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Hong Bo and Elmer Sterken
“Volatility of the interest rate, debt and firm investment: Dutch evidence”

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Abstract
In this paper we derived a neoclassical-type investment model taking account of the risk-averse attitude of the owners of the firm. Departing from the irrelevance theorem of Modigliani and Miller, we investigate the interaction between the interest rate uncertainty and debt in affecting firm investment decisions. The Auto Regressive Conditional Heteroskedasticity (ARCH) modeling of the volatility of the interest rate, as well as the variance of the unpredictable part of the stochastic process that generates the interest rate, is used as the measure of the interest rate uncertainty. Dutch evidence shows that the debt position of the firm affects the impact of the interest rate uncertainty on investment. Low debt firms respond to the cross-effect of the interest rate uncertainty and debt negatively, while high debt firms seem not to react to this cross-effect. We interpret this finding by the trade off between the effect of the interest burden and the effect of debt revaluation. The comparison between different uncertainty measures suggests that the choice of techniques of quantifying uncertainty does not affect qualitative conclusions on the relationship between investment and the volatility of the interest rate.

Jan Boone
“Measuring product market competition”

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Abstract
This paper considers a number of parameterizations of competition. It turns out that it is not always the case that a rise in competition reduces industry wide profits, concentration or increases industry wide revenues. However, all parameterizations of competition feature the reallocation effect: a rise in competition reallocates profits from inefficient to efficient firms. I propose an empirical indicator of competition based on the reallocation effect and consider how well it works in the light of unobservable marginal costs, unobservable product quality and an unlevel playing field.

Charles S. Bos, Ronald J. Mahieu, and Herman K. van Dijk
"Daily exchange rate behaviour and hedging of currency risk"

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Abstract
Exchange rates typically exhibit time-varying patterns in both means and variances. The histograms of such series indicate heavy tails. In this paper we construct models which enable a decision maker to analyze the implications of such time series patterns for currency risk management. Our approach is Bayesian where extensive use is made of Markov chain Monte Carlo methods. The effects of several model characteristics (unit roots, GARCH, stochastic volatility, heavy tailed disturbance densities) are investigated in relation to the hedging decision strategies. Consequently, we can make a distinction between statistical relevance of model specifications, and the economic consequences from a risk management point of view. The empirical results suggest that econometric modelling of heavy tails and time-varying means and variances pays off compared to an efficient markets model. The different ways to measure persistence and changing volatilities appear to strongly influence the hedging decision the investor faces.

D. Peter Broer
"Social security in an ageing society: An applied general equilibrium analysis"

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Abstract
This paper studies the effects of the imminent ageing of the population on the system of social security and health care in the Netherlands. The paper tries to measure the distortionary burden of these systems, and their effects on growth and welfare of the Dutch economy. The paper shows that in the current system ageing leads to considerable welfare losses for future generations. It discusses the effect of reform measures in the pay-as-you-go social security system, both in terms of a larger degree of funding, and in terms of a better linkage between contributions and benefits. It investigates the sensitivity of these results to the development of the world rate of interest. It is shown that both transitions are efficiency-improving, even in case of a fall in interest rates. Both reforms hurt in particular the lower income groups of current generations. However, it appears that the negative welfare effect of the reform for current generations is

smaller than the redistribution caused by the demographic shift.

Allard Bruinshoofd
"Asymmetric information, agency costs and the demand for corporate liquidity in the Netherlands"

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Abstract
This paper draws on the literature on asymmetric information and agency costs and on collected empirical evidence on liquidity constrained investment behaviour. A framework is presented in which firms demand liquidity due to informational problems in the capital market. Furthermore, forward looking firms take into account that credit rationing may be a real option. Cash holdings provide a cushion between unforeseen events and real activities. However, at the same times firms make efforts to adjust their cash balances towards the desired levels. This produces constrained investment behaviour when the need for financial adjustment is mounting. Empirical results are derived from a sample large Dutch enterprises, presenting financial information on 30,000 firm-years over the period 1979-1997. The results indicate that informational discrepancies carry on to the demand for corporate cash, while deviations from desired cash ratios impact on investment.

