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**SHORT AND LONG-TERM FORECASTING BY THE  
NETHERLANDS BUREAU FOR ECONOMIC POLICY  
ANALYSIS (CPB): SCIENCE, WITCHCRAFT, OR  
PRACTICAL TOOL FOR POLICY?**

Frits Bos and Coen Teulings\*

This paper discusses five different types of forecasts by CPB: forecasts for next year, forecasts for next period of government, analyses of the sustainability of public finance, long-term scenarios and long-term effects of election platforms. CPB forecasts for next year and for the next period of government should be seen as well-motivated estimates based on all recent information, plausible assumptions and expected trends. The more distant the look into the future, the more uncertain are the forecasts. For such long-term analyses, the CPB employs scenarios, extended sensitivity analyses and identification of major political choices. Policy making is like sailing in fog. The regular set of CPB forecasts helps to look forward and to monitor whether a change of course is necessary. Despite fundamental uncertainty about the future, the CPB forecasts provide a good base for political discussions and decision making, like a coalition agreement, budget and wage rate negotiations and defining a long-term policy strategy. These forecasts inform Dutch society, reduce transaction costs in economic and political decision making, and foster consensus on economic and fiscal policy.

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## 1. Introduction

The CPB Netherlands Bureau for Economic Policy Analysis (CPB) regularly publishes forecasts about the macroeconomic development next year, in the next period of government, or for the long term. These forecasts play a central role in official decision making in the Netherlands.<sup>1</sup> But it is evident that the CPB and other economic institutes like the IMF and the OECD were not very successful in forecasting the financial crisis. This raises some important questions. How are such forecasts constructed? To what extent are they based on facts and scientific insights? Why were these forecasts not more accurate? What is the value of such forecasts when they are often inaccurate, in particular in times when they would have been most useful?

This paper discusses five different types of forecasts by the CPB: forecasts for next year, forecasts for the next period of government, analyses of the sustainability of public finance, long-term scenarios, and long-term effects of election platforms.

## 2. Forecasts for next year<sup>2</sup>

Each quarter, the CPB publishes a forecast on the Dutch economy and the world economy for the current year and next year. Twice a year, extended analyses are published: in April the so-called “Central Economic Plan” (CEP) and in September, on the same day as the release of the new annual national budget publication, the “Macro Economic Outlook” (MEV). In June and December, updates of these forecasts are published. In the extended analyses in April and September, a lot of attention is paid to the uncertainty of the forecasts. This could be in quantitative terms, e.g. by estimating the impact of a higher oil price or a lower growth of world trade on Dutch economic growth, inflation, public finance and real income of various groups of households. But the uncertainty of the forecasts could also be addressed in more qualitative terms, e.g. by referring in the text to major unbalances in the terms of balance of payments between China and the United States or the risks on the American housing market.

CPB’s short term forecasts serve many different purposes. The general purpose is to provide an up-to-date assessment and forecast of the Dutch economy and government budget, including the impact of most recent policy measures. This serves Dutch politics and society, but also other stakeholders, e.g. the European Union and foreign investors. The short term forecasts are also used for many specific purposes. This includes its use as input for negotiations between employers, trade unions and government about wage rates, pensions and social security arrangements. Its macro-economic part also serves as input for forecasting government revenue and expenditure by the Ministries. As a consequence, the same macro-economic input is used by all Ministries and this input is not subject to interference by politicians or civil servants. Another specific use is indexing of public and private contracts, e.g. updating the budgets and contracts for infrastructure projects for price changes.

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<sup>1</sup> The role of the CPB in Dutch policy is discussed by Bos (2008) and by Bos and Teulings (2010, 2012 and 2013).

<sup>2</sup> For a more detailed discussion, see Jong et al. (2010).

