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Changing Economic Expertise at the Dutch Central Planning Bureau 1945–1977

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Economics as a Public Science, Part I: The Economist's Ethos and Modes of Persuasion

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A Night Train in Broad Daylight: Changing Economic Expertise at the Dutch Central Planning Bureau 1945–1977

Un train de nuit en plein jour : l'évolution de l'expertise économique au Bureau central néerlandais de planification 1945-1977

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Abstracts

English Français

The Dutch Central Planning Bureau (CPB) is the most prominent scientific advisory body of the Dutch government on economic issues. By providing a macroeconomic framework the CPB plays an important role in the preparation and coordination of social and economic policy. With the figures and forecasts it offers to national media and politicians, the CPB is also an influential actor in public debates. In both instances, the expertise that the bureau offers is strongly based on the macroeconomic models it employs. By discussing two periods in the history of the CPB, this article will investigate how the CPB gained this important role in Dutch politics and what the relation is between its modelling practices and economic expertise. The first period deals with the CPB's initial attempts of gaining a foothold in policymaking circles from 1945 to 1955. The second period concerns the CPB's interventions in public debates on unemployment and the growth of the public sector in the 1970s. Making use of two theoretical notions from sociology, *policy device* and *public interventions*, I will argue that the introduction of new macroeconomic models was crucial to the impact of the CPB's interventions in both periods. Furthermore, I will argue that by targeting a broader audience in the 1970s, the CPB started to shift the mode of their expertise, from a facilitating role towards a watchdog role.

Le Bureau central néerlandais de planification (CPB) est l'organe consultatif scientifique le plus important du gouvernement néerlandais sur les questions économiques. En fournissant un cadre macroéconomique, le CPB joue un rôle important dans la préparation et la coordination de la politique sociale et économique. Par les chiffres et les prévisions qu'il offre aux médias nationaux

et aux hommes politiques, le CPB est également un acteur influent dans les débats publics. Dans les deux cas, l'expertise qu'offre le Bureau est fortement fondée sur les modèles macroéconomiques qu'il utilise. En examinant deux périodes de l'histoire du CPB, cet article examine comment le CPB a acquis ce rôle important dans la politique néerlandaise et quelle est la relation entre ses pratiques de modélisation et son expertise économique. La première période porte sur les premières tentatives du CPB de prendre pied dans les cercles politiques de 1945 à 1955. La deuxième période concerne les interventions du CPB dans les débats publics sur le chômage et la croissance du secteur public dans les années 1970. En utilisant deux notions théoriques issues de la sociologie, à savoir le dispositif politique et les interventions publiques, je soutiendrai que l'introduction de nouveaux modèles macroéconomiques a été cruciale pour l'impact des interventions du CPB dans les deux périodes. De plus, je soutiendrai qu'en ciblant un public plus large dans les années 1970, le CPB a commencé à changer le mode de son expertise, passant d'un rôle de facilitateur à un rôle de chien de garde.

Index terms

Mots-clés: Tinbergen (Jan), expertise, economic policy, economic planning, public economics, public debate

Full text

- 1 No other scientific advisory body in the Netherlands holds such sway over politics like the economic experts of the Central Planning Bureau (*Centraal Planbureau*, CPB).¹ Deeply embedded in the state apparatus, the forecasts and assessments of the CPB play an instrumental role in the development of new social and economic policies. Researching the influence of economists on government policy in 1984, sociologist Marie-Louise Bemelmans-Videc concluded on the role of the CPB that: “it is where the most important research takes place, and where, and above all, the framework is developed which provides the foundation of policies with a systematic character” (Bemelmans-Videc, 1984, 406).²
- 2 Outside of policymaking circles, the bureau is an important player in the public debate: providing figures for politicians and journalists; putting issues on the agenda or intervening in discussions through publicly available reports on a variety of subjects, from state pensions to educational policy. Justifying its role in the public debate the bureau has described itself as the gatekeeper of realism, economic feasibility, and sound facts within the public debate; making sure that false promises, misleading rhetoric and falsehoods regarding the economy do not enter the public domain. Or, as former director of the CPB, Gerrit Zalm, formulated this idea in more contemporary buzzwords: “The election of a Donald Trump-type for public office, or a Brexit, could never have happened in the Netherlands. We have institutions like the CPB that can single out and counter the fake news in our political debate.”³
- 3 In the performance of both roles the application of large scale macroeconomic models is central to the bureau’s *modus operandi*. It is a model that produces the policy scenarios on which basis policymakers design their measures. And it is the models that allow for strategic oversight of policies, ensuring their systematic character. Likewise in the presentation of their reports the CPB is keen to stress their figures are model-based, sometimes even going so far as presenting the model as a neutral arbiter on economic issues (Boumans, 1990, 51). Analysing the historical development of the relation between macroeconomic modelling and the mode of expertise of the bureau, this article investigates how the CPB came to play such a prominent role in Dutch politics, and what this role precisely entails.
- 4 The CPB’s role in policymaking and its role in the public debates did not emerge during the same period. In the 1950s the bureau started to assist public officials in the structuring of policymaking procedures, becoming integrated into the larger network of governmental bodies and advisory councils in the process. It was only in the 1970s that the CPB would fully take on a role in the public debate, adopting more coordinated strategies to get its messages across in national media. In both cases, the introduction of macroeconomic models proved to be crucial to the success of the CPB’s interventions in the political sphere. In the first case it was crucial in convincing policymakers to

collaborate with the CPB, while in the second, for getting across its message in the public discussion. In the first section of this article, I will discuss the CPB interaction with policymakers in the 1950s; in the second, I will delve deeper into the role the bureau played in discussions on economic politics in the 1970s. As I hope to show, the adoption of a new role did not only entail a shift towards a new audience, but also a shift in the form of economic expertise it provided: going from a facilitating role to policymakers in the 1950s, towards a role of a gatekeeper or watchdog over the public debate.

5 By discussing the role of models in relation to the influence of the CPB on Dutch politics, I do not only want to focus on the political context in which the bureau developed its mode of expertise, but also on the modelling processes itself. In that manner I will explore how these models are in part responses to political needs and how it is partly the design of the models themselves that determines their success in the political sphere. Doing so, I will draw theoretically from two bodies of literature. First from recent scholarship from the History of Economic Thought that make use of practice-oriented accounts and assigns a central role to the application of economics (e.g. Backhouse and Cherrier, 2017; Stapleford, 2017; Halsmayer, 2018). More specifically, I am conceptualising the model as an *artefact* and focus on how it travels from a milieu of academic economics into the sphere of politics. This process entails, as Verena Halsmayer puts it, following “all the shifts and changes in [the model’s] meanings, forms, and interpretations. ... Even if a model keeps its shape, it still changes when we engage with the narrative practices that accompany it.” (Halsmayer, 2018, 632) This also requires attention to the “spaces of speech” and the “inscription devices” that allow the model to travel and which cause shifts in meaning, form and interpretation. In order to better understand the modelling processes of the CPB, I will draw on archive material from the archives of the bureau itself. To see what narratives are constructed around the model, I will furthermore analyse the reports and news outlets containing the figures of the models under discussion.

6 The second theoretical source is literature from sociology and Science and Technology Studies. More specific, I will adopt two sociological notions to structure the history of the CPB in this article. In the first section, I will analyse the role of the macroeconomic model in terms of what Daniel Hirschman and Elizabeth Popp Berman call a *policy device* (Hirschman and Berman, 2014).⁴ Using this notion, the economic model can be seen as a heterogeneous assemblage that enables policymakers to *act on* a domain called ‘the economy’. Such assemblages, Hirschman and Berman write, “bring together people, knowledge, and material things in ways that turn the messy, endlessly complex world into a formal, calculative order that can be used productively” (Hirschman and Berman, 2014, 796). To formulate it differently, policy devices are objects that provide frames in which economic issues can be identified, as well as scripts that allow for adequate solutions to those issues (Callon, 1998).⁵ The use of these frames and scripts create what Alain Desrosières has called a *cognitive space*, a domain in which economic entities gain coherence and stability, enabling thinking and reasoning about them, and wherein specific types of thinking and reasoning gain legitimacy (Desrosières, 1992).

7 Subsequently, for my analysis of the CPB’s role as an economic authority in public debates in the second section, I will utilise the notion of *public interventions* as introduced by Gil Eyal and Larissa Buchholz (Eyal and Buchholz, 2010). The notion of public interventions allows for the description of diverse ways in which experts have an impact on politics, without focussing solely on public debates and the media in which these debates take place. Instead, the focus is placed on the role of epistemic communities, devices, figures and infrastructures that make public interventions by experts possible. Moreover, this framework allows for an analysis of what makes an intervention a success or not. Next to the already identified archival sources and publications, I will base the analysis of the CPB’s public interventions on articles in newspapers, magazines and economics journals on relevant economic issues in the 1970s. It should, furthermore, be noted that the two central notions, policy device and public intervention, are not mutually exclusive, but partly overlap and can be, as I hope to show, used as an extension of each other.

