for SME. The integration of German products (i.e. machinery and other intermediate products) into international supply-chains (value-added chains) and the competitiveness of final products (i.e. premium cars) have enabled many firms to carry the initial burden of environmental charges. This is particularly important for smaller firms which have fewer options to avoid these charges than multinational firms.

The many exemptions of industrial firms (see above) from energy taxes and EEG levies may, of course, reduce the pressure on industrial innovation in some SME sectors.

To identify the environmental, innovation and economic effects of the electricity tax separately from the effects of the EEG is methodologically very difficult. It is also

important to notice that the exit from nuclear energy within 10 years and from fossil energies within 40 years is considered to be a major investment programme over the next ten years in the order of 300 milliard Euro for German industry and - due to the decentralized nature of clean energies – mainly to SME. As many SME, especially when family- owned, have a long-term perspective, the energy turn-around may be an important incentive for innovation and growth.

7. Summary

The German 1999 tax package and in particular the new electricity tax have helped to overcome the economic crisis of the years 2000-2005. But their effects have to be evaluated in the context of a larger package of reforms by the Schröder government.

While this energy policy package did, so far, have limited effects on CO₂ reduction, it helped to increase strongly the share of clean energies.

The eco-tax package was very helpful to generate fiscal income to stabilize social security charges and labor costs. The wider energy policy mix had important effects on green job creation.

Energy policy and wider industrial and innovation policies strengthened the German industrial base and export capacity, profiting from very favorable pre-existing industrial and governmental structures.

All this does not exclude that traditional economic interests have often succeeded, through strong lobbying, to retard environmental reforms. Reformers themselves have committed damaging errors. But on the whole, there is a wide agreement that permanent change is needed, that market forces and governments have to cooperate closely and that environment and energy are among the foremost issues to be targeted.

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