Thomas Cool
"An estimator for the road freight handling factor"

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Abstract
Analysis of road freight transport is hindered by the lack of direct observations of the handling factor. The handling factor is the frequency of lifts of the tonnes in the supply chain from origin to destination. It also is the number of times that the same tonnes are reported to the central statistical office. Changes in the tonnes lifted figure may be caused by changes in the actual tonnes in transport or by changes in the handling factor, in unknown proportions. An econometric technique can be used to estimate what has not been observed, and thus to recover the hidden variables of both the handling factor and the tonnes in transport.

Harald Creusen and Bert Minne
"Falling R&D in oil companies: A study on R&D and investment in fixed assets in the oil industry"

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Abstract
Recently CPB Netherlands Bureau of Economic Policy Analysis studied the strategic interactions of 13 companies in the oil industry on their research and investments in fixed assets. Actually, the research intensity of the oil industry has dropped in the last decade, while the investment intensity in fixed assets remained stable. This is a matter of concern because a lack of pioneering research may retard technological progress and preserve environmental pollution. First we investigated why the research intensity and investment intensity have diverged. Our study reveals that the investment in fixed assets of oil companies particularly depend on their own financial structure, while their research expenditures mainly coincides with the research expenditures of competitors. The research strategy and investment strategy thus depend on different premisses. Then we analysed the seriousness of the drop in research intensity. The drop is partly compensated by an increase in research efficiency. But there is no evidence that oil companies have specialized their research and avoided duplication, or extended their research to new fields such as renewable energy sources.

Ronald Dekker
"Unemployment duration after temporary jobs: Evidence for the UK"

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Abstract
This paper looks at unemployment durations for people that have previously been employed on temporary contracts, were dismissed or were made redundant using data from the British Household Panel Survey (BHPS) for the 1991-1997 period. It is hypothesized that workers on temporary contracts are more active in on-the-job search than permanent workers and therefore experience shorter spells of unemployment after the contract ends compared to permanent workers that were laid off without prior notice. The question is whether the shorter duration compensates for the inherently higher probability of unemployment for temporary workers. Furthermore, theory offers competing hypotheses for the influence of the duration of the

temporary contract on the duration of the following unemployment spell. It can be argued that longer permanent contracts lead to longer spells, because of longer potential entitlement to unemployment benefits. On the other hand longer temporary contracts enables longer on-the-job search before the end of the contract and therefore shorter spells of unemployment after the contract. Furthermore in this paper we incorporate temporary jobs into a standard job-search framework. Results indicate that when workers' employment is 'caused' by the end of a temporary contract, the unemployment spell is indeed shorter than for other unemployment causes. Furthermore we show that under general circumstances more attractive temporary jobs can increase overall re-employment hazards.

Gerrit van den Dool
"The budget balance in the medium term and the Hodrick-Prescott filter"

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Abstract
The Pact for Stability and Growth obliges the EMU countries to strive for a budgetary position in the medium term that is 'close to balance or in surplus.' Such a position allows them to cope with cyclical downturns and to keep the budget deficit below the 3% ceiling without having to resort to special measures. The European Commission therefore has proposed that Member States should concentrate on the budget balance 'corrected for the influence of cyclical fluctuations in economic activity.' This proposal was agreed with by the Monetary Committee and the Ecofin in the opinion of 24 September: 'It is therefore clear that the assessment of the appropriateness of Member States' medium-term objectives and the examination of their fulfilment has to take explicit account of the cyclical position and its effect on the budget.' The time frame for interpreting the medium term would be the length of the business cycle. Apart from a cyclical safety margin, leeway is needed to cope with 'other sources of variability and uncertainty in the budgets, the need to ensure a rapid decline in high debt ratios and the need to cater for the costs associated to population ageing.' Given the importance which the Pact attaches to the budgetary position in the medium term, paragraph 2 goes into this subject in greater detail. Structural budget balances are usually calculated by adjusting the actual balance for cyclical influences and not for any other temporary factors. This means that the structural balance may not be as structural as the word suggests. For analytical purposes one might therefore need to go further and eliminate other components (due to temporary or one-off measures) as well. In many calculations a major role is played by the Hodrick-Prescott filter. Therefore paragraph 3 discusses the end point problem, which is inherent to this filter. Paragraph 4 gives some examples of the peculiarities of the HP-filter. Finally, some tentative conclusions are drawn in paragraph 5.

