

# **Charting CPB's course**

**December 2009**



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# 1 Introduction

## 1.1 A new scientific review

For the third time,<sup>1</sup> a committee consisting of internationally renowned economists will evaluate the scientific work of CPB Netherlands Bureau for Economic Policy Analysis (CPB).<sup>2</sup> The Central Planning Committee (CPC) commissions this scientific review.<sup>3</sup>

CPB aims to provide its clients with independent economic analyses and forecasts that contribute to the policy debate. The clients include the government, political parties (both coalitionists and oppositional parties), employers' organisations, unions, the press and the society at large. CPB has acquired a reputation of independence and impartiality in serving this wide circle of clients. The scientific quality of its analyses, predominantly consisting of applied research, is a crucial aspect of this reputation.

A scientific evaluation of CPB differs from that of an economic faculty. Scientific recognition, as evidenced by publications in international journals, signals the quality of a faculty's work. Applied research, however, does not lend itself easily to scientific publications. Therefore, most of CPB's output can hardly be evaluated in this way. Still, it must meet scientific standards and be based, to the greatest extent possible, on scientific analyses. A major component of the Review Committee's task will thus be to judge the scientific quality of the applied work and to suggest ways for CPB to improve its analyses.

## 1.2 The terms of reference

The task of the 2010 Review Committee, briefly stated, is to judge the work done by CPB in the period 2003-2008/2009. The Committee is also welcome to comment on any characteristics of CPB affecting the quality of the work, in the field of organisation, management, HRM, work plan procedures and work practices.

More specifically, the Central Planning Committee invites the Review Committee to evaluate the following issues:

1. The scientific quality of CPB work and its value-added for policy;
2. The adequacy of the analyses in terms of the theories endorsed and the methods employed;
3. The quality of the forecasts;
4. The performance of CPB compared to foreign 'sister' institutes such as CEPII (France), ETLA (Finland), IFO (Germany) and NIESR (UK);

<sup>1</sup> The previous scientific reviews took place in 1997 and 2003.

<sup>2</sup> Other reviews evaluating the *policy relevance* of CPB work took place in 2001 and 2007.

<sup>3</sup> The CPC is the independent external body (consisting of members from academia and industry) that advises CPB about the work and methods of the Bureau.

5. The dissemination of CPB products: outlets (including reports, articles, congresses, press releases), reach and impact;
6. The allocation of resources to subject areas: Does CPB cover the right topics, and is the allocation of resources to the topics adequate?
7. Organisation, management and HRM.

All suggestions for improvement are welcome.

### **1.3 Plan of the report**

In this report CPB presents itself to the Review Committee. Chapter 2 gives an *Overview of CPB*; subsequent chapters deal with *Management*, *Output* and *Responses to previous recommendations*. There are five annexes. An extended version of Annex C, containing an exhaustive survey of CPB and CPB staff publications, is supplied separately. Several electronic documents supply as background material two citation analyses of the publications by the Centre for Science and Technology Studies (CWTS) of Leiden University and a detailed account of the way in which CPB has responded to the recommendations of the 2003 Review Committee.



## 2 Overview of CPB

### 2.1 Origin and position

CPB Netherlands Bureau for Economic Policy Analysis started operations in 1945, immediately after WW II. It was formally instituted under the name of ‘Centraal Planbureau’ (Central Planning Bureau) by the *Law of April 21, 1947, containing the preparation of the assessment of a Central Economic Plan*. Jan Tinbergen was its first director. ‘Centraal Planbureau’ is somewhat of a misnomer, actually. CPB never did any planning in the sense of issuing administrative guidelines for managing the Dutch economy. Right from the start the Bureau emphasised macroeconomic assessment and forecasting, and the annual *Central Economic Plan* has never contained any guidelines. The name *Centraal Planbureau* is so engrained in the Netherlands, however, that it would not pay to change it. Internationally, however, CPB presents itself abroad<sup>4</sup> as *CPB Netherlands Bureau for Economic Policy Analysis*.

CPB is the main advisor of the government on economic policy issues. Our forecasts for the short- and medium term are universally accepted as setting the framework for political negotiations on the budget. They are the only macroeconomic forecasts that are used in the budgetary process, and their use is formalised in procedures. Most political parties present their election platforms to CPB for evaluations of their economic and budgetary implications. In that sense, CPB has a monopoly— and every now and then there is some discussion on whether or not there should be alternatives to CPB’s forecast. In fact, alternatives have always been around, but the forecast of the Bureau has remained the natural focal point of the political process. Forecasting inflation is a task of CPB by legislation, and CPB’s estimate of the contractual wage increase is used for adjusting the legal minimum wage. For the most part, however, CPB’s policy analyses are influential due to public perception of their quality and independence. This perception generates a considerable market for our analyses outside the circles of policymakers in The Hague. CPB is cited more or less every day in the popular press on a wide range of issues.<sup>5</sup>

The position of CPB is somewhat comparable to the Congressional Budget Office (CBO) in the US— although they are constrained to budgetary analysis, whereas CPB also performs wider economic analyses and scenario studies. Also, our research is more deeply embedded in economic theory than that of the CBO. Compared to the Institute of Fiscal Studies in the UK, CPB has a deeper knowledge of the institutional details of its home country’s system and is also more embedded in the policy process, via our participation in all kinds of advisory committees, at the expense of the effort that we can spend on scientific publications. The Bureau is frequently consulted, formally and informally, on a wide range of factual and policy issues. Moreover, CPB has regular contact with colleagues at the IMF and OECD, who consult the

<sup>4</sup> This name has been used now for over 15 years.

<sup>5</sup> CPB keeps track of the citations through a subscription to the media monitoring service of Meltwater News, enabling a timely reaction if necessary.

Bureau for our assessment of the situation in the Netherlands. In fact, the IMF and OECD put forward the Dutch institutional setting, in which CPB acts as an economic research institute that is independent but well embedded in the policymaking process, as an example of a 'best practice' to other countries.<sup>6</sup>

Formally, CPB is just a branch of the civil service within the Ministry of Economic Affairs. The personnel evaluation of the CPB director is carried out by the Secretary General of the Ministry. In that sense, CPB's independence is not formally engrained. By way of comparison, Statistics Netherlands (CBS) is an Independent Government Body (ZBO), which gives more formal guarantees for independence. However, the informal rules of conduct and procedures—many of which have evolved into their present form during the course of decades—provide CPB a strong independence. This is reinforced by the fact that CPB also does policy analyses for the political parties not represented in the government. All this does not preclude the occasional attempt by politicians to interfere with either our research agenda or our conclusions.

CPB has an advisory board, installed by the law of 1947 and therefore named the Central Planning Committee (CPC), and which is commissioner of the evaluation. While the CPC is formally just an advisory board, CPB uses the committee as if it were a supervisory board, just to provide proper checks and balances for the board of directors of CPB and to avoid a situation in which the Minister of Economic Affairs has to play that role. CPB's research programme is discussed by the CPC. This role of the CPC contributes to the independence of CPB.

With regard to CPB's funding, eighty percent comes from a lump-sum subsidy from the government. The other twenty percent involves monies that are earmarked for specific projects—most of them carried out for the Dutch government, but also some for the European Commission. There is a semi-formal rule that the share of our budget that comes from this type of project should not exceed twenty percent, since a larger share would undermine the independence of our judgment.

## 2.2 Vision

CPB's vision is to be '*A widely trusted source of independent policy-relevant economic analysis.*' The four crucial aspects in the vision are (i) *trust*, (ii) *independence*, (iii) *policy relevance*, and (iv) *economic analysis*. *Trust* refers to the Bureau's reputation: CPB not only does independent policy-relevant economic analysis; our analyses are also perceived as such by the public at large. *Independence* implies that the Bureau is independent in its choice of research topics and the methodology applied for this research, in its conclusions, and in the way in which the conclusions are disseminated. The *policy relevance* of our research implies that all of our research must be relevant for policymaking in the Netherlands—mostly at the national level, but also at the European and local levels. Since the Netherlands has a corporatist system

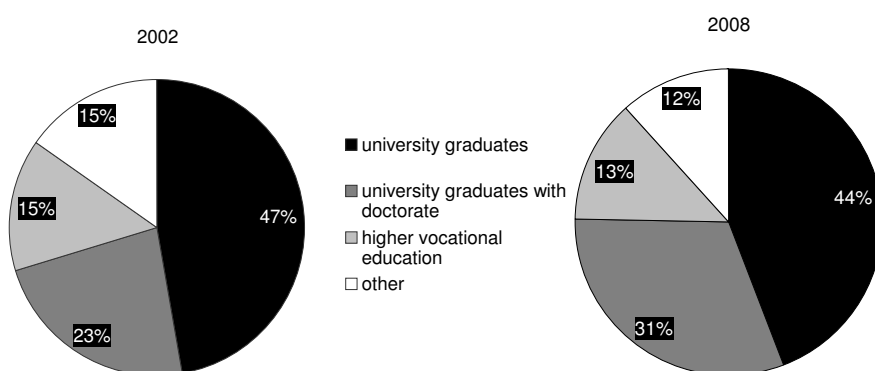
<sup>6</sup> IMF, 2006, *Report on the Observance of Standards and Codes (ROSC) Fiscal Transparency Module*, IMF Country Report No. 06/124, Washington, DC; Anderson, B., 2009, The changing role of parliament in the budget process, *OECD Journal on Budgeting*, Vol. 2009/1, 1–11.

of wage setting and policy consultation, CPB analyses are also used in the negotiations between trade unions and employer federations. *Economic analysis* implies that the work is based on economic theory in the broadest sense: that the Bureau bases its conclusions on a thorough analysis and avoids political judgement. This mono-disciplinary focus sets the CPB apart from the two other planning bureaus in the Netherlands: the *Sociaal en Cultureel Planbureau* (SCP), which uses the other social sciences as its frame of reference, and the *PlanBureau voor de Leefomgeving* (PBL), which analyses spatial and environmental issues. Needless to say, there are many borderline-topics that could equally well be treated by either Planbureau. Therefore, CPB closely cooperates on some topics with these research institutes, for example with the PBL, when evaluating the election platforms, or with the SCP, during our yearly analysis of the impact of the EU on the Netherlands.

## 2.3 Types of activities

To implement its vision, CPB has a staff of about 170 persons, corresponding to 152 FTE (numbers at the end of 2008). Thirty-four persons are employed in administrative support and maintenance of the facilities, 24 persons in data analysis, and the remaining 112 persons in economic research (including higher management). Figure 2.1 gives the educational composition of the total staff at the end of 2002 and 2008. There is a trend away from staff with a higher vocational or some lower education towards university graduates, and an increasing share of the university graduates has obtained a doctorate. The share of research staff with a doctorate has risen from 38% at the end of 2002 to 47% at the end of 2008 (and has by now reached 53%). The research staff consists mainly of economists and econometricians, next to some mathematicians and physicists. The number of staff members born abroad is 12 (up from 3 by the end of 2002).

Figure 2.1 Staff by educational level



CPB's research staff is divided among six sectors, each of which cover a relatively coherent broad range of topics:

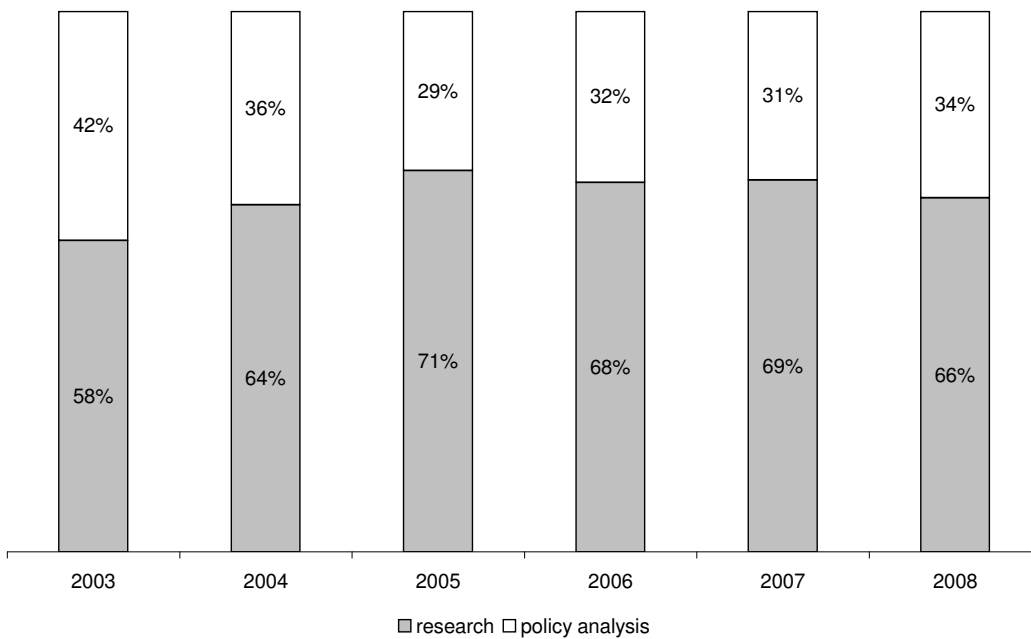
- Sector 1: Labour market and welfare state,
- Sector 2: Short-term analysis and fiscal affairs,
- Sector 3: Growth, structure and knowledge economics,
- Sector 4: Competition and regulation,
- Sector 5: Physical aspects, and
- Sector 6: International economics.

There are at least three ways in which one can classify the Bureau's activities. All of them highlight a particular dimension of the activities.

**2.3.1 Policy analysis versus research**

One classification is to distinguish between *policy analysis* ('lopend werk') and *research* ('onderzoek'). *Policy analysis* addresses short- and medium-run policy issues that are usually raised by (parts of) the government, political parties, parliament, employer federations, unions and other interest groups. Policy analysis generally does not lead to scientific publications, but applies knowledge that is (for the most part) readily available at the Bureau. Policy analysis requires detailed knowledge of the relevant institutions. This institutional knowledge is widely available at CPB. Current institutions are embedded in CPB's models for e.g. the labour market, ageing, pensions, and purchasing power. Our knowledge is also used for answering all kinds of detailed questions on a daily basis. The Bureau addresses a wide range of short-run issues: macroeconomic forecasting, cost-benefit analysis of infrastructural projects, the evaluation of proposals for institutional reform, etc.

**Figure 2.2 Allocation of labour to types of activity, 2003–2008**



Our *research* elaborates new themes, investigates new lines of reasoning, prepares the ground for future policy analysis, and establishes the empirical value of elasticities that are crucial for this analysis. For example, the CPB did a meta-analysis of the labour supply elasticity. Publishing our research in scientific journals serves two goals. First, it is a means to disseminate our research across the world and to encourage interaction with the scientific community. Second, the publication of our research is a way to signal its quality. This is important since policymakers are typically unable to judge the quality of our research.

Although the borderline between both types of research is not always clear-cut, a crude estimate is that nowadays about one-third of the Bureau's research budget is spent on policy analysis and the remaining two-thirds is spent on scientific research. The share of policy analysis has declined somewhat in the period from 2003 to 2005, and has stabilized afterwards. As indicated by Table 2.1, the two types of activity are spread unevenly across sectors. Policy analysis is concentrated on Sector 2 (*Short-term analysis and fiscal affairs*), which carries out almost 60% of all policy analysis and devotes more than two-thirds of its capacity to this task. The focus on research is strongest in Sector 6 (*International economics*). In practice, policy analysis requires somewhat different human capital than research (familiarity with the institutional background and sensitivity for politics versus a thorough knowledge of the scientific literature and analytical creativity). There is thus a tendency for staff to specialize in one of these two categories.

	S1	S2	S3	S4	S5	S6	CPB total
	<i>% of CPB total</i>						<i>labour months</i>
Policy analysis	10	58	10	7	14	1	316
Research	18	12	20	17	14	17	601
Total	16	28	16	14	14	12	917
	<i>% of sector total</i>						<i>% of total</i>
Policy analysis	23	71	21	18	34	2	34
Research	77	29	79	82	66	98	66
Total, labour months	144	270	151	128	130	106	917

### 2.3.2 Classification in research programmes

A second classification of our research is in *research programmes*. A research programme is a coherent body of research in a particular area, where CPB is committed to maintain an adequate level of competence and where there is flow of new research output. A programme is headed by a programme leader, who is responsible for the research agenda and target setting in the programme and who supervises its research projects. *Programme leader* is a formal position in

CPB's functional hierarchy, directly subordinate to the sector head. Each sector has three programme leaders. One programme leader can be responsible for more than one programme.