8 Lastly, there already exists extensive body of literature on the expertise of the CPB and its models, especially in Dutch. Moreover, there are some historical accounts that also take similar practice-based accounts of models as a starting point as this article does, although most of them do not go beyond the history of the CPB in the 1950s. For example: Adrienne van den Bogaard takes an Actor Network Theory inspired approach in order to explain how the model-based expertise emerged in the Netherlands; Arnold Wilts discusses the emergence of economic expertise in the Netherlands in relation to the formation of economics as a discipline, making use of Maarten Hajer's notion of *discourse coalition*; and Harro Maas discusses the turn to mathematical modelling techniques in the CPB and the establishment of a new form of economic expertise (Van den Bogaard, 1997; Wilts, 1997, Maas, 2010). The success of the macroeconomic model as a tool for policy is also discussed in a non-historical way by Mary Morgan and Frank den Butter; Annick de Vries, Willem Halffman and Rob Hoppe, who all place emphasis on the *boundary work* that establish a fruitful interaction between economist and policymaker (Den Butter and Morgan, 1998; De Vries, Halffman, and Hoppe, 2010). Building on above mentioned studies, this article attempt to extend a practice-oriented account of the history of the CPB into the 1970s. Furthermore, by making use of the notions of policy device and public interventions, I will explore, to a greater degree than these precedents, how the models of the CPB shaped the cognitive space in which reasoning about the economy took place, both by policymakers and in public discussions.

1. The Emergence of Model-Based Expertise, 1945-1955

9 Only three months after the liberation of the Netherlands in 1945, the newly appointed minister of Economic Affairs, Hein Vos, instructed his fellow Labour-Party member Jan Tinbergen to start the organisation of a new institute for scientific expertise on economic issues that would carry the name of the Central Planning Bureau. The founding of the CPB was part of the larger effort by Vos and prime minister Wim Schermerhorn to “order the economy”. The task of the newly founded bureau in ordering the economy was formulated in the bill *Preparations for the establishments of a National Welfare Plan* from 1946 as follows: “The CPB’s task is to design a National Welfare Plan, which will be regularly determined for the benefit of the coordination of governmental economic, social and financial policies.”⁶ These Welfare Plans became known as Central Economic Plans, published annually by the CPB. Estimating economic development, including the economy’s needs and preferences, these plans were intended as the basis upon which economic issues could be discussed and policies could be designed and implemented. For Tinbergen public discussion of economic issues was of great importance for the democratic legitimacy of economic policies, and the availability of reliable numbers crucial for the “rationality” of those discussions (CPB, 1951, 6). In addition to its tasks of monitoring and informing, the Plans also contained policy recommendations. Looking back at the end of his life, Tinbergen formulated this last task as follows: “to scientifically determine [the totality of] preference within society. And on the basis of those preferences, recommending measures that would result in the highest welfare” (quoted in Passenier, 1994, 40).

10 In order to perform those three tasks, the CPB used a national accounting-like framework to draft their Central Economic Plans, the so-called national budgets. The mutation of each budget item was determined on the basis of time-series data. And these mutations were, in turn, used to produce forecasts of the Dutch economy. In the booklet that would form the actual Central Economic Plan, these national budgets were presented in tables combining the preliminary data of the present year, with forecasts of the following year (see figure 1 for an example). The forecast for the next year given in the tables was actually the forecast of the state of the economy based on the adaptation of all the CPB’s recommendations by the government. In this manner the

bureau incorporated its recommended measures into its forecasts, making forecast and recommendation less distinguishable.

Figure 1. 'Table IV.i. Abbreviated Confrontation between Means and Requirements'

Tabel IV. 1. VERKORTE CONFRONTATIE VAN MIDDELEN EN BEHOEFTE
1947¹⁾, 1948 EN PLANCIJFERS 1949 (in mld gld)

Middelen	1947	1948	1949	Behoeften	1947	1948	1949
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nationaal product (tegen factorkosten):				Gezinnen, consumptie .	9,32	10,17	10,30
van bedrijven ²⁾ . . .	9,70	10,85	11,19	Bedrijven, netto-investe- ringen	1,81	2,04	2,23
van de overheid . .	1,58	1,43	1,42	Overheid:			
Kostprijsverhogende be- lastingen minus sub- sidies	0,67	1,22	1,69	netto materiële con- sumptie	0,82	0,80	0,81
Tekort	1,63	1,01	0,61	ovrige consumptie .	1,53	1,43	1,42
				netto-investeringen .	0,05	0,07	0,15
Totaal	13,58	14,51	14,91	Totaal	13,58	14,51	14,91

¹⁾ Voor de verschillen met de cijfers van het C.B.S. zie bijlage II.

²⁾ Incl. netto-inkomsten uit het buitenland.

An example of an earlier method of presenting the forecasts of the Dutch economy in the Central Economic Plans. The 'Plan-figures' (*plancijfers*) contain a forecast of the economy in a scenario where the government was to adopt all the measures that the CPB recommended. These figures are presented in the columns with the heading '1949' (4 and 8). No other forecasts were provided in the table. From *Centraal Economisch Plan 1949* (The Hague: Staatsdrukkerij Uitgeverijbedrijf, 1949, 20)

- 11 The plans were, however, not a success. Ministers were inclined to use the data they received from their ministry, and policymakers were not keen on giving up their data producing activities. Moreover, ministers tended to regard the CPB's recommendations as unwanted interferences in their own policies (Passenier, 1994, 81-99; Camphuis, 2009, 63-65; Don, 2019, 63-65). To make matters worse, the cabinet did not want to publish the Central Economic Plans, as they considered the data in those plans to be politically charged, thus making public discussion on the basis of the figures impossible (Maas, 1986). It was clear that the figures of the CPB were still very much contested, frustrating Tinbergen's ideal of informed public discourse on economic issues. Telling in this case was the decision made by minister of economic affairs Jan van den Brink not to involve the CPB in the preparation and implementation of his industry investment agenda, the so-called Industrialisation memorandum (*Industrialisatienota*), one of the most prominent economic policies of the 1950s (De Hen, 1980, 267-290; De Liagre Böhl, Nekkers, and Slot, 1981, 218-236).
- 12 Generally speaking, the political climate was shifting at the end of the 40s. With the immediate economic dangers of the aftermath of World War Two averted, and the Dutch economy slowly showing some recovery, a strong call for ending state control on the economy became imminent (De Liagre Böhl, Nekkers, and Slot, 1981; Mellink, 2017). After the 1946 elections, Vos lost his position as minister of economic affairs. The new minister, Gerardus Huysmans and his successor Jan van den Brink, both members of the Roman-Catholic People's Party, opted for a different manner of organising the economy. They installed a law on organised businesses and labour organisations in which the coordination of the economy should commence through the deliberation of representatives of both businesses and unions. The central platform for this deliberation was called the Social and Economic Council (*Sociaal-Economische Raad*).⁷
- 13 With the founding of the Social and Economic Council in 1950 the Dutch government adopted a series of economic measures that would determine the social economic politics for the coming decade. With the negative impact of the Korean War on the Dutch economy in 1950, the government deemed it necessary to introduce wage-moderation, a measure soon approved by the Social Economic Council, as well as a less rigid system for price-control. Additionally, the Council stressed the importance of full employment. On top of these measures, the government added another three spearheads of economic policy: keeping equilibrium in the balance of payments, keeping consumption relatively low, and introducing an industrial investment agenda.

Except perhaps for the measure of wage-moderation,⁸ none of the policies were CPB recommendations (Van Zanden, 1998, 120-130).

1.1. Seeing the Macroeconomy, Towards a Model-Based Expertise

- 14 With the economic politics of the government set in stone, a strong advisory role of the CPB in terms of policy recommendations seemed no longer viable. Yet, in this new institutional set-up, the bureau was quick in adopting new services to provide, while it succeeded in establishing its figures as authoritative and neutral. Both feats were accomplished by developing macroeconomic models and placing them at the centre of the expertise the CPB was offering. As it turned out, the Social and Economic Council and a newly founded committee for high-level public officials, the Central Economic Committee (*Centraal Economische Commissie*), formed the perfect audience for these models.
- 15 Given Tinbergen's reputation as a pioneer in macroeconomic modelling, modelling beyond the simple relations in the national budget was remarkably absent in the early years of the CPB. Indeed, scientific employees of the bureau were quite vocal about their hesitance of employing modelling for the drafting of the Central Economic Plan. For example, in a research memorandum from 1948 titled *On the Use of Macroeconomic Calculation for Forecasting*, CPB employee L. Lijklema noted that the use of models had serious drawbacks in "the supposed linear relations" and "the assumption of an economic structure".⁹ The measured correlation gave too little evidence for the existence of these relations and structures. And such relations were, according to the author, heavily dependent on "psychological factors, which cannot be put into a mathematical straitjacket". In his critique, Lijklema explicitly references the Dutch economist Jan Goudriaan who had already criticised Tinbergen in 1936 when the latter had presented his first macroeconomic model of the Dutch economy to the Society for Economics and Statistics. Goudriaan unfavourably compared this model to a night train: just as in a night train the traveller cannot see the route the train takes, the model produced results of which the user had no idea how the model had derived them.¹⁰ This critique was approvingly echoed by Lijklema.
- 16 It were specific policy concerns of the Social and Economic Council that pushed the CPB towards more model-based work. From 1949 to 1951 there was much talk among political organisations of reorganising the social security system and introducing a system of social insurances (Van Griensven, 1997). The Social Economic Council tasked the CPB with providing an estimate of what the economic impact of such policies could be. It was for these estimates that the CPB decided to employ a macroeconomic model for the first time. The choice was very much prompted by the requests themselves, as the aim of the forecasts was not, like previous CPB policy advice, a correction of the course of the economy, but rather a reaction of the existing system on the introduction of new elements. For such a purpose it was more convenient to work with a model that provided a more or less comprehensive set of relations within the economy, as the influence of the policies on each aspect of the economy could not be calculated independently. Macroeconomic models thus provided the ultimate tool for seeing the economy as an interconnected system, and allowed for a more precise calculation of the effect of government policies. As Tinbergen put it in the introduction of the Central Economic Plan of 1951:

the usefulness of these figures is ... that an expression is given to the ... interdependence in the national economy [volkshuishouding]. After all, it is unthinkable that a good understanding of government policy can be obtained if one is not constantly aware of this interdependence (CPB, 1951, 7).

- 17 Using small macroeconomic models as policy devices, the policymaker and politician would thus be able to gain "awareness" of the interdependences within the economy which was crucial to adequately judge economic policy. Speaking with Mary Morgan, it

can similarly be said that using the tools of the CPB, the policymakers and politicians were able to visualise the macroeconomy (Morgan, 2011). Policymakers, in particular, started to appreciate the figures of the bureau more and more, precisely because it allowed to view the economy as a cohesive whole and in a systematic way. When discussing the influence of economists on government policy, Bemelmans-Videc, concluded that one of the main CPB contributions to policymaking was precisely this. One of her interview subjects put it in the following way: “Relations... is what forms the background, a frame; gradually it becomes a piece of experience. ... With the help of techniques and models you could indicate what the development is going to be, where the bottlenecks are” (Bemelmans-Videc, 1984, 376). The models of the CPB thus created a cognitive space in which economic issues could be made visible, became objects of discussion, and in which solutions to these issues could be formulated.

18 Given that these models were not only intended for economic experts, but also for policymakers and politicians, the CPB attempted to make the use of them as simple and easy as possible. As Tinbergen stated: “the models must be accessible not only to the experts. But also ... to those for whom the experts work: members of the executives and parliaments of the countries concerned” (Tinbergen in the introduction of Van Duijn, 1952, 5). In this sense, Tinbergen continued his vision for a broad political function for the CPB, in which economic expertise should first and foremost facilitate a rational public discussion, and the activities of the bureau should be as transparent as possible. It was also a way to circumvent the critique levelled at macroeconomic modelling by Goudriaan. Moreover, since the models were to be kept simple, models had to be issue specific. Which part of economic reality had to be simplified and how depended on the purpose of the model, and on the specific issue it had to address. Such considerations were, according to Tinbergen, the art of modelling.

1.2. Uncertainty, Decision Models and Policy Scenarios

19 Another opportunity for the CPB to take on a new role appeared within the newly found Central Economic Committee. This committee was composed of high-ranking public officials and tasked with the preparation of policies and discussion papers for the Council of Economic Affairs (*Raad voor Economische Aangelegenheden*), the latter being a sub-meeting of the cabinet meetings, attended by the ministers of finance, social affairs and economic affairs. The Central Economic Committee was initially founded in order to facilitate increased coordination between the ministries of finance, economic affairs and social affairs with the purpose of counter the consequences of the before-mentioned Korea Crisis (Van Griensven, 1993). It would continue this coordination between the ministries afterwards. Apart from the Secretary-Generals and other high officials from those ministries, the director of the Dutch Central Bank and the CPB were also members of the committee. The role that the adopted within the working group was determined more or less by the nature of the crisis the committee was to address initially. The development of the Korea Crisis was deemed very uncertain, and this was the reason that the bureau decided to carry out multiple forecasts of the Dutch economy—from a very grim outlook to an optimistic one allowing the committee to work out multiple possible policy scenarios. Although the single figures the CPB had been using up to that point were distrusted by the public officials, the multiple forecasts were received positively and contributed greatly to the success of the measures proposed by the committee. This success, as well as the agreeable cooperation between policymakers and the CPB within the committee, inspired the bureau to adopt a new framework for their Central Economic Plans (Maas, 1986; Don, 2019; Van den Bogaard, 1997, 180-186).

20 The new format was also inspired by theoretical developments within the bureau itself. In 1951, an internal memorandum by Tinbergen was circulated in which working with forecast scenarios was further theorised in a formal economic manner.¹¹ He based his approach on Ragnar Frisch’s work on managing the economy through calculating

preferences and decision making, adopting his notion of a *decision model*. The main issues that Frisch addressed with his decision models related to how the economy could be managed in a more democratic fashion. To that end, Frisch's model incorporated the preferences of policymakers, producing multiple forecast outcomes that could, in theory, be discussed in a public debate. Similar to Tinbergen, Frisch was here concerned with the public nature of economic expertise, considering democratic support vital to the success of economic policy (see for example Frisch, 1962).¹²

21 The main question that occupied Tinbergen in his research memorandum was how a government would decide what policies to use (in his terminology *instruments*) to what ends (*goals*, as Tinbergen called them). Although it was clearly Tinbergen's aim to give policymakers and politicians freedom in choosing the goals and the instruments, he did develop a formal model in order to achieve a certain efficiency in the instruments. Tinbergen considered it the democratic responsibility of politicians to ensure the effectiveness of their policies; a responsibility the CPB was eager to assist in. The goals then should be formulated by the government—more specifically the cabinet—in terms of quantitative variables that are part of the model provided by the economist. The instruments are also variables of the same system. The right instruments that should be used as a means of achieving those goals can subsequently be calculated on the basis of four factors: (1) the preference of the cabinet for certain instruments; (2) available data on the variables; (3) boundary conditions (also expressed in equations, for example the balance of payments); (4) 'outside' variables (also confusingly called 'irrelevant variables'), such as world trade and inflation. The model then rendered multiple suitable instruments or combinations of instruments out of which the cabinet could then choose. This model would appear a year later in a more extended version in his *On the Theory of Economic Policy* (1952).

22 Perhaps the method of choosing aims and instruments in the decision model was not the most relevant for Dutch policy making since, as described above, most of the economic policies were already fixed. More applicable was the method of finding a way to combine the uncertainty inherent in the use of specific instruments with the preferences of policymakers, which provided a way to order the policy options, from more to less desirable. The uncertainty of an instrument depended on the availability of data on specific relations and 'outside' variables. Policy scenarios that relied on more uncertain instruments were deemed less desirable than more certain variants—Tinbergen even considered such ordering "objective", in contrast to the "subjective" preferences of the policymakers (Van den Bogaard, 1997, 180-186). The decision model thus formed a policy device which created a framework in which the drafting of policies consisted of ordering and evaluating alternatives, in which each policy should be judged by its efficiency and probability. The decision model as a policy device also provided a method of aggregating efficiency with uncertainty, thus becoming the ultimate measuring stick for policies.

23 Using decision models yielded multiple forecasts similar to the ones the CPB had previously delivered in the Central Economic Committee during the Korea Crisis. Apart from the method of combining preference and uncertainty factors in one forecast, the presentation of the policy scenarios in the Central Economic Plans was also crucial to its success within policymaking circles. Instead of presenting the present state and one forecast within one table, as the bureau had previously done, the plans now contained multiple policy scenarios (three to ten alternatives) and their estimated effects within one table (see figure 2 for an example). The overview of the present state was removed and replaced with a forecast containing a scenario of the Dutch economy in which no new policies would be adopted. With all scenarios in one table, it was easy for the policymakers to compare the alternatives and to choose their most preferred combination of policy instruments. Over time these tables became such a success that policymakers started to refer to them as the "railway timetables" ("spoorboekjes") of the CPB. Just like a train passenger, the policymakers would choose their destination (the goal variable) and then look at the timetable in order to find out which possible trains (the instruments) they could take to get there, and choose their preferred route (Den Butter, 2011). As one policymaker would remark years later when working with the railway tables became an established practice: "It makes ... the discussion much easier

... it's all neat and tidy and we all know what we are talking about and what we should think about when we have to take or discuss certain measures ... makes the discussion much clearer" (Cited in Bemelmans-Videc, 1984, 482).