Rudy C.M.H. Douven

"Equilibrium rates and wage flexibility in Europe"

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Abstract:
This paper presents estimates of short-term and long-term equilibrium rates of unemployment. Estimates of equilibrium rates of unemployment in the literature often produce results that closely follow actual unemployment rates. This paper, in contrast, shows that in the past twenty years equilibrium rates may well have been substantially lower than actual unemployment rates in many European countries. This result indicates a considerable period of rather low wage flexibility and strong persistence.

Robert A.J. Dur
"Why do policy makers stick to inefficient decisions?"

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Abstract
This paper offers an explanation for why policy makers stick to inefficient policy decisions. I argue that repealing a policy is a bad signal to voters about the policy maker's competence if voters do not have complete knowledge about the effects of implemented policies. I derive the optimal policy maker's decision on continuation of a policy, assuming that voters' beliefs about the policy maker's competence are updated according to Bayes' rule. I show that if the policy maker cares sufficiently about reelection, he will never repeal a policy.

Jan Fidrmuc and Jarko Fidrmuc
"Integration, disintegration and trade flows in Europe: Borders do matter"

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Abstract:
We use gravity models to analyze the effects of integration and disintegration on trade. We explore the dynamics of trade relations during the processes of integration and disintegration that occurred during the last decade. We find evidence of intensifying trade relations in the European Union, especially after the introduction of the common market in 1992. The liberalization of trade between CEE and the EU has so far lead only to normalization of trade relations between the East and the West, i.e. trade has grown to the normal level as predicted by the distance and economic size of the respective countries. Disintegration of Czechoslovakia and the Soviet Union resulted in sharp fall in the intensity of trade, despite continuing high degree of trade liberalization, as was the case of the customs union of the Czech and Slovak Republics.

Jana Fidrmucova
“The channels of restructuring in privatized Czech companies”

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Abstract
Not available at this time.

Fergus Bolger, **Philip Hans Franses**, and Gerrit Antonides
“Does the Index of Consumer Sentiment only measure expectations? An empirical assessment for the Netherlands

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Abstract
The Index of Consumer Sentiment (ICS) is widely accepted as a leading indicator for discretionary consumption and even the business cycle more generally. However, the ICS displays

strong seasonality, which suggests that not only future expectations are being measured but also reactions to current circumstances. We examine if economic variables, seasonality, weather and non-economic events have explanatory value for consumer sentiment indicators for The Netherlands, for which we have seasonally unadjusted data. We find substantial evidence of such explanatory value, which implies that these variables may bias the economic expectations as measured by the ICS. However, we also find that correcting for these variables does not cause consumer sentiment indicators to have more (out-of-sample) predictive value for economic entities such a new car sales, retail sales of durables or consumer credit. The results are discussed both in practical terms, for data collection and forecasting, and theoretical terms, for modelling the relationship between news, mood and expectation formation

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Koos Gardebroek and Alfons Oude Lansink
"Estimating systems of equations with unbalanced panel data: The Hausman-Taylor approach"

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Abstract
This paper develops a Hausman-Taylor estimator for estimation of systems of equations on unbalanced panel data. The Hausman-Taylor estimator results in more efficient estimates than the frequent applied Fixed-Effects estimator and allows for estimating parameters associated with variables that vary over individual firms only (e.g. regional dummies). Moreover, the Hausman-Taylor estimator allows for performing tests on correlation between fixed factors and the unobservable management variable. These tests yield insight in the sources of management bias. The framework is applied to a rotating panel of specialised Dutch pig producers over the period 1980-1996.

