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The new director of CPB

As of May 1, 2006, Coen Teulings is the new Director of CPB Netherlands Bureau for Economic Policy Analysis. Having served on CPB’s Advisory Board from 2001-2004, Teulings is well acquainted already with the research institute. Prior to this appointment, Teulings served as general director of Tinbergen Institute (1998-2004) and of SEO Economic Research (2004-May 2006). Despite these demanding positions, Coen Teulings is also Professor of Economics at UvA and an active researcher.

An interview with Coen Teulings

Allow me to congratulate you on your new position as Director of CPB Netherlands Bureau for Economic Policy Analysis. CPB conducts economic analyses for the Dutch government. Is your new job of a political or of an academic nature?

It's definitely not a political job. CPB provides advice to Dutch politicians—primarily to the government, but also to the parliament. CPB's strength is to advise on the basis of academic arguments.

If you ask people working at CPB what they like about their jobs, the answer is invariably that this is the place where you can consider policy questions in a fundamental way. CPB has to respond to concrete questions from the Dutch ministries. CPB's answers, formulated on the basis of its own economic research and the international literature, are translated into conclusions that are relevant for economic policy. This is what makes CPB a unique institute; there are not many places in the world where economic arguments find their way into policy in such a structured manner.
Questions of economic policy are often related to political disagreements. CPB should anticipate political disputes. When you find yourself in the position of a referee when political parties have already entrenched themselves, you are too late. In such a situation it is hard to avoid choosing sides. And you shouldn’t—unless it is absolutely clear that one of the parties is talking nonsense from an economic point of view. CPB thus has to pre-empt disputes and formulate its position based on economic arguments before things turn into a political quarrel.

You are an academic economist, but also active in the Dutch Labour party. Do you find that your political views have guided your research interests?

Foremost, I would like to stress that it’s an honour that our current coalition, consisting of VVD, CDA and D66, appointed me as CPB director. This is evidence that the political preferences of the CPB director are unimportant.

But the question was whether my political preferences have played a role in my research. Perhaps they have, to some extent. Now that I am growing older, political convictions have become a less important driver in my research. My early research concentrated on income inequality. I am still concerned with this question, in my work with Robert Dur. One could say that this is a leftist’s question, but in fact it isn’t. Our concern is how you can find an efficient mode of redistribution, given that you do want to redistribute income. This, of course, is still highly relevant today.

Some of my more recent research is on privatisation, and thus might be called ‘liberal’. I am convinced that the current process of curtailing the central role of the government will continue—even though some people in the Netherlands claim that the momentum for privatisation has disappeared. The current developments are essentially more about decentralisation, rather than privatisation. The gains to be reaped are welcome, whatever your position on the political spectrum.

Perhaps you could also describe some of your current research.

I’m currently working on a very nice project: the marriage market. A compelling argument can be made that there should be economies of scale to search: search should be easier in places where you have lots of people together. Strikingly, almost all of the empirical research seems to establish the
contrary. Together with Pieter Gautier and Michael Svarer, I have shown that economies of scale are indeed present on at least one ‘market’: the marriage market.

Something else that has kept me busy, in collaboration with Miguel Portela, is the return on education. We use new methods to look for externalities. Although the literature seems to think that these should not be present, there seem to be many problems with explaining some basic empirical observations. Specifically, we are trying to determine whether there is a relation between the level of education in neighbouring countries and GDP. Indeed, we find that there is.

Another thing that I’m still working on is wage formation. We ask why it is that when you remain in a specific job for a given period, you tend to earn more than you would if you switched jobs. Our argument is that this has to do with insider/outside effects, and your company offering you a promotion after a given period of time. The increase in wage is, in part, simply economic rents. We show that in rapidly growing firms (where there are many rents to be gained) wages increase quickly— but that this is not the case for firms that are not growing.

Finally, I’m also involved with the Dutch research institution NETSPAR (Network for Studies on Pensions, Aging and Retirement). Within NETSPAR, I am involved with generational accounting. This, of course, is directly relevant to CPB’s work.

When I glanced at a list of your present and past research, one theme that stood out was that you appear to look for refinement of standard neoclassical thinking. A recent paper in the Review of Economic Studies argued that unemployment benefits might be efficient in some circumstances, whereas textbook economics would perhaps assert the opposite.

Although everything I do is always based on hard-core economic principles, I do look for the modern variety of these principles. Modern-day economics has paid a great deal of attention to market failures. Economists know that they are there. Market failure does not, however, automatically legitimate government intervention. Yet, one must take some account of the problems that market failures present. The paper you mentioned, dealing with the labour market, points to a case in which there are many market failures, and identifies some things that could be mended by sound policy.