Figure 2. 'Table III.2. Overview of the Principle Outcomes of the Alternatives for 1952'

Omschrijving	Eenheid	1951	1952, alternatieven:										
			I (3)	II (4)	III (5)	IV (6)	V (7)	VI (8)	VII (10)	VIII (11)			
Veronderstellingen:													
Aantal werklozen	1000 pers.	93											
Invoerprijspeil	1951 = 100	100	100			100					105		
Buitenlands prijspeil van met Nederlandse export concurrerende goederen	1951 = 100	100	100									103	
Autonome uitvoerstijging voor goederen	uitvoer goederen 1951 = 100												
Netto investeringen van bedrijven incl. voorraadvorming, (in prijzen van 1951)	mld gld	2,80	2,95	2,65	2,95	2,65	2,95	2,65	3,25	3,25	2,95	3,25	2,95
			5			10			10			15	
Uitkomsten:													
Nationaal inkomen tegen factor-kosten	mld gld	16,70	17,28	17,16	17,32	17,20	17,20	17,20	17,75	17,63	17,79	17,67	17,67
Uitvoer	"	10,80	11,81	11,77	12,19	12,15	12,15	12,15	12,36	12,32	12,74	12,70	12,70
Invoer	"	10,80	11,93	11,71	12,18	11,96	11,96	11,96	12,59	12,37	12,84	12,62	12,62
Saldo betalingsbalans, lopende rekening	"	—	-0,12	+0,06	+0,01	+0,19	+0,19	+0,19	-0,23	-0,05	-0,10	+0,08	+0,08
Productie per werknemer	1951 = 100	100	105,7	104,3	107,4	105,9	105,9	105,9	106,7	105,3	108,4	106,9	106,9
Reële consumptie	1951 = 100	100	101,8	101,4	102,5	102,1	102,1	102,1	100,2	99,7	100,8	100,5	100,5
Prijsniveau van consumptiegoederen	1951 = 100	100	99,0	99,2	98,1	98,4	98,4	98,4	102,4	102,7	101,6	101,8	101,8

This table is a good example of how the CPB presented their forecasts of policy alternatives within one chart, allowing for easy comparison. The upper half of the table contains the presumptions on the economy and the lower half the outcomes. The roman numerals (I up to VIII) represent the different policy alternatives. From *Centraal Economisch Plan 1952* (The Hague: Staatsdrukkerij Uitgeverijbedrijf, 1952, 32)

Since the principles of the economic policies were already in place, the main task of policymakers was to adjust those policies with regard to new economic developments,

e.g. to increase the amount of money spent on a policy, or to prioritise specific policies over others. For example, one of the principles of social-economic policy was full employment, and in order to combat a rising unemployment rate when it occurred, policymakers would usually adjust government expenditure in order to boost the aggregated demand of the Dutch economy, resulting in more production and consequently more employment. This economic policy is often called Keynesian demand management (Schmelzer, 2016, 190). The Central Economic Plan in a new style contributed to and reinforced this practice, not only by incorporating the preferences and uncertainty in forecasts which were needed to adjust the policies accordingly, but the detail figures also offered a guideline on how to adjust those policies, i.e. which one should be prioritised or how much money should be spent on them. The tables of the plans thus framed the actions of the policymakers by reducing the options for making new policies into specific scenarios provided by the CPB and turning the process of policymaking into a more ordered affair.

25 This emphasis on scenarios and especially the detailed figures they contained had another effect. As the tables of the Central Economic Plan allowed for comparison of the different scenarios, arguments in favour of this or that scenario came down to having the right number. Reasoning based on the use of figures from the Central Economic Plans started to form a dominant form of reasoning within the Central Economic Committee and the Social and Economic Council. Sometimes differences between these numbers could be very small, which often resulted in bickering over the second decimal. As the former minister of economic affairs, Koos Andriessen, would remark in an interview with Arjo Klammer concerning discussions within the Social Economic Council: “we have the tendency to call upon the authority of the figures if there is a clash of ideas.” (Klammer, 1990, 58). Similarly, a respondent in Bemelmans-Vidéc’s study remarks: “The policy requires figures; you can’t say: prices will rise between 6 and 12%; that becomes 8 or 9%” (Bemelmans-Vidéc, 1984, 433). To speak with historian Theodore Porter, this ‘culture of quantification’ was very much propagated by the use of ever-growing macroeconomic models which were better suited to render more precise predictions (Porter, 1996).¹³ As Hirschman and Berman would put it, the economy thus became a “calculative order”.

1.3. Large-Scale Macroeconomic Models

26 With the success of the railway timetables, the CPB started to integrate their model-based advisory task on specific issues, such as unemployment insurance, with their advisory role of providing model-based scenario forecasts. This integration resulted in work on one large-scale model that would generate more precise forecasts and could be applied to multiple issues. The first of model of this kind was published in 1955 as part of the appendix of the 1955 Central Economic Plan (CPB, 1955, 110-119). Working with large models meant a change of practice within the bureau, as well as a change of expertise ideal. Within the bureau, the economic advisory practices started to revolve around the big model, either developing sub-models for specific issues that could be integrated into the larger framework of the model or running specific policy questions through the main model. As former employee Anton Barten would later put it: “The staff became model minded. It also homogenized their vision of the working of the economy” (Barten, 1988, 59). A bigger model also meant a more complex model. The model used for the social policies and decision models from 1952 consisted of ten and twelve equations, the 1955 model already consisted of 27, and quickly grew bigger. This meant that Tinbergen’s ideal for developing models intended for use by politicians and policymakers could no longer be adhered to. The models were so complex that only CPB-employees could operate them.

27 This was not the only development that gradually obscured the activities of the bureau. Even if the decision models were aimed at more democratic engagement with macroeconomic forecasting and helping out in the politician’s representative responsibility, the reality was that larger model generated too many policy options to include in the Central Economic Plan. Although the choice of which scenarios to include

and which to exclude was dependent on the discussions the CPB had with the Central Economic Committee, choosing options was not a formalised process and often just as well depended on what the bureau's economists thought economically feasible. Moreover, the main discussion partners of the CPB had become the Social and Economic Council, and the Central Economic Committee. Neither council nor committee was a democratically elected body and consequently the openness and publicity of the CPB's activities were diminishing.

28 Another effect of the use of large-scale models was a shift in the debates on economic policy and the exclusion of certain topics. With an increasing reliance on models for the debates within the Social Economic Council, the validity of macroeconomic reasoning, as for example countering unemployment through government expenditure, or wage moderation, was no longer questioned. These fundamental questions on what kind of economic policy was desirable, which is what Tinbergen called "qualitative politics", were excluded by the model, focussing instead on the efficiency and uncertainty of these policies, which is what Tinbergen called "quantitative politics" (Tinbergen, 1952, chap. 1). To use a notion by the philosopher Bruno Latour, the model *black boxed* the more fundamental assumption in the debate on economic issues, that is to say, the matters were settled and disappeared into the background (Latour, 1988); questions on the desirability of the consumption moderation, equilibrium in the balance of payments, or full-employment, were rarely discussed after 1951.

29 The shift towards a form of expertise based on macroeconomic models came about through the interaction the CPB had with various audiences: most prominently the Social and Economic Council and the Central Economic Committee. Models were meant as tools or, in Hirschman and Berman's term, policy devices. Yet the workings of these devices remained for the most part obscure to its users. This meant that, despite early reservations and initial caution, the CPB's macroeconomic models had become what Goudriaan had criticised Tinbergen for in 1936: a night train. And although the policymakers now had timetables to plan trips, the trains they used were still very much night trains, i.e. the working of the trains were completely obscure for the ones who made use of them. Moreover, the desired interaction of the CPB's with the public debate became less and less pronounced when the bureau started to rely more and more on macroeconomic models.

2. Macroeconomic Models and the National Media: Unemployment Debates in the 1970s

30 With the start of the 1960s, the core economic policies of the Netherlands began to change. Wage moderation gradually ended, the Netherlands was experiencing an economic boom and the social security system was expanded. The constellation of councils, committees and bureaus involved in the preparation of economic policies, however, remained largely in place. The Social and Economic Council was still the main platform for the discussion of economic issues, and the Central Economic Committee the most important organisation for coordination between the ministries involved with social-economic policy. The CPB likewise continued to offer its model-based expertise to both institutes. Yet under the pressure of a new economic recession and the emergence of new ideas on the economy, this constellation was to shift in the 1970s. The relevance of the Social and Economic Council diminished and the CPB broadened its target-audience to include not only policymakers and politicians, but also the general public. The latter indicated a change in the form of expertise that the CPB provided: it was no longer just the provider of policy alternatives and assessor of scenarios, but also the "watchdog" of the public debate, determining what was feasible and what was not.