Currently, CPB has 19 programmes. Although CPB decides each year which programmes to continue and which new programmes to start, there is a substantial degree of persistence in the list of programmes. For example, from 2009 to 2010, the list of programmes will remain unchanged (apart from two programmes being united). The current list of programmes can be found in Table 2.2, including the capacity that is assigned to each of them. The table reveals that there is substantial dynamics in the allocation of the available research time (e.g. rapid increase in the resources spend on Financial markets and Climate change, a rapid decline in the share of the budget spent on Macroeconomics and Healthcare).

Sector 2, *Short-term analysis and fiscal affairs*, is organised in a different way. It has no programmes, but units— each with its own manager. The reason for this separate structure is that Sector 2 does predominantly policy analysis (see Table 2.1), being responsible for the quarterly macroeconomic forecast and the two yearly publications, the *Centraal Economisch Plan* (CEP) in March, and the *Macro Economische Verkenning* (MEV) in September. These units are as follows:

**Table 2.2 Allocation of labour to programmes**

	2004	2006	2008	2010 <sup>a</sup>
	% of column total			
Labour market	5,4	1,3	3,0	2,7
Ageing and life cycle policies	7,1	10,0	10,9	8,9
Pensions	5,9	4,5	6,1	5,3
Macro analysis	12,3	7,1	11,5	5,0
Productivity	6,6	6,5	7,9	5,5
Education and public research	6,7	4,4	5,1	4,5
Social cohesion	-	-	-	2,9
Network sectors ► Regulation ► Energy	0,7	2,0	2,4	3,5
Public/semi-public organisations	2,0	4,7	1,9	3,5
Market sectors ► Competition ► Care	9,4	6,4	5,2	3,3
Financial markets	-	-	-	4,8
Housing	-	4,0	5,0	1,2
Spatial economics and agglomeration	5,8	5,7	3,2	5,8
Mobility and infrastructure	5,5	6,7	1,8	4,8
Environment, nature and agriculture	1,5	1,1	0,8	2,3
Water safety	4,2	-	1,1	1,1
European analysis	3,9	6,0	7,1	4,8
Globalisation	2,8	3,3	5,1	6,8
Climate change	0,1	2,5	2,2	7,1
Other	20,0	23,8	19,5	16,1
Total, labour months <sup>b</sup>	604	673	601	660

<sup>a</sup> According to work plan.

<sup>b</sup> Net labour months for 2004, 2006 and 2008.

- International cyclical analysis;
- Cyclical analysis;
- Income and prices;
- Public finance;
- Social security.

### 2.3.3 Classification in types of research

A third classification has no formal status in the organisation, but provides a useful insight into the type of research that the Bureau initiates to realise its vision. Our research can be roughly classified into six categories, which are listed together with some examples for each category in Table 2.3.

An ever-increasing part of CPB's research capacity is assigned to *the institutional analysis of specific sectors*. We analyse what type of incentives various actors (both in the public and the private sector) have, examine how these incentives affect the outcome, and explore how changes in incentives can improve these outcomes. These studies are highly influential for policymaking. On many occasions, the government commissions CPB to carry out such a study—often when the current institutions are unsustainable.

The second category is *Cost-Benefit Analysis (CBA)*. These analyses have a formal status in the decision process on infrastructural projects, but also for investment in knowledge-based projects. Although the conclusions of our analyses are again quite influential, the ultimate decision deviates in many cases from what is implied by the CBA. CPB has contributed to a set of standardized guidelines stipulating how to do a proper CBA for infrastructure (OEI). The Bureau executes part of the CBAs itself. However, in many cases the Bureau is asked to give a second opinion on CBAs executed by other institutes. This practice helps to maintain a proper application of OEI guidelines. There is a gradual tendency for an ever-widening field of projects to be subjected to a CBA. At the same time, the enormous impact of the outcome of a CBA on the final decision evokes considerable animosity among stakeholders, which requires proper attention.

Whereas CBAs provide an *ex ante* evaluation of projects, CPB also initiates *ex post evaluations*. The Bureau encourages ministries to evaluate new programmes by scientific methods. We have initiated a number of evaluations ourselves that can serve as practical examples, using treatment- and control groups derived both from natural experiments and by randomisation. The Bureau is currently participating in a joint project with a single ministry (OCW, The Ministry of Education and Culture), first in order to set up legislation for new programmes in such a way to allow proper evaluation, and subsequently to assist the ministry in executing these evaluations properly. After a slow start, this joint project is now gathering steam. We think that this advisory role for CPB can be very fruitful, and we would support similar joint projects with other ministries. Compared to CBAs, which are by now accepted practice and therefore largely initiated by the stakeholders themselves, *ex post* evaluations are

**Table 2.3** Examples of CPB studies per type of research**Institutional analysis of specific sectors, e.g.**

- . Intergenerational risk sharing in pension funds
- . The organisation of the care sector in healthcare (as opposed to the cure sector)
- . Competition in education
- . Tax subsidies for formal and informal childcare
- . The interaction of social assistance, disability insurance for youngsters, and subsidized employment
- . The housing market

**Ex ante Cost-Benefit Analysis (CBA), e.g.**

- . Maasvlakte 2 (construction of area for sea harbours, transshipment facilities and industry)
- . Space for the River
- . Business district Amsterdam South Axis
- . A large housing location including its infrastructure in Almere

**Ex post evaluation**

- . A new organisation of social assistance
- . Stricter performance evaluation for primary education in Amsterdam
- . Performance contracts for the police
- . Extension of the EU by new member states

**Short- and medium-term macroeconomic forecasting**

- . Quarterly publication of short-term macroeconomic forecast, including an extensive discussion of budgetary policy
- . Medium-term review of the state of the economy
- . Charting Choices (analysis of election platforms)

**Long-run studies**

- . Four Futures of Europe
- . Four Visions on the Netherlands: Scenario studies for the Dutch economy at large for the next 30 years
- . Welfare and the environment (an elaboration of the spatial and environmental dimensions of these scenarios)
- . Ageing and the sustainability of Dutch public finances

**Background studies, e.g.**

- . A meta-analysis of the labour-supply elasticity
- . Income effects in labour supply
- . A micro simulation model for the labour market
- . A DSGE model for the Dutch economy
- . The effects of positive and negative externalities on housing prices
- . The relation between productivity and export performance at the firm level (Melitz model)
- . Use of real options in CBA

still in the take-off stage. CBP initiatives therefore have an important role to play in this type of research.

A fourth category comprises the *short- and medium-term forecasts*. CPB publishes a monthly world trade monitor, which is widely used throughout the world (e.g. the IMF and OECD refer to it, and it is cited in the Financial Times regularly). Short-term forecasts (intended for the present year and the next) are published quarterly. Twice a year they include an extensive evaluation of the budgetary situation. These forecasts play an important role in the yearly budgetary process for the government. Medium-term forecasts (looking four years ahead) are published every four years, coinciding with the election cycle. The latter forecasts are published one year ahead of the general election. Political parties use these forecasts for



deciding on their election platforms. Many parties present their platforms to CPB for evaluations of their implications for public finance and for the economy in general. The evaluations are published uniformly and jointly in a Special Publication, *Keuzes in Kaart* (KiK; *Charting Choices*), which is issued a couple of months before the election. Parties are free to participate in this process: CPB evaluates a party's platform only on the explicit request of that party. Over time, the number of parties that participates in this process has increased. The evaluation of the platforms is based upon research effort that falls into the previous categories, sector studies, CBAs, and ex post evaluations.

A fifth category includes the *long-run studies* (looking some thirty years ahead). Many of these studies use a scenario approach. They are published at irregular intervals of about four to seven years. In these studies, CPB sketches a picture of conceivable states of the world several decades from now. These worldviews help in getting a grip on the central dilemmas that policymakers face in the next couple of decades. Usually, scenario studies have a considerable impact on the long-run policy agenda in the Netherlands— for example, regarding the role of markets in the economy, the relevance of international labour mobility, or the relative importance of the European versus national level in economic policy.

The sixth and final category is comprised of *background studies*, to develop new models and methods, to update our priors on the value of crucial elasticities, to build up new human capital for addressing questions and issues arising in the other categories, and to open up new areas where economic theory can be applied fruitfully with the aim of improving economic policy.

## 2.4 Independence and impartiality

As discussed before, CPB's independence is crucial for its current position in the Dutch policy debate. The Bureau's reputation for political independence is a precondition for the credibility of its judgements on policy issues. On the one hand, this independence implies that we are free in the choice of research topics and the conclusions that can be drawn from them. On the other hand, our independence compels us not to interfere in the political debate and in the competition between political parties for the support of the voters. Our core business is providing arguments derived from economic theory for how to improve economic policy. We try to articulate these arguments as clearly as possible— and to as wide an audience as is willing to learn about them. However, convincing voters that they should support the one policy above the other is the prerogative of politicians. CPB aims not to interfere in the competition for votes between political parties. This rule of conduct implies that CPB has a greater freedom in putting forward arguments in the initial stage of the debate on a certain topic, when political parties have not yet taken a strong stance on the topic. CPB times the publication of its research accordingly. The Bureau tries to be ahead of the debate— in its publication<sup>7</sup> exploring employment protection

<sup>7</sup> *Rethinking retirement: From participation towards allocation*, CPB Special Publication 80, 2009 (Rob Euwals, Ruud de Mooij and Daniël van Vuuren).

and its implications for the labour market for the elderly, for example, or in its study<sup>8</sup> of the impact of ageing for the government budget and for intergenerational fairness. When a debate on a certain topic is running between political parties or between other interest groups, CPB usually makes a judgement only upon the request of the parties involved or when such a judgement is expected by the general public. The Bureau tries to avoid being an arbitrator without a mandate. In the evaluation of the election platforms in KiK, we apply the same principles: We analyse the implications of each election platform and the differences among them. We see it as our main contribution to point out the trade-offs, but leave it to the voter to decide how to weight these implications.

## 2.5 Publication policy

CPB has several publications series— each with different requirements and serving different purposes. The main series are the Special Publications, Documents and Discussion Papers.<sup>9</sup> *Special Publications* contain the final reports of major CPB studies. Half of the thirty Special Publications report on joint work with other institutes (often one or more of the other planning bureaus). They can be in Dutch or in English, depending on the targeted clients. A publication in English has the advantage of being available to a global audience. Apart from benefits of the availability to a wider audience, this also has an advantage from the point of view of quality control: It makes our work accessible for the international scientific community (e.g. for your Review Committee). However, publishing in English also has a severe disadvantage. Many publications draw wide attention among a broad Dutch audience that is not always fully fluent in English. For this reason, CPB decided to publish the new study on ageing and generational accounting in Dutch (whereas the previous issue was in English). *Documents* present policy analyses resulting from applied research. Opinions in Documents express the view of CPB. Here, we deviate from the policy of the NBER regarding its working paper series (that the institute as such does not take policy positions). The publication of a Document therefore requires the consent of the author's sector head and a member of the board of directors. Documents can be in Dutch or in English. The standard for a *Discussion Paper* is that it is publishable in a refereed journal. Discussion Papers are in English and are mildly refereed on an accept/reject basis. Opinions expressed in Discussion Papers may not reflect the opinion of CPB at large (in line with the NBER policy). CPB merely maintains a quality standard. Hence, we use external referees to avoid differences in opinion among staff members to interfere with the acceptance procedure. The upper part of Table 2.4 provides an overview of the numbers of publications in each series during 2003–2008.

<sup>8</sup> *Ageing and the sustainability of Dutch public finances*, CPB Special Publication 61, 2006 (Casper van Ewijk, Nick Draper, Harry ter Rele and Ed Westerhout).

<sup>9</sup> Two other series are the Memoranda and Communications. See Chapter 4 for more information.

**Table 2.4** Numbers of publications, 2003–2008

<b>In CPB publication series</b>	
Special publications	30
.in English	10
.joint work	15
Documents	150
.in English	72
Discussion Papers (all in English)	100
<b>In refereed journals<sup>a</sup></b>	
.top six (AER, Econometrica, JofFinance, JPE, QJE, ReStud)	2
.A (34 journals)	12
.B (92 journals)	40
.other	98
.forthcoming <sup>b</sup>	14
Contributions to books	79
Editorships	3

<sup>a</sup> Journal classification of Tinbergen Institute; only publications in English.

<sup>b</sup> As of the end of 2008.

CPB encourages its staff to publish in scientific journals. Although a publication in a top-20 journal is far from a prerequisite for a career at CPB, it certainly helps. The lower part of Table 2.4 provides an overview of the output in terms of journal publications and contributions to books over the reporting period.

## 2.6 Human resource policy

CPB hires its new staff both domestically and on the international market. Vacancies for research positions are posted in Dutch and in English as a matter of routine.<sup>10</sup> The increasing orientation of Dutch students towards a study in business economics instead of macro- and microeconomics reduces the domestic pool of potential employees. Although a Ph.D. is no prerequisite for a position at the Bureau, it certainly helps; as mentioned in Section 2.3, the share of Ph.D.s in the research staff has risen substantially during the review period. Recruitment and selection policies aim at attracting strong candidates with a broad interest in applied policy-relevant issues, rather than highly specialised personnel.

The Bureau's policy is to avoid its staff becoming locked into just a single topic. Although we stimulate internal mobility of our staff across topics and sectors, we do recognise that specific human capital can be highly valuable in many positions— particularly for those who publish in international journals. Currently, CPB is stepping up its efforts to enhance education and training of staff— both in the field of personal competence and concerning professional

<sup>10</sup> Most positions in policy analysis require the applicant to have a native command of the Dutch language.

skills. Besides the general objective to invest in highly qualified staff, an important objective is also to invest in the human capital of our older workers, keeping them up-to-date. A strategic issue still under discussion is career assessment. Current discussions focus on three aspects: the status of the assessment (formal or informal), the functions for which it applies, and the absence of a guarantee for a job placement (the best candidate will be selected in all cases).

CPB has a *Young Professionals Programme* (YPP), which aims at attracting talented young academics, economists and non-economists with a background in the sciences and math, but without a Ph.D. in economics. The YPP is a two-year programme in which a young professional participates in three projects and takes courses of the extended Masters programme at the Tinbergen Institute.<sup>11</sup> During this two-year programme, young professionals work in three different sectors, an experience that provides them with an overview of their career opportunities in the Bureau.

CPB wants to apply the YPP philosophy to all of its young academics. In fact, all new academic staff members are offered the opportunity to take courses at the Tinbergen Institute to improve their knowledge in specific fields. The Bureau has defined a certain *minimum standard*, which implies that all research staff should reach the extended Masters or equivalent level after two to three years of employment at CPB. The Bureau, in turn, offers ample facilities (by granting time, giving support and covering costs) to achieve this goal. CPB allots 2.5% of the wage bill and 4-5% of the working time to schooling and training.

To foster its ties with academia, CPB encourages collaborative relationships with full professors with excellent international reputations in economics/econometrics. These *Academic Partners* work with one (or a small number) of our staff on a number of projects. The collaboration may take several forms— ranging from co-authorship or scientific advice, to commenting on reports. The personal relationship between a staff member and the Academic Partner is crucial for the partnership to be effective. Frequently, a partnership evolves from the role as supervisor for the thesis that the staff member has written before his affiliation to CPB. Academic Partners obtain a small financial compensation. The partnership is evaluated every year, and may be ended by CPB at the Bureau's discretion. Table 2.5 presents the current list of Academic Partners.

CPB encourages links with other institutions (both institutions more or less comparable to CPB) and in academia. For example, there is a cooperative agreement with the Institute of Fiscal Studies for a project whereby we construct a new micro-simulation model of the labour market (integrating the *Mimosi* and *Mimic* models) and for a project on the diffusion of knowledge across firms and borders. The Bureau has promising contacts with Resources for the Future and the World Bank for joint work on environmental issues. Thirteen staff members have a second affiliation, three of which are professorships.

<sup>11</sup> Tinbergen Institute is the Research Institute and Graduate School in economics of Erasmus University Rotterdam, the University of Amsterdam and VU University Amsterdam.