CPB uses economic models to predict the effects of policy on the economy. Do these models give sufficient attention to market failure?

I think so. In MIMIC, one of the important CPB macroeconomic models, search frictions are explicitly included. And wage formation, for instance, is not modelled in a neoclassical vein, but is based on bargaining power. At CPB, researchers also look at how bargaining power might vary between parties. Of course it’s hard to say whether this is sufficient. But I suppose the true test is whether CPB’s models feature the really important market failures. This question will have to be approached on case-by-case basis.

Still, there has been some critique from political parties in the past that the models used by CPB do not conform to their perceptions of how the economy operates.

When I was still active in the Green party, we had a discussion on whether we should ask CPB to evaluate our political programme. Virtually all parties do this nowadays. I was actively involved in this discussion, and thought it was a good
idea— that it would be beneficial both to our political party and to the country. In my view, political disputes should be about political preferences. So it’s important to have an impartial institute that judges whether a party’s programme is financially feasible, so that discussions can concentrate on the political arguments and not on the financial side. This development has improved the quality of discussions on economic policy. The left parties are nowadays content with CPB’s role.

But now these parties simply write their programmes in such a way that they perform well in the CPB evaluations.

Yes, of course! Everyone wants to look good.

At the time of this interview, you are serving as director of SEO, an institute that conducts research financed by external parties on a project basis. Here, you must also have been confronted with principals that desire favourable research results. Has this ever led to conflicts of interests between the principal and SEO, the agent who wants to uphold scientific standards?

Personally, I have never really been involved any such disputes. But there’s no denying that our organization has faced them. Conflicts about scientific standards are sometimes very explicit and may be dealt with easily by simply confronting the principal. But the problem is more difficult to manage when the conflict of interest lurks just below the surface— in cases where the principal hires you to make his case look attractive. We try to deal with this in the right way, but it would be naive to claim that it’s never a problem.

One aspect is particularly important to keep in mind: namely, that it is not easy to argue what would be the right approach to conflicts of interest. An article written by Tirole and Dewatripont discussing advocacy argues that one approach— not necessarily the most efficient— is that of the impartial referee. A referee in a conflict has no incentive. Thus, in some cases it’s efficient to have advocates rather than a referee, and at SEO we recognize this. When we take on this role, however, we state this clearly in our report. Moreover, we would never put forward arguments that we do not stand behind.

CPB has only one principal: the Dutch government. What does this mean for CPB’s position?

The government is a monster with many heads, so it’s a bit naive to think that there is ‘just one’ government. But CPB plainly cannot assume the role of the advocate. CPB is a referee, and sometimes a referee is what is needed.

One of your predecessors, Gerrit Zalm, is now the Minister of Finance. What are your ambitions?

Well, I’m excited about my new job and also extremely honoured to follow in his tracks as director of CPB. And although I can’t help wondering sometimes what the next step will be, for now my place is at the helm of CPB.

Thank you for your time.

References


Notes

1 In his article, also published in this issue, Pieter Gautier discusses this finding more extensively.
Empirical evidence. The fact that “rich” wage equations typically leave 70% or more of the variation in compensation across workers unexplained, suggests, however, that the “law of one price” does not hold. Gautier and Teulings (2006) derive a search model with two-sided heterogeneity that predicts that log wages are concave in appropriately normalised worker and job characteristics. They empirically explore this result, and estimate that output in the US is about 25% lower than it would have been in the absence of frictions. This output loss is about the same as the theoretical predictions in Gautier, Teulings and van Vuuren (2005), where we allow for two-sided heterogeneity and on-the-job search. There are two key factors that matter for the nature of the decentralised (search) equilibrium: matching and wage determination. Both are discussed below. Once we have gone through the effort of solving the equilibrium, we can use those models to answer important efficiency questions.

The matching process

In the random search literature (e.g. Pissarides, 2000), the rate at which workers meet vacancies is determined by an exogenous matching technology, and workers and jobs are homogeneous. Gautier (2002) extends this framework to a model with two worker- and job types in order to identify which types of shocks could explain the actual changes in wage dispersion and unemployment rates between different skill
groups in a number of OECD countries. Teulings and Gautier (2004) consider a continuum of worker and job types. Our main contribution is that we characterise the equilibrium, derive its efficiency properties and precisely decompose the losses due to search frictions into: (i) unemployment, (ii) vacancy cost and (iii) mismatch. The contact technology is still exogenous in this framework, but it is separated from the endogenous matching decision. Basically, a match is acceptable if its total value exceeds the total option value of continued search. Recently, there has been strong renewed interest in directed search models (i.e. Burdett, Shi and Wright, 2001), in which firms offer a price together with a probability of service. One big advantage of this framework is that it provides a micro-foundation for the matching function.