According to common perception in the Netherlands, the macro-econometric model plays the most dominant role in CPB's short-term forecasting. However, the macro-econometric model mainly serves as a bookkeeping system in which the insights from monitoring, specific economic analyses and other economic models are combined and made consistent. During the forecasting process, many specific equations in the macro-econometric model are even ignored and are replaced by the estimates of other models. This applies, for example, to the estimates on government finance: these are mainly based on three specific models (a model for social security and income tax based on detailed micro data, a model with estimates for all kinds of specific types of taxes, and a bookkeeping model for government finance as a whole) in combination with the estimates of some macroeconomic key variables (e.g. GDP growth, changes in wage rates, inflation and interest rates) and all kind of exogenous information (e.g. about new policy plans). The forecasting process is interactive: in several rounds, the estimates of macroeconomic key variables are updated on the basis of the most recent data (e.g. about wage agreements, new statistics on national accounts and the labour market, administrative information on public finance) and updated specific estimates (e.g. about tax revenue, unemployment and imports and exports); the latter will often be partly based on the macroeconomic estimates of the previous round. This interactive process stops when no new information becomes available, and the macroeconomic estimates hardly change any more in successive rounds of estimation. Exchange of views with experts from Statistics Netherlands, the Dutch Central Bank and the major socio-economic Ministries is also a regular part of the forecasting process. This provides feedback on the data used, the interpretation of policy measures and the expected development of the Dutch economy.

The Netherlands is a small and very open economy, to a great extent intertwined with Germany, the European economy and the rest of the world. Forecasts for economic growth in major trading partners are therefore crucial to forecasting the Dutch economy. CPB forecasts about foreign economic growth are based on statistics, forecasts and analyses of international economic institutions, like the IMF, the OECD, the European Commission and the European Central Bank, and of national economic institutions like the CPB or the Central Bank. There is also regular consultation and exchange of views in the various international forums for macroeconomic forecasters. The most recent development of world trade is published in the CPB world trade monitor. This monitor is based on statistics on the imports and exports of 85 countries and other data from national statistical offices and central banks. International and national economic institutions all over the world use the CPB world trade monitor. The oil price and exchange rates are not really forecasted, but are fixed on the average of the previous month. This turns out to be a more accurate forecast than forecasts based on econometric models and analyses. As a first step, the forecast of domestic developments mainly amounts to quantifying the impact of new government policy and forecasting the result of new wage negotiations and changes in the structural labour supply.

Regularly, the CPB publishes analyses of the accuracy of its forecasts. In the period 1971-2008, the average forecasting error of economic growth was 0%, i.e. an unbiased estimate. However, this average reflects major under- and overestimates. The average absolute forecasting error for the next year was more than 1 percentage point. After some time, when more information becomes available, the error becomes smaller, but even in September of the current year the average absolute forecast error was still 0.7 percentage points. In times of economic downturn, economic growth is often overestimated, while in

years with a booming economy underestimation is quite common. The CPB was not successful with its forecasts of the financial crisis of 2008. In September 2008, the CPB forecasted an economic growth rate of 1.25% in 2009, while national accounting statistics showed two years later that the Dutch economy had contracted by 3.5%.

Improving the accuracy of these forecasts is very difficult to achieve. Modifying the macro-econometric model will hardly yield better results, as this model only has a very limited impact on the forecasts for the current and next year. Three-quarters of the forecasting error are caused by an error in forecasting exogenous developments, like world trade.

Our material welfare is based on an extreme amount of world-wide co-operation and specialisation. The famous economist Milton Friedman used the example of a pencil to illustrate this.<sup>3</sup> A pencil is made of wood, paint and graphite, materials that come from all over the world, but it only costs a dime in the shop next door. The downside of this extreme amount of world-wide specialisation and the strong interrelations of world-wide financial markets is that specific events in one part of the world can have major impact elsewhere. Examples from the recent past are the bankruptcy of the American investment bank Lehman Brothers, earthquakes in Japan, the terrorist attacks on 11 September 2001 and the unsustainable public finance in Greece. Such specific events are often already very hard to foretell, but it is even much more difficult to foretell their consequences. This involves not only the consequences in a pure technical sense, but also forecasting the effect on trust and under- and overreaction by investors, governments, producers and consumers. The economy also reacts to forecasts made by economic institutes like the CPB and the IMF. This may invalidate the accuracy of such forecasts.<sup>4</sup> For example, if a financial crisis is forecasted, then governments and investors can take measures to prevent such a financial crisis or to mitigate its effects substantially.

The Dutch economy is very likely to be influenced by unlikely events. From a Dutch perspective since the Second World War, the financial crisis in 2008 looked like a very rare black swan (see Taleb, 2007). However, based on a world-wide and historical overview of financial crises, Reinhart and Rogoff (2009) demonstrate that such financial crises are much more likely than commonly thought. For forecasters like the CPB it is very difficult to foretell when such a black swan will arrive, how it will look and what its consequences will be.<sup>5</sup> But the CPB can indicate what are the most likely and major risks for the Dutch economy and suggest how Dutch policy makers should best deal with such risks. The most important lesson for the CPB from the financial crisis in 2008 is that much more attention should be paid to the risks on the financial markets.