31 In writings of the CPB, the general public was featured previously as an ideal audience for economic expertise, rather than an actual public they had a concrete

relation with. In order to analyse further how this relation with a concrete general public was established, I will apply the notion of *public intervention* as introduced by Gil Eyal and Larissa Buchholz, and later expanded in an article by Eyal and Moran Levy (Eyal and Buchholz, 2010; Eyal and Levy, 2013).¹⁴ Building on the work of, amongst others, Latour they argue that the public sphere should not be seen as “an agora populated by reasonable citizens” but rather as constructed through “techniques, instruments, demonstrations, figures, charts and numbers” (Eyal and Levy, 2013, 227-228). Instead of conceiving the public sphere as one unified space, Eyal and Levy argue that this sphere consists of multiple *channels*, or as Latour puts it: “the frail conduits through which truths and proofs are allowed to enter the sphere of politics” (Latour, 2005, 9). Techniques, instruments, demonstrations, etc. are then materials which are used to constitute a culture or institute in which these truths and proofs can circulate. Truths and proofs that successfully enter the sphere of politics can then be considered a public intervention. In this section, I argue that in the debates on unemployment that ensued in the Netherlands in the mid-70s, macroeconomic models can be theorised as a technique that helped to establish multiple channels, allowing for a series of successful public interventions.

2.1. The Growing Public Sector and Unemployment Problems

32 From the end of the 1960s to the mid-1970s, a group of economists of neoliberal ilk became increasingly vocal, both in the community of academic economics and national media. What brought this group together was a shared group of issues, arguments and images, such as: a collective worry about the expanding state apparatus; similar academic economic arguments about how the growth of the public sector relative to the private sector would have detrimental effects on the economy as a whole; and a shared political doom scenario in which the private sector would be swallowed by the state, ending free enterprises for good. In short, they formed what Eyal and Levy, following political scientist Peter Haas, call an *epistemic community*. That is to say, a community created and shaped by shared ideas, instruments, techniques, outlets and meeting places within which knowledge can develop and be circulated. The fostering of such a community is crucial for ideas of that group to compete with other ideas, and to bring those ideas within the political sphere (Eyal and Levy, 2013, 226). Prominent among this epistemic community were professors from Tilburg University, Theo Stevers and Dick Schouten, Floor Hartog from the University of Groningen and to a lesser extent Arnold Heertje from the University of Amsterdam (Lansbergen, 1980, 38-43).¹⁵ Already in 1977, the economist Hans van den Doel noticed that the argument that markets would be more efficient in satisfying individual preference than the government was largely absent from the writings of this group (the writings of Hartog are an exception here). Yet, according to Van den Doel, it was this argument that constituted their underlying world view (Van den Doel, 1979, 60).

33 A good example of the writings of this group is Stevers’ book *Openbare Financiën en Economie* (Public Finance and Economics) from 1971. Stevers argued in an academic style for a technical point in economic policy, namely the restriction or diminishing of the costs of social insurances. According to Stevers, growing social insurances would lead to stabilisation, if not a decrease, in spendable income for workers even with a growth of wages. More government expenditure, including the social insurances, would lead to higher marginal income tax; combined with the ever-increasing demands for higher wages by unions, this would eventually lead to an inflation spiral. Such a situation would only be sustainable if the private investments kept up. But according to Stevers it was precisely this investment rate that was under pressure, as businesses experienced a decrease in the returns of investments (Stevens, 1971, 282-285). Arguments with similar structure can also be found in the writing of Schouten and Heertje for example (Heertje, 1970; Schouten, 1974).¹⁶

34 In articles intended for a broader audience, the same common issues and ideas can be found. For instance, in an article for *De Volkskrant* (one of the biggest daily newspapers of the Netherlands) from 1976, Stevers repeats his worries for the disastrous consequences the expansion of the public sector could have in a more urgent tone. The growth of the public sector can only have two outcomes, he argues, social chaos, because of a high level of unemployment, or the complete governmental take-over of all economic enterprises. The latter option would then automatically lead to “the trampling of personal freedom”. Under the present circumstances Stevers warns, “the instalment of a leftist dictatorship would be the most likely outcome” (Stevens, 1976). Similar bleak visions can, for instance, be found in an interview with F. Hartog in the Magazine *Haagse Post* in 1973, and in articles by Heertje from 1974 (Nypels and Tamboer, 1973; Heertje, 1974).

35 At the end of the 1960s and early 1970s, very little people picked up on the warnings of Stevers and company. Within economists’ circles, the group formed an outlier, and among the general public probably even fewer people took notice. In terms of public interventions, they had too little material to build a larger community; moreover, academic publications and newspaper articles proved to be too weak a mode of intervention for these worries to actually enter the political sphere, i.e. to be put on the agenda in parliament or at cabinet meetings. Journals, papers and magazines were, however, not the only outlets through which the message of this epistemic community could travel. Among its associates, the group had some high-ranked public officials, most prominently Frans Rutten of the ministry of economic affairs, who later became Secretary-General in 1974.¹⁷ Rutten was very willing to bring the concerns regarding the public sector into the meetings of the Central Economic Committee, of which he was the secretary from 1969 onwards. On the committee, Rutten was supported by Coen Oort, the Treasurer-General of the ministry of finance, and the president of the Dutch Central Bank, Jelle Zijlstra, who was also concerned with the public budget, albeit for different reasons. Although the CPB took these voices seriously—especially the CPB-director Cees van den Beld was very sympathetic towards Rutten and Zijlstra’s arguments—the bureau struggled to find ways in which the worries about the growing public sector could be modelled.¹⁸ Problems such as the rising inflation and the reduced returns on investment were framed as problems of overheating of the economy.¹⁹ Such framing was at odds with the narrative that Stevers and Rutten were presenting since they considered the economy’s problems as structural rather than conjunctural. In the end, the negative effects or potential downside of a growing public sector did not end up in the scenarios of the Central Economic plan; thus the issue failed to gain traction among the rest of the community of policymakers.

36 Speaking with Eyal and Levy, the large-scale macroeconomic models that the CPB used for generating policy alternatives and scenario assessments had become so integral to the policymaking process that it formed a channel for public interventions on its own. That is to say, a community of economic experts (the CPB in this case) that can get their proofs and truths across relatively easy through a system of instruments and techniques (such as decision models, national accounting techniques and time-series data), figures and graphs (as those provided in the Central Economic Plans). Rutten and supporters therefore could not rely on a model-based channel of the CPB to pose the expanding public sector as a serious political problem; and lacking the models as instruments severely obstructed Rutten, Oort and Zijlstra’s efforts.

37 However, concerns for the expanding public sector did not disappear, and only increased when the Labour Party and Roman-Catholic People’s Party, together with some smaller parties, formed a new centre-left cabinet led by the Labour leader Joop den Uyl in 1974. The rise of New Left at the end of the 1960s had pushed the Labour Party gradually to the left, and when Den Uyl took office he led what was probably the most left-leaning cabinet in Dutch parliamentary history (Hellema, 2012, 150-152). The coalition agreement, which became famous under the slogan of “the redistribution of power, income and knowledge”, chose a completely new economic outlook to counter the rising inflation rate of the early seventies than the ones proposed in the Central Economic Committee.

38 The economic situation became more complex when the Organization of Arab Petroleum Exporting Countries installed an embargo against those countries who supported Israel during the Yom Kippur War in October of 1973, which included the Netherlands, resulting in what is known as the oil crisis. The crisis hit the Dutch economy particularly hard. The unemployment rate, that had already been rising steadily since the start of the seventies, experienced a sudden spike in the aftermath of the crisis (Van Zanden, 1998, 160-167). Den Uyl initially reacted with a package of public investments, hoping to boost the economy. Although receiving praise at first for his quick action by the Dutch press, and also internationally by OECD, the economy was very slow to recover. Before long, the question whether the cyclical-oriented measures by Den Uyl were the right ones became a hotly debated topic. The uncertainty of the economic situation put extra pressure on the CPB to come up with new models to explain the rising unemployment.

2.2. Neoclassical Growth Modelling

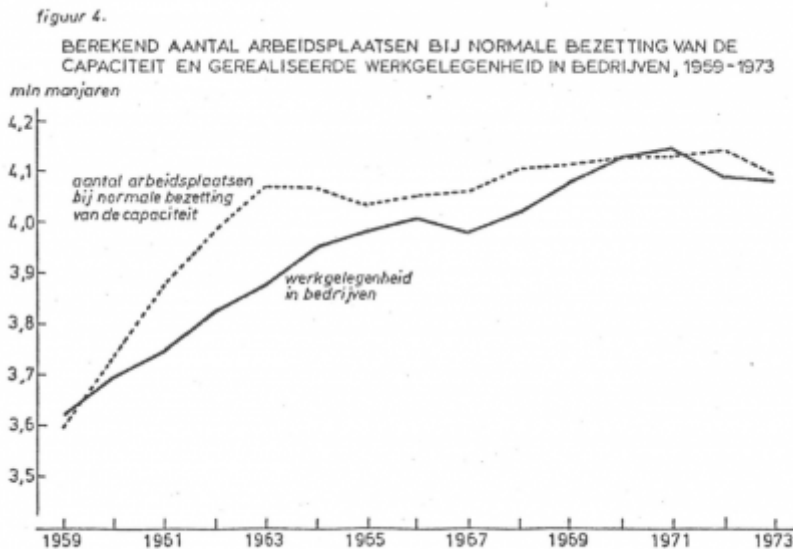
39 The new approach the CPB took with regard to the rising unemployment was neoclassical growth modelling based on the work of Robert Solow. This was a modelling approach the bureau had been researching since the mid-sixties. Although there was a pronounced wish within the board of the bureau to use elements from growth modelling in their main large-scale macroeconomic model, integration proved difficult. In practice the theory was only used to model specific issues or sub-sections of the economy (Barten, 1988, 66-67; Zalm and Verbruggen, 1993). The impetus to apply growth modelling to the unemployment problem came from the board's same wish for the integration of modelling techniques. Van den Beld, the director of the CPB, instructed employees Hok-Soei Tjan, who had previously been working on growth modelling in the context of assessing the economic consequences of environmental pollution, to work on a model of the development of unemployment. According to Van den Beld, what prompted the approach was the discussion on the so-called vintages approach. As he would later put it: "We came across an account on vintages in a journal. They [the writers of the article] applied those on this or that field. Then I said to Tjan and Den Hartog: this is how it should go. I could've done it myself, but I thought it would be nice if someone else could shine in the limelight instead" (cited in Passenier, 1994, 220).

