

**MUTUAL LEARNING PROGRAMME:  
PEER COUNTRY COMMENTS PAPER - GERMANY**

Peer Review on  
“The Ageing Population and Educational Choices”

Finland

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# 1 LABOUR MARKET SITUATION IN THE PEER COUNTRY

## *Impact of the financial crisis*

The German GDP decreased by 5 % in 2009 in the course of the financial crisis. First signs of a recovery appeared in the second and third quarter of 2009 with GDP growth rates between 0.4 % and 0.7 %. The recovery is ongoing as recent data confirm.

Until now, the German labour market has been resistant against the negative economic impacts. Unemployment decreased by 217,000 people in May 2010 compared to the previous year. This means a decrease of the unemployment rate by 0.5 %.

The favourable development of the labour market in the aftermath of the crisis was mainly achieved by the flexibility of working time. Public short-time working schemes considerably helped to preserve jobs. The number of short time workers peaked in May 2009 with around 1.5 million people in short time work. In March 2010, around 830,000 short time workers were reported by the Federal Labour Agency – a decline by 45% (Bundesagentur für Arbeit 2010).

## *Flexibility of labour markets*

The German labour market faced severe problems in the beginning of the millennium due to inflexibility and a large amount of long-term unemployed. Between 2002 and 2005 the government introduced comprehensive labour market reforms, known as Hartz-reforms. This has proved to be efficient: while the number of unemployed rose to 5 million in 2005 it started to decrease in the years after to the current 3.2 million.

Due to the new flexibility of the labour market the amount of non-standard jobs increased, mainly in the service sectors where only 53.2 % persons have a standard job. According to the IAB-Operating Panel (IAB-Betriebspanel) every second new hire is for a non-standard job (IAB 24.03.2010).

## *Demographic change*

The German economy is facing challenges due to the demographic change of the population. While the labour force slightly increased in the first half of the decade it started to decline in 2008 due to demographic reasons. The Institute for Employment Research (IAB) expects a further decrease of 108,000 people in 2010 (IAB 2010) and forecasted a decrease of around 2 million up until 2025 (Chart 1, Annex 2).

Hence, a lack of qualified workers is expected in all sectors. Nowadays the manufacturing sector already has problems to recruit adequate apprentices and in the high-skilled sector a “war of talents” is expected to arise. Low birth rates and a sub-optimal integration of women with children and young people with migration background strengthen the trend.

To counteract the impact of an ageing population on the labour market the statutory retirement age was raised from 65 to 67 in 2007. The increase will be implemented stepwise starting in 2012. The age groups born after 1964 will be fully affected. Recent studies have estimated that the rise of the retirement age will increase the labour supply by 1.2 to 3.0 million by 2030 (IAB 2009, p. 43).

## *Labour market forecasts*

Two major forecasting models are used in Germany:

- the Interindustry Forecasting Model for Germany (INFORGE) has been developed by the Gesellschaft für Wirtschaftliche Strukturforchung (GWS) and is used by the Institut für Arbeitsmarkt- und Berufsforschung for quasi-official labour market forecasts.
- The Swiss Prognos AG has established long-term forecasts for Germany which are widely used by companies and regional authorities.

The INFORGE model is a long-term econometric forecast and simulation model, which is disaggregated into branches of production and categories of goods. It uses a “bottom-up” principle for modelling the 59 sectors of the economy and the around 600 macroeconomic variables. It assumes restricted rationality of agents with mark-up pricing. Econometric parameter specification is based on time series estimates. Foreign trade is modelled by a link to a worldwide network of econometric models.

According to the INFORGE model, the total number of jobs will increase by 1 million between 2005 and 2025. A strong rise of jobs in finance and business services, health and social services, and other societal services is expected. Primary production, energy, manufacturing, public administration and defence are expected to decline. The highest increase of jobs will be experienced in business services (+2.5 million) due to outsourcing of business segments and operational offices. The highest reduction of jobs will be in the manufacturing sector (-1.5 million) due the rise of productivity. The decrease of jobs in public administration and defence will be caused by lower public consumption.

The results for primary production, manufacturing industries and energy are more or less in accordance with the Finnish forecast. In health and social services however, there are significant differences. While the Finnish forecasts expects an increase of this sector which is 4 times higher than in Germany, INFORGE expects job growth mainly in financial and business services (Chart 2, Annex 2).