**Table 2.5 Academic partners in 2009**

Name	Affiliation	Research interests	Sector
Bas Jacobs	EUR, Rotterdam	Public finance, Macroeconomics, Labour economics	1
Maarten Lindeboom	VU Amsterdam	Labour economics, Social security, Labour force participation and Income and health	1
Rob Alessie	Groningen University	Micro-econometrics, Consumer economics, Household saving, Economics of ageing, Labour economics	2
Hessel Oosterbeek	UvA, Amsterdam	Economics of education, Experimental economics, Impact evaluation	3
Wouter den Haan	UvA, Amsterdam	Macroeconomics	3
Jan Boone	Tilburg University	Industrial economics, Economics of healthcare	4
Erik Schut	EUR, Rotterdam	Economics of healthcare, Health insurance	4
Jan Rouwendal	VU Amsterdam	Spatial economics, Housing market	5
Eric Bartelsman	VU Amsterdam	Productivity growth (micro and macro)	6
Harry Garretsen	Groningen University	International economics, Macroeconomics, Institutional economics, Economic geography	6
Sjak Smulders	Tilburg University	Economic growth, Environmental economics	6

On the international scene, CPB participates in OECD working groups (short-term economic prospects, country examinations, Working party 1 and Working party on ageing), in expert meetings of the European Commission (short-term prospects and medium-term prospects) and in AIECE (Association of European Conjunctural Institutes) working groups. CPB actively seeks cooperation in research at the European level through the ENEPRI network (European Network of Economic Policy Research Institutes),<sup>12</sup> EUROFRAME with eight other European research institutes,<sup>13</sup> and— increasingly— through occasional alliances with other research institutes. CPB has been successful in acquiring European research projects on e.g. long-term care (*Ancien*), the Lisbon Agenda (*Models*), corporate taxes (*Taxud*), trade liberalisation (*Atlas*) and the trade monitor. Finally, CPB is a member of the IPCC (International Panel on Climate Control), and participates in GTAP and a number of smaller projects.

CPB offers staff members the opportunity to present their work for the international scientific community, to build an international scientific network and a scientific reputation, and to pick up new ideas at an early stage. Staff members are encouraged to present papers at international scientific conferences, and CPB has established a budget for travel expenses. In

<sup>12</sup> CEPPII, the Centre d'Etudes Prospectives et d'Informations Internationales, Paris, France; CEPS, the Centre for European Policy Studies, Brussels, Belgium; CPB Netherlands Bureau for Economic Policy Analysis, The Hague, The Netherlands; DIW, Deutsches Institut für Wirtschaftsforschung, Berlin, Germany; ETLA, the Research Institute of the Finnish Economy, Helsinki, Finland; FEDEA, the Fundacion de Estudios de Economia Aplicada, Madrid, Spain; FPB, the Belgian Federal Planning Bureau, Brussels, Belgium; ISAE, Istituto di Studi e Analisi Economica, Rome, Italy; NIESR, the National Institute for Economic and Social Research, London, U.K.; NOBE, Niezalezny Osrodek Bana Ekonomicznych, Lodz, Poland.

<sup>13</sup> DIW, Deutsches Institut für Wirtschaftsforschung, Berlin, Germany; ESRI, Economic and Social Research Institute, Dublin, Ireland; ETLA, the Research Institute of the Finnish Economy, Helsinki, Finland; IfW Institut für Weltwirtschaft, Kiel, Germany; NIESR, the National Institute for Economic and Social Research, London, U.K.; OFCE, Observatoire Français des Conjonctures Economiques, Paris, France; Prometeia, Bologna, Italy; and WIFO, Österreichisches Institut für Wirtschaftsforschung, Vienna.

2008, 137 presentations were given— 73 of which took place at international conferences and workshops. Usually, the presentation of a paper is a necessary condition for reimbursement.

These international relations foster the international and scientific climate at the Bureau.

## **2.7 Recent evolution**

The evolution of CPB's research programme over the past decennium has followed the general trend in the economic discipline at large. Ten to fifteen years ago, a much larger share of our resources was used for medium- and short-run forecasting (the fourth category of our activities). These forecasts were constructed bottom-up, starting with input from specialists per industry. Six years ago, CPB decided to abolish the bottom-up approach and to stop keeping track of the evolution of every industry. In the meantime, CPB has shifted the focus to a more institutional, microeconomic approach— and within the field of macro analysis, from cyclical to structural factors determining the growth of the economy. The Bureau's research focus shifted from monitoring all industries to understanding how markets operate in specific industries, and how their operation can be improved. These new research fields have been quite successful, in the sense that they drew a lot of attention in the policy debate. For example, CPB's research inspired a discussion on transaction cost in the insurance industry. On the empirical side, this shift of attention comes at a cost. Detailed empirical knowledge of the market structure in each industry is no longer available. Instead, we use up-to-date econometric methods for program evaluation and the like nowadays.

## 3 Management

### 3.1 Work plan procedures

#### Procedure

In preparing the work plan for a new year, CPB uses a combination of a bottom-up and a top-down approach. The preparations start in January, when the management contacts clients and partners for consultations on the programmes in the prospective work plan. The information that is gathered becomes input for further discussion among directors, sector heads and all programme leaders on strategic choices about current and future programmes. In March, the management establishes a draft work plan *in terms of programmes*, which is submitted to the CPC for comments. In June, the management establishes the work plan in terms of programmes and presents it to the Cabinet (for reviewing and coordinating the work plans of all advisory agencies and councils). In October, CPB uses a great deal of input from the work floor to draft a detailed work plan *in terms of projects*. This detailed draft is subsequently submitted to the CPC. The combination of a bottom-up and a top-down approach ensures that projects are feasible, meet with the support of the staff, and fit into the broader strategic choices of CPB.

#### Selecting projects

How does CPB decide which projects will be included in the work plan? Two aspects come into play: the *selection process* and the *selection criteria*.

The discussion on strategy early in the year provides the programme leaders (and unit heads) with guidelines for drafting their research agendas. By September, the programme leaders come up with long lists of project proposals. How do these lists come about? CPB carries out a mix of demand-driven and supply-driven research. Occasionally a government Ministry commissions some research; more often, CPB decides to initiate research on its own (proposals are elicited from the whole staff). In practice, the distinction between these polar cases can be rather small. In the demand-driven case, CPB still ensures that the research satisfies the criteria set forth below. The supply-driven case does not imply that there is no policy interest for the research. The main reason for CPB taking a pro-active stance is to help policymakers in drafting their long-term agendas. Thus, what is supply-driven today could be demand-driven tomorrow.

CPB's vision yields almost automatically four simple criteria for including a project in the research programme:

- Does the project have policy relevance?
- Does CPB have some kind of comparative advantage in the execution of the project?
- Does the project offer a chance for changing the policy agenda?
- Does the project allow CPB to improve its methods or models?

Next to these four crucial criteria are several others, including the continuity of the knowledge base, the extent to which projects fit into broader strategic choices, and the possibility for scientific spin-off.

## 3.2 Work process control

### 3.2.1 Project management

At the start of each major research project (that is, a project that will take at least three months), a project plan according to a prescribed template must be made. Policymakers and (external and internal) experts will be asked for comments on the project plan. They will also be consulted during the execution of the project. For large research projects, a number of clients and external experts will be invited to form a *sounding board*; the minimal involvement of the sounding board consists of commenting on the project plan and on the draft of the final report.

Halfway through the project, the directorate, the sector heads involved and the project team will take stock of the results obtained until then.

This small group will discuss these intermediate results at an internal seminar. If the project is large, the results may also be presented to the sounding board.

A major project is rounded off with an evaluation according to a prescribed template. The evaluation takes stock of what went well and what went wrong, and draws lessons for future projects.

### 3.2.2 Progress control

The directorate and sector heads meet every second Monday to discuss topical matters concerning the workflow, organisation and strategic issues. The minutes of the meetings are published on the Intranet.

**Table 3.1 Allocation of responsibilities**

	PL	SH	D
Establishing programmes	R	R	U
Prioritising within sector		R	U
Work plan of programme	R	U	
Prioritising within work plan	R	U	
Process control and progress reports	R	U	
External contacts, networking	R	U	
Quality control	R	R	U
Knowledge base			
. human capital	Signalling	R	U
. institutions and facts in field of programme	R	U	
. policy topicality	R	U	
R: Responsible			
U: Ultimately responsible			



The sector heads report to the Directorate on the progress of their projects compared to the work plan thrice a year— after four, eight and twelve months. Moreover, the programme leaders discuss the content and progress of their programmes with the director or one of the deputy directors twice a year.

Table 3.1 above gives the allocation of responsibilities in the work plan procedures and in work process control to programme leaders (PL), sector heads (SH) and directorate (D).

### 3.2.3 Documentation

The requirement that CPB's work be scientifically sound implies that the analyses and forecasts must be verifiable and reproducible. A great deal of this work is documented in internal papers and background information regarding published forecasts and research activities. Furthermore, model outcomes are preserved by saving model versions and model inputs for a number of years (most units have some automated systems in the form of catalogue structures).

## 3.3 Human resource management

### 3.3.1 The HRM cycle

Early in the year, each employee must establish his (or her) Individual Work Plan (IWP) for the year ahead in consultation with his (or her) direct chief. The IWP is derived from the work plan of CPB— in particular, from the part(s) of the plan affecting the employee's sector or unit. The IWP specifies the prospective activities and the associated claim on working hours— as well as the expected results, and includes agreements on the circumstances in which the employee will work and on the role of the direct chief. The staff member may also make a Personal Development Plan (POP), but need not do so. In any case, when establishing an IWP the employee must discuss also his or her personal development goals with his or her direct chief. If the employee chooses to formulate a POP, then the development activities and associated claim on working hours are included in the IWP.

In May or June, each employee has a *Performance Interview* with his or her direct chief. Given the employee's IWP, they talk about his or her tasks and the way they have been fulfilled, the work atmosphere, and the circumstances in which the employee works (including the functioning of the chief). Irrespective of whether or not the employee has a POP, they talk also about personal development activities, actual or desired. In October or November, the employee and his direct chief discuss the employee's *Annual Evaluation*, on which the decision regarding his salary next year is based.

### 3.3.2 Appraisal

Functions at CPB have been classified in six families; function descriptions differ between families and between pay scales within families. A *function description* lists the main activities and responsibilities and the required competences and knowledge for a function in a particular

pay scale. The *required competences* are the link with the system of appraisal. For the purpose of the Annual Evaluations, the elements of the appraisal have been allocated to three *aspects* of the functioning, *Quality*, *Quantity* and *Behaviour*. The system is rather time-consuming, but its transparency and broad scope promote the objectivity of the Annual Evaluations.

Inadequate functioning, as apparent from an insufficient score for any of the three aspects, leads to remedial action. The staff member gets ample opportunity for improvement and is entitled to (external) coaching and courses. Progress is discussed every eight weeks. Results must be forthcoming within a year.

### 3.3.3 Remuneration

In terms of financial rewards, CPB does not have to be the highest bidder, as intrinsic motivation is an important driving force for working at CPB. To be an employer of choice does, however, require the ability to offer competitive salaries and secondary benefits. Within the government (including public research institutions), CPB offers competitive remuneration. As of 1 April 2009, gross annual salary is about 31,000 euro for young academics. It rises to a maximum of about 64,500 euro for highly qualified senior research staff and about 80,000 euro for programme leaders and unit heads. For data analysts the maximal annual salary is about 50,000 euro.

Individual performance is rewarded in three ways. First, during the first eight- to ten years of employment considerable differentiation can be applied in terms of annual salary growth. High performers are awarded extra steps within the scale structure during these years. Second, when at the top of the regular structure, high performers may be promoted to the next higher pay scale, where the maximum salary is about 10% higher. Finally, CPB rewards individual achievements and efforts through a (degressive) system of merit pay linked to the Annual Evaluations. The maximal amount of merit pay that a staff member can earn is 10% of his or her gross annual salary. However, the total amount of merit pay for all of CPB may not exceed 2% of the annual budget for personnel; if necessary, the merit pay of all staff is scaled down proportionally. The system is intended to strengthen the financial incentives for productivity somewhat without harming the cooperative attitude and fellow feeling that traditionally characterises CPB staff.

### 3.3.4 Hires

New permanent staff positions are first announced within the Bureau, to stimulate internal mobility and to offer staff members career opportunities and possibilities to work in new areas. External recruitment channels are advertisements in national newspapers and economic journals, (university) networks and the Internet. Vacancies for research positions are posted in Dutch and in English as a matter of course.<sup>14</sup> The importance of social networks and the Internet has grown, and the role of published advertisements has decreased. The number of

<sup>14</sup> Most positions in regular work require the applicant to have a native command of the Dutch language.

open job applications through the Internet has increased. These applications, like requests for internships, can occasionally be met through temporary contracts. In this way CPB may become acquainted with the candidates, and perhaps extend an invitation to certain individuals to join the permanent staff at a later stage.

Recruitment and selection policies aim at attracting strong candidates for CPB as a whole (rather than highly specialised personnel). Although the approach varies somewhat for different staff positions, the overall goal is to attract staff who can work in various sectors within the Bureau. Candidates are typically interviewed in two or three rounds by management and co-workers. At least one member of the board of directors conducts one of the interviews. An assessment by an external bureau is typically also part of the procedure (as a last marginal test and particularly as a good starting point for a POP).

Hiring new management staff is subject to formal procedural restrictions. The staff members who are directly involved have the opportunity to comment on the profile of the candidates, interview the candidates and to formally advise the director, who decides on the appointment. The aim of the procedure is to make better-informed decisions and to increase staff support for newly appointed managers.

Members of CPB's board of directors are appointed by the Cabinet, acting on the basis of a proposal by the Minister of Economic Affairs (in consultation with seven other ministers). CPB personnel are involved in the process through the Works council, which formally advises the Minister of Economic Affairs.

New employees are appointed on probation for a period of two years. A Performance Interview that occurs half a year after his or her entrance gives the new employee early feedback. A full-fledged evaluation a year and a half after his entrance is decisive for the new employee being offered a contract of indefinite duration at the end of the probation period.

### **3.3.5 Mobility**

Because the Bureau is small and management positions are few, CPB does not have a system of vertical career planning. Some rules of thumb apply to horizontal mobility. Internal mobility is stimulated through attracting versatile staff and by providing preferential opportunities in applying for vacancies within the Bureau. Still, many job durations exceed the 'normal' lengths.

The outflow of staff is about 10% annually. The fact that CPB has proved to be a launching point towards other positions in public service or in academia strengthens its employer status. Easy access to people in leading positions— whom we know well and who appreciate our work and organisation— is a vital element of our social network.

## **3.4 Works council**

The Works council, elected every three years by the CPB staff from its members, consists of union members and independent members. The council has the right to advise the director of

CPB on issues concerning personnel and organisation. In some cases the council can formally approve or reject decisions of the director.

## 4 Output

This chapter reviews the various CPB publication series and the work fields and output per sector.

### 4.1 Survey of publications

The three periodical publications of CPB are the yearly *CEP* and *MEV* and the quarterly *Nieuwsbrief* (English version: Newsletter). For other publications on paper, three series exist: CPB Special Publications, CPB Documents and CPB Discussion Papers. Two other channels of communication are the CPB Memoranda and CPB Communications, which are published only electronically (if at all).

#### 4.1.1 Periodical publications

##### CEP and MEV

The yearly *CEP* and *MEV*, which are in Dutch, describe the state of the world economy and the Dutch economy, present new short-term forecasts, and, as a service to the readers, provide statistical information on the Dutch economy. CPB uses these publications also as outlets for recent work on topical matters, announced as *Special subject(s)* on the title page.

##### Newsletter

To keep its clients and other interested parties informed about its work, CPB publishes a quarterly newsletter in a Dutch edition (*Nieuwsbrief*) and a brief, four-page English edition. Two issues appear simultaneously with *CEP* and *MEV*; the other two appear in between (in June and December). The newsletter presents the latest short-term forecasts in a nutshell and contains short articles on recent research (in the English edition: only one article). Finally, it lists recent publications (in the English edition: only the publications in English).

#### Special subjects in *MEVs* published in 2003–2008<sup>a</sup>

2004	Paying for higher education: Graduate taxes or income-contingent loans (S3; CPB Discussion Paper 9)
2005	Labour productivity and participation (S3)
2006	Europe: Financial prospects in perspective (S5/S6; CPB Document 101)
2007	The importance of China for the Dutch economy (S2; CPB Document 127) Efficacy of the police: Replacing quantity by quality (S4)
2008	Happiness and economics (S5) Female labour supply (S1; CPB Discussion Papers 93 and 100)
2009	Food price hikes: Temporal or structural? (S5) Child care (S1; CPB Communication 2008/17)

<sup>a</sup> Between parentheses: delivering sector(s); related publication(s).

**Special subjects in *CEPs*, 2003–2008<sup>a</sup>**

2003	Incoherent agricultural policy (S5) Ageing and public debt reduction (S1; CPB Communication 2003/10)
2004	The German economy: A view from the Netherlands (S6; CPB Memorandum 89) Abolishing the special tax treatment of early retirement provisions: Its effect on labour supply (S1; CPB Memorandum 76)
2005	Three institutional reforms: Healthcare, disability insurance and early retirement provisions (S2; CPB Memoranda 86, 112 and 114, CPB Communication 2004/47)
2006	Employment protection legislation (S1; CPB Document 135) Doha Round: Tardy negotiations over trade liberalisation (S6)
2007	Current accounts worldwide, the dollar and the Dutch economy (S2) Institutional reform of healthcare: First experiences (S4)
2008	Wage inequality in the Netherlands (S3; CPB Discussion Paper, forthcoming) Markets in transition (S4)

<sup>a</sup> Between parentheses: delivering sector; related publication(s).