40 The vintages approach had been derived from a certain way in which Solow's notion of technical change could be modelled. One of Solow's main contributions to the theory of growth was the idea of technical change, a notion that could explain why the capital-output ratio was increasing, i.e. how when applying the same ratio between capital and labour the output of goods could rise over the years. According to Solow, this increase was due to the development of technology, in other words, with more advanced machinery, the same amount of labour could make the output grow (Solow, 1957). The vintages approach then had found a way to further model the factor of technical change. According to the vintages theory, technical change would not come gradually, but only occurred with the replacement of old machinery. Assigning vintages to capital goods was thus a way of determining the likelihood of employers replacing their machines, and therefore a means to forecast the rise of the capital-output ratio better (Solow, 1962).

41 The result of applying the vintage approach to the relation between investments, prices, wages and unemployment resulted in what became known as the Hartog-Tjan model, first published in a CPB occasional paper in 1974. According to Den Hartog and Tjan, the rise in unemployment could be explained by high wage costs. Faced with increasing wage costs, employers would rather buy new machines instead of hiring more labour power. This meant that machines received a higher replacement rate than could be expected on the basis of their age (Den Hartog and Tjan, 1974). The paper thus not only explained the rise in unemployment, but also how the increase could have snuck up on the Dutch economy. In times of economic prosperity the fall in jobs relative to the production would not have been noticed. As such, Tjan and Den Hartog claimed

that the problem of unemployment already started in the early 1960s (see figure 3). Beside its explanatory power, the strength of the model was that it could finally theorize a number of relations between the private and public sector, thus incorporating a long-standing concern on the part of the Central Economic Committee, while also describing unemployment as structural problem, providing ammunition for the ongoing debate on Den Uyl's unemployment policy.

Figure 3. 'Figure 4. Calculated amount of jobs under normal utilisation of the capacity and realised employment in firms, 1959-1973'



The graph shows that the actual amount of jobs (solid line) is much lower than the calculated amounts of jobs on the basis of the production function (dotted line). From *Investerings, lonen, prijzen en arbeidsplaatsen: een jaargangenmodel met vaste coëfficiënten voor Nederland* by Den Hartog and Tjan (The Hague: CPB Occasional Paper 8., 1974, 17)

42 Upon publication, the Hartog-Tjan model caused quite a stir among the community of professional economists. Due to its method and its application the model was considered controversial. Yet at the same time, it set the terms for further debate concerning the unemployment issue. The model and its outcomes was not a perfect fit with the narrative on the growing public sector that Stevers, Schouten, Hartog and Heertje were propagating. It said nothing about the public and private sector ratio, nor was the growth of the public sector a problem *per se*, only with regard to the cost of social insurances and wages. Yet Stevers and company seized the model in order to prove their arguments right (Stevens, 1975). Other economists also used the model in order to argue for their specific solutions to the unemployment problem. For instance, Tinbergen (who left the CPB in 1955), together with fellow Labour Party economists Van den Doel and Cees de Galan, drew on the basis of this model the conclusion that the instalment of wage moderation as a means of getting the wage-costs down was the best solution to the unemployment crisis (Van den Doel, De Galan, and Tinbergen, 1976).

43 Critics of the model mostly attacked the methodology, rather than the modelling technique or the identified relations. Former CPB employee and professor at the University of Amsterdam, Wim Driehuis, for instance, further disaggregated the relation between production output and wage-cost, concluding that productive industries acted as wage-leader for less productive industries and public sector, which explained the high wage costs in the public as well as in the private sector. According to Driehuis, the presumed ineffectiveness of Keynesian demand management was caused by a shift in private investment toward the service sector and a shift in the government expenditure towards social security. If the government would spend more directly, the multiplier effect on private investments would occur. A remarkable facet of Driehuis' study is that it used the same growth modelling techniques as the Hartog-Tjan model, while defending a Keynesian expenditure program to counter unemployment—

completely the opposite of the narrative the CPB was pushing or the arguments that Stevers was making (Driehuis, 1979).²⁰

44 The impact of the Hartog-Tjan model was not only that the unemployment issue came to be discussed in the terms and relations the model suggested. It also shifted the attention in the debate from the unemployment figures just after the oil-crisis towards the forecasted unemployment rate in the medium-term. The large-scale macroeconomic models used by the CPB were then still short-term models, the Hartog-Tjan model in contrast, could be applied for medium- and long-term forecasting, something which its successor, the VINTAF-model, was explicitly designed for. In the short term, the CPB-models still predicted that unemployment could be countered through public expenditure, medium-term forecasts predicted that this was ineffective. With the Hartog-Tjan model, figures on the unemployment rate in 1980 started to enter the debate and soon took over the conversation. The focus of the conversation on the development of unemployment similarly shifted. No longer was the problem of disappearing jobs the centre of the discussion, rather structural causes of unemployment became the object of debate—even among economists like Driehuis who argued in favour of Keynesian demand management.

45 As discussed in the previous section, shifting the emphasis from the present state of the economy towards forecasts—going so far as removing the present state from their tables—was nothing new for the CPB. While such a shift previously reinforced the cognitive space of macroeconomics, the VINTAF model started to change the nature of the issue at hand. In other words, the CPB models *translated* the problem of unemployment into a problem of the development of unemployment and its relation to social insurances and wage costs in the long run.

2.3. The VINTAF Models in the Daily Newspapers

46 The structure of the Hartog-Tjan model differed so much from the large-scale model used for the Central Economic Plans that the former could not be easily integrated into the latter. But the fact that the Hartog-Tjan model was a growth model made it potentially very apt for medium-term forecasts. Therefore, Den Hartog and Tjan continued, together with their colleague Theo van de Klundert, developing the model into a medium-term forecaster. The results was the VINTAF model, whose name was derived from the vintages approach (VINT) and the Dutch word for sales, ‘afzet’ (AF). It was in this form that the model would stage its most successful public intervention. In the summer of 1975, the CPB prepared a report on the basis of the model intended for the cabinet, called *De Nederlandse Economie in 1980* (The Dutch economy in 1980). The outlook that the report provided was very dire: the unemployment rate would keep on rising together with the public deficit with no improvement of the situation in sight. These numbers convinced the minister of finance Wim Duisenberg that drastic measures were necessary (Visser and Wijnhoven, 1989, 42-54).

47 With the other cabinet members, Duisenberg agreed on the introduction of the so-called 1%-norm, the principle that the collective financial burden (taxes and premiums) could not grow to exceed more than one per cent of the national income. Together with a restriction on the public debt this basically meant a restriction on the growth of the public sector and the implementation of austerity measures. Yet for the most part, the 1%-norm remained a paper tiger. Some ministers were not too willing to implement the budget cuts in their portfolio, nor were all the ministers fully convinced of the necessity of the austerity operation. Most prominently, the minister of social affairs, Jaap Boersma, constantly proposed alternatives to the 1%-operation. According to him, the norm *de facto* made all his unemployment measures impossible. Boersma was also not persuaded by the arguing behind the norm. In his view, the unemployment problems were primarily caused by the international economic malaise. Den Uyl was not convinced either, but decided to follow the 1%-norm anyway. The CPB figures that were constantly updated during the operation stressed the importance of the austerity measures for the most part (Toirkens, 1988, chap. 3). The role of the VINTAF model was so important in this process that one policymaker would later remark: “The 1% norm ...

actually came about through the constant confrontation of ministers with a scientifically based model of causes and consequences” (cited in Bemelmans-Videc, 1984, 390). In the terms of Eyal and Levy, the VINTAF model became a successful instrument by means of which the CPB had created a new channel through which they could introduce ‘truths’ and ‘proofs’ into the government’s policies.