According to Prognos AG a Swiss economic research and consulting company, Germany is a facing long term GDP growth of only 1 % on average until 2035. The prospect is primarily based on the demographic projection which expects the population to fall by 3.74 million to the total of 78 million in 2035. Even with rising investment and productivity growth, there is little reason to expect a higher GDP growth rate. Unemployment is anticipated to decrease to 1.88 million in 2035. This will be accompanied by considerable skills shortages. The already high export dependency of the German economy of 44 % in 2005 is predicted to further increase to 72 % in 2035.

#### *Health and social services*

In 2005 around 6.3 million people were working in German health and social services; thereof 2.3 million in education and around 4.0 million in health care. This totalled to a share of 16.2 % of overall employment. In 2025 the health care sector will offer many additional jobs. INFORGE expects an increase by 1 million jobs (+24 %). Similar to the Finnish forecast a huge increase in the demand for health care services, senior assistance services and nursing services is assumed. The education sector will provide around 2 million jobs in 2025. All in all, the amount of people working in health and social services is expected to amount to 7.0 million jobs which will be a share of 17.5 % of total employment (IAB 2007).

## **2 ASSESSMENT OF THE POLICY MEASURE**

#### *The VATTAGE model*

The host country paper impressively demonstrates the enormous efforts undertaken in Finland on the field of long-term economic forecasting not only at national but also at

regional level. There must be a strong need in Finland for this type of information on one hand, and a highly developed research and modelling competence on the other.

The current application of the general equilibrium model (GEM) by the Finnish team is state of the arts in economic forecasting. Having formerly been applied on developing countries – countries with a weak statistical basis and short time-series – GEM is increasingly used for simulation purposes in developed countries. The simulation of economic adjustments at the regional level is particularly important.<sup>1</sup>

The VATTAGE model appears to be well structured with a breakdown by 43 sectors, 20 regions and 6 occupations. This provides an information base which allows considering basic trends of sectoral and regional restructuring, and looks at the principal changes of the skills composition of the workforce for a period of 20 years.

In section 3 a rather sceptic position will be taken with regard to the usefulness and the anticipatory capabilities of such undertakings. This is not only based on the experience of the recent world crisis but on a principal critique of the approach.

### *The ageing problem*

The ageing of the population certainly belongs to the central long-term issues not only in Finland but in Germany and other countries as well. Due to the unavoidable shift of age structures towards old age population, the Finnish forecast expects an increase of employment shares in social and health services by 5.6 percentage points up until 2025 while all other sectors will more or less decline – manufacturing in particular (Chart 2, Annex 2).

This is not only difficult to perceive but appears as an exaggeration of the ageing problem due to several reasons:

- Finland has launched a successful ageing programme which was evaluated to be a benchmark for the European countries. This programme achieved an impressive increase of participation rates in old ages. The forecast nevertheless expects a strong increase of health and social services.
- Finland has a strong industry which contributed to growth and employment in the past. Even if production jobs can be expected to move to Asia, the high-skill business services jobs will expand.
- Finland has increased pension age and will continue to do so, facing the enormous financial burdens from rising longevity.
- Health services are not directly linked to ageing of the population. High costs arise in the last two or three years of peoples' lives rather than at a certain age. This means that people who live longer will also be healthy for a longer period of their life, and will be able to work longer, in particular if there is a preventive health care policy and an integrative labour market policy. Both are the case in Finland.

Considering these arguments, the forecasted results appear to be biased by the ageing problem. The manufacturing sector can be expected to defend jobs and to restructure towards a knowledge-intensive industry. The strong position on international markets will provide the basis for such a strategy.

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<sup>1</sup> e.g. the REMI model developed by the Regional Economic Models Inc. in Massachusetts, USA, which provides a wide range of regional applications.

### 3 ASSESSMENT OF THE SUCCESS FACTORS AND TRANSFERABILITY

#### *A principal critique of model-based forecasting*

On page 9 of the methodological paper written by Ahokas et al. the credo of many model building researchers is written explicitly "... to know your future you must know your past." This is the indispensable precondition which justifies all the enormous efforts which are necessary to establish such complicated models. However, it misleads to the belief that having built a model for the past provides the model to forecast the future. While there is no doubt that a sound understanding and knowledge about the past and the present is required to establish a forecast, there is no guarantee that a model built on past data can provide reliable data for the future. This is definitely not the case as the recent experience of the world financial crisis demonstrates.