**4.1.2 CPB Series: Special Publications, Documents and Discussion Papers****CPB Special Publications**

CPB Special Publications contain the final reports of major CPB studies. Half of the thirty Special Publications produced during 2003–2008 report on joint work with other institutes (often one or more of the other planning bureaus); one-third of them are in English. Most Special Publications are published by an external publisher at the request of CPB.

**CPB Documents**

CPB Documents present completed, policy-relevant applied research, most of them aiming at national policymakers; still, almost half of the 150 CPB Documents produced during 2003–2008 are in English. While CPB Documents remain the responsibility of CPB, the names of the authors usually also appear on the cover.

**CPB Discussion Papers**

CPB Discussion Papers present completed scientific research, aiming at an international scientific forum and therefore written in English. A refereeing process by an editorial board safeguards the scientific quality of the series. Responsibility for the contents of the CPB Discussion Papers rests with the authors.

Table 4.1 gives the numbers of publications in the three series during the review period by year and sector (Table C.1 in Annex C gives the publication numbers corresponding to the entries of Table 4.1). The sums over the sectors may exceed the CPB total, because some publications result from co-operation by several sectors. It should also be mentioned that differences between the sectors reflect differences in the type of work done. Sectors 5 and 6 (respectively, *Physical aspects* and *International economics*) contributed to two-thirds of the

**Table 4.1 Numbers of CPB publications by series, sector and year, 2003–2008**

		2003	2004	2005	2006	2007	2008	Total
CPB	Special Publications	5	5	4	7	6	3	30
	. in English	2	2	1	2	2	1	10
	. joint work	3	1	2	1	5	3	15
	Documents	16	31	29	36	17	21	150
	. in English	8	11	14	17	10	12	72
	Discussion Papers	10	16	10	24	19	21	100
Sector								
1	Special Publications	1	-	1	4	-	-	6
	Documents	-	3	2	1	2	1	9
	Discussion Papers	-	1	4	3	5	3	16
2	Special Publications	-	-	1	2	-	-	3
	Documents	2	2	3	9	7	5	28
	Discussion Papers	-	1	-	4	2	1	8
3	Special Publications	1	1	-	1	1	-	4
	Documents	4	8	7	9	2	5	35
	Discussion Papers	2	4	-	3	3	5	17
4	Special Publications	-	2	-	-	-	-	2
	Documents	7	10	12	8	4	7	48
	Discussion Papers	1	5	4	6	8	9	33
5	Special Publications	2	1	2	2	2	1	10
	Documents	2	3	5	7	1	3	21
	Discussion Papers	1	-	-	3	1	1	6
6	Special Publications	2	2	2	1	2	2	11
	Documents	1	6	3	7	3	6	26
	Discussion Papers	6	3	3	2	2	4	20
Other <sup>a</sup>	Special Publications	-	-	-	3	1	1	5
	Documents	-	3	-	1	-	-	4
	Discussion Papers	-	3	-	4	-	1	8

<sup>a</sup> Directorate, IT and OMD; CPB.

*Special Publications.* With regard to *Documents*, sectors 3 and 4 (respectively, *Growth, structure and knowledge economics* and *Competition and regulation*) are above average, and Sector 1 (*Labour market and welfare state*) is below average. With regard to *Discussion Papers*, sectors 2 and 5 (respectively, *Short-term analysis and fiscal affairs* and *Physical aspects*) are below average, and Sector 4 (*Competition and regulation*) is above average.

#### 4.1.3 Other CPB publications: Memoranda and Communications

##### CPB Memoranda

*CPB Memoranda* contain background material of policy-relevant analyses, intermediate results of research projects, draft versions of Dutch articles etc. Many of them serve the purposes of

**Table 4.2 Numbers of CPB Memoranda by sector and year, 2003–2008**

		2003	2004	2005	2006	2007	2008	Total
CPB	Total	70	50	58	45	31	34	288
	. public	29	22	33	35	16	22	157
	.. in English	5	6	11	16	8	6	52
Sector								
1	Total	5	5	4	3	1	6	24
	. public	3	2	4	3	-	3	15
2	Total	27	23	31	18	14	19	132
	. public	11	9	15	12	6	12	65
3	Total	15	2	7	4	5	3	36
	. public	13	2	4	4	2	2	27
4	Total	3	4	2	5	4	2	20
	. public	1	2	2	5	4	2	16
5	Total	7	5	3	2	3	1	21
	. public	-	3	1	2	-	2	8
6	Total	2	4	6	7	3	3	25
	. public	1	3	6	7	3	3	23
Other <sup>a</sup>	Total	11	8	5	6	2	1	33
	. public	-	2	1	2	2	1	8

<sup>a</sup>Directorate, IT and OMD.

**Table 4.3 Numbers of CPB Communications by sector and year, 2003–2008**

		2003	2004	2005	2006	2007	2008	Total
CPB	Total	87	53	43	47	82	54	366
	. public	16	27	24	28	31	22	148
Sector								
1		8	9	4	6	11	9	47
2		53	20	24	13	40	22	172
3		3	7	2	4	3	2	21
4		4	2	1	4	10	7	28
5		18	13	12	22	18	15	98
6		-	-	-	-	2	2	4
Other <sup>a</sup>		1	2	2	-	2	-	7

<sup>a</sup>Directorate.

documentation and internal dissemination of information. Only those that may be of interest to a wider public are published electronically on CPB's external website. Responsibility for the contents of the CPB Memoranda rests with the authors.



## CPB Communications

*CPB Communications* (in Dutch) are mostly small studies that are carried out at the request of ministries, political parties, employers' organisations or trade unions in order to answer specific policy questions. Many CPB Communications are for the client's eyes only, and remain confidential (as long as the clients do not cite them in public). Once a client makes public use of a confidential CPB Communication, CPB publishes it, under CPB responsibility, electronically on the external website.

Table 4.2 gives the numbers of CPB Memoranda by sector and year (Table C.2 in Annex C gives the corresponding memorandum numbers); Table 4.3 does the same for CPB Communications. The total number of CPB Memoranda during 2003–2008 is almost 300; over half are publicly available (one-third of them in English). Sector 2 (*Short-term analysis and fiscal affairs*) produced the lion's share (almost half) of the CPB Memoranda. Sector 2 also produced almost half of the CPB Communications, as well, with Sector 5 (*Physical aspects*) contributing to over one-quarter; sectors 3, 4 and 6 (respectively, *Growth, structure and knowledge economics*, *Competition and regulation* and *International economics*) lag far behind. Again, these differences between the sectors reflect differences in the type of work done.

## 4.2 Sector 1: Labour market and welfare state

### 4.2.1 Description

#### Tasks and activities

Sector 1 (*Labour market and welfare state*) conducts applied economic research on labour-market behaviour and the design of institutions in the Dutch welfare state, such as pensions, social security, life-cycle saving schemes and the tax-benefit system. The work focuses on the implications of institutional reform for the functioning of the labour market. The sector also makes short-, medium- and long-term projections of labour market developments, pensions and public finances (using generational accounting).

#### Ambition

The sector aims to contribute to the Dutch policy debate by offering insight into future developments and in the economic implications of policy reform. Studies also inform the international research and policy community about Dutch policy. Research is firmly grounded in economic theory, has a strong empirical component based on up-to-date econometric methodologies and concentrates on Dutch institution design. The sector's ambition is to serve policymakers in two ways: by doing applied scientific research with a clear value-added to our understanding of economic relations, and by writing comprehensive studies that are accessible to a broad readership and contribute to structuring the debate on policy reforms.

## Co-operation

Staff members of Sector 1 maintain close relations with outside scholars. Research in pensions is integrated in Netspar (an independent network in the Netherlands for research, education and knowledge exchange in the field of pensions, ageing and retirement) and has been part of several European projects, jointly with research institutes in Europe. Sector 1 staff members cooperate individually with people from other institutes (most of them in academia). Some staff members have made long-term research visits abroad (e.g. to the European Commission, Oxford University and the University of California). The sector's academic partners are Bas Jacobs, Professor of Economics and Public Finance at Erasmus University Rotterdam (EUR), and Maarten Lindeboom, Professor of Economics at VU University Amsterdam (VU).

### 4.2.2 Programmes

#### Labour market

The *Labour market* programme monitors, analyses and forecasts future labour supply. These projections are an input for the macroeconomic forecasts in *CEP*, *MEV*, and for medium- and long-term scenario analyses. The programme uses MIMIC to explore the impact of reforms in both the social security and the tax-benefit systems. Several behavioural elasticities have been estimated using Dutch micro data. Studies on immigration have also been conducted in the programme.

#### Aging and life-cycle policies

The *Aging and life-cycle policies* programme explores the impact of the ageing of the Dutch population on Dutch public finances in the long run. It uses a generational accounting framework that is embedded in GAMMA. GAMMA is a model that offers insight into the impact of policy reforms on the intergenerational distribution of net government balance, income and welfare. The programme also studies life-cycle interactions between labour supply, retirement and savings. It constructs a dataset of synthetic life-cycle earnings profiles, which is used as an input for other research projects. The programme develops small models that consider the impact of policies on lifetime labour supply and the impact of individual saving accounts for dealing with unemployment risk.

#### Pensions

The *Pensions* programme considers the long-term implications of alternative designs of the Dutch pension system. Being part of the Netspar project on the *Macroeconomics of Pensions*, it concentrates on the welfare implications of intergenerational risk sharing, interactions with life-cycle labour supply and absorption of macroeconomic risks. Small models are developed, which may be integrated in GAMMA for numerical simulations of alternative pension designs.

### 4.2.3 Results of work

The box below presents six studies selected from the sector's output (three comprehensive studies and three research papers). *Reinventing the welfare state* analyses a number of reforms of the Dutch welfare state from a broad welfare perspective and quantifies their effects on the labour market and the income distribution. It also develops three comprehensive prototype redesigned welfare states and explores how robust they are for immigration, economic integration and technological change. *Ageing and the sustainability of Dutch public finances*, which is an update of a similar study in 2000, quantifies the effects of population ageing for Dutch public finances by defining and computing the sustainable public budget balance for 2011 and onward. *Rethinking retirement* offers a comprehensive study on how Dutch institutions influence the functioning of the labour market for elderly workers (the project was wrapped up by the conference *The labour market for older workers* on 23/24 April 2009). *Corporate tax policy and incorporation in the EU* explores to what extent income shifting from

#### Selected publications of Sector 1: Labour market and welfare state

**Reinventing the welfare state**, Special Publication 60, 2006 (Ruud de Mooij et al.).

**Ageing and the sustainability of Dutch public finances**, Special Publication 61, 2006 (Casper van Ewijk, Nick Draper, Harry ter Rele and Ed Westerhout).

**Rethinking retirement**, Special Publication, 2009, (Rob Euwals, Ruud de Mooij and Daniël van Vuuren, eds.).

**Corporate tax policy and incorporation in the EU**, CPB Discussion Paper 97, 2008 (Ruud de Mooij and Gaëtan Nicodème (European Commission, DG ECFIN)); published in *International Tax and Public Finance*, vol. 15, no. 4, pp. 478–498, 2008.

**Hidden unemployment in disability insurance: An empirical analysis based on employer data**, CPB Discussion Paper 69, 2007 (Pierre Koning and Daniël van Vuuren); published in *Labour*, vol. 21, no. 4, pp. 611–636, 2007.

**Ageing, demographic uncertainty and optimal fiscal policy**, in J.M. Alho, S.E.H. Jensen and J. Lassila (eds.), *Uncertain Demographics and Fiscal Sustainability*, 2008, pp. 161-183, Cambridge University Press, Cambridge (Alex Armstrong, Nick Draper, André Nibbelink and Ed Westerhout).

the personal income tax base to the corporate tax base can explain the fact that in Europe declining corporate tax rates have accompanied rising tax-to-GDP ratios. *Hidden unemployment in disability insurance* constructs and estimates a (semi-) structural model so as to uncover the fraction of hidden unemployment in the Disability Insurance enrolment rate, and finds it to be about 11% on average. *Ageing, demographic uncertainty and optimal fiscal policy* focuses on the implications of demographic uncertainty for public-debt policies. It finds that demographic uncertainty calls for precautionary government saving; in particular, short-term labour income tax rates should be about four percentage points higher than the corresponding tax-smoothing level.

#### Instruments

Analyses by the sector are based on a variety of instruments and methodologies. First, the sector has developed two general-equilibrium models: MIMIC, for the long-term labour market

implications of welfare state reform (this model was built before the review period), and GAMMA, for long-term projections in public finances. Second, the sector develops small, parsimonious models to improve our understanding of complex life-cycle interactions (e.g. for pension design and policies affecting retirement or unemployment risk). Third, the sector estimates key behavioural elasticities using Dutch micro data to assess the implications of reforms. Fourth, to ensure that our analysis is properly grounded in the international literature, it makes up-to-date literature reviews on particular topics, sometimes complemented by meta-analyses. Finally, the sector monitors developments in the labour market and pensions using data analysis.

### **Other products**

During the past five years, Sector 1 has organised seven events, both small workshops with experts in the field and large conferences. Examples of the latter are the joint CPB/Netspar conference “Reinventing the Welfare State” held in April 2006, which resulted in a special issue of *International Tax and Public Finance* (no. 15(1), 2008, jointly edited by A.L. Bovenberg, B. Jacobs and R.A. de Mooij), a conference on Ageing, which led to a special issue of *Tijdschrift Openbare Financien* (Dutch Journal of Public Finance), and the CPB/Netspar theme conference in 2007. Moreover, Sector 1 staff members participate regularly in congresses, conferences and seminars by presenting CPB work— on average, 28 visits per year during 2004–2008.

#### **4.2.4 Plans**

The sector aims to write a number of comprehensive studies, each of which will be combined with a conference on the date of publication. Themes include *Ageing and fiscal policy in the Netherlands* (scheduled for 2010), *Macroeconomics of pensions* (scheduled for 2010) and *Labour market flexibility* (beyond 2010). The comprehensive studies will incorporate and synthesise the results of a number of special research projects. We also aim to update MIMIC by constructing a micro simulation model for households in the Netherlands with endogenous labour supply.

### **4.3 Sector 2: Short-term analysis and fiscal affairs**

#### **4.3.1 Description**

##### **Tasks and activities**

The sector *Short-term analysis and fiscal affairs* is charged with carrying out the short-term analyses and projections for the Dutch economy that CPB publishes each quarter. The publications pay ample attention to developments in the public sector and to the income distribution (purchasing power of households). The analyses play a major role in the policy preparation of the Cabinet, political parties and social partners. The sector also contributes

importantly to the policymaking process through analyses of the election platforms of political parties, of the (concept) Coalition Agreement of a new administration, and of alternative budget memoranda drafted by oppositional parties. For the most part, these analyses are made at the request of the sector's primary clients: politicians, ministries and organisations of employers and employees. The sector continually carries out research to improve the analyses, by investing in analytical instruments (models, calculation schemes and leading indicators) and by monitoring the quality of the projections (forecasts versus realisations). Finally, the sector also contributes to more structural research on the public sector.

### **Ambition**

The goal with regard to the short-term forecasts of the Dutch economy is that they be at least as good as those of competing domestic and foreign institutes, judged by the ex post forecasting errors. Another ambition is to anticipate new developments in the economic situation and in policy, so as to be well prepared for future requests and be able to answer most policy questions with a sound, quantitative analysis in a timely fashion.

### **Co-operation**

Sector 2 staff maintains close relations, on an almost daily basis, with staff at government ministries for obtaining up-to-date (and often confidential) information on government finances and policy plans; there are also frequent contacts with Statistics Netherlands (CBS) and the Dutch central bank (DNB). This part of the work requires a native command of the Dutch language and expert knowledge of Dutch institutions, next to a lot of non-codified knowledge (Who is who? Whom to ask for what?). The sector has good working relations with international institutions (OECD, ECB, IMF, EC) and participates in several international research networks, e.g. Euroframe (network of ten independent European economic research institutes) and the AIECE (*Association d'Institutes Européens de Conjoncture Economique*). The sector's academic partner is Rob Alessie, Professor of Micro-econometrics at the University of Groningen.

## **4.3.2 The units**

### **Cyclical analysis**

The *Cyclical analysis* unit produces short-term forecasts of the Dutch economy, using the quarterly version of the macroeconomic model SAFFIER, a leading-indicators system, several monitoring systems for the processing of recent data, and a data system. The unit assesses the accuracy of the short-term forecasts every year. Next to the regular maintenance of SAFFIER, the unit is involved in re-estimating its behavioural equations, trying to incorporate the latest theoretical and institutional insights. In recent years, special attention has been paid to private consumption and savings and to exports (which have been split into domestically produced

exports and re-exports). The unit participates in several international networks of forecasters, linked to the OECD and EC.