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<sup>3</sup> See the famous television series “Free to Choose” (1979-80) and the book by Friedman (1980). Friedman borrowed this example from Read (1958).

<sup>4</sup> The major role of trust and the interaction of the economy with forecasts and policy advice are reasons why forecasting in economics is fundamentally different from forecasting in natural science.

<sup>5</sup> However, it is clearly not impossible. This is evidenced by the contribution of the IMF chief economist Rajan to the 2005 Jackson Hole Conference in which he well foretold the financial crisis (see Rajan, 2005 and 2010).

### 3. Forecasts for the next period of government<sup>6</sup>

Before the start of a new period of government, the CPB publishes a macroeconomic forecast for the next four or five years assuming no changes in government policy. Together with the CPB analysis of the sustainability of public finance, this forecast is the major input for the official Advisory Group on Fiscal Policy, the evaluation of election platforms, and the coalition agreement. After the start of a new government, an updated forecast is published including the effects of the new coalition agreement. This forecast is also used for fixing the expenditure ceilings for the new period of government and the multi-annual budgets for each ministry.

Like in the forecasts for next year, the assumptions about international developments such as world trade, the oil price, the interest rate and the exchange rate are of major importance for the forecasts for the next period of government. However, the impact of the macro-econometric model is much larger, and the estimate of potential economic growth plays a central role in this.

The macro-econometric model (see CPB, 2010b) is not based on strict adherence to one school of economics. Most of the economic relationships employed are the result of empirical studies. Major assumptions in economic theory, like rationality and a perfect market mechanism, are of minor importance in the model. In the short term, expenditures like private consumption and exports are the major drivers of economic growth. In the long run, the supply side is the most important. This is investigated by looking at the structural development of labour supply, the equilibrium rate of unemployment, and labour productivity. The financial crisis has adverse effects on structural economic growth. The increased risk premiums imply that the desired return on financial investments also increased. Higher risk premium means higher costs of capital, which pushes investments down and reduces capital intensity. This lowers labour productivity and increases the equilibrium rate of unemployment.

The macro-econometric model is not used mechanically: CPB economists should always check the plausibility of the results. Common sense and a critical attitude towards the model – which by definition can never be more than a very simple imitation of the many complex relationships in economic reality – are indispensable. Furthermore, when necessary and relevant, the insights from more specific models and analyses are also used, e.g. for the labour market.

For the forecasts for the next period of government, the operationalisation of the assumption of no changes in policy is also important. For the government revenues, unchanged policy is interpreted as stable rates for taxes and social security contributions and application of current official indexing formulas to thresholds and maximum tax deductions. For health-care expenditure, it is much less straightforward to define unchanged policy for the next period of government. Extrapolation of the trend growth in real health-care expenditure of 4.25% per year in the period 2001-08 is not appropriate, because in that period health-care expenditure was growing much faster than economic growth. This cannot last long without

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<sup>6</sup> See CPB (2010a) and CPB (2012).

restrictions. For the next period of government, therefore, different growth rates are assumed for the public and private health-care expenditure. For each age cohort, the assumption is made that public health-care expenditure will increase in line with economic growth, i.e. by 1.75% per year. Due to an ageing population, this results in a real growth rate of publicly financed health care of 3%. The growth of total health-care expenditure is expected to be 1% higher per year. It is assumed that, in this scenario of no policy change, this extra growth in health-care expenditure is paid by the individual consumers themselves. This implies that the growth of health-care expenditure will be financed up to 30% by private contributions. In their election platforms, all political parties have allocated extra resources for public health care, in order to reduce the strong increase in private health-care contributions.

#### **4. Sustainable public finance<sup>7</sup>**

In order to judge the health of public finance, the current deficit, debt and assets of the government are not the only things that are relevant. This information should be combined with estimates about future revenue and expenditure. Since 1997, the CPB makes such analyses of the sustainability of Dutch public finance. These analyses show that the ageing of the Dutch population, the increase in their life expectancy and the exhaustion of natural gas resources are a major threat to the sustainability of Dutch public finance. These calculations are based on demographic projections and assumptions about economic growth, the interest rate and the discounting rate. Public finance is defined in general terms to be sustainable when our children and grandchildren can in the future benefit from the same social security and other public arrangements without any need for increasing taxes and social security contributions. Translating this general definition into an operational concept is not straightforward and requires major choices. How is this definition of constant arrangements put into practice by the CPB?