The cyclical forecasts for the German economy e.g. completely failed in forecasting the impact of the financial crisis in 2009 (Chart 3, Annex 2). In effect, the forecasting institutions did not discern what really occurred earlier than the end of 2009: a decrease of GDP by 5 %. But even worse, the forecasters also did not realise the upswing during 2006 and 2007. In this period the German economy passed through a phase of serious restructuring which resulted in rising competitiveness and increasing growth. This was something that remained undetected by all forecasting organisations, like the importance of the US mortgages bubble in 2008.

Considering the reasons behind these failures, we have to raise some principal questions which equally apply to long-term forecasting:

- Do historical data tell the right story about the future? Time series covering the German unification period e.g. can hardly reflect conditions for other periods. Do central data sets like input-output tables, international trade statistics, or occupation by industry matrices reflect the structure of the economy which can also be assumed for the future? If not, which changes have to be expected or how can they be modelled?
- Does the model reflect the major behavioural relations of consumers, investors, and public institutions? General equilibrium models put market-based relations into the centre, and economic theory likes to use the principal agent approach. This however appears as a rather limited reflection of human behaviour as Akerlof and Shiller argue in their recent book (2009).
- Where are the risks that the economy will be pushed into a new disequilibrium? There might be unsustainable expectations like in the 2005 to 2008 upswing on financial markets. There might be political risks like the emergence of the OPEC in the 1970s or the break-down of the eastern bloc in the 1980s. If we want to have an idea about the future, we should identify the inequilibria rather than search for a general equilibrium. This is important as there is no guarantee that economies will return to a previous equilibrium after a substantial shock. The oil crises are impressive examples for that.

To be short, economics is about political and human history rather than mathematics. It cannot be supposed to follow unchanged rules in the future. We don't know the future even if we know the past - this is the uncomfortable insight which model builders have to take into account.

The exclusion of long-lasting shocks also leads to results which significantly reduce the variance of long-term forecasting. Figure 11 in the Ahokas et al. report gives an impressive example for that (the figure is reproduced in Chart 4, Annex 2). As these shocks can be expected to have long-term effects on growth and restructuring, the value of a forecast without such shocks is limited.

### *An alternative approach*

What should be done in order to overcome the limitations of economic modelling? The first step is to skip the “steady-state” assumption, and further steps have to follow:

- Give econometrics the task in which it is most efficient and useful: testing theories and building up consistent models which can be used for simulation purposes rather than forecasts.
- Build teams with sociologists, psychologists, political scientists and economists and give them the task to write individual reports about major restructuring trends and the future risks of long-term shocks.
- Consolidate these reports to different scenarios, preferably written by individuals rather than in consensus.
- Undertake a strategic analysis of the scenarios in order to identify the optimal policy choice.

This will overcome the view that our future is determined by economic laws or the reflection of such laws in the mathematics of a general equilibrium model. It will underline that the future is a set of options which can be used – or missed. Forecasting therefore needs the broad exploitation of our present knowledge and the ingenuity of individuals. Most importantly, forecasting needs a broad and controversial debate about risks and chances, as nobody knows the future – economists included.

### *Transferability*

The principal methodological approach of a general equilibrium model can be well transferred to Germany and is applied in a series of research. The main macro-oriented forecasts, however, use econometric models based on time-series estimates (see section 1).

Long-term forecasting seems to have a significantly lower priority in Germany as compared to Finland. The results of these forecasts are not really relevant for public debates and are only partly used by the administration. The scepticism about the accuracy of long-term forecasts has spread broadly. This is very much in contrast to the high relevance of business cycle forecasts which are available numerously.

## **4 QUESTIONS**

Will the population and policymakers be willing to finance the strong increase of public and private expenditures for health and social services?

Will this restructuring not lead to decreasing productivity and incomes?