### **Income and prices**

The *Income and prices* unit forecasts and analyses wages, consumer prices and purchasing power, and the consequences for the labour market. It uses models and databases for monitoring consumer prices and contractual wages, and micro-simulation models for calculating changes in purchasing power, wage rates and replacement rates. In 2007, the MIMOSI model was completed. MIMOSI, a new model for the analysis of purchasing power based on individual tax data, merges two older models, MIMOS and MOSI, into one. The model deals with social-security contributions and wage- and income taxes in great detail, so as to ensure consistency between estimates of purchasing power and of tax receipts and social-security contributions. The remaining part of the unit's research capacity was spent on the analysis of income, savings and labour participation during the life cycle.

### **Public finance**

The core task of the *Public finance* unit is the estimation and analysis of government revenues, expenditures, the budget balance and debt for the short-, medium- and long term. Next to macroeconomic variables such as public consumption and capital formation, the unit considers specific variables like EMU-budget balance, expenditure ceilings and micro tax burdens. The procurement of accurate and timely information for short-term analysis and forecasting requires the monitoring of quite a number of detailed budgetary items, on the expenditure and revenue sides. The unit is also involved in policy support and specific research projects. Examples of the latter are the economic effects of subsidies on housing and Dutch government expenditure in a historical perspective.

### **Social security**

The *Social Security* unit makes analyses and projections of expenditures on social security and of their financing through social-security contributions and other means. The main instrument for projections is the MIMOSI model. As policy reforms impact the expenditures, understanding the effects of policy reforms in social security is the crucial element of the unit's research agenda. Recent research includes a policy evaluation of the new Welfare Act, a decomposition of recent growth in self-employment, and a reassessment of the Disability Insurance scheme as an early exit route into retirement. Finally, the unit regularly engages in ad hoc policy questions, such as ex ante evaluations of working-time reduction and of a more flexible old-age pension scheme.

### International cyclical analysis

The *International cyclical analysis* unit (which was a programme within the *International economics* sector until May 2008) makes short- and medium-term projections of exogenous (for the Dutch economy) international variables (e.g. world trade and oil prices). These forecasts largely determine the assessment of the future development of the open Dutch economy. They are based on analyses of the economic developments in large economies (including international trade, price movements on international raw material markets and domestic markets), and on research of financial markets. The unit produces a monthly trade monitor, which is widely used by subscribers from all over the world (including several international organisations).

#### 4.3.3 Results of work

The publications in the box below testify to the diversity of work done by the sector, ranging from special studies (*Retirement behaviour of Dutch elderly households, China and the Dutch economy*) to model building (*Models and methods for economic policy*, SAFFIER) and wide-ranging policy analyses (*Charting choices 2008–2011*). The common factors are links with policy or with improvement of forecasting ability, or both.

#### Selected publications of Sector 2: Short-term analysis and fiscal affairs

**Charting choices 2008–2011: The economic effects of eight election platforms** (in Dutch), Special Publication 65, 2006 (CPB); CPB Document 139, with the same title, is an extensive summary in English

**SAFFIER: A multi-purpose model of the Dutch economy for short-term and medium-term analyses**, CPB Document 144, 2007 (Henk Kranendonk and Johan Verbruggen)

**Retirement behavior of Dutch elderly households: Diversity in retirement patterns across different household types**, *Journal of Applied Econometrics*, Vol. 19, no. 6, pp. 777–793, 2004 (Mauro Mastrogiacomo, Rob Alessie and Maarten Lindeboom)

**Models and methods for economic policy: 60 years of evolution at CPB**, CPB Discussion Paper 55, 2006 (Henk Don and Johan Verbruggen); published in *Statistica Neerlandica*, Vol. 60, no. 2, pp. 145–170, 2006

**China and the Dutch economy: Stylised facts and prospects**, CPB Document 127, 2006 (Wim Suyker and Henri de Groot, eds.)

#### 4.3.4 Plans

One of the main challenges ahead is an assessment of the consequences of the financial crisis for model specification, forecasting and policy. How good or bad was our forecast performance during the recent credit crisis? Will SAFFIER have to be expanded with a model of the banking sector? In the upcoming medium-term assessment (which will be the basis for analysing the election platforms of the political parties at the next general elections), the impact of the crisis on future GDP and GDP growth must be quantified. In work for the budgetary policy study group (in Dutch: *Studiegroep Begrotingsruimte*), the sector will have to consider the consequences for the fiscal rules.

## 4.4 Sector 3: Growth, structure and knowledge economics

### 4.4.1 Description

#### Tasks and activities

The sector *Growth, structure and knowledge economics* conducts policy-relevant institutional and empirical economic analyses in the areas of education, innovation, R&D and ICT. A major aim is gaining insight into the causes and consequences of productivity growth. To that end, the sector conducts empirical research primarily on the micro level and develops an encompassing framework for macroeconomic analysis, incorporating the results of the micro research. The sector works also in the field of macroeconomics. It produces medium- and long-term forecasts with SAFFIER, and conducts research in general macroeconomic theory and modelling.

#### Ambition

The sector aims to provide policymakers and other interested parties with relevant and high-quality analyses in the fields of macroeconomics (medium- and long term), education and public research, productivity and social cohesion. The central theme is productivity, which is studied in both a microeconomic and a macroeconomic framework. The goal is to be able to assess specific policy proposals in the field of productivity. Research uses up-to-date econometric methodology (e.g., ex post policy evaluation) and is firmly based on economic theory (e.g., DSGE models).

#### Co-operation

The sector does not co-operate with other institutes on a regular basis. Sector 3 staff members do joint work with people at other institutes (e.g., Statistics Netherlands) as the need (and occasion) arises. In the review period, the sector participated in the EU KLEMS project. Some staff members are associated with other institutes (mostly in academia). The sector's academic partners are Hessel Oosterbeek, Professor of Economics of Education, and Wouter den Haan, Professor of Macroeconomics, both at the University of Amsterdam (UvA).

### 4.4.2 Programmes

#### Macro analysis

The *Macro analysis* programme conducts macroeconomic analyses for the medium- and long term in support of the medium-term projections, the assessment of election platforms, and long-term scenario studies. For that purpose, SAFFIER is often the main instrument. Running, maintaining and renewing the model is thus an important task. The programme also studies general macroeconomic issues, with a focus on macroeconomic dynamics and the determinants of economic growth.



### Productivity

The central goal of the *Productivity* programme is the integration of microeconomic analyses of productivity into a macroeconomic framework. The programme combines the mostly theoretical macroeconomic research on productivity with the more micro-economically oriented institutional and empirical analyses of education, innovation, R&D and ICT. The aim is to produce comprehensive quantitative analyses of policies designed to raise the level of productivity. An important application of this type of knowledge is in assessing the election platforms of political parties.

### Education and public research

Both education and public research contribute significantly to the rise of labour productivity. The government is a central player on the market for education and science. Therefore, two central questions dealt with in the *Education and public research* programme are as follows:

- How large are the contributions to growth of education and public research?
- How do existing institutions affect the functioning of the markets for education and public research, and what changes in the institutions might improve the functioning of these markets?

#### 4.4.3 Results of work

##### Publications

The box below contains a representative selection of the sector's publications. The scenarios in *Four perspectives on the Netherlands* correspond to the *Four futures of Europe* (CPB Special Publication 49) sketched by the sector of *International economics*; policy plans with a long-term perspective (e.g., in spatial planning) are usually assessed against the background of (one or several of) the national scenarios. *Promising knowledge policies* evaluates a number of policy options in education, research and innovation, classifying them as promising or not, or as

#### Selected publications of Sector 3: Growth, structure and knowledge economics

**Four perspectives on the Netherlands: Production, labour and industrial structure in four scenarios until 2040**

(in Dutch), Special Publication 55, 2004, CPB & Koninklijke De Swart, The Hague (Free Huizinga and Bert Smid).

**Promising knowledge policies** (in Dutch), CPB Document 124, 2006 (Maarten Cornet, Free Huizinga, Bert Minne and Dinand Webbink).

**Excellence for productivity?**, Special Publication 69, 2007 (Bert Minne, Marieke Rensman, Björn Vroomen and Dinand Webbink).

**Human capital, R&D, and competition in macroeconomic analysis**, CPB Document 91, 2005 (Eric Canton, Bert Minne, Ate Nieuwenhuis, Bert Smid and Marc van der Steeg).

**Returns to university education: Evidence from an institutional reform**, CPB Discussion Paper 34, 2004 (Dinand Webbink); published in *Economica*, vol. 74, no. 3, pp. 113–134, 2007.

**Investigating uncertainty in macroeconomic forecasts by stochastic simulation**, CPB Discussion Paper 112, 2008 (Debby Lanser and Henk Kranendonk).

yet undecided; the research programme should enable the sector to do a better job in future assessments. *Excellence for productivity?* surveys the research on the contribution of human capital to productivity; it concludes that in the present Dutch situation, fostering talents is a promising policy for nurturing productivity. The literature survey *Human capital, R&D, and competition in macroeconomic analysis* contains also sketches of how ideas from modern growth theory on the role of human capital, R&D and competition may be embodied in CPB models. *Returns to university education* exploits a natural experiment to estimate the return to (an additional year of) university education. *Investigating uncertainty ...* allocates the forecast standard errors of GDP and eight other variables to four sources of uncertainty, and concludes that exogenous variables contribute the largest share.

### **Instruments**

The sector contributes to the maintenance and elaboration of SAFFIER. The sector is currently constructing a DSGE model in order to learn more about the pros and cons of this type of model for CPB purposes; the main differences between SAFFIER and DSGE models are in the micro-economic foundations and the role of expectations. In the analysis of educational policies, (natural) experiments are studied; this line of research often uses micro data (e.g. on test scores of children or twin data). Empirical studies in the *Productivity* programme use micro data as well, mostly on the firm level. For gaining theoretical insights, the programme constructs small models describing (potentially) important mechanisms in fostering productivity.

### **Other products**

Sector 3 staff gives on average seven presentations per year at scientific conferences and congresses.

#### **4.4.4 Plans**

In 2009, the *Social cohesion* programme was instituted. The programme aims to analyse issues such as segregation, white/black schools, integration of immigrants, early school leaving, neighbourhoods at risk of becoming ghettos, polarization of the political environment and high-trust society. A major and urgent question facing the *Macro analysis* programme is how useful a DSGE model is for CPB purposes, and whether such a model may eventually replace SAFFIER.

## **4.5 Sector 4: Competition and regulation**

### **4.5.1 Description**

#### **Tasks and activities**

The *Competition and regulation* sector investigates, from a microeconomic perspective, a multitude of issues around the central question: How can the government improve the

functioning of markets? The concept of ‘market’ is taken broadly, so as to include institutional questions concerning public services. Thus, studies undertaken in this sector may focus on government failures as well as market failures. The studies make use of the theory of Industrial Organization, Institutional Economics, or empirical methods (econometric techniques, benchmarking).

### **Ambition**

The sector aims to supply not only policymakers and regulatory authorities, but also a broader audience of interested parties, with timely analyses that meet the quality standards of the international academic community, by keeping up with the developments in the fields of Industrial Organization, Public Economics and Regulatory Economics.

### **Co-operation**

The sector maintains close contacts with several institutes. It has carried out joint projects with OCFEB (Dutch acronym for Research Centre for Economic Policy), ECRi (Erasmus Competition and Regulation Institute, Rotterdam) and ZEW (Mannheim) on network industries and energy markets, and with NZa (Dutch acronym for Netherlands Care Authority) on (health) care; it has participated in “Homeownership, Commuting and Labour Mobility,” financed by the European Science Foundation. Recently, two new joint projects have started (see under *Plans* below).

Several people have visited the sector: Paul Grout (Bristol University), Svetlana Ikonnikova (Center for Energy Economics, University of Texas at Austin), and five PhD students from the University of Toulouse. Six staff members have visited other institutes, almost all in academia, as a researcher or lecturer. Several staff members give occasional guest lectures at universities and other institutes. In 2009, a staff member spent three months as a guest researcher at the University of Madison, Wisconsin.

The sector’s academic partners are Jan Boone, Professor of Industrial Economics at Tilburg University, and Erik Schut, Professor of Health Economics at EUR. In the near future, Arnoud Boot, Professor of Corporate Finance and Financial Markets at the UvA, will become an academic partner. Previously, Eric van Damme, Professor of Economics at Tilburg University served as one of its academic advisors.

## **4.5.2 Programmes**

### **Public/semi-public organisations**

The *Public/semi-public organisations* programme explores issues related to institutions, incentives and effectiveness in (semi-) public organisations (which may have substantial discretion vis-à-vis the central government). While some work is theoretical (e.g., providing guidelines on how to use incentive schemes in semi-public sectors or studying the role of non-profit organisations in the provision of public goods), other work addresses specific sectors

(e.g., studying the incentives for efficiency in the care sector or the effects of performance contracts for police forces). A growing share of the studies uses advanced econometric techniques to estimate (measures of) competition and public-sector efficiency and effectiveness.

#### **Market sectors ► Competition ► Healthcare**

The *Market sectors* programme was relabelled as *Competition* programme in 2007. It studies competition issues in markets that lack sector-specific regulation. Theoretical studies of the switching behaviour of consumers, vertical foreclosure and the use of measures of the intensity of competition have been made. More specific studies have considered competition in the markets for pharmaceuticals and hospital care, in financial and (life) insurance markets (focusing on the role of financial intermediaries), and in the notary profession.

In 2008 the programme was replaced by the more narrowly focused programme *Healthcare*, which until then had been a unit of the sector *Short-term analysis and fiscal affairs*. A recurrent activity of this programme is the forecasting of healthcare expenditures for the short term and, less frequently, for the medium- and long term; the results are an input for CPB's short-term forecasts, medium-term outlooks and long-term scenarios. This part of the work requires a thorough understanding of the organisation and financing of Dutch healthcare. Research covers both cure and care. Projects tackle issues like the performance of the risk-equalisation system for healthcare insurers, the influence of pharmaceutical promotion and the effect of co-payments on healthcare consumption. A regular partner in projects is the NZa; a new project uses models from the theory of Industrial Organization to analyse strategic interactions between hospitals and health insurers.

#### **Network sectors ► Regulation ► Energy**

The *Network sectors* programme, relabelled as *Regulation* programme in 2007, focuses on sector-specific regulation in markets for energy, telecommunication and railway transport. Subjects studied include the costs and benefits of energy policies, risks on energy markets, reliability policy in network industries, and the impact of competition on productive efficiency in European railways. In 2008, the programme was replaced by the narrower *Energy* programme, which deals solely with questions of energy-market structure and the regulation of power and gas companies. It also contributes to research into climate change (see the *Climate Change* programme of the sector *International economics*). The programme participates in a long-term research project on how the regulation of grid companies affects investments in infrastructure and distributed generation.

### **4.5.3 Results of work**

#### **Publications**

The publications in the box below testify to the sector's commitment to state-of-the-art, policy-relevant research. *The effect of home-ownership on labor mobility in the Netherlands* estimates

**Selected publications of Sector 4: Competition and regulation**

**The effect of home-ownership on labor mobility in the Netherlands** (Michiel van Leuvensteijn and Pierre Koning); published in *Journal of Urban Economics*, vol. 55, pp. 580–596, 2004.

**The price of free advice**, CPB Discussion Paper 66, 2006 (Machiel van Dijk, Michiel Bijlsma and Marc Pomp); published in *Applied Economics*, vol. 40, no. 14, pp. 1889–1903, 2008.

**Pharmaceutical promotion and GP prescription behaviour**, CPB Discussion Paper 30, 2004 (Frank Windmeijer (Centre for Microdata Methods and Practice, Institute for Fiscal Studies), Eric de Laat, Rudy Douven and Esther Mot); published in *Health Economics*, vol. 15, pp. 5–18, 2006.

**Access regulation and the adoption of VoIP**, CPB Discussion Paper 109, 2008 (Paul de Bijl and Martin Peitz (Department of Economics, University of Mannheim)); published in *Journal of Regulatory Economics*, vol. 35, pp. 111–134.

**Do non-profits make a difference? Evaluating non-profit vis-à-vis for-profit organisations in social services**, CPB Document 142, 2006 (Pierre Koning, Joëlle Noailly and Sabine Visser); published in abbreviated form as **Do not-for-profits make a difference in social services? A survey study** in *De Economist*, vol. 155, no. 3, pp. 251–270, 2007.