A great deal of empirical work has focused on the matching process. The bulk of the literature explores cyclical variation in labour market tightness to estimate empirical matching functions. Recently, a number of papers have explored cross-regional differences in labour markets to get an idea of the returns to scale in the matching process (see Gautier and Teulings, 2003). Intuitively, it seems easier to find a vacancy or a marriage partner in Amsterdam than in the rural North of the Netherlands. Underneath this intuition lies the notion that there are increasing returns to scale (IRS) in the contact process. However, as the scale of the market increases, agents also become choosier. Gautier, Svarer and Teulings (2005) present evidence that big cities are marriage markets: singles move to the city, and after they marry they move out. Even couples that never have kids are more likely to leave the city than singles, and we also observe that divorcees move back to the city.

Wage formation

The second important factor in search models is wage or price determination. In labour market models with undirected search, wages are typically determined through Nash bargaining. Outcomes depend on the exact specification of the bargaining game, but there are no theoretical reasons to prefer one specification to another. This critique does not apply to directed search models. In directed search models, firms can ex ante “communicate” with workers through the wage they offer. Albrecht et al. (2006) show that directed search could also lead to wage dispersion because some workers receive multiple offers and some don’t. This is a different source of wage dispersion than the wage-posting model of Burdett and Mortensen (1998), where the matching technology and vacancy supply is exogenous, but where workers can search on the job. This model was structurally estimated by Van den Berg and Ridder (1998).

Efficiency

The great benefit of formulating equilibrium models is that one can carry out welfare analysis. One of the key questions in the search literature is thus whether decentralised labour markets can arrive at (constrained) efficient outcomes. The answer is important for motivating active labour market policies such as introducing a minimum wage or optimal unemployment insurance. The general view is that if search is random, the market equilibrium is not efficient; if search is directed, the market works fine. The intuition is as follows. In undirected search models with wage bargaining, efficiency requires that the marginal contribution of a worker to the matching process (the elasticity of unemployment in the matching function) is equal to his share in the matching process (the Nash bargaining parameter). This so-called “Hosios” condition only holds by coincidence (see Hosios, 1990). When there is IRS in the contact technology, Teulings and Gautier (2004) show that both workers and firms are not choosy enough. Optimal UI benefits are positive because they can act as a search subsidy. Directed search models typically do generate efficiency because the marginal rate of substitution between labour market tightness and wages is the same for workers and firms. Albrecht et al. (2006) show, however, that this result depends on the (often implicit) assumption in the literature that workers can apply to only one
job at a time. If workers apply to multiple jobs, it is possible that a firm’s candidate has other offers. We show that efficiency requires full ex ante competition (as in Burdett et al., 2001), and full ex post competition (i.e. Bertrand competition) for the workers with multiple offers. The problem is, however, that when there is full ex post competition, a firm that posts a slightly lower wage than the rest of the market would hardly lose any applicants because the most important motivation to apply is the hope of winning the jackpot by getting multiple offers. This drives the equilibrium wage to zero and eliminates ex ante competition. The only way to get full ex ante competition is to allow firms to collude, by allowing for offer-beating strategies, for example— but then ex-post competition is too low. In both cases, firms open too many vacancies. Gautier and Wolthoff (2006) extend this model to allow for heterogeneous firms. Workers now face a complicated portfolio problem. We show that this leads to a second source of inefficiency caused by the fact that workers choose their portfolio of applications such that they maximise the productivity-weighted probability of receiving multiple offers, whereas a social planner maximises the productivity-weighted number of matches.

To conclude, modern search theory has successfully made the invisible hand more visible. This is still a lively research area that combines the rigor of microeconomics and game theory with the dynamics and equilibrium focus of macroeconomics. Since everything can be stated in terms of observable variables, it is also suitable for structural estimation and policy simulations. This research area has something to offer for everyone.

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Why TV game shows have economists glued to their television sets

Thierry Post


The theory of risky choice is one of the cornerstones of economics. In recent years, the classic expected-utility theory (EUT) has been challenged by frame-dependent theories such as prospect theory (PT; Kahneman and Tversky, 1979). Empirical research in this field is often plagued by problems of joint hypotheses and improper stimuli for the subjects. This has led some researchers to analyse the behaviour of contestants in TV game shows, which often involve simple decision problems and large monetary stakes.

In everyday life, people face many risky choice problems, often involving large stakes. Examples include choosing pension plans, buying and selling homes, selecting mortgages and buying insurance. Unfortunately, studying these decisions is plagued by the joint hypotheses problem: We generally do not directly observe risk preferences because the probability distribution in many cases is not known to the subjects, and the subject's beliefs are not known to the researcher.