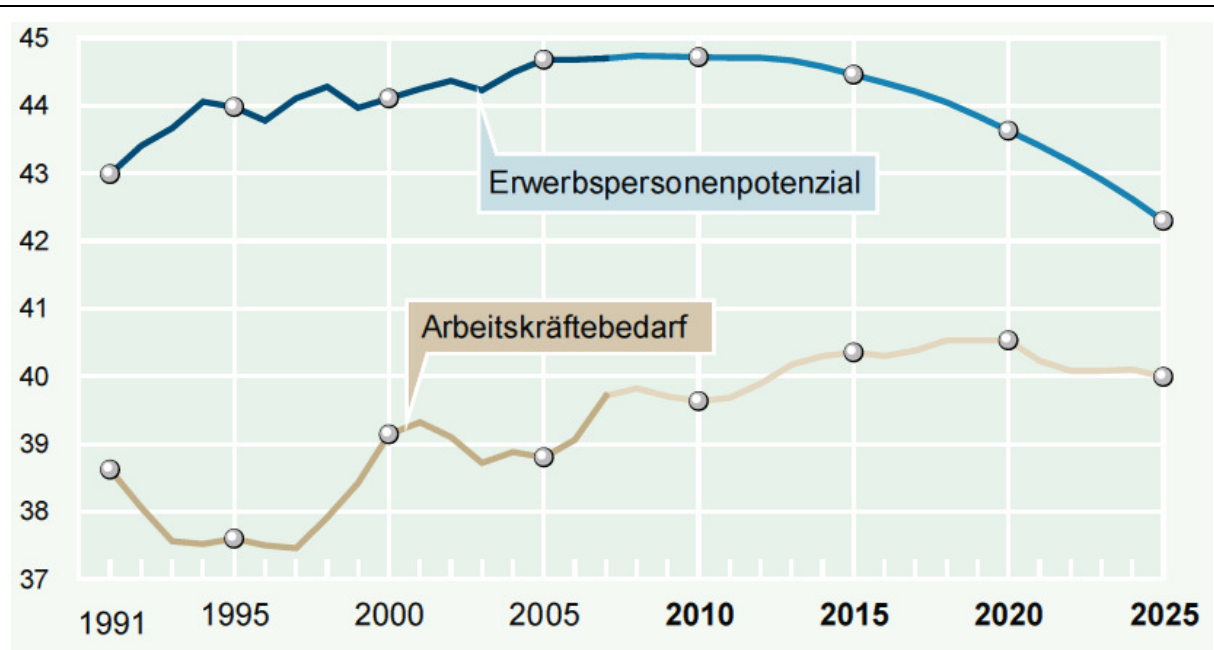
Will the business and the government accept the accelerating de-industrialisation of its economy, considering the high importance of the Finnish industry for total growth?

## ANNEX 1: SUMMARY TABLE

<b>Labour market situation in the Peer Country</b>
<ul style="list-style-type: none"> <li>Germany passed the financial crisis without a serious downturn on labour markets. Long-term forecasts expect decreasing population with considerable effects on growth. Restructuring will continue to favour know-how intensive business services, health and social services at the expense of manufacturing jobs.</li> </ul>
<b>Assessment of the policy measure</b>
<ul style="list-style-type: none"> <li>The VATTAGE model is well developed and applies state of art methods. However, it seems to include an “ageing-related” bias. The strong trend towards health and social services does not seem to be sustainable.</li> </ul>
<b>Assessment of success factors and transferability</b>
<ul style="list-style-type: none"> <li>The approach nevertheless raises the principal question about its effectiveness which are related to the misleading message of historical data, the limits of mathematical economics, and the assumption of a general equilibrium.</li> <li>An alternative approach is suggested which on the identification of restructuring trends and long-term shocks in an interdisciplinary approach. Strategic scenarios should be developed and broadly discussed.</li> </ul>
<b>Questions</b>
<ul style="list-style-type: none"> <li>Will the population and policymakers be willing to finance the strong increase of public and private expenditures for health and social services?</li> <li>Will this restructuring not lead to decreasing productivity and incomes?</li> <li>Will the business and the government accept the accelerating de-industrialisation of its economy, considering the high importance of the Finnish industry for total growth?</li> </ul>