For government expenditure, constant arrangements imply that social benefits increase in line with wage rates. Future generations can then receive old-age benefits and unemployment benefits indexed by the increase in wage rates. The same applies to the current public arrangements for education and health care. Also, these types of expenditure are linked per recipient (children or the elderly, respectively) to the increase in wage rates, which enables providing the same quality of education and health care in the future. Put differently: in the future, for each pupil the same number of teachers are available, and for each of the elderly the number of nurses is the same as at present, while the salaries of these teachers and nurses increase in line with the general increase in wage rates. Some government expenditure is more difficult to attribute to individual recipients, like defence, police and public administration. This is resolved by assuming that in the future the expenditure remains fixed as a percentage of GDP.

For taxes and social security contributions, a similar approach is taken. Constant arrangements then imply a constant average tax rate in comparison to income (income tax) and consumption (VAT). For a long-term analysis, the assumption of constant arrangements is more meaningful than an alternative benchmark defined by strictly following current laws

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<sup>7</sup> See Horst et al. (2010).

and regulations. An example can illustrate this. According to the law, the tax bracket for the income tax does not increase in line with wage rates but in line with inflation. Strictly adhering to this legal principle would imply that all Dutch citizens, including those with very low incomes, would have to pay in the future the highest tax rate of 52%. This would resolve the problem of the sustainability of Dutch public finance, but it does not present a plausible and politically neutral picture of the future.

**Table 1. Dutch government expenditure and revenue, 2011-60 (% GDP)**

Assuming no policy changes; figures excluding the new coalition agreement by the Rutte government<sup>1</sup>

	2011	2015	2020	2040	2060
<b>Expenditure</b>					
Social security	12.6	12.3	12.75	15.25	14.75
AOW (old-age pensions)	4.9	5.4	6.0	8.5	8.0
Disability benefits	1.8	1.6	1.5	1.5	1.5
Unemployment benefits	1.4	1.0	1.0	1.0	1.0
Other	4.4	4.4	4.25	4.25	4.5
Care (collectively financed)	9.8	10.3	10.75	14.25	14.25
Education	5.5	5.3	5.25	5.5	5.25
Other expenditure (excluding interest)	19.9	18.4	18.25	18.0	18.0
Interest payments	2.6	3.1	3.0	4.5	7.5
<b>Total</b>	<b>50.3</b>	<b>49.4</b>	<b>50.0</b>	<b>57.75</b>	<b>60.0</b>
<b>Revenue</b>					
Income tax and social security contributions	22.3	23.0	23.25	24.75	24.75
<i>of which: linked to pension income</i>	1.9	1.9	2.0	2.75	2.75
Taxes on production and imports	13.2	13.3	13.75	15.5	15.25
<i>of which: linked to consumption by 65+</i>	2.1	2.3	2.75	4.25	4.0
Corporation tax (excluding natural gas part)	2.7	3.1	3.5	3.25	3.5
Revenues from natural gas	1.7	1.6	1.5	0	0
Other revenue	5.7	5.4	5.25	5.0	5.0
<b>Total</b>	<b>45.6</b>	<b>46.4</b>	<b>47.25</b>	<b>48.5</b>	<b>48.25</b>
EMU government balance	-4.7	-3.1	-2.75	-9.0	-11.25
Robust government balance	-5.0	-2.75	-2.5	-5.75	-4.75
EMU government debt	69.0	73.8	75.0	132.0	217.0

1. See Horst et al. (2010), "Vergrijzing verdeeld; toekomst van de Nederlandse overheidsfinanciën", CPB *Bijzondere publicatie 86*.

The analysis of the sustainability of Dutch public finance is not a forecast of the most likely scenario. To meet that end, expected future changes in government policy should also be taken into account. The analysis should be regarded as a way to check whether the financial position of the government is sufficient to continue current public arrangements. If the current financial position does not suffice for this, sooner or later a change of policy will be required to restore sustainability.



Sustainability of public finance could be regarded as a problem with regard to the distribution of income over generations. Without timely adjustments, future generations may suddenly have to accept a drastic deterioration of public arrangements. By timely adjustments, the net benefit from the government will be spread more evenly over the different generations. CPB studies on ageing and sustainability also show the impact of specific policy measures on sustainability and the distribution over different generations.