A large part of the empirical research therefore relies on laboratory experiments or classroom experiments. The key advantage of such experiments relative to real-life data is the possibility to control the probability distribution of the choice alternatives and to ensure that the subjects are aware of the distribution. Nevertheless, experiments generally use hypothetical stakes or small real stakes, and subjects may not be sufficiently motivated to act optimally and reveal their true preferences and beliefs.

One way to overcome this incentive problem is to use TV game shows as natural experiments. Examples of game show studies include “Card Sharks” (Gertner, 1993), “Jeopardy!” (Metrick, 1995), “Illinois Instant Riches” (Hersch and McDougall, 1997), “Lingo” (Beetsma and Schotman, 2001), “Hoosier Millionaire” (Fullenkamp et al., 2003) and “Who Wants to be a Millionaire?” (Hartley et al., 2005). The key advantage is that the decision problems generally are simple, and that large, real monetary amounts are at stake. Arguably, the behaviour of game-show contestants may not be representative for behaviour outside the studio. Contestants may be influenced, for example, by social pressure from the audience, remarks and directions by the game-show host and the unique event of being on national TV.

Still, if the decision problems are sufficiently simple and the amounts at stake are sufficiently high, we may expect that the choices reflect the contestants’ risk preferences.

In a recent study (Post et al., 2004), we analysed the decisions made in the international blockbuster show “Deal or No Deal”, which has a number of particularly favourable design features for studying risky choice. The stakes are very high and wide-ranging: with a maximum prize of €5,000,000 and an average prize of roughly €400,000 (in the Dutch edition, called Miljoenen Jacht), the game show can send contestants home as multimillionaires— or practically empty-handed. Unlike other game shows, “Deal or No Deal” involves only simple stop-go decisions that require minimal skill, knowledge or strategy. In addition, the probability distribution is simple and known with near-certainty.

The game starts with 26 numbered briefcases containing hidden money amounts...
Our findings seem consistent with the “break-even effect" of Prospect Theory: decision makers become more willing to take risk due to incomplete adaptation to previous losses

that range from €0.01 to €5,000,000 (in the Dutch edition); see also Figure 1. The contestant selects one of the briefcases, which is not to be opened until the end of the game. The game is played over a maximum of nine rounds, during each of which a “banker” tries to buy the briefcase from the contestant by making him an offer. If the contestant accepts the offer (“Deal”), he walks away with this sure amount and the game ends; if the contestant refuses the offer (“No Deal”), play continues and he enters the next round. Prior to each offer, the contestant obtains information about the unknown prize in his briefcase by choosing one or more of the remaining briefcases to be opened. The numbers of briefcases to be opened in the nine rounds are, respectively, 6, 5, 4, 3, 2, 1, 1, 1, and 1, and so the number of remaining prizes decreases from 26 to 20, 15, 11, 8, 6, 5, 4, 3 and finally to 2. If the contestant rejects all offers, he receives the prize in his own briefcase at the end of the game.

Our study analyses episodes from Belgium, Germany and the Netherlands in 2002-2005. These editions are selected for the diversity in the stakes; the initial stakes in the German edition are roughly 15 times smaller than those in the Dutch edition, and the Belgian edition falls somewhere in between. Apart from the initial stakes, the game formats are comparable. The contestants from the three European countries also seem comparable in terms of their cultural and economic background.

We first investigate the contestants’ decisions using the classic EUT. We estimate the Arrow-Pratt coefficient of relative risk aversion (RRA) for every individual contestant based on his observed Deal/No Deal decisions during the game, using a constant relative risk aversion (CRRA) model. Next, we try to explain the cross-sectional differences in risk attitudes with characteristics of the contestants and the state-of-the-game they face. The analysis shows that risk attitudes differ widely across the contestants, some exhibiting strong risk aversion (RRA > 4) and others being risk seeking (RRA < 0). The differences can be explained in large part by the outcomes experienced by the contestants in the previous rounds of the game. Most notably, risk aversion generally decreases after prior expectations have been shattered by unfavourable prior outcomes. Contestants facing a large reduction in the average remaining prize during the game may even become risk seeking; they reject offers that exceed the average and thus enter “unfair gambles”.