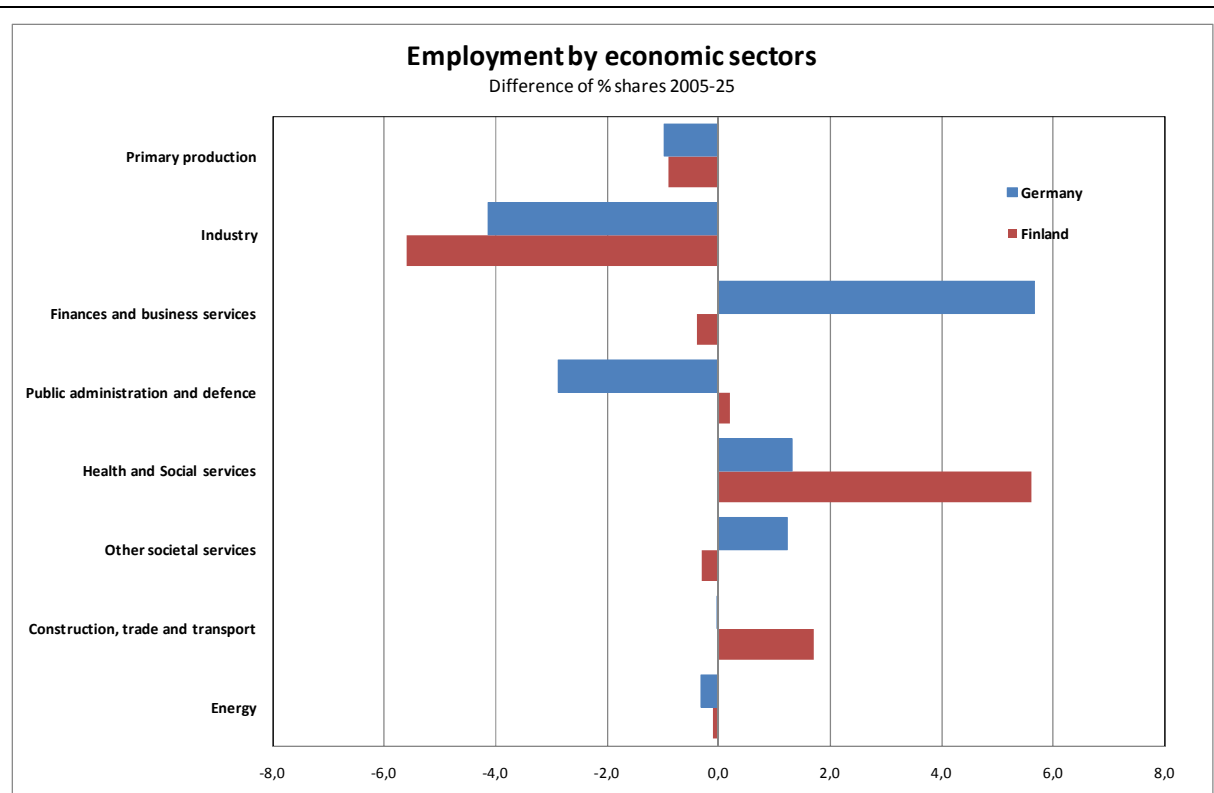
## ANNEX 2: CHARTS

Chart 1 Labour force and labour demand in Germany



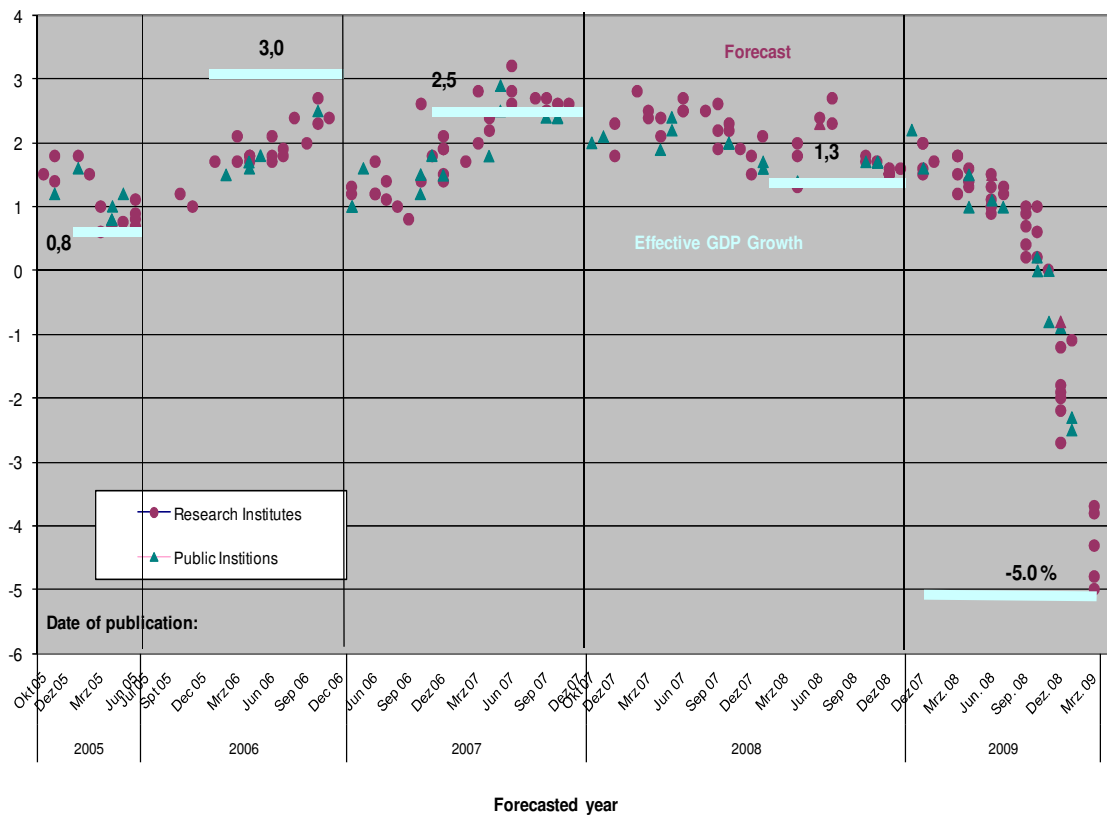
Source: IAB (2007)