The analysis of sustainability is a financial check on government policy. However, it does not provide a criterion for discerning which policy measures are preferable from a welfare point of view. Innovations in medical technology can raise life expectancy and therefore have a high social rate of return. But in terms of sustainability, public investments in medical research score badly, as they not only increase public expenditure but also increase life expectancy and therefore old-age public pensions. All public expenditure, irrespective of its importance for society, should be financed. This applies also to expenditure on infrastructure, education or future environmental quality.

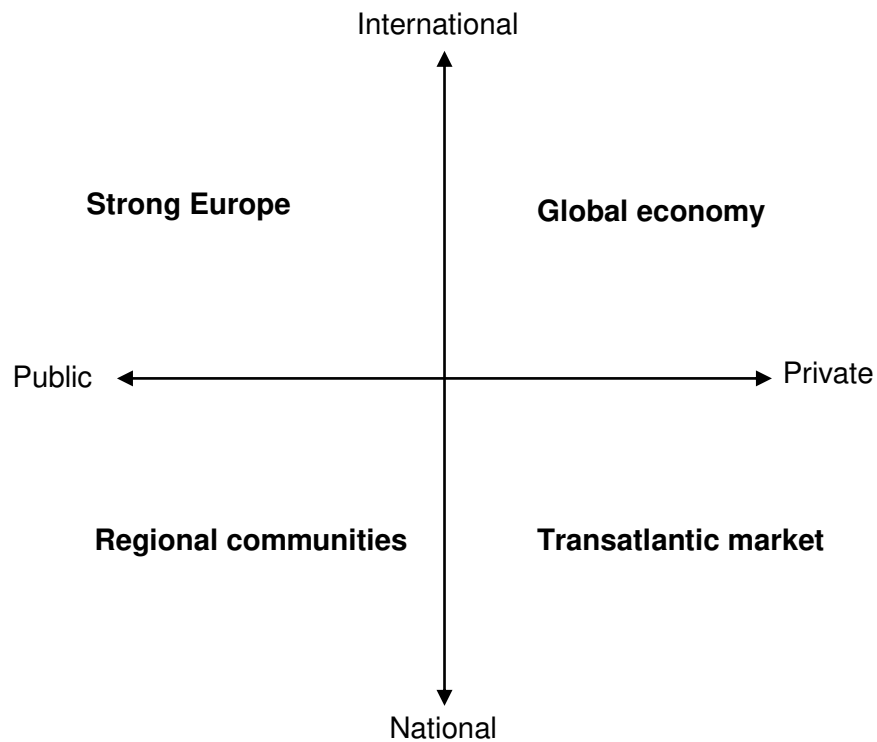
## **5. Long-term scenarios**

Since 1955, the CPB has established long-term scenarios. The purpose of these studies is to support policy makers in making strategic choices. Current decision making is based on current knowledge and a rough assessment of future developments. For policy decisions with a long time horizon or requiring huge investments, policy makers should balance the advantages of waiting and postponement (with the possibility that new knowledge becomes available or that economic and political circumstances unexpectedly change) and the costs and risks of postponement.

Scenarios provide policy makers with different perspectives on the future that can be used to evaluate and compare policy alternatives and their long-term consequences. Scenarios can be smart combinations of historic developments, current facts and possible future trends. They force policy makers to look and reconsider how effective and robust their policy proposals are in view of different long-term perspectives. The purpose of scenario analysis is not to forecast the future. The purpose is to help policy makers prepare for the future and make robust, effective and promising plans.

In the CPB study “Four Futures of Europe” (Mooij and Tang, 2003), four scenarios are presented for the development of the European economy up to 2040. Different scenarios are defined in terms of two key uncertainties (see Figure 1). The first is the role of national institutions: to what extent will the division of tasks between public and private change? The second key uncertainty is about international co-operation: to what extent will countries be prepared and able to co-operate in Europe and world-wide? In subsequent CPB studies, these scenarios have been elaborated for the Dutch economy, its major regions, the spatial development and the environment (see Huizinga and Smid, 2004, and Janssen et al., 2006).