**Concern about competition: An analysis of the new healthcare system** (in Dutch), CPB Document 28, 2003 (Marja Appelman, Rudy Douven, Erik de Laat, Esther Mot and Marc Pomp).

a nonparametric model of job durations and homeownership; the results suggest that the housing decision is driven by job commitment (and not the other way around). *The price of free advice* is an empirical study into the quality of advice given by insurance brokers in the market for deferred annuities; it finds that buying a policy directly from an insurer rather than through a broker results in choices of policies with significantly better matches to the clients' risk preferences and also significantly higher pay-outs. *Pharmaceutical promotion and GP prescription behaviour* studies the responses of general practitioners (GPs) to promotional activities by pharmaceutical companies, finding that GP drug price sensitivity, small already at the outset, is adversely affected by promotion. *Access regulation and the adoption of VoIP* shows that with endogenous consumer choice between PSTN and VoIP telephony, higher prices for terminating access to the PSTN network make VoIP less likely to succeed and will lead to lower profits of operators who offer VoIP telephony exclusively. *Do non-profits make a difference?* provides a framework for the evaluation of non-profit organisations and applies it in three sub-sectors of Social services, finding no strong arguments for enhancing the role of non-profit organisations. *Concern about competition* evaluates a reform proposal for the healthcare sector with a central role for competition between health insurers and between health providers, concluding that it is likely to improve efficiency while maintaining accessibility.

**Instruments**

Since the start of the *Healthcare* programme in 2008, the sector develops and maintains models for forecasting healthcare expenditures in the short-, medium- and long run. The sector maintains the NATGAS model, which can be used for simulations of the European market for natural gas.

### Other products

On a regular basis the sector organises a *Competition Workshop* (2-3 times per year as of 2003, jointly with CentER for Economic Research / TILEC of Tilburg University and Ministry of Economic Affairs), and an *Energy Workshop* (twice a year as of 2008, jointly with CentER for Economic Research / TILEC and the NMa (Dutch acronym for Netherlands Competition Authority)).

Other conferences that have been organised include the symposium on *European Electricity Markets*, organised by AER, CPB and Energy research Centre of the Netherlands (ECN) in 2003; the conference on *Productivity in services - Determinants, international comparison, bottlenecks, policy* (2004); the symposium on the *European Natural Gas Market* (2004); the symposium on *Competition in Life Insurances*, with NMa (2005); and the ENCORE symposium *The Future of Telecoms Regulation 2006*, with OPTA (2006).

Staff members participate actively in academic conferences, and several of them have presented keynote speeches at national and international symposiums.

Paul de Bijl, together with Jos Huigen (OPTA), was guest editor of the special issue "Future Telecommunications Regulation: A Dutch Perspective" of *Telecommunications Policy* 32(11), pp. 699-758 (2008), as a spin-off of the symposium *The Future of Telecoms Regulation 2006*. Michiel van Leuvensteijn is, together with Casper van Ewijk, editor of the book *Homeownership and the Labour Market in Europe* (Oxford University Press, 2009).

#### 4.5.4 Plans

In 2009, a research cluster on *financial markets* was instituted. The cluster focuses on microeconomic aspects (market structure, governance, regulation) of financial markets.

As of the end of 2008, CPB participates, through ENEPRI, in ANCIEN (Assessing Needs of Care In European Nations), a four-year research project on long-term care policy, and in TREIN (TRansition of Energy INfrastructure), a two- to six-year interdisciplinary programme on the effect of regulation on energy networks.

#### 4.5.5 Miscellaneous

In 2006, an external committee led by Eric Bartelsman (VU) reviewed the sector.<sup>15</sup>

### 4.6 Sector 5: Physical aspects

#### 4.6.1 Description

##### Tasks and activities

The *Physical aspects* sector is charged with analyses in the fields of mobility, infrastructure, spatial economics, housing, agriculture, nature and the environment. The activities include cost-

<sup>15</sup> Report of the Visitation Committee of the Sector Competition and Regulation at CPB (30 Nov. 2006), by Eric Bartelsman, Adriaan Dierx and Leigh Hancher, available at: [http://intranet/organisatie/beleidscyclus/2006/visitatie\\_sector4.doc](http://intranet/organisatie/beleidscyclus/2006/visitatie_sector4.doc).

benefit analyses (CBAs) of large infrastructure projects, research on European agricultural policy and land policy, institutional and empirical analyses of housing issues, and contributions to the design of safety standards for the prevention of flooding. Although most work has a national focus, analyses in a growing number of areas are prepared in the EU framework (e.g., transport, spatial issues, environmental standards).

The activity of *Cost-benefit analysis* occupies a special place in the sector's work. In line with the advice of previous Review Committees, CPB has elaborated the methodology of CBA. This work has resulted in a Guide for CBA, which by Cabinet decree has become the official format for assessing major infrastructure projects in the Netherlands. CPB may be involved in the assessment of such projects— either making its own CBA or giving a second opinion on the CBA made by some other institute(s). Thus CPB is in a special position: It must guard the observance of the guidelines and the quality of CBAs, and it must improve the instrument of CBA. In practice, CPB makes CBAs only for those projects that enlarge our knowledge of the subject concerned and are challenging because they require improving the methodology of CBA. Other projects are left to other institutes, CPB giving a second opinion upon request.

### **Ambition**

The sector aims to maintain and strengthen CPB's independent and leading role in the analysis of economics and physical surroundings. Moreover, CPB wants to deploy its acquired expertise in the field of CBA on a wider scale. The sector faces challenging questions in a number of fields, for example the environment and sustainability, CBAs of regulation, the valuation of open space in cities and road use pricing.

### **Co-operation**

Because the study of the issues often requires a considerable amount of specific (non-economic) knowledge, CPB co-operates closely with the other planning bureaus, specialised institutes and ministerial research departments. Regular partners are the Netherlands Environmental Assessment Agency (*Planbureau voor de Leefomgeving*, PBL) and the Netherlands Institute for Transport Policy Analysis (*Kennisinstituut voor Mobiliteitsbeleid*, KiM). CPB's primary task in joint projects is to deliver economic scenarios and analyses— mostly at a high level of aggregation; the partners usually prepare estimates at a much more detailed level. In practice, CPB is also the coordinator of many joint projects, because an overall economic framework is required or because ministries explicitly ask CPB to play a leading role.

A strategic alliance with the Spatial Economics section of VU University Amsterdam supports CPB's ambition to maintain and improve scientific quality, as do other international contacts and networks. The sector's academic partner is Jan Rouwendal (VU). One staff member spent a term at LSE as a visiting research scholar to initiate various joint projects. The results thus far include a chapter in a forthcoming handbook and two academic papers in

progress written jointly with LSE staff, not to mention an affiliation with the Spatial Economics Research Centre.

#### 4.6.2 Programmes

##### **Mobility and infrastructure**

The *Mobility and infrastructure* programme studies the effects and efficiency of investment in transportation infrastructure and other transport and mobility policies (e.g., road pricing and the benefits of public transport), often by means of CBA. Research concerns methodological improvements of CBA (e.g., real options) as well as widening and deepening their scope and applicability. Another important strand of research is the exploration and charting of future developments in transportation and mobility, which are necessary inputs for evaluating the impact of long-lived investments in transportation infrastructure.

##### **Spatial and regional economics**

Using instruments like RAM, the programme studies regional differences within the Netherlands, paying attention to the labour market, agglomeration effects and the land market. In long-term studies, the programme adds a regional dimension to national scenarios on the basis of research on commuting and migration. Issues studied include the policies of larger cities (*Grotestedenbeleid*) to cope with their problems and to foster their development and reconstruction. Relatively new subjects are the radius of the effects of local public goods and their relation to questions on subsidiarity (e.g. the size of local government and local taxes, and population shrinkage in border regions).

##### **Housing**

The *Housing* programme studies rental-housing policy for low-income families, residential construction, the tax treatment of owner-occupied housing and spatial planning. Recent publications discuss the economic effects of various tax treatments of owner-occupiers and the effects of several rental-housing policies aimed at low-income families. Ongoing work investigates alternatives for current housing policies and their effects on the owner-occupied and rental-housing markets and the wider economy (labour market, welfare, purchasing power).

##### **Environment, nature and agriculture**

With respect to the environment and the conservation of nature and the landscape, the *Environment, nature and agriculture* programme studies mainly *national* or regional problems; when appropriate, an international perspective is also given (as in the recent *Sustainability Monitor* of the Netherlands<sup>16</sup>). With respect to agriculture, the *international* dimension of the problem is often predominant, as in work on reforms of or the effects of the Common

<sup>16</sup> Monitor Duurzaam Nederland 2009, a joint report of CBS, CPB, PBL and SCP published in 2009.



Agricultural Policy, alternative proposals within the WTO or the analysis of international food prices. The participation in various advisory committees is an important part of the work.

### **Water safety**

The increasing risks of floods have led CPB to analyse water management issues. Working on the CBA for the project *Room for the Rivers* (upgrading the existing rivers and dikes system to the legal safety standards), the *Water safety* programme has developed a new method of underpinning safety standards for dike-ring areas. Apart from safety, the analysis accounts for spatial quality as well. In the meantime, research groups at universities have taken the lead in the elaboration of the method. The contribution of CPB focuses now on applications of the new models and on quality control of the CBAs in the field.

## **4.6.3 Results of work**

### **Publications**

The publications in the box span the range of activities of the sector. The book *Welfare and environment* presents the results of a comprehensive scenario study (in cooperation with PBL) with contributions from all programmes. The scenarios are widely used in CBAs by CPB and other institutes. *Economic effects of reforming the deductibility of home mortgage interest* analyses the consequences of the subsidy on homeownership implied by the tax deductibility of home mortgage interest for the public budget, the housing market and the income distribution, while *Housing market effects of reforming the deductibility of home mortgage interest* focuses on the consequences for the housing market of changing the fiscal treatment of homeownership in one particular way. *Housing supply in the Netherlands* finds that four measures of the supply of new dwellings are almost fully inelastic with respect to house prices— at least in the short- to medium run. *Compensation of regional unemployment in housing markets* finds empirical support for the hypothesis that workers in high-unemployment regions are compensated by low prices on the housing markets. (The latter two studies are examples of joint work with the VU on the consequences of Dutch spatial planning.) *From optimal to practical safety standards for dike-ring areas* (based on a presentation at a conference of the International Water Association) is an offspring of the new model for the safety standards of dike-ring areas. *CBA of railway station area development: the case of Amsterdam South Axis* is a CBA; it arrives at negative net benefits, surrounded by a wide uncertainty margin, of one part of the project, bringing the transport infrastructure underground.

**Selected publications of Sector 5: Physical aspects**

**Welfare and environment: A scenario study for the Netherlands in 2040** (in Dutch), CPB Special Publication 64, 2006 (jointly with Milieu- en Natuurplanbureau and Ruimtelijk Planbureau).

**Economic effects of reforming the deductibility of home mortgage interest** (in Dutch), CPB Special Publication 62, 2006 (Casper van Ewijk, Martin Koning, Marcel Lever and Ruud de Mooij).

**Housing market effects of reforming the deductibility of home mortgage interest** (in Dutch), CPB Document 128, 2006 (Martin Koning, Rafael Saitua and Jos Ebregt).

**Housing supply in the Netherlands**, CPB Discussion Paper 87, 2007 (Wouter Vermeulen and Jan Rouwendal (VU University Amsterdam)).

**Compensation of regional unemployment in housing markets**, CPB Discussion Paper 57, 2006 (Wouter Vermeulen and Jos van Ommeren (VU University Amsterdam)); published in *Economica*, vol. 76, pp. 71–88, 2009.

**From optimal to practical safety standards for dike-ring areas**, (Carel Eijgenraam); published in *Water Science and Technology*, vol. 56, no. 4, pp. 113–124, 2007; CPB Discussion Paper 62 explains the theoretical model.

**CBA of railway station area development: The case of Amsterdam South Axis** (Carel Eijgenraam and Ioulia Ossokina), in F. Bruinsma, E. Pels, H. Priemus, P. Rietveld, and B. van Wee (eds), 2008, *Railway development: Impacts on urban dynamics*, Physica-Verlag, Springer; based on CPB Document 134.

**Instruments**

CBA is a frequently used instrument in the sector's work. Refining the CBA methodology developed at CPB is one of CPB's tasks.

Since the model for the Business Estates Monitor was transferred to the PBL, the one remaining model is the regional labour market model RAM.

**Other products**

Recently the Guide for CBA was extended with passages about defining a project and the reference situation in the case of land development and with regard to the treatment of road safety (first- and second party damage and the role of insurance). A discussion on the treatment of indirect taxes in CBA was initiated.

**4.6.4 Plans**

In 2009, the sector started a CBA on a large housing and land development project in Almere (near Amsterdam), combined with new railway lines. The sector plans to start the preparation of a new long-term study, successor of *Welfare and environment*, and the construction of a regional housing market model jointly with the PBL in 2010. To enhance our understanding of the welfare consequences of spatial policy, we intend to construct small special-purpose models (e.g., a simultaneous model of the land and labour market or a model for studying the redevelopment of underused areas near city centres). CPB will continue its work in refining the methodology of CBA by way of learning-by-doing.

## 4.7 Sector 6: International economics

### 4.7.1 General

#### Tasks and activities

The sector *International economics* conducts studies on international and European policy issues and undertakes scenario studies for the long term. During the review period, research in the sector focused on three themes:

- the impact of globalisation on the Dutch economy;
- international aspects of climate and energy policy, mainly from a European perspective;
- issues with a typical EU dimension (e.g., EU policy with regard to the internal market, economic reforms under the Lisbon agenda, the Economic and Monetary Union).

#### Ambition

The sector's main ambition, since its institution in January 2004, has been to strengthen CPB's presence internationally— by improving, in particular, its role in economic policy analyses for the EC. Meanwhile, CPB wanted to maintain its presence in a broad field of international policy analyses, ranging from climate change and globalisation to a number of European policy issues (for example, accession of new member states, subsidiarity, tax harmonisation, structural reforms and the Lisbon agenda).

#### Co-operation

The sector co-operates on a regular basis with the *Planbureau voor de Leefomgeving* (PBL; Netherlands Environmental Assessment Agency), the ECN and the Copernicus Institute of Utrecht University for research on energy and climate change. Over the years, the sector has contributed to the construction of successive GTAP databases; CPB is a member of the GTAP Advisory Board. The sector is also involved in comparative research by the Energy Modelling Forum (EMF) and represents CPB in the economic research network ENEPRI. The yearly *European Outlook*, commissioned by at the Dutch Ministry of Foreign Affairs, is produced jointly by CPB's Sector 6 and the *Sociaal en Cultureel Planbureau* (SCP; The Netherlands Institute for Social Research | SCP). In developing the WORLDSCAN model for specific policy applications, the sector is involved in collaborative efforts with counterparts that actually use copies of the WORLDSCAN model for their own policy analyses (such as the PBL Netherlands Environmental Assessment Agency, DC ECFIN and DG ENTR).

Via framework contracts with DG ENTR and DG TRADE, framework programme projects commissioned by DG RTD as well as direct research contracts with DG BUDGET and DG TAXUD and via the EUROFRAME consortium, many joint research projects have been (and are still being) conducted with other partners (including IAS, CEPII, Ecorys, ESRI, ETLA, Groningen University, NIESR, NTUA, TNO and ZEW). A staff member visited IFS in London to conduct joint empirical research in the field of patent citations. The sector's academic

partners are Eric Bartelsman, Professor of Economics at the VU, Harry Garretsen, Professor of International Economics and Business at the University of Groningen, and Sjak Smulders, Professor of Economics at Tilburg University.

#### 4.7.2 Programmes

##### European analysis

The *European analysis* programme has focused on six topics in the past five years. It has studied European integration and the design of welfare states. It has examined the Internal Market and its expansion through the accession of new member states, and also the deepening of the Internal Market (through the Services Directive) and its benefits. The other three topics are subsidiarity and the division of responsibilities for economic policy, the Lisbon agenda and the modelling of structural-reform policies to assess their benefits, and corporate income tax competition between the member states.

##### Climate change

The *Climate change* programme focuses on the analysis of the international and EU instruments in the field of climate policy. It examines the structure and operation of specific policy instruments and the interaction between policy instruments in different countries and regions. The programme assesses the effectiveness and efficiency of alternative policies, the effects on innovation, the diffusion of new, cleaner technologies and the economic implications.

##### Globalisation

The institution of the *Globalisation* programme during mid-2008 reflects CPB's intention to intensify its research efforts on this theme. In the past, activities on the theme were carried out under the auspices of different programmes/units. Subjects studied include outsourcing and the impact of China and India on the Dutch economy (in co-operation with the *International cyclical analysis* unit, then a programme of Sector 6), and other studies with mainly a macroeconomic and industry perspective. Meanwhile, the programme has started to explore the export behaviour and productivity of Dutch firms using firm-level data.