Chart 2 Comparison of long-term forecasts for Finland and Germany



Source: Arnkil R. (2010): Host country paper, p. 11; IAB (2007)

**Chart 3 Business cycle forecasts for Germany 2005 – 09**

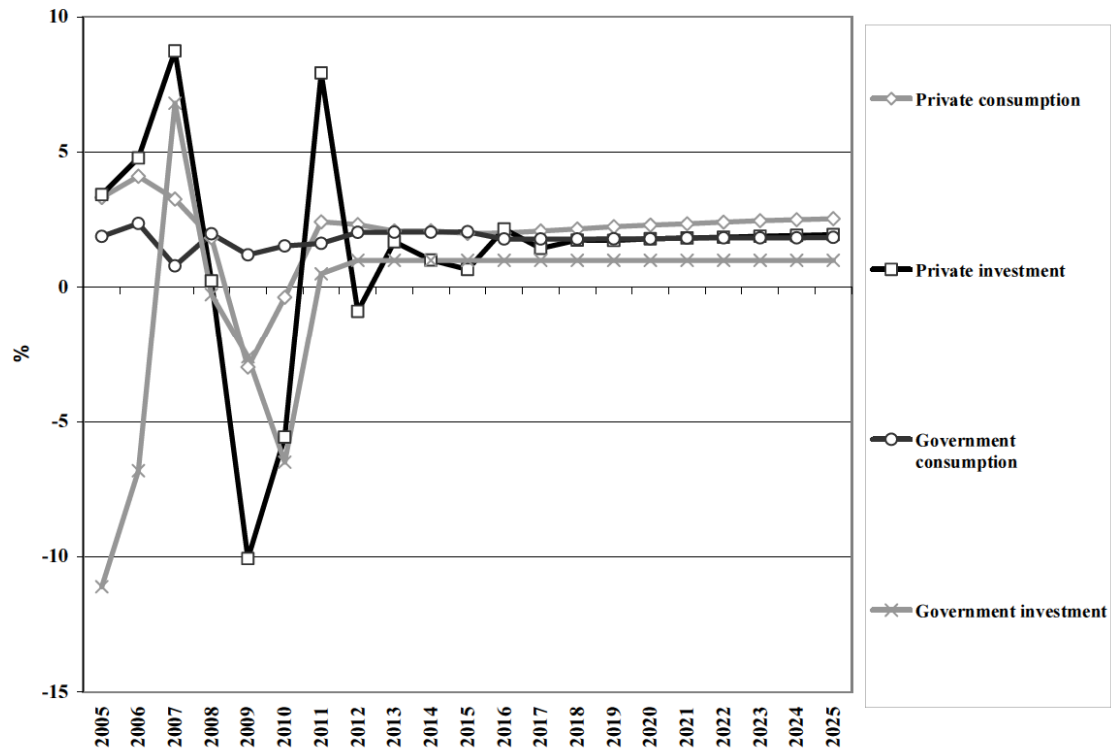


The chart compares the results of GDP forecasts for Germany of 17 private and public institutions, ordered on the X-axis by the date of publication and the year of reference for the forecast. These values are compared with effective annual growth rates of real GDP.

Source: Vogler-Ludwig, Forecasts without future, 2009

Chart 4 Variance of growth rates in Finnish long-term forecast

Figure 11. The foresight of domestic demand development between 2005 and 2025



Source: Ahokas et al. (2010): Forecasting Demand for Labour and Skills with and AGE-model in Finland, p.22

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