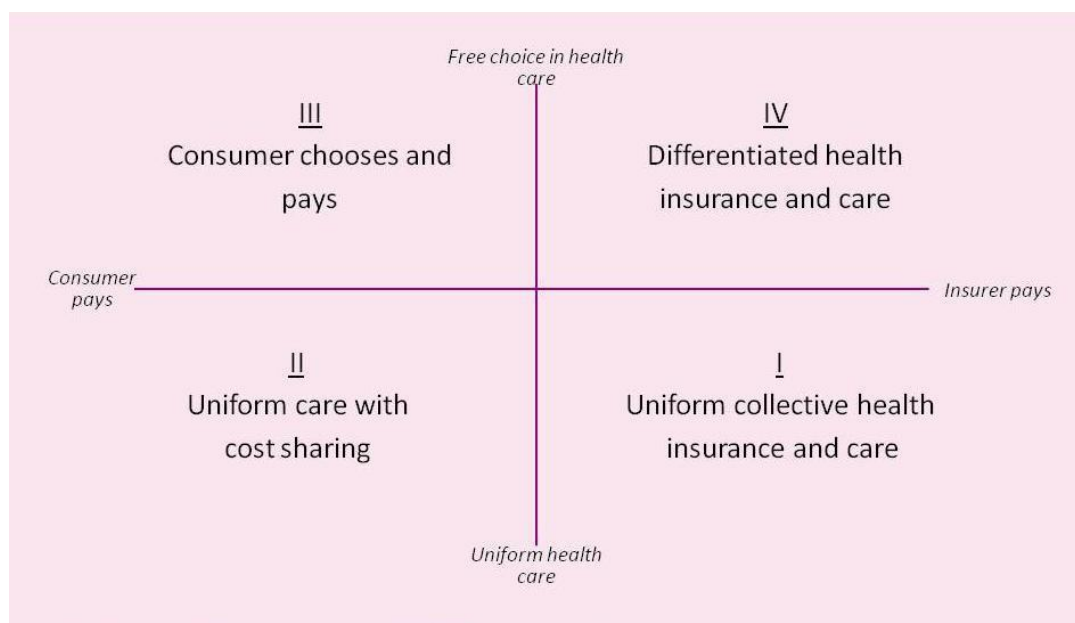
**Figure 1. Two key uncertainties and four scenarios (see Mooij and Tang, 2003)**



In 2010, a new scenario analysis was published (“The Netherlands of 2040”) which focused on the role of human capital, technology and cities for economic growth (Weel et al., 2010). The first key uncertainty was the world-wide distribution of work among people: will there be more specialisation or will flexible generalists win the day? The second key uncertainty relates to cities. In all scenarios, cities become more important. However, the question is whether there will be relatively small and scattered cities or whether economic growth will concentrate in some very big cities.

In 2013, the major policy options for health-care reform in the Netherlands were investigated through four scenarios (see Ewijk et al., 2013). For this purpose, two fundamental dimensions of alternative health-care systems were distinguished: care solidarity and risk solidarity (see Figure 2).

**Figure 2. Four different worlds of future health care in the Netherlands**



Recently, the practice of half a century of scenario analysis by the CPB was evaluated (Gelauff, 2012). Major conclusions were:

- Quantification was of limited importance in international studies, like “Four Futures of Europe” and “The Netherlands of 2040”. In contrast, scenarios that focused on the Dutch economy were much more quantified; this applies in particular to studies about the impact for spatial development and regions. In a quite *ad hoc* way, over time many cost-benefit analyses on investments for infrastructure and the environment were also based on key figures of the scenarios, e.g. economic growth, demography and mobility.
- Economic outcomes were sometimes outside all the scenarios, e.g. average annual economic growth was 5% in the period 1950-70, while the three scenarios indicated a range between 2.2 and 2.9%. Similarly, according to one of the scenarios in the 1980s, unemployment would be over 23% in 2010. However, other scenarios were much more successful in capturing a realistic range – e.g. scenarios for the period 1985-2010 indicated a range of economic growth between 1.75% and 4%, and 2.5% was the actual outcome. Similarly, according to 1992 scenarios, the number of passengers at a major Dutch airport (Schiphol) in 2015 would be between 34 and 49 million, which well encompasses the current number of 45 million.
- Stories and visionary perspectives were particularly important for international studies. Scenario analysis served to introduce new developments and challenge the mental maps of policy makers, e.g. about the role of human capital, the city, globalisation, demographic shrink in the countryside and the choices to be made in Dutch health care.