Witness Frank, the 36-year old male contestant in the Dutch episode aired on January 1, 2005. Table I shows the gambles presented to him in rounds 6 through 9, and the decisions he made; the photo on page 12 is a screenshot from round 9. Recall that Dutch contestants start with an expected prize of nearly €400,000. In round 7, after several unlucky picks, Frank opens the briefcase with the final remaining large prize (€500,000) and he sees the expected prize tumble from €102,006 to £2,508. The bank then offers him £2,400, or 96 percent of the average of remaining prizes. Frank rejects this offer and play continues. In the subsequent rounds, Frank deliberately chooses to enter unfair gambles, to finally end up with a briefcase worth only €10. Specifically, in round 8 he rejects an offer of 105 percent of the expected prize and in round 9 he rejects a certain €6,000 in favour of a 50/50 gamble of €10 and €10,000. We feel confident in classifying such decisions as risk-seeking behaviour, because they involve single, simple, symmetric gambles with relatively large amounts at stake. Also, unless we are willing to assume that Frank would always accept unfair gambles of this magnitude, the only reasonable explanation for his choice behaviour seems a reaction to his misfortune experienced during the game.

Frank is no exception, and illustrates a general pattern: risk aversion falls after the elimination of valuable briefcases shatters earlier expectations. This path-dependent pattern occurs in all editions of the game, despite sizeable differences in the initial stakes across the editions. Thus, losers seem less risk averse than winners, irrespective of the amounts at stake.

Path dependence is not consistent with EUT, and points in the direction of frame-dependent choice theories such as PT. More specifically, our findings seem consistent with the “break-even effect” (Thaler and Johnson, 1990): decision makers become more willing to take risk due to incomplete adaptation to previous losses. In PT, this effect arises when the reference point sticks to the earlier, more favourable situation, placing relatively many outcomes in the domain of losses, where decision makers are risk seeking. If contestants are sufficiently
risk seeking in the domain of losses, they may even accept “unfair gambles” to escape these losses. Indeed, a simple version of the PT with a sticky reference point equal to the highest bank offer during the game yields surprisingly good predictions of the “Deal”/“No Deal” decisions in our sample. These results suggest that phenomena such as framing and path-dependence are also relevant when large, real monetary amounts are at stake.

Table I
Example “Frank” The table shows the gambles presented to contestant Frank and the “Deal”/“No Deal” decisions made by him in rounds 6 through 9. This particular episode of the show was aired on Dutch television on January 1, 2005. In round 9, Frank deliberately enters an “unfair” gamble by rejecting a bank offer of €6,000 or 120 percent of the average of the remaining prizes.

<table>
<thead>
<tr>
<th>Remaining Prizes (€)</th>
<th>Exp. Prize (€)</th>
<th>Offer (€)</th>
<th>Offer (%)</th>
<th>Deal/ No Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 6</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>102,006</td>
</tr>
<tr>
<td>0.50</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>75,000</td>
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<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>74% No Deal</td>
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<tr>
<td>20</td>
<td></td>
<td></td>
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<tr>
<td>10,000</td>
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<td></td>
<td></td>
<td>2,508</td>
</tr>
<tr>
<td>500,000</td>
<td></td>
<td></td>
<td></td>
<td>2,400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>96%</td>
<td>No Deal</td>
</tr>
<tr>
<td>Round 7</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>3,343</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>3,500</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105% No Deal</td>
</tr>
<tr>
<td>Round 8</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>5,005</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>6,000</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120% No Deal</td>
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<tr>
<td>Round 9</td>
<td>x</td>
<td></td>
<td>x</td>
<td>10</td>
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<td></td>
<td></td>
<td></td>
<td>– No Deal</td>
</tr>
<tr>
<td>Round 10</td>
<td>x</td>
<td></td>
<td></td>
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</tbody>
</table>

“Frank” This screenshot is taken from the Dutch episode of January 1, 2005. The centre frame shows the game show host and contestant Frank. All possible prizes are listed in the left and right panels. Prizes that are eliminated in earlier rounds are shown in dark grey, and remaining prizes are in bright yellow. The bar on the top of the screen shows the bank offer.

This example demonstrates the two options open to the contestant in the ninth game round, after opening 24 briefcases in the previous eight game rounds: (i) accept a bank offer of €6,000 or (ii) continue to play with the remaining two briefcases, one of which is the contestant’s own.

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Transfer Pricing

Clive Jie-A-Joen
Ernst & Young

One thing I regret about my PhD thesis is that I did not entitle it “Transfer Pricing”. Ever since my thesis defence at Erasmus Universiteit Rotterdam, my work has centred on the area of transfer pricing. I currently work at the transfer pricing / tax effective supply chain management group of Ernst & Young in the Netherlands as a transfer pricing economist.

Transfer pricing is concerned with the determination of arm’s length prices for transactions of goods, services and intangible property between associated enterprises. Tax authorities in the various countries in which a multinational enterprise is located are afraid that profits are shifted to low tax countries through manipulation of the transfer price. Essentially, the tax authorities would like to have a fair share of the cake. OECD Member countries have therefore agreed that the arm’s length principle is the international transfer pricing standard to be used for tax purposes. A multinational enterprise must therefore set arm’s length prices, which would have been agreed upon between unrelated parties engaged in the same or similar transactions under the same or similar conditions.