Pieter A. Gautier
"Unemployment and search externalities in a model with heterogeneous jobs and heterogeneous workers"

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Abstract
The continuing deterioration of the position of low skilled workers in the beginning of the 90's in essentially all industrialized countries is one of the most debated issues in both labor and macro-economics. In this paper a matching model with low and high skilled workers and simple and complex jobs is presented. I show that the degree to which low skilled workers are harmed by high skilled workers who are willing to temporarily accept simple jobs depends on the relative productivity of high and low skilled workers on simple jobs. Under certain conditions low skilled workers can even benefit from job competition by high skilled workers.

Jardena Gil and Henk Folmer
"International environmental problems and the European Union"

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Abstract
The most fundamental problem of international environmental policy is to achieve cooperation among the countries involved. This paper addresses the problem whether the unification of Europe facilitates linking environmental problems to non-environmental problems in order to achieve cooperation. We discuss the multistage decision making process and the different institutions of the European Union. We will see that the division of seats and the weights of the votes is divided over the member states approximately according to the number of inhabitants of the countries. Furthermore we will notice that when the European Commission cannot reach an agreement in the last stage of the multistage decision making process, negotiations take place where several different subjects are linked, in order to compensate concessions in one area of negotiations by concessions in another area of negotiations. To model the linking of several areas of negotiations, we use interconnected games. We define interconnection of cooperative games in characteristic function form. We include a linear weight function that represents the 'preferences' of the players across the constituting games and a weight vector that represents the power each player has. Finally we will show that the core of an interconnected game can be nonempty, although the cores of some constituting games are empty. This result can be used to explain cooperation in the area of environmental problems, where it normally would not occur.

Wolter Hassink and Marc Pomp
"Shortages and the wages of teachers at dutch secondary schools: An empirical investigation"

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Abstract:
This paper presents estimates of wage curves of individual teachers who are employed at Dutch secondary schools. We find a positive, but modest impact of labour market tightness on the individual hourly wage of teachers. Furthermore, we get some indication of a trade off between class size and the wages.

A. Lans Bovenberg and **Ben J. Heijdra**
"Environmental abatement and intergenerational distribution"

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Abstract
This paper employs an overlapping-generations model to explore the impact of public abatement on private investment and the intergenerational distribution of welfare. Whereas public abatement benefits the oldest generations in terms of non-environmental welfare, future generations gain most in terms of environmental welfare. The overall benefits tend to be smallest for generations born at the time of the unanticipated policy shock. Public debt policy, however, can be employed to ensure that welfare gains are distributed more equally across the various generations. Such a policy implies that natural capital crowds out man-made capital.

Petra Hellegers
"New options for groundwater allocation in Dutch agriculture"

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Abstract
Farmers in the Netherlands extract groundwater of good quality for low-value use, whereas the replenished aquifer is of a lower quality, and extraction has a negative impact on environmental amenities. These externalities are not yet fully considered when determining agricultural groundwater extraction patterns. In this paper conceptual models are used to study optimal groundwater extraction patterns over time, considering water's environmental benefits as well as

user costs of changes in the quantity and quality of the groundwater stock. Existing and alternative institutional arrangements to allocate groundwater and their impact on technology adoption are compared. The study shows that the current system of historical groundwater extraction rights and irrigation bans is less efficient and provides less incentives for technology adoption than a system that considers externalities in the price of water or diverts water away from agriculture while encouraging trading.

Jeroen Hinloopen and Charles van Marrewijk
"On the empirical distribution of the Balassa index"

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Abstract
The concept of revealed comparative advantage as measured by the Balassa index is widely used in practice to determine a country's weak and strong sectors. Interpreting the Balassa index is difficult however in view of the limited knowledge to date on the distribution of this index. We analyze the empirical distribution of the Balassa index and its stability and properties over time, using Japan - European Union trade data. It appears that the distribution is relatively stable over time and that the widely used rule 'a Balassa index above one' to identify a strong sector, selects about one third of all industries. On the other hand, the distribution appears to differ markedly across countries.