#### 4.7.3 Results of work

##### Publications

The six publications in the box cover the main research areas and publication outlets of the sector. The scenario study *Four Futures of Europe* is the successor of *Scanning the Future*. It was the first of a series of scenario studies for the Netherlands. *Turkish delight*, a study carried out at the request of Dutch policymakers, is representative of the work on EU enlargement. *Five Lisbon highlights* was requested by the European Commission and positioned CPB and the model WORLDSCAN at the European Commission. The model contains R&D spillovers as derived, estimated and modelled in the paper *Openness, growth and R&D spillovers*. The paper

**Selected publications of Sector 6: International economics**

**Four futures of Europe**, CPB Special Publication 49, 2003 (Ruud de Mooij and Paul Tang).

**Turkish delight: Does Turkey's accession to the EU bring economic benefits?**, in *Kyklos*, vol. 58, no. 1, 2005, 87–120 (Arjan Lejour and Ruud de Mooij).

**Five Lisbon highlights: The economic impact of reaching these targets**, CPB Document 104, 2006 (George Gelauff and Arjan Lejour); see also DG Enterprise and Industry, *Industrial Policy and Economic Reforms Papers 1*, 2006.

**Will corporate tax consolidation improve efficiency in the EU?**, CPB Document 141, 2007 (Leon Bettendorf, Albert van der Horst, and Hugo Rojas-Romagosa).

**Openness, growth and R&D spillovers: Uncovering the missing link?**, CPB Research Memorandum 168, 2000 (Arjan Lejour and Richard Nahuis); published in *Review of International Economics*, vol. 13, 927–944, 2005.

**Post-2012 climate policy scenarios**, CPB Special Publication 70, 2007 (Stefan Boeters, Michiel den Elzen (Planning Bureau for the Environment (PBL)), Ton Manders (PBL), Paul Veenendaal and Gerard Verweij).

*Will corporate tax consolidation improve efficiency in the EU?* marks the development of an applied general-equilibrium model for tax competition at the frontier of applied research. The research on *Post-2012 climate policy scenarios* marks the work on the economics of climate change and the cooperation with PBL.

**Instruments**

The methods for analysing a host of policy options are still insufficiently developed in the literature. For that reason, the elaboration of WORLDSCAN constitutes a major part of the *European analysis* programme. Particularly important are extensions that allow us to analyse the costs and benefits of human capital accumulation and extensions that provide insights into how innovation, competition and productivity interact. Furthermore, WORLDSCAN continues to be an indispensable instrument in analysing the economics of climate change.<sup>17</sup> An applied general-equilibrium model for tax competition was developed and used to study corporate tax consolidation.

**Other products**

Jointly with the European Commission, the *International Economics* sector organised a two-day conference in Brussels in 2006 on *Subsidiarity and Economic Reform*. In 2007, the sector organised a one-day conference on migration, jointly with the Dutch Ministry of Employment and Social Affairs. In 2003, the sector organised the three-day Sixth annual conference on *Global Trade Analysis*, jointly with LEI and EUR. Next to these conferences, the sector often organised one-day workshops on topics like the Stability and Growth Pact, innovation in Europe, labour supply, and economic geography.

Sector 6 staff members often present their research findings at international conferences. Each year, staff members visit the GTAP conference on global modelling and the ETSG

<sup>17</sup> Copies of WORLDSCAN are regularly used (and modified to meet specific research questions) for policy analyses by PBL, DG ECFIN and DG ENTR.

conferences on international trade. Papers are presented at international workshops and conferences with specific themes such as globalisation, trade in services or climate change issues.

The sector edited the book on *Subsidiarity and Economic Reform in Europe*. Henk Kox is co-editor of the book *Business Services in European Economic Growth*.

#### 4.7.4 Plans

From 2009 onward, the micro-econometric work on export behaviour and productivity of Dutch firms will be expanded to the recently instituted *Globalisation* programme. CPB will focus on the way in which Dutch firms cope with internationalisation and on the consequences for productivity and the demand for labour and skills, using firm-level data from Statistics Netherlands. The *Climate change* programme will concentrate on the analysis of the '20 20 by 2020' policy package, and the *European analysis* programme on economic reforms.

#### 4.7.5 Miscellaneous

In 2005, an external committee led by Professor Harry Garretsen (then at Universiteit Utrecht) reviewed the sector.<sup>18</sup>

### 4.8 Miscellaneous

A difficult problem facing CPB and similar institutes is how to deal with uncertainties in policy-related knowledge: how to determine these uncertainties, how to communicate them to policymakers, and how to help policymakers cope. In 2006, Rand Europe, PBL (current Dutch acronym for the Netherlands Environmental Assessment Agency) and CPB organised a two-day conference entitled 'Dealing with Uncertainty in Policymaking.' The conference report (originally in Dutch, as CPB Special Publication 67; now available also in English) concludes with ten recommendations for a better way of dealing with uncertainty.

<sup>18</sup> *Visitatie van de sector Internationale Economie van het CPB: Eindrapport van de visitatiecommissie* (December 2005).

## 5 Responses to previous recommendations

The 2003 Review Committee made a substantial number of recommendations related to both CPB's position and to specific themes. While CPB has responded positively to many recommendations, some have been rejected— but only after careful consideration of the issue at stake. A separately available document gives a systematic account of how CPB has responded to all of the recommendations. This chapter briefly treats most of the recommendations related to CPB's position.

The 2003 Review Committee was convinced that CPB could strengthen its position in two ways: first, by broadening its research questions and research methods to issues like welfare reform and regulation; and second, by strengthening its links with the academic community. The Committee made two recommendations and elaborated them with a number of specific suggestions.

### 5.1 Broadening questions and methods, reallocating resources

- *The Committee advises CPB to focus more on policy-analytic, microeconomic- and institutional research both in the national and international arenas.*

The institution of the sector *Competition and regulation* (Sector 4) in 2004, the recent focus on micro-econometric research methods for studying the effects of globalisation in the sector *International economics* (Sector 6) and the new cluster of research on *Financial markets* (in part financed externally) in Sector 4 testify to the increased focus on policy-analytic, microeconomic- and institutional research. The increased focus can also be seen from the output record.<sup>19</sup>

- *The Committee is aware that the desired shift in analysis requires a reallocation of resources. Accordingly, the Committee finds that a more efficient use of resources can be attained by a reallocation of research work away from forecasting activities and model maintenance.*
- *The Committee advises the CPB leadership to work with its clients to reduce the level of demands for (budgetary) forecasts and estimates of party platforms.*

CPB has saved on the volume of resources dedicated to forecasting the world economy. Alternative budget proposals (of oppositional parties) are no longer analysed in depth.

<sup>19</sup> Some examples are *Reinventing the welfare state* (Special Publication 60), *Concern about competition* (CPB Document 28), *Hidden unemployment in disability insurance* (CPB Discussion Paper 69), *Returns to university education* (CPB Discussion Paper 34), and *Do non-profits make a difference?* (CPB Document 142).

Contrary to the advice of the Zimmermann Committee, the Bakker Committee, which evaluated CPB from the policy point of view in 2001, argued for *deepening* the analyses of party platforms. CPB certainly does not want to reduce the depth of the analyses.

- *The Committee questions the need for four quarterly forecast exercises, and suggests that only semi-annual forecasts be prepared.*

CPB has not followed the suggestion. Three of the four quarterly forecasts cannot be missed because they have a clear function in the preparation of the national budget. Policymakers may do without the December forecast. Still, in many a year unexpected events make intermediate updating of the September forecast desirable, if not necessary. The savings from not making the December forecast would be minor (less than 0.5FTE).

- *The Committee recommends that CPB leadership undertake a systematic review of the numerous econometric and simulation models, with a view to coordinating them and assessing the net benefits of each so as to reduce the volume of resources dedicated to the construction / maintenance of the models.*

The annual model JADE and the quarterly model SAFE have been united to form SAFFIER, which may be run in a quarterly or annual mode. Two micro-simulation models (dealing with taxes, social-security contributions, wage costs and purchasing power) have been united as well. Several models have been scrapped, and the development of other models has been discontinued. On the other hand, some new models have been constructed.

- *The Committee recommends that CPB carefully compares the costs and benefits of further development of its own software.*

CPB has evaluated external modelling software comprehensively in search of an alternative to maintaining in-house software, but has not found any that can satisfy all of its needs. While continuing to use its own software, CPB organises its software (development) programme in such a way that it keeps its options open for future developments in external, especially open-source software.

- *The Committee also recommends that the model forecasts be presented with ranges or high/low bounds indicated, rather than point estimates. (...)*

CPB organised, jointly with PBL and RAND Europe, the conference *Dealing with Uncertainty in Policymaking*<sup>20</sup> in May 2006, which testifies to the weight that CPB attaches

<sup>20</sup> CPB Special Publication 67 is the final report on the conference.



to the subject. However, CPB feels that presenting forecasts with ranges or high/low bounds indicated may not be the best way of communicating uncertainty to decision makers. CPB has continued to bring the uncertainty of the forecasts to the fore by presenting ‘uncertainty variants,’ by rounding projected growth rates to one-quarter of a percent instead of to one-tenth of a percent (as with observed growth rates), and by repeatedly stressing the uncertainty of the forecasts and pointing out major risks in the text. Moreover, starting in 2002, CPB has published an analysis of the forecast errors in a number of major macroeconomic aggregates in almost every year.<sup>21, 22</sup> The application of a DSGE model, now under construction, will open new ways of dealing with uncertainty in the forecasts.

## 5.2 Strengthening links with academic research

- *Over time, CPB has strengthened links with academic research. However, the Committee feels that the academic research orientation can be increased, that the scientific output of its staff be raised, and that CPB should seek strategic partnerships in academia.*

The budget for *scientific advice*, formerly spent on long-term contracts with three or four advisers, is nowadays spent on short-term contracts for consultancy for a limited amount of time (five days per year) with about twelve *academic partners*, with whom CPB staff actually co-operates in academic research. For details on strategic partnerships in academia, see sections 4.2–7 under the heading *Co-operation*.

- *The Committee has a number of specific suggestions for strengthening the links with academic research:*
  - *CPB should extend its support for young staff members to engage in academic research. CPB is invited to consider its internal incentive structures from this perspective.*

CPB does grant its staff members some time for academic research and preparing publications in scientific journals, limited by the necessity to keep the costs, in terms of policy-relevant output foregone, to an acceptable level. Monetary rewards are not biased in favour of academic output.

<sup>21</sup> The latest version is Trefzekerheid CPB-prognoses 1971-2007, CPB Document 178, February 2009 (Henk Kranendonk, Jasper de Jong and Johan Verbruggen).

<sup>22</sup> A related study is *Evaluating CPB's published GDP growth forecasts: A comparison with individual and pooled VAR-based forecasts*, CPB Document 172, 2008 (Adam Elbourne, Henk Kranendonk, Rob Luginbuhl, Bert Smid and Martin Vromans).

- *CPB should seek more venues for international cooperation; the establishment of a visitor's programme for international scholars, including a Tinbergen Fellowship seems a productive way of accomplishing this goal.*

In co-operation with the Netherlands Institute for Advanced Science (NIAS), a Tinbergen Fellowship (with Paul Grout as the Visiting Fellow) was attempted. It was less than successful, probably due to the distance of NIAS from CPB and the lack of a long-term commitment. CPB seeks international contacts and co-operation through lectures, conferences, and short-term stays of visitors at CPB or of CPB staff at foreign institutes as opportunity arises.

- *CPB should seek additional outside sources for financing research projects.*

As a rule, CPB aimed at outside sources of about ten percent of its regular budget, in terms of staff equivalent to 17 FTE. The limit has been maintained at 17 FTE, although the regular budget has shrunk. At the same time, a shift from CBAs to long-term projects financed by the government, NWO, the EU (7th Framework) and Netspar has occurred. In spite of future budget and staff reductions, the limit will be maintained at 17 FTE.

Increasing the share of externally financed staff even further does not seem warranted.

Other recommendations induced CPB to change its organisational structure and to strengthen its HRM in several ways.

## **Annex A The Review Committee**

Chairman: Martin F. Hellwig (Max Planck Institute for Research on  
Collective Goods, Bonn)

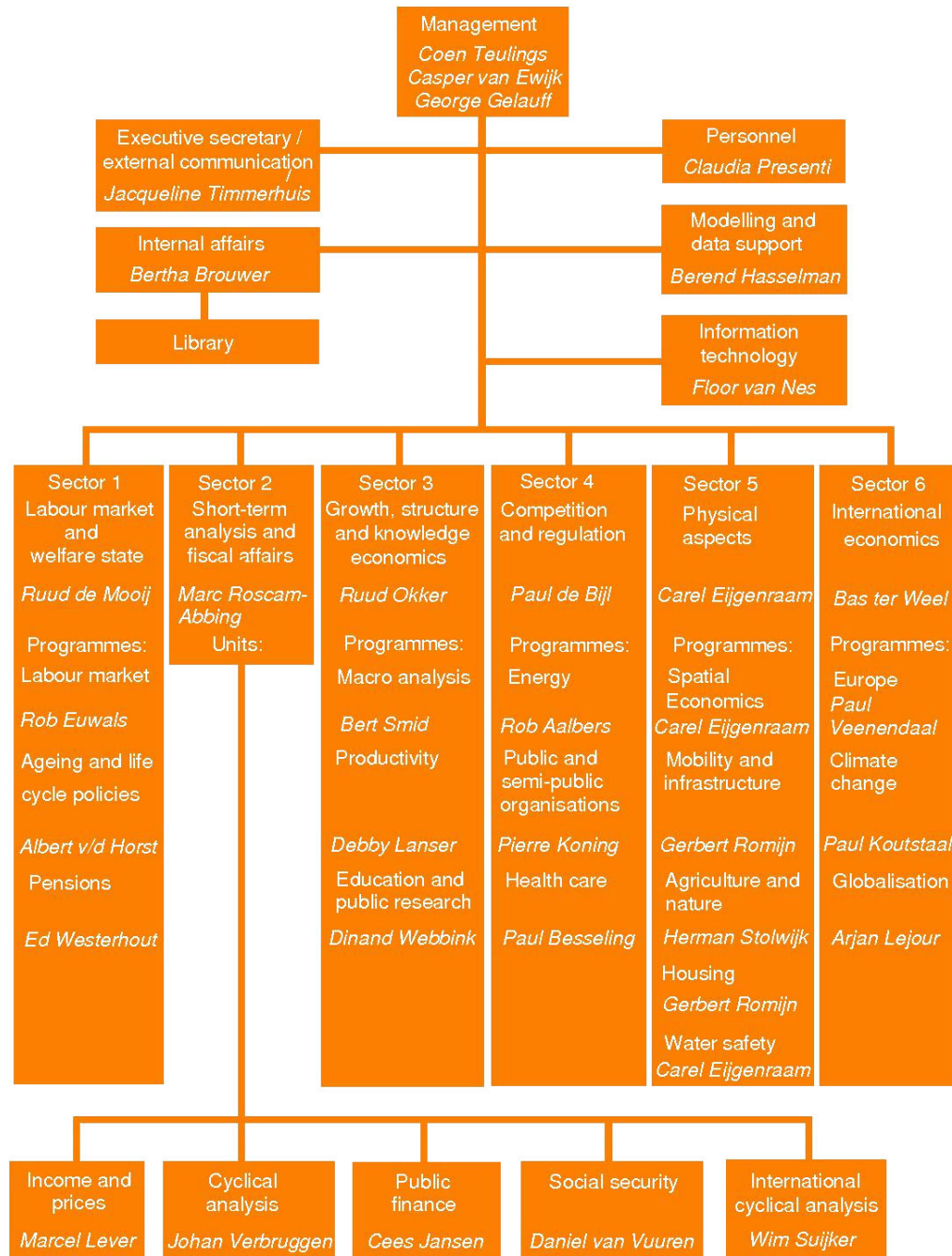
Members: Torben M. Andersen (Aarhus University)  
Robin W. Boadway (Queen's University Kingston, Ontario)  
Jørgen Elmeskov (OECD, Paris)  
Rachel Griffith (University College London, Institute of Fiscal  
Studies, CEPR)  
Sweder van Wijnbergen (University of Amsterdam)

Secretary: Alexandra van Selm (Social Economic Council)

Second secretary: Jante Parlevliet (Social Economic Council)



## Annex B Organisation Chart



Coen Teulings, director, supervises Sector 2; Casper van Ewijk supervises the Sectors 1, 4 and 6; George Gelauff supervises the Sectors 3 and 5 and the support staff.



## Annex C Publications, 2003–2008

### Contents

- C.1 CPB publications
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  - C.1.2 Chronologically by series and sector
  - C.1.3 Alphabetically by author name(s)
- C.2 CPB staff publications in English
  - C.2.1 By outlet and author name(s)
  - C.2.2 Alphabetically by author name(s)

This annex comes separately, except for two tables.