48 In writing the memorandum to announce the restriction of the government budget, Duisenberg introduced the notion ‘support’ (*draagvlak*) to describe the relationship between the private and public sector. Meaning that the public sector could only thrive when it was supported by the private sector.²¹ The same notion was later picked up in a report of the Scientific Council for Government Policy (*Wetenschappelijke Raad voor Regeringsbeleid*), another scientific advisory council of the government, which discussed the unemployment problem with a similar message (WRR, 1977). This description did not follow necessarily from the outcomes of the VINTAF model and echoes Stevers’ earlier arguments in which he views the taking over of public sector of services from the private sector as the fundamental problem. This framing of the CPB forecasts brought the narrative of the public sector as a problem in full swing. A similar framing of the VINTAF -figures were also used in memorandums for the cabinet by the employers’ federations and the Committee of Economic Expert of the Social and Economic Council. Although the content of the memorandums differs—the employers federation wanting a further restriction of ten billion on government expenditure; the Social and Economic Council wanting support for the weaker industries—part of the message overlaps, unemployment is a problem of the growing public sector (SER, 1977). In this way, a diverse set of social organisations rallied around the VINTAF model and its forecasts. The model allowed for multiple discussions and narratives, but amplified one main message, adding to the public pressure that was put on the cabinet to carry out the austerity measures.

49 Discussions on the usefulness of the 1%-norm were not confined to cabinet meetings, but became a heated subject of debate by economists, union and business representatives and political parties in national media. The fact that the norm was based on on a new CPB-model was quickly picked up by journalists, resulting in the name VINTAF becoming public. Discussion on the credibility, usefulness and desirability of the model soon ensued in newspapers and magazines (Van Seumeren, 1977; Van Zweeden, 1977; Pen, 1977).

50 Bringing the model into the open was probably a conscious effort on the part of the CPB. The VINTAF model was publicly presented for the first time in a preliminary report delivered by Tjan, Den Hartog and Van de Klundert for the annual meeting of the Society for Economics in December of 1975. It is clear from the structure of the paper that the authors wanted to focus on the model, putting the name VINTAF at the centre (Den Hartog, Tjan, and Van de Klundert, 1975, 6). Although the annual meeting for the Society of Economists was an event primarily intended for professional economists, its yearly preliminary reports were usually sure to attract some media attention. That year all of the major Dutch daily newspapers published something on the annual meeting. The CPB was thus ensured that its report would caught everyone’s attention.

51 In the similar vein, Van de Klundert published a small booklet two years later intended for a broader audience in which he explained the workings of the model and placed it in the context of a broader development of economics as a science, thus adding to the public recognition of the VINTAF model (Van de Klundert, 1977). Such coordinate media strategies also fitted a general development of the relation between the CPB and the national media. From 1972 onwards, the bureau started to organise yearly press events for the launch of the new Central Economic Plans. A little later, press conferences on other CPB reports, such as the medium-term forecast, were also organised (Passenier, 1994, 280). Outside the regular publications, the bureau started to provide figures to politicians on specific subjects, such as purchasing power trends, which also fostered personal contacts between CPB-economists and members of parliament (Passenier, 1994, 230).

52 It is clear that the audience of the CPB was no longer limited to policymakers and politicians, but also included the general public. In an effort to build a channel for a public intervention on the growing public sector and unemployment for which large-

scale macroeconomic models were unfit, the CPB had to charter new publics and forge new alliances with employer federations, neoliberal economists, and journalists. With these new audiences the form of the expertise that the CPB offered also changed. For policymakers and politicians, the CPB had a seemingly facilitating function, providing tools for picking and choosing the right policy mix. With regard to a more general public, the CPB adopted a role that I will describe as that of a watchdog: an institute that watches over the public debate in order to make sure that untruthful or unfeasible statements are debunked or corrected; thus making sure the debate is concerned with facts.²² In the news articles that were based on CPB publications at the time, the emphasis was usually on the impossibility of alternative policy proposals, rather on the possibility. Alternative plans on countering unemployment by the labour unions, left-wing politicians, minister Boersma and economists at the University of Amsterdam were all deemed unfeasible in a time where the primary concern of the government should be restriction of the budget. The forecasts for 1980 were hanging over the debate as a dark clouds warning that all scenarios that did not limit to the growth of the public sector would lead to massive unemployment. These were according to the CPB the facts, and everyone not adhering to them were branded in the debate.

53 The real *coup d'état* of the CPB model came when the successor of the VINTAF model (simply called VINTAF-II) had replaced the central macroeconomic model of the CPB, customarily used for the preparation of the Central Economic Plans. As discussed in the previous section, this central model which was up to that point, in essence, a revised updated version of the model from 1955, was embedded in the economic policymaking process to such an extent that it was crucial in how policymakers viewed the economy and understood the issues and formulated solutions. In other words, it had (and still has) a very solid surrounding infrastructure. The previous model had proved to be very influential in justifying the Keynesian demand management of the government; replacing it with VINTAF-II, which in comparison put much more emphasis on stimulating private investments, had a similar influence on the type of reasoning concerning policies and the justification of certain policies. Moreover, the instalment of the model took place in a politically turbulent time.

54 The Den Uyl cabinet had fallen in March of 1977 and in the following election the Labour Party won, making them again the largest political party in parliament. Yet negotiations with the newly formed Christian Democratic Appeal (a fusion of multiple Christian parties, among which the Roman-Catholic People's Party) on forming a second Den Uyl-cabinet were stiff. In this process, the CPB was tasked in with the assessment of policy proposals both parties could agree on. The instalment of VINTAF-II had a huge effect on the outcomes of these assessments, usually with negative effects for the proposed unemployment policies. According to one of the newspaper commentators, the Labour Party was so frustrated with the outcomes of the new model that they requested the CPB to calculate the intended measures with the old model (Hoffman, 1977). A similar frustration can be found in the diary that Labour negotiator Ed van Thijn kept during the process and that was published a year later. The complete astonishment of Van Thijn with the outcomes of the CPB-models was clearly visible on many occasions. For example: The CPB is overdoing itself this time [*bakt ze wel erg bruin*]. Instead of the previously estimated 150,000 unemployed in 1980 we now have to suppose that unemployment will rise to 275,000 in 1981. The CPB has adopted a new model, introduced new starting points and has also applied new policy variants. "Out of the blue the economy has collapsed. ... When the politician is outside campaigning, the forecaster stays indoors and reads a book and suddenly the world has changed". (Van Thijn, 1978, 28)

55 The negotiation failed. And instead the Christian Democratic Appeal decided on forming a cabinet with the right-wing liberal People's Party for Freedom and Democracy, a party much more willing to implement further austerity measures.

3. Conclusion

56 The first macroeconomic model of the CPB in 1951 was to a large extent an answer to the policies of the time, the institutional architecture of Dutch policymaking, and the bureau's earlier failure to influence politics. By adjusting to the situation and reacting to the wishes of policymakers, the CPB designed their models in such a way that they could be used to enhance and improve existing policies; allowing policymakers to provide input and giving them a wide variety of choices. As a result, policymaking became a more structured, or systematic affair: all social and economic policies could be placed into the framework that the macroeconomic models provided and their effects on the economy as a whole could be expressed in seemingly precise figures. Policymakers could, with the help of models, rank policy scenarios and incorporate uncertainty in their measures, thus introducing a whole new dimension to policymaking. This new model-based practice created a cognitive space in which wage-moderation and Keynesian demand management became accepted measures.

57 A similar development took place in the 1970s with the VINTAF-model and the discussion on unemployment. Arguments surrounding the model made a strong association between unemployment, the growth of the public sector and wage costs; associations used by both camps in the debate, both the opponents and proponents of the growth of the public sector. These associations became commonly accepted relations, thus shaping the unemployment debate for the decade to come (Visser and Wijnhoven, 1989, 154-170). Later, at the start of the 1980s, the policy principle of full employment was abandoned, introducing the idea of a 'natural' rate of unemployment ushering a new way of thinking about unemployment. More fundamental question concerning the relation of unemployment and the collective financial burden were black boxed in the later iterations of the VINTAF model.

58 The VINTAF also shaped the cognitive space on thinking about unemployment even when contributors to the debate were not using the model as a policy tool. VINTAF became an artifact around which the debate developed; an artifact that allowed for the development of new arguments, the articulations of new issues and the creation of new epistemic communities. The model also functioned as a builder of coalitions, as its figures brought anti-Keynesian economists, employer federations and the Central Economic Committee together. VINTAF allowed for a successful public intervention putting the growth of the public sector as major problem on the political agenda.