Andrea Gaunersdorfer and **Cars H. Hommes**
"A nonlinear structural model for volatility clustering"

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Abstract
A simple nonlinear structural model of endogenous belief heterogeneity is proposed. News about fundamentals is an IID random process, but nevertheless volatility clustering occurs as an endogenous phenomenon caused by the interaction between different types of traders, fundamentalists and technical analysts. The belief types are driven by an adaptive, evolutionary dynamics according to the success of the prediction strategies in the recent past conditioned upon

price deviations from the rational expectations fundamental price. Asset prices switch irregularly between two different regimes - close to the fundamental price fluctuations with low volatility, and periods of persistent deviations from fundamentals where the market is dominated by technical trading - thus, creating time varying volatility similar to that observed in real financial data.

Albert van der Horst
"The dynamics of public investment: A theoretical and empirical investigation"

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Abstract
We study both theoretically and empirically the response of the economy to changes in public investment and the energy price. Theoretically, this response is dynamic because the stock of public capital has to be built up, and because firms smooth their investments. We develop a VAR model for the Dutch economy, and show that output, private investment and employment respond dynamically to exogenous changes in public investment and the price of energy.

W. Jos Jansen
"What do capital inflows do? The case of Thailand, 1980-96"

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Abstract:
This paper examines the effects of private financial capital inflows in Thailand in the pre-crisis period (1981:I-96:IV). Private capital inflows are found to be associated with higher asset prices, lower lending rates, surges in bank lending to the private sector, surges in domestic spending driven by higher investment, higher output, modest inflation, and modest real exchange rate appreciation. Inflows are associated with greater macroeconomic and financial vulnerabilities. However, current account deficits are temporary, thus sustainable, as exports catch up with higher imports within two years. Consequently, the Thai crisis appears to be more of a liquidity crisis than an external solvency crisis.

Robert Paul Berben and **Eelke de Jong**
"The euro/dollar exchange rate: The consequences of euro's role as a vehicle currency"

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Abstract
This paper argues that an increase in the use of the euro as a vehicle currency will limit the pobability of misalignment between the euro and the dollar. To verify this claim, a BAND-TAR model of the real exchange rate is estimated. The model allows for the possibility of different speeds of adjustment in the two outer regimes. The ratio of the speeds of adjustment in the outer regimes is used as an indicator for the currency's overvaluation or undervaluation (misalignment). According to this measure the dollar has been systematically overvalued in the last two decades. The extent of the overvaluation appears to be related to the currency's use in international transactions. Therefore, as the euro becomes more widely used in international transactions, the likelihood of a prolonged period of misalignment between the euro and the dollar diminishes.

Vladimir A. Bulavsky and **Vyacheslav V. Kalashnikov**
"Equilibrium in generalized Cournot and Stackelberg models"

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Abstract
A model of an ollgopolistic market with a homogeneous product is examined. Each subject of the model uses a conjecture about the market response to variations of its production volume. The conjecture value depends upon both the current total volume of production at the market and the subject's contribution into it. Under general enough assumptions, the equilibrium existence and uniqueness theorems are proven. Furthermore, a particular case of conjectures of the constant elasticity is considered, and the generalized Stackelberg model comprising several leaders is investigated.

Thijs Knaap
"Generalizations in a model of economic geography"

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Abstract
Under the heading 'new economic geography,' a collection of models has been constructed that purport to explain part of an economy's geographic structure using pecuniary externalities. Agglomerations, in these theories, are caused by complementarities in production. The complementarities formalize the concept of forward and backward linkages (Hirschman 1958) between firms and the labor market, or among firms. Many of the results that have been obtained in this literature make use of the monopolistic competition model by Dixit and Stiglitz (1977). A survey of those results may be found in Knaap (1998) or Ottaviano and Puga (1997). One particular way of modelling linkages is used in Krugman and Venables (1995). In this paper, agglomeration occurs because of input-output connections: the production of one firm is used as an input for other firms, who therefore prefer to be close by. The authors assume that every firm uses as an input a composite good, made from the output of all other firms. In fact, the structure of production is completely symmetric, so that each firm uses every possible product to the same degree. This is a natural property of the Dixit-Stiglitz framework, in the way it is usually applied.