## 6. Long-term effects of election platforms<sup>8</sup>

For 25 years, the CPB has evaluated the economic effects of election platforms. Only the election platforms of political parties that make a request are evaluated by the CPB. In 2006, eight political parties made such a request; of the political parties represented in the Dutch parliament, only the Party for Animal Rights was not interested in such an evaluation. Each evaluation provides a transparent and comparable overview of the policy measures proposed by the various political parties, and their effects. The booklet with the evaluations is therefore labelled “Charting Choices” (CPB, 2006). Each evaluation is not a report mark or approval, and certainly not advice on how to vote. All political platforms are good, but they reflect different political priorities and choices.

Political parties are often suspected of promoting their policy with unwarranted claims and false promises. By subjecting their election platform to an independent analysis, they can increase the credibility of their policy plans. It also forces them to specify their plans and can help in negotiations about coalition agreements. On the basis of a first quick scan or a more thorough provisional evaluation, political parties may also decide to adjust their plans, e.g. to ensure that their targets in terms of public finance or real income of specific groups of households will be met.

The first evaluation in 1986 was restricted to analysing the consequences for economic growth, employment, public finance and real income of various groups of households during the next period of government. However, the most fundamental political choices only become visible when looking at the long-term effects. For example, does a party prefer reducing income inequality or increasing long-term economic growth? Does the political party favour education for the younger generation or more care for the elderly? Is a party willing to pay for a cleaner environment in terms of smaller long-term economic growth? The reaction to such fundamental choices clarifies a party’s political priorities. In subsequent evaluations, the analysis was therefore extended to all kinds of long-term effects. This not only covered the budget of the government or of households, the profits of corporations, or economic growth, but also a broad concept of welfare – i.e. in principle everything that citizens think is important and valuable. The last evaluation therefore included, inter alia, the reduction of greenhouse effects, changes in traveling time and noise, education, health care, efficiency of the housing market, and the change in housing prices and net rentals.

Unavoidably, the evaluation remains restricted to major effects and to effects for which sufficient high-quality data and scientific analyses are available. For example, an extended international economic literature exists regarding the effectiveness of many different types of education policies, like class size and performance pay for (good) teachers (see Elk et al., 2011). As a result, the education policy proposals of political parties could be classified as promising, not promising, neutral, or effect unknown. An effort was even made to quantify the effects of education policy proposals on long-term economic growth. For major proposals to reform Dutch health care, such an analysis was not possible – not even in very modest qualitative terms. As a consequence, the evaluation of the health-care proposals was limited to

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<sup>8</sup> See CPB and Planbureau voor de Leefomgeving (2010 and 2012) and Bos and Teulings (2012).

describing the type of policy measures, e.g. in favour of more or less free market processes, and the proposed adjustment of the private contributions.

## **7. Conclusions**

This overview of the various short and long-term forecasts by the CPB shows that they have different purposes and different features. For all forecasts, it is crucial that they are updated when new information and insights become available, that they are relatively accurate in comparison to forecasts by other institutes and that they are not subject to political interference or systematic biases. All forecasts are a mix of facts, assumptions and science.

Point estimates – i.e. estimates without reliability intervals or optimistic and pessimistic scenarios – are best suited as macro-economic input for government budget estimates, for indexing public and private contracts, for comparing election platforms and for making policy agreements for the next year or the next period of government. In the analysis of the sustainability of public finance, the evaluation of election platforms and the long-term scenarios, the focus is on identifying and clarifying the major uncertainties, the political choices and their consequences.

Users of forecasts should be well aware of the uncertainties involved and should take them into account when formulating policies. To a great extent, policy should be robust in order to avoid a situation where the permanent adjustments in forecasts necessitate continuous adjustment of policy. The Dutch trend-based fiscal policy is a good example of how to deal with such uncertainty. The CPB tries to shed light on the uncertainty of the future by explicitly addressing major risks and by sketching their consequences and the various policy options to best deal with them.

The role of the CPB as a forecaster is therefore comparable to a seismologist warning for a new earthquake. Although it is impossible to forecast exactly the timing and strength of an earthquake, the warnings by the seismologist can help to make houses more shockproof.

However, a major task of the CPB is also to provide construction advice – i.e. how can the Dutch and European economies and public finances be made more healthy and shockproof. What are the institutions, fiscal rules and public arrangements best suited for this? According to Coats (1989, p. 118), the most valuable contribution of economists is “damage minimization by modifying, refining, or even blocking the ill-considered policy proposals by laymen - for example, by emphasizing the opportunity costs of a given action or more broadly, the system-wide implications of a specific policy”. In line with this view, CPB’s construction advice should also include criticizing policy proposals that would not help to make the Dutch and European economies more shockproof and healthy.

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