Transfer pricing is a multidisciplinary subject occupying the time and talents of (tax) lawyers, accountants and economists. You basically provide advice to multinational enterprises in determining arm’s length transfer prices from a tax viewpoint, or assist companies in case they face a transfer-pricing audit from a tax inspector. The fun part of this process is that you need to analyse the supply chain structure of a multinational enterprise, which means you speak to the operational people of the company and learn about industries.

At the end of my PhD thesis research, I faced the choice of doing a post doc or going into consultancy. Doing a post doc would have been a “safe” choice, since I did not see myself as a consultant at the time. I finally decided to leave the university and go forth into the uncertain world. Now, about nine years on, I am still working in transfer pricing tax consultancy—and I enjoy it. Every project is different. Every multinational enterprise is different. And a great advantage of having a PhD is that clients and colleagues somehow respect you more.

Besides working at Ernst & Young, I also teach (together with a tax inspector!) transfer pricing at the LLM programme International Taxation of Leiden University since 1999, and supervise students in writing a thesis on transfer pricing. The experience you gain by working on real-life cases helps you a lot in teaching. It is fun to see students warming to the subject after a couple of lectures. Furthermore, teaching forces you to go back to the basics. Considering the importance of the subject of transfer pricing for multinational enterprises, it is strange, actually, that the subject is dealt with so briefly during your graduate studies.

Anyway, there is a life after your PhD thesis defence. The most important aspect is that you can do the thing that you like. In my case, it is working in transfer pricing: consulting, writing articles and lecturing.
about the process of network formation. In particular, there is a need to understand better the economic determinants of co-authorship and how the inter-linked star architecture evolves. The findings also raise questions about the impact of social interaction on scientific discovery and the diffusion of knowledge—issues slated for future work.


Coordination of expectations in asset pricing experiments

Do stock prices reflect economic fundamentals or can “market psychology” affect asset prices significantly and cause persistent deviations from fundamentals? Do investors hold rational expectations about future prices or can herding behaviour cause (temporary) bubbles in asset prices? These questions have hounded financial economists already for decades.

This article examines this argument by analysing the evolution of social distance amongst economists who publish in journals, during the period from 1970 to 2000. While the number of economists has more than doubled, a giant component comprising more than 40 percent of the authors has emerged and the distance between authors, which was already small, has declined significantly. The key to understanding the short average distances is the observation that economics is spanned by a collection of inter-linked ‘stars’. A ‘star’ is an economist that writes with many other economists who, for the most part, have few co-authors and generally do not write with each other.

These results are striking and lead to certain questions expectations. The realised market price thus depends upon the average individual forecasts. If all subjects would behave in a fully rational manner, the realised market price would be equal to a constant fundamental price.

Two typical outcomes are observed in the experiments: (1) slow convergence to the constant benchmark fundamental price, and (2) persistent price oscillations for 50 periods. In all experiments, strong coordination on a simple common strategy occurs. In the stable case (1), coordination on a naive (the forecast equals the last observed price) or adaptive (a weighted average of the last price and the last forecast) strategy occurs. In case (2), however, coordination on a trend following strategy occurs, where the price forecast equals the last observed price plus a fraction of the last observed price change.

These laboratory experiments suggest that persistent deviations from benchmark fundamentals can arise—even in a simple stationary environment, and that—even without knowing other strategies—strong coordination on a behavioural trend following strategy typically arises. The experiments suggest a behavioural explanation of observed large swings in asset prices.

more entry into banking—essentially, by reducing the competitive strength of lower quality banks. This insight complements certain observations by practitioners and policymakers, who have sometimes argued that the real contribution of the existing Basel I capital requirements is that they have raised capital levels across the industry and, in doing so, have improved the stability of the financial system. This study shows that discouraging weaker players is an important aspect of the link between capital requirements and the quality of the industry.

The paper also shows that competition improves the monitoring incentives of better quality banks and undermines the incentives of lower quality banks, and that—precisely for those lower quality banks—competition typically compromises the effectiveness of capital requirements.

The analysis is generalised along a few dimensions, including an analysis of the effects of asymmetric competition (i.e. one country that opens up its banking system for competitors, but not vice versa). The key result here is that higher capital requirements always encourage entry of existing banks in a previously closed low quality banking market: that is, they make such entry more profitable. The study also analyses how the threat of entry affects domestic merger incentives.