Lourens Broersma, Frank A.G. den Butter and **Udo Kock**
"Wage formation and the flow approach: An empirical analysis for the Netherlands"

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Abstract
In flow models of the labour market, wages are determined by negotiation between workers and employers on the surplus value of a realised match. From this perspective our study presents an econometric analysis of the influence of labour market flows on wage formation as alternative to the traditional specification of wage equations where unemployment (or a transformation thereof) represents the Phillips-curve or wage curve-effects. We estimate a dynamic wage equation for the Netherlands using a cointegration approach. We find that labour flows are indeed important determinants for both short run and long run wage setting.

Peter Kooreman
"Veblen effects when licence plates signal car age"

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Abstract
In The Netherlands the age of a car can be inferred from its license plate. A particularly strong age signal was introduced in 1991 due to a change in the number format on the plates of new cars. Using data from the used car market we find that, other things equal, a new type of license plate increases a car's price by 4 to 5 percent.

W. Erno Kuiper and Matthew T.G. Meulenberg
"Vertical price leadership within a channel: A cointegration study"

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Abstract
This paper is concerned with the question whether or not retailers allow suppliers to set the wholesale price not only on the basis of the costs faced by the suppliers but also on the basis of consumer demand. In other words, are suppliers able to behave as vertical price leaders in the sense of Stackelberg leadership by having the economic power and managerial ability to take into account the reactions of the downstream retailers to changes in the wholesale prices? Using standard theory, long-run price relationships between the stages in the channel are derived. Next, these static price relationships are imposed on a dynamic model to be tested for cointegration and error-correction structure, embedding the hypotheses on vertical leadership. An empirical application to two Dutch marketing channels for food products gives conceivable results.

Gerard H. Kuper and Daan P. van Soest
"Asymmetric adaptations to energy price changes"

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Abstract
The effectiveness of policies to reduce the use of energy depend on the elasticity of substitution between the various inputs and on the rate of technological progress. This paper presents a theoretical model emphasising energy investments' characteristics of uncertainty and irreversibility that result in testable hypotheses concerning the relative values of substitution parameters and rates of technological change in periods of high and increasing energy prices and in periods of low prices. Estimation results for a panel of sectors of the Dutch economy show that the elasticity of substitution between energy and other inputs is low in periods of low energy prices, whereas it is significantly higher in the preceding period of high and increasing energy prices. Furthermore, energy-saving technological progress in periods of high and increasing energy prices is also significantly higher than if energy prices are low and falling. The regression results suggest that, due this asymmetric response of firms to changes in energy prices, taxing energy in the current period of low energy prices will not yield substantial reductions in energy use of Dutch industry.

Gerard J. van den Berg, **A. Gijsbert C. van Lomwel**, Jan C. van Ours
"Individual variation in exit rates from unemployment: A nonparametric multivariate analysis using aggregate data"

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Abstract
In this paper we analyze transitions from unemployment both to out of the labour force and to employment. We estimate a two state competing risks model with nonparametric specifications of duration dependence and unobserved heterogeneity in which there is possible correlation between the unobserved heterogeneity terms of both transitions. We use a unique data set on French unemployment over the period 1988.3-1994.4, stratified by gender type, duration class and exit state. Our nonparametric approach enables us to illustrate the identifiability conditions of this model. Our results show that a competing risks model is superior to a single risk model which only considers exits out of unemployment regardless of the destination. We find that unobserved heterogeneity terms affect both observed exit rates, but there is no correlation between the terms, so the exit rates are independent. Furthermore, we find clear differences in duration dependence. While the exit rate to employment shows some negative duration dependence, the exit rate to nonparticipation is about constant over the duration of unemployment. Finally, we find that the

exit rates of males and females are very much alike.

Emiel Maasland
“Auctioning universal service subsidies”

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Abstract
The new Dutch Telecommunications Law requires that telephone service be available to everybody at an affordable price. It also requires that the universal service provider be compensated for universal service costs. It offers the opportunity to select the universal service provider by the market. The proposed procedure is to hold a procurement auction in which bidders name the price they require to accept a universal service obligation in a service area. The one who settles for the lowest subsidy gets the universal service. One of the problems of this procedure is the information advantage of the former universal service provider (KPN) in the auction: he knows what the most recent costs are and therefore what a good bid is. The new entrants have to base themselves on information from previous years that can be outdated. This paper shows that forcing the former universal service provider to bid first can counteract his information advantage. Also, the paper shows that the Dutch government profits from sequencing.