59 The VINTAF intervention highlights the beginning of a development in which the CPB became increasingly more visible in the national media. Using new channels to circulate forecasts figures and policy scenarios also meant that the form of expertise the bureau offered changed. The figures associated with VINTAF did not only reconceptualise unemployment, they were also used to brand policy proposals that went against the 1%-norm as unrealistic, irresponsible, or outright dangerous. This set a precedent of how the CPB would operate in the public sphere from then onwards, namely, by putting emphasis on economic feasibility and political realism. Such a watchdog role went hand in hand with an emphasis on the public budget: the CPB consciously started to present itself as the institution which ensured the government would spend its money responsibly and wisely. As such the shift in the CPB's form of expertise fits into a larger development of the role of economists in society, a development Morgan describes as follows:

In terms of operating the economy, notions of control engineering were explicitly discussed during the 1950s experience of the 'managed' economy. In the 1980s, still less interventionist modes were in favor, and macroeconomic policy was understood to be taking fiscal care and following rules of monetary operation, suggesting the idea of maintaining a smooth-running machine (Morgan, 2003, 276).

60 The only difference with the role of the CPB is that its practice is better described as fiscal watchdog rather than as fiscal caretaker.

61 To bring the topics of this article into the present, I would like to finish with a contemporary example of the CPB's watchdog role in public debates. As from 1986, the CPB has started to make assessments of political party manifestos during national election times. In these assessments, the bureau provides economic forecasts based on

the policies provided in the manifestos, in order to allow voters to make a more informed choice. Although the assessment allows for quite some flexibility on how economic issues can be dealt with, all the manifestos should adhere to the budgeting principles provided by the ministry of finance. These assessments are also executed by the main macroeconomic model the bureau still employs. Even with the CPB preaching the transparency that these assessments would bring to the economic impact of the party manifestos, the analysis also obscures the fact that all parties agree to adhere to budgeting rules. Consequently, questions concerning the public deficit tend to disappear from the public debate. Although the models of the CPB are now widely discussed, the issues they tend to exclude are not. In Goudriaan's terms: the models are still night trains, but now operating in broad daylight.

I would like to thank the participants of the Economics and Public Reason workshop at the University of Lausanne (3-5 May 2018) for their helpful comments and questions. I also would like to thank Federica Russo, Huub Dijkstra, Emma Mojet, Jaco de Swart, Sjang ten Hagen, Chaokang Tai and Deva Waal who provided useful comments and suggestion on (earlier) drafts of this article. Lastly, the article benefitted hugely from the elaborate comments of two anonymous referees.

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Annex

Archives

Nationaal Archief, Den Haag, Ministerie van Economische Zaken: Centraal Planbureau, nummer toegang 2.06.093

Notes

1 In de 1990s the CPB changed its official English name into *Bureau for Economic Policy Analysis* since the notion of ‘planning’ in the name of the bureau caused some confusion with regard to the task of CPB outside of the Netherlands. In Dutch the name ‘Centraal Planbureau’ is still used. Because I want to make the connection of the bureau’s origins with ideas on economic planning explicit, I stick to the more literal translation of the name. For a critical account of the large influence of the CPB on Dutch politics see Becker and Hendriks (2008), Hendriks (2010, chap. 5), Klamer and Teule (2014).

2 All translations of sources in the Dutch language are mine.

3 In a public interview at the book presentation of Wimar Bolhuis’ *De rekenmeesters van de Politiek* (Bolhuis, 2017) on January, 24 2017.

4 The notion is a riff on the idea of *market devices* introduced by Fabian Muniesa, Yuval Milo, and Michel Callon (2007).

5 The idea of frames and scripts is derived from the works of Erving Goffman (1974).

6 ‘Voorbereiding ter vaststelling van een Nationaal Welvaartsplan’, in *Handelingen der Voorloopige Staten-Generaal (1945-1946) bijlage 180 1-2 artikel 3*.

7 For more on the founding of the Social Economic Council, see: Camphuis (2009, chap. 1); Wilts (1997, 117-119).

8 According to historian Peter van Griensven Tinbergen played a vital role in convincing the government in adapting wage moderation policies, see Van Griensven (1993).

9 Lijklema, ‘Het gebruik van macro-economische berekeningen voor de prognose’, September, 1948, found in National Archive, The Hague, Ministry of Economic Affairs: Central Planning Bureau, entrance number 2.06.093, inventory number. 319. Henceforth abbreviated as: NL-HaNA, CPB, 2.06.093.

10 VSS (1936, 67); Harro Maas notices that Goudriaan’s critique echoes that “of his old mathematics teacher in Delft, who compared systems of algebraic equations with the ‘night train’ as opposed to the ‘day train’ of geometry.” (Maas, 2014, 151).

11 Tinbergen, ‘Welvaartmaximalisatie en decisiemodellen’, 3 June 1951, NL-HaNA, CPB, 2.06.093, inv.nr. 319.

12 Work on the development of decision models within the CPB was also carried out by Henri Theil, a protégée of Tinbergen who was also working at the CPB at that time. Theil’s work might

be just as important to the influence of the CPB on policymakers as Tinbergen's contributions were. For the sake of brevity, I will focus on Tinbergen in what follows, but for more information see Theil (1958) and Don (2004).

13 Van den Bogaard discusses Porter's seminal work in the context of the history of the CPB. Contra Porter, Van den Bogaard argues that the emergence of economic modelling did not replace an intersubjective trust for an 'objective' trust in numbers, but rather introduced a new type of expert (Van den Bogaard, 1997, 204-208). This however does not change the fact that a culture focused on numbers did arise in Dutch politics in the 1950s.

14 As the latter article is specifically concerned with economic expertise I take Eyal and Levy's account as starting point here.

15 Schouten and Hartog had been working for the CPB in the past, but had long left when they published the after mentioned articles.

16 The implication of Van der Doel's remark was that this group formed a neoliberal thought collective *incognito*.

17 For an account of the neoliberal ideas of Rutten and his influence on Dutch social and economic policy, see Oudenampsen (2019, 125-130).

18 'Beoordeling van de Huidige Economische Ontwikkeling' memorandum prepared for the *Centraal Economische Commissie*, April 10, 1970, NL-HaNA, CPB, 2.06.093, inv.nr. 211.



19 'Nadere en herziene informatie met betrekking tot de economische vooruitzichten van 1973', memorandum prepared for the *Centraal Economische Commissie*, June 7, 1972, NL-HaNA, CPB, 2.06.093, inv.nr. 211.

20 Driehuis' article had already been circulating as research memorandum since 1976.

21 'Nota over het te voeren beleid ter zake van de collectieve voorzieningen en de werkgelegenheid', Kamerstuk Tweede Kamer der Staten Generaal (1975-1976), 13951, ondernummer 4.

22 The CPB has later adopted the notion 'watchdog' to describe its task within the Dutch government (Bos and Teulings, 2012). The word was not yet part of the task description of the bureau in the 1970s, thus I use the notion anachronistically. This watchdog role is different from other economic organization that are often also called watchdogs in the media, like the Financial Conduct Authority in the UK, as it is not the CPB's task to regulate markets or audit other organization. Rather, in their own description, the watchdog role is aimed at the public budget, making sure that the government adheres to budgeting rules. I use the notion in yet a different way: emphasizing the role the CPB plays in the public debate, guarding the 'truthfulness' of the debate. As I briefly mention in the conclusion, the fiscal watchdog and the public debate watchdog are strongly connected.

List of illustrations

	<p>Title Figure 1. 'Table IV.i. Abbreviated Confrontation between Means and Requirements'</p>
 <p>Caption An example of an earlier method of presenting the forecasts of the Dutch economy in the Central Economic Plans. The 'Plan-figures' (<i>plancijfers</i>) contain a forecast of the economy in a scenario where the government was to adopt all the measures that the CPB recommended. These figures are presented in the columns with the heading '1949' (4 and 8). No other forecasts were provided in the table. From <i>Centraal Economisch Plan 1949</i> (The Hague: Staatsdrukkerij Uitgeverijbedrijf, 1949, 20)</p>	<p>URL http://journals.openedition.org/oeconomia/docannexe/image/5613/img-1.png</p> <p>File image/png, 288k</p>
 <p>Caption This table is a good example of how the CPB presented their forecasts of policy alternatives within one chart, allowing for easy comparison. The upper half of the table contains the presumptions on the economy and the lower half the outcomes. The roman numerals (I up to VIII) represent the different policy alternatives. From <i>Centraal Economisch Plan 1952</i> (The Hague: Staatsdrukkerij Uitgeverijbedrijf, 1952, 32)</p>	<p>Title Figure 2. 'Table III.2. Overview of the Principle Outcomes of the Alternatives for 1952'</p> <p>URL http://journals.openedition.org/oeconomia/docannexe/image/5613/img-2.png</p> <p>File image/png, 530k</p>
	<p>Title Figure 3. 'Figure 4. Calculated amount of jobs under normal utilisation of the capacity and realised employment in firms, 1959-1973'</p>



Caption The graph shows that the actual amount of jobs (solid line) is much lower than the calculated amounts of jobs on the basis of the production function (dotted line). From *Investeringen, lonen, prijzen en arbeidsplaatsen: een jaargangenmodel met vaste coëfficiënten voor Nederland* by Den Hartog and Tjan (The Hague: CPB Occasional Paper 8., 1974, 17)

URL <http://journals.openedition.org/oeconomia/docannexe/image/5613/img-3.png>

File image/png, 262k

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Electronic reference

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