Status-seeking in violent subcultures and the double dividend of zero-tolerance

While social norms that condemn criminal behaviour are adhered to by a large part of the population, they are not universally shared. Some subcultures actually glorify criminals. Violent subcultures are a case in point. In his famous book Code of the Street, Elijah Anderson finds that residents of Philadelphia's poor inner-city neighbourhoods are confronted with a local hierarchy based on 'toughness' in which a reputation for being willing and able to fight earns respect among peers. 'Toughness' has also been identified in many other studies as a source of considerable status in street corner groups, gangs and hooligan groups.

This paper examines the effects of penalties for violent acts when people care about their social status for being 'tough.' The results show that, if people care enough about their social status, there is a double dividend of zero-tolerance policing in that it reduces both minor offences and more serious violent crime.

The reason for this result is as follows. When minor offences are punished harder, some individuals are deterred from committing those acts, and instead choose not to take action. Since these individuals are relatively 'gutless' individuals (i.e., at the bottom of the toughness distribution), the signaling value of committing a minor offence increases. This makes committing a minor offence more attractive for people who would otherwise commit more severe crime. If people care sufficiently about status, this effect dominates the standard substitution effect of zero-tolerance—and thus stiffer penalties for minor offences reduce crime across the board.

The policy implications of the model are well in line with the 'zero-tolerance' or 'broken windows' approach to crime fighting that has been pursued in New York City and, since recently, in several other US cities. Unlike existing arguments, the argument in this paper for a double dividend of zero-tolerance policing holds even in the long run—when criminals are perfectly informed about both enforcement policies and public tolerance of crime in their neighbourhood.


By Robert Dur (EUR), Status-seeking in violent subcultures and the double dividend of zero-tolerance, TI DP 06-005/1

Periodic seasonal Reg-ARFIMA-GARCH models for daily electricity spot prices

This paper develops new time-series models for daily electricity spot prices. Price formation on electricity markets is complex, as it depends on the short-term characteristics of energy supply and demand. Electricity demand depends on weather variables, seasons in the year, day-of-week effects and holidays. Electricity supply- and demand functions determine the specific behaviour of electricity prices encountered in empirical work. This behaviour differs from market to market, and depends primarily on the method of power generation: hydropower, power generated from coal or gas, or nuclear power. The paper improves upon existing models in capturing the memory characteristics, which are important in derivative pricing and real option analysis.

The study considers novel periodic extensions of dynamic long-memory regression models with time-varying volatility for the analysis of daily electricity spot prices. An approximate maximum likelihood estimator is developed for these models. The methods are implemented for recent time series of 1,200 to 4,400 daily price observations. Apart from varying persistence, varying volatility and extreme observations in prices, a novel empirical finding is the importance of day-of-the-week periodicity in the memory characteristics of electricity spot prices.

The modelling framework has been particularly effective for the longest time series of prices from the...
Nord Pool power exchange of Norway. These prices are partly explained by daily aggregate consumption figures, to capture the demand side, and by weekly water reservoir levels, to incorporate supply effects in the hydropower generation. Even with these effects taken into account, however, the prices are still long memory—i.e., they revert only slowly to equilibrium levels.

For the daily prices of three European emerging electricity markets (EEX in Germany, Powernext in France, APX in the Netherlands), which are less persistent due to the absence of hydropower generation, day-of-the week periodicity is also shown to be highly significant.

By Siem Jan Koopman (VU), Marius Ooms (VU) and M.A. Carnero (University of Alicante), Periodic seasonal REG-ARFIMA-GARCH models for daily electricity spot prices, TI DP05-091/4

Do employers prefer temporary employment contracts?

During the last few decades, the use of temporary employment has grown tremendously. For employers, temporary contracts offer ways to avoid hiring and firing costs. Severance payments are nonexistent for temporary contracts. And temporary work agencies reduce search costs by instantaneously providing workers to firms. But what exactly makes direct-hire temporary workers attractive for some employers and temporary agency contracts more attractive for others? Why don’t all firms hire workers on the same basis?

In its analysis of the attractiveness of temporary contracts for employers, this paper first determined the distinguishing characteristics of employment contracts (attributes). Next, a sample of 1000 employers was asked to describe a vacancy in their organisation. They were shown ten random combinations of contract attributes, and were asked how attractive these imaginary contracts were for their vacancy (this type of analysis is known as conjoint analysis). Results show the dominance of attributes that reduce worker turnover versus attributes that reduce hiring or firing costs per worker. This illustrates the importance of investment costs. A firm invests in a new employee in several ways, most notably by providing (firm-specific) human capital, but also by incurring costs of advertisement, interviews and paperwork. These costs are irreversibly lost if the worker leaves the firm.