Other classifications available for CPB publications:

- chronologically per series;
- for each sector
  - chronologically per series,
  - alphabetically by author name(s);
- for each year
  - chronologically per series.

## C.1 CPB publications

### C.1.1 CPB publication numbers by sector, series and year

Table C.1 corresponds to Table 4.1, Table C.2 corresponds to Table 4.2.

		2003	2004	2005	2006	2007	2008
Sector							
1	Special Publications	47	-	58	60, 61, 65, 66	-	-
	Documents	-	47, 67, 71	79, 100	135	147, 153	169
	Discussion Papers	-	31	45, 46, 51, 52	69, 70, 75	79, 81, 85, 88, 93	97, 100, 104
2	Special Publications	-	-	58	60, 65	-	-
	Documents	40, 42	46, 72	77, 81, 99	106, 109, 118, 120, 123, 126, 127, 129, 131	143, 144, 149, 150, 151, 155, 156	158, 161, 169, 172, 176
	Discussion Papers	-	32	-	53, 55, 59, 63	77, 92	112
3	Special Publications	50	55	-	65	69	-
	Documents	30, 37, 39, 41	48, 49, 55, 58, 61, 62, 70, 74	86, 88, 91, 92, 95, 98, 103	105, 107, 115, 117, 124, 129, 130, 136, 137	140, 151	162, 163, 170, 172, 177
	Discussion Papers	25, 26	28, 33–35	-	58, 64, 74	83, 91, 92	96, 102, 110, 113, 114
4	Special Publications	-	51, 52	-	-	-	-
	Documents	28, 29, 31–34, 36	45, 50–54, 60, 63, 66, 73	75, 78, 81, 84, 85, 89, 90, 93, 94, 96, 97, 102	108, 110, 112, 116, 119, 121, 122, 138	142, 145, 146, 152	157, 159, 163, 164, 167, 173, 175
	Discussion Papers	21	30, 36–39	43, 47–49	56, 60, 61, 66, 71, 73	78, 82, 84, 86, 90, 91, 94, 95	103, 106, 108–110, 113–116
5	Special Publications	46, 50	53	57, 59	62, 64	71, 72	74
	Documents	35, 44	57, 65, 68	81–83, 86, 87	113–116, 128, 130, 134	148	161, 165, 166
	Discussion Papers	18	-	-	57, 62, 65	87	98
6	Special Publications	48, 49	52, 54	56, 58	63	68, 70	73, 75
	Documents	38	43, 51, 56, 59, 64, 69	76, 80, 101	104, 108, 111, 125, 127, 132, 133	141, 154, 155	160, 163, 168, 170, 171, 174
	Discussion Papers	17, 19, 20, 22–24	36, 40, 42	44, 49, 50	68, 72	80, 89	99, 105, 107, 111
Other <sup>a</sup>	Special Publications	-	-	-	61, 62, 65	67	73
	Documents	-	43, 47, 67	-	139	-	-
	Discussion Papers	-	27, 29, 41	-	54, 55, 67, 76	-	101

<sup>a</sup> Directorate, IT and OMD.



**Table C.2 Public CPB Memorandum numbers by sector and year, 2003–2008**

Sector	2003	2004	2005	2006	2007	2008
1	75, 76, 85	100, 101	108, 115, 127, 134	155, 168, 171	-	196, 198
2	55, 56, 60, 62, 71, 72, 74, 78, 79, 81, 82	86–88, 95–98, 104, 106	112–114, 116, 117, 119, 124–126, 129, 132, 133, 137, 147, 151	139, 141, 145, 146, 150, 152, 153, 157, 159, 162, 166, 173	178, 181, 182, 185–187	192, 197, 199, 200, 203–207, 209–211
3	57, 61, 63–69, 73, 77, 80, 83	90, 103	107, 109, 122, 123	138, 156, 158, 163	177, 184	194, 201
4	54	84, 94	121, 131	142–144, 148, 149	175, 176, 188, 190	202, 210
5	-	91, 92, 105	110	154, 172	-	193, 195
6	58	89, 93, 102	111, 120, 128, 130, 135, 136	140, 160, 161, 164, 169, 170, 174	180, 183, 189	191, 208, 212
Other <sup>a</sup>	-	94, 99	118	165, 167	179, 188	212

<sup>a</sup> Directorate, IT and OMD.



## Annex D Bibliometric analyses

The Centre for Science and Technology Studies (CWTS) of Leiden University has made two bibliometric analyses of CPB and CPB staff publications. One analysis investigates how the publications are cited in the worldwide scientific literature as represented by the Web of Science database (WoS). The second analysis counts the references to CPB in the parliamentary database Parlando. At present, the absence of benchmarks makes it hard to judge the outcomes in both cases. The outcomes do set standards for the outcomes of similar future evaluations of CPB work.

The full reports are available in electronic form. Here below are summaries.

### **Summary of *A bibliometric analysis of CPB publications***

by R. K. Buter and M. S. Visser, CWTS, Leiden University

The bibliometric analysis of CPB publications consists of two parts. One part deals with the CPB staff articles that have been found recorded in the WoS, the other part deals with the remaining CPB publications. The first part shows that the 95 CPB staff articles (two-thirds of the total of 147) found in the WoS have been cited 127 times (149 times, including author self-citations) in the period 2003–2008. In comparison with other publications in the same scientific fields as the CPB staff articles, this number is 0.69 of the world average. Confined to articles in the field of economics, the citation rate of CPB staff articles is 0.74 of the world average. There are no citation rates of similar institutes to compare this score to. Co-publications are mainly with authors affiliated with Dutch organisations; most citations to CPB staff articles are made by these authors. The second part of the analysis has found 210 citations to 101 of the 388 other CPB publications, an average of 0.54 citations per publication. Unfortunately, there is no natural benchmark to compare this number of non-WoS citations to.

### **Summary of *The parliamentary impact of CPB in 2001–2008: Central Planning Bureau in parliamentary documents*** (in Dutch)

by A. J. Nederlof, CWTS, Leiden University

The study counts the number of documents of the First and Second Chamber in the parliamentary database Parlando in which the terms CPB, CEP or MEV and variants thereof occur over the periods 2001–2004 and 2005–2008. It measures the *use* of CPB information by the references in the Official Parliamentary Reports (the equivalent of the Hansard of the English House of Parliament) and the Parliamentary Questions, and the *input* of CPB information by the references in all other Parliamentary Documents. From the first sub-period to the next, the number of references in all Parliamentary Documents has risen by 56%, from 1760 to 2750 (rounded to multiples of ten). On the input side the number of references has risen

by 72%, from 1270 to 2200, and on the use side by 14%, from 480 to 550. The number of Official Parliamentary Reports and Parliamentary Questions has risen by 39%, from almost 15,000 to almost 21,000. Hence, on the use side the share of CPB-citing documents has fallen from 3.2% to 2.7%. This fall need not imply a diminished importance of CPB information for the First and Second Chamber; it may reflect a greater interest in non-economic issues.

A recent study<sup>23</sup> has counted the references in Parlando to The Netherlands Institute of Social Research | SCP (SCP) during the period 2004–2006. Over the same period, the number of references to CPB is about twice that to SCP, both on the input side and on the use side. Differences in the tasks and sizes of the bureaus and in the methodologies of the studies hamper the comparison.

<sup>23</sup> Prins, A. A. M., 2008, Evaluation in plural. A quantitative analysis of use and users of the work of the Social and Cultural Planning Bureau 2004–2006 (in Dutch), report to KNAW.





## Annex E List of abbreviations

ABP	Algemeen Burgerlijk Pensioenfonds <i>(the pension fund of the Dutch government and educational sector)</i>
AER	Algemene Energieraad <i>General Energy Council</i>
AGE	Applied General Equilibrium
AGIR	Ageing, health and retirement in Europe (ENEPRI)
AIECE	Association d'Instituts Européens de Conjoncture Economique <i>Association of European Business Cycle Institutes</i> <i>Vereniging van Europese Conjunctuurinstituten</i>
ANCIEN	Assessing Needs of Care In European Nations
cao	Collectieve arbeidsovereenkomst <i>Collective labour agreement</i>
CBA	Cost-Benefit Analysis <i>Kosten-batenanalyse</i>
CBO	Congressional Budget Office
CBS	Centraal Bureau voor de Statistiek <i>Statistics Netherlands</i>
CEC	Centrale Economische Commissie <i>Central Economic Commission</i>
Center	Center for Economics Research, Tilburg University
CEO	Corporate Executive Officer
CEP	Centraal Economisch Plan <i>Central Economic Plan (yearly CPB publication)</i>
CEPR	Centre for Economic Policy Research, London
CEPII	Centre d'Etudes Prospectives et d'Informations Internationales, Paris <i>Centre for International Forecasts and Analyses, Paris</i>
CEPR	Centre for Economic Policy Research, London <i>Centrum voor Economisch Beleidsonderzoek, Londen</i>
CPB	Centraal Planbureau <i>CPB Netherlands Bureau for Economic Policy Analysis</i>
CPC	Centrale Plancommissie <i>Central Planning Commission</i>
CWI	Centrum voor Wiskunde en Informatica <i>Center for Mathematics and Computer Science</i>
D	Directie <i>Directorate</i>
Deltares	Dutch institute for Delta Technology

DEMSEL	Demographic uncertainty and the sustainability of social welfare systems
DG BUDGET	Directorate-General for Budget, EC
DG ENTR	Directorate-General for Enterprises and Industry, EC
DG RTD	Directorate-General for Research, EC
DG TAXUD	Directorate-General for Taxation and Customs Union, EC
DG TRADE	Directorate-General for Trade, EC
DIW	Deutsches Institut für Wirtschaftsforschung, Berlin <i>German Institute for Economic Research, Berlin</i>
DNB	De Nederlandsche Bank <i>Netherlands Central Bank</i>
DSGE-model	Dynamic Stochastic General Equilibrium model
EARIE	European Association on Research in Industrial Economics, Lausanne
EC	European Commission <i>Europese Commissie</i>
ECB	European Central Bank <i>Europese Central Bank</i>
ECN	Energieonderzoek Centrum Nederland <i>Netherlands Energy Research Foundation</i>
ECRI	Erasmus Competition and Regulation institute, Rotterdam
EMU	Economic and Monetary Union <i>Economische en Monetaire Unie</i>
ENCORE	Economics Network for Competition and Regulation, UvA
ENEPRI	European Network of Economic Policy Research Institutes
ESB	Economisch Statistische Berichten <i>(Dutch economics magazine)</i>
ESRI	Economic and Social Research Institute, Dublin <i>Instituut voor Economisch en Sociaal Onderzoek, Dublin</i>
ETLA	The Research Institute of the Finnish Economy, Helsinki
ETSG	European Trade Study Group
EU	European Union <i>Europese Unie</i>
EUR	Erasmus Universiteit Rotterdam <i>Erasmus University Rotterdam</i>
EUROFRAME	European Forecasting Research Association for the Macro Economy
FTE	Full-time equivalents <i>Arbeidsjaren</i>
GAMMA	Generational Accounting Model with Maximizing Agents (CPB model)
GDP	Gross Domestic Product <i>Bruto Binnenlands Product</i>



GP	General Practitioner
GTAP	Global Trade Analysis Project
HRM	Human Resource Management
IAEE	International Association of Energy Economics
ICES	Interdepartementale Commissie Economische Structuur <i>Interdepartmental Committee for Economic Structure</i>
ICT	Information and Communication Technology
IFS	Institute for Fiscal Studies
IMF	International Monetary Fund <i>Internationaal Monetair Fonds</i>
IT	Information Technology (also name of supporting staff unit of CPB) <i>Informatie Technologie</i>
IV	Instrumental Variables
IZA	Forschungsinstitut zur Zukunft der Arbeit, Bonn <i>Institute for the Study of Labor, Bonn</i>
JADE	Model for the Joint Analysis of Dynamics and Equilibrium (CPB macroeconomic model; later merged with SAFE into SAFFIER)
KNAW	Koninklijke Nederlandse Academie van Wetenschappen <i>Royal Netherlands Academy of Arts and Sciences</i>
KiK	Keuzes in kaart <i>Charting choices (a CPB publication)</i>
KiM	Kennisinstituut voor Mobiliteitsbeleid <i>Netherlands Institute for Transport Policy Analysis</i>
LEI	Landbouw-Economisch Instituut, Wageningen <i>Institute for Agricultural Economics, Wageningen</i>
LSE	London School of Economics
MEV	Macro Economische Verkenning <i>Macroeconomic Outlook (yearly CPB publication)</i>
NA	National Accounts <i>Nationale Rekeningen</i>
NBER	National Bureau for Economic Research
NEI	Nederlands Economisch Instituut, Rotterdam <i>ECORYS-NEI Economic research and consulting organisation, Rotterdam</i>
Netspar	Network for Studies on Pensions, Aging and Retirement
NIAS	Netherlands Institute for Advanced Studies
NIESR	The National Institute of Economic and Social Research, London <i>Nationaal Instituut voor Economisch en Sociaal Onderzoek, Londen</i>
NMa	Nederlandse Mededingingsautoriteit <i>Netherlands Competition Authority</i>

NTUA	National Technical University of Athens
NWO	Nederlandse Organisatie voor Wetenschappelijk Onderzoek <i>Netherlands Organization for Scientific Research</i>
NZa	Nederlandse Zorgautoriteit <i>Netherlands Care Authority</i>
OCFEB	OnderzoeksCentrum voor Fiscaal-Economisch Beleid <i>Research Centre for Economic Policy</i>
OECD	Organisation for Economic Cooperation and Development <i>Organisatie voor Economische Samenwerking en Ontwikkeling</i>
OEEI	Onderzoekprogramma Economische Effecten Infrastructuur <i>Research Programme on the Economic Effects of Infrastructure</i>
OMD	Ondersteuning Modelbouw en Databeheer <i>(unit of ) Modelling and Data Support</i>
OPTA	Onafhankelijke Post en Telecommunicatie Autoriteit <i>Independent Post and Telecommunications Authority</i> <i>(Dutch independent regulator of post and electronic communications)</i>
PBL	Planbureau voor de Leefomgeving <i>Netherlands Environmental Assessment Agency (successor of RIVM &amp; RPB)</i>
PL	Programmaleider <i>Programme Leader</i>
POP	Persoonlijk OntwikkelPlan <i>Personal Development Plan</i>
PSTN	Public Switched Telephone Network
RAM	Regionaal Arbeidsmarktmodel <i>Spatial Labour Market Model</i>
R&D	Research & Development <i>Onderzoek en Ontwikkeling</i>
RIVM	Rijksinstituut voor Volksgezondheid en Milieu <i>National Institute for Public Health and the Environment</i>
RPB	Ruimtelijk Planbureau <i>Netherlands Institute for Spatial Research</i>
RPD	Rijksplanologische Dienst <i>National Physical Planning Agency (precursor of RPB)</i>
SAFE	Short-term Analyses and Forecasts for the Dutch Economy (CPB quarterly macroeconomic model; later merged with JADE into SAFFIER)
SAFFIER	Short- and medium-term Analysis and Forecasting using Formal Implementation of Economic Reasoning <i>(CPB macroeconomic model created from JADE and SAFE)</i>

SCP	Sociaal en Cultureel Planbureau, Den Haag <i>The Netherlands Institute of Social Research   SCP, The Hague</i>
Sdu	Sdu Uitgevers <i>Sdu Publishers</i>
SER	Sociaal-Economische Raad, Den Haag <i>Social Economic Council, The Hague</i>
SH	Sectorhoofd <i>Head of sector</i>
TILEC	Tilburg Law and Economics Center
TNO	Nederlandse organisatie voor Toegepast Natuurwetenschappelijk Onderzoek <i>Netherlands organisation for applied scientific research</i>
TREIN	TRansition of Energy INfrastructure
UvA	Universiteit of Amsterdam <i>University of Amsterdam</i>
VKB	Verkorte beoordeling <i>(yearly performance evaluation of staff members)</i>
VoIP	Voice over Internet Protocol
VU	Vrije Universiteit, Amsterdam <i>VU University Amsterdam</i>
WAO	Wet op de Arbeidsongeschiktheidsverzekering <i>Disability Insurance Act</i>
WIOD	World Input-Output Database
WIFO	Österreichisches Institut für Wirtschaftsforschung, Wien <i>Austrian Institute for Economic Research, Vienna</i>
WTO	World Trade Organisation <i>Wereldhandelsorganisatie</i>
YPP	Young Professionals Programme
ZEW	Zentrum für Europäische Wirtschaftsforschung, Mannheim <i>Research Centre for the European Economy, Mannheim</i>