Temporary contracts do not reduce turnover, but enhance it. The attractive feature of temporary-work arrangements is that they reduce firing costs, and sometimes also hiring- and quit costs per worker. Compared to the turnover-reduction strategies, these costs were found to be of minor importance in hiring decisions. This explains why temporary contracts are used only in situations with extreme fluctuations in demand or for screening purposes. When used for screening purposes, a fixed-term contract is explicitly contracted with the intention of becoming permanent at the end of its term. In that case, expected duration is not so much shorter than for indefinite contracts. It is these contracts that are most popular on the Dutch labour market.

By Marloes de Graaf-Zijl (UvA), The attractiveness of temporary employment to reduce adjustment costs, TI DP2005-121/3

Monetary policy: Decision making and implementation

According to the recent book by Professor Alan S. Blinder, The Quiet Revolution; Central Banking Goes Modern, “…one of the hallmarks of the quiet revolution in central banking practice has apparently been a movement towards making decisions by committee, whereas previously a dictatorial central bank governor was more of the norm” (p. 35). Since interest rate decisions are no longer taken by a single governor, a number of issues arise—related, for example, to an efficient aggregation of diverse preferences of monetary policy committee (MPC) members, their beliefs about models of the economy and its likely future development. These topics are addressed in the first part of this thesis.

The theoretical results can be (loosely) applied to answer some questions on group dynamics originating from experimental findings and/or empirical stylised facts. Why do majority decisions tend to evolve into unanimous decisions? Why do committee members dissent (or not) with the chairman or the majority view? Why can a committee perform better than a sum of its parts? Majority decisions have a high probability of being correct, and that is why members that care about the accuracy of the collective decision may choose to follow the majority view. The same logic applies if the chairman has unparalleled expertise. Finally, committee members can exchange information and aggregate it, thereby obtaining a highly accurate estimate of the state of the economy.
Better information naturally results in better decisions, the accuracy of which may far exceed the average performance of individual committee members.

The second part of the thesis investigates another institutional aspect of monetary policy making: the control of short-term interest rates. The following questions are answered: What mix of monetary policy instruments can efficiently implement collective policy decisions? Why can short-term market interest rates be comparably well controlled by a central bank intervening in the market daily and a central bank intervening only once a week?

The study shows what level of required reserves (relative to the size of autonomous factors) provides a sufficient liquidity buffer to allow the central bank to intervene in the market less frequently and still obtain a high control of the interest rate. This result not only explains the excellent performance of the operating framework of the European System of the Central Banks, but also provides a rationale behind the current change in the framework of the Bank of England.


Thesis: “Essays on the making and implementation of monetary policy decisions” by Beata Bierut. Published in the Tinbergen Institute Research Series #369

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Protecting the poor in Indonesia

When an economic crisis hits, a primary policy concern in developing countries is how social services can be protected and, in particular, how access to health and education for the poor can be maintained. Using the Indonesian Social Safety Net (SSN) as case study, this dissertation investigates the effectiveness of targeted demand-side interventions in health and education as a tool to protect access to these services for the poor in times of crisis—when policymakers are faced with severe information and time constraints.

The SSN was implemented in 1998 in response to the Southeast Asian economic crisis, and included a scholarship programme targeted to children from poor households, and a health card programme entitling poor households to free primary healthcare. The scholarships were effective in keeping children in school and relieved the pressure on households to draw on the labour of their children. The programme reduced child labour amongst recipients by 27 percent, while 13 percent of the recipients would have dropped out of school if they had not received a scholarship. Nevertheless, a large part of the funds was allocated to students who would not have dropped out of school. Furthermore, priority should have been placed with protecting primary school enrolment, where the scholarships seem most effective, and with providing support for children from the poorest households in the transition from primary to secondary schooling.

The effect of the health cards was compared with the effect of a supply-side impulse in the form of extra budgetary support to public healthcare facilities. Healthcare utilisation by the poor is responsive to the health card price subsidy, but was not affected by increased public spending. Utilisation by the non-poor was mainly supply driven, while the health card only lead to substitution of private for public care. This emphasises that in the absence of clear incentive mechanisms for healthcare providers, general increases in public spending are relatively ineffective in reaching the poor.

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Addresses
Tinbergen Institute Amsterdam
Roetersstraat 31
1018 WB Amsterdam
The Netherlands

Telephone: +31 (0)20 551 3500
Fax: +31 (0)20 551 3555

Tinbergen Institute Rotterdam
Burg. Oudlaan 50
3062 PA Rotterdam
The Netherlands

Telephone: +31 (0)10 408 8900
Fax: +31 (0)10 408 9031

e-mail: tinbergen@tinbergen.nl
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