Huigh van der Mandele
“Economic apoptosis: Consequences of the scientific work of the biologist Wyllie and the mathematician Markov for the debate ‘markets versus government’”

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Abstract:
Schematization of the debate government-market. Continuous variation of effectiveness of economic organizations from excellent to mediocre and back, in the course of which some organizations become irreparably ineffective or “kaput”. According to the Markovian stochastic process all organizations would in the long run end up being kaput. Biological apoptosis (discovered by Wyllie et al.) is an essential process by which useless or harmful cells are disposed of tidily. The ingredients are made available for use in other parts of the organism. Absence of apoptosis, due to damage to the DNA, plays a large role in the occurrence of some types of cancer. Economic apoptosis is the equivalent of biological apoptosis. Irreparable

organizations are dissolved, and production factors are made available for other more effective organizations. Apoptosis is scarce or absent in the public sector. It is widespread in the market-sector. This is one of the causes of the effectivity gap between government and market.

Philip S. Marey
"Chartists and fundamentalists: Evidence from an artificial foreign exchange market"

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Abstract
Survey studies on exchange rate expectations tend to reject the rational expectations hypothesis for longer horizons and indicate that expectations are heterogeneous. In this paper we perform situations with an artificial foreign exchange market in which both extrapolative expectations traders ('chartists') and regressive expectations traders ('fundamentalists') are present. Artificial markets with up to 20% chartists are able to reproduce statistical properties that are characteristic for empirical exchange rate series. When the fraction of chartists exceeds this critical level, the simulated exchange rate process may be weak-form efficient, but exhibits too many extreme returns to be empirically plausible.

Theo Leers, **Lex Meijdam**, and Harrie Verbon
"Asymmetric demographic shocks and migration when public pensions are endogenous"

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Abstract
The paper analyses the long-run and short-run effects of asymmetric demographic shocks in a multi-region two-period overlapping generations model with two types of agents, each having perfect foresight: immobile Rich and mobile Poor. In all regions a Pay-As-You-Go financed public pension system is decided upon under the influence of the young and the old currently living in the region. A decline in the fertility of the Rich in one country is shown to set off a dampening process of cyclic migration flows. This cyclic behaviour is perfectly rational and will be foreseen, as decisions are taken with full information on their consequences. At the time of the occurrence of the shock (or its first anticipation) the young are less, but the old are more

affected in a small country compared to a large country.

Joan Muysken and Geralt Nekkers
"Skilled-unskilled wage differentials, unemployment and hours of work: The case of America and Europe"

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Abstract
In our analysis we follow Davis (1998a) and consider the consequences from trade between a flexible-wage America and a rigid-minimum-wage Europe. The minimum wage implies a certain level of unemployment in Europe, whereas factor price equalization guarantees the same wage in America, albeit at full employment levels. We then use a process of endogenous human capital accumulation, together with a lower schooling productivity for the American unskilled workers to explain the larger skilled-unskilled wage differential in America. Moreover, we show that unskilled workers in America will work more hours than their European counterparts.

Niek J. Nahuis
"An alternative demand indicator: The **N**on-**A**ccelerating **I**nflation **R**ate of **C**apacity **U**tilisation"

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Abstract
This article examines the usefulness of capacity utilisation as a demand indicator of inflation for European countries. The traditional demand indictor, the NAIRU, suffers from hysteresis, causing the NAIRU to fluctuate. As a consequence monetary policy analysis requires alternative concepts. A potential candidate may be the NAIRCU, the Non-Accelerating Inflation Rate of Capacity Utilisation. However, hardly any empirical literature on the NAIRCU for European countries exists. This article tries to fill this gap. First, the NAIRCU is estimated for several European countries. Second, it is investigated wether this equilibrium level is stable over time.

Richard Nahuis and Sjak Smulders
"The rising skill premium, technological change and appropriability"

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Abstract
In the US the skill premium and the non-production/production wage differential increased strongly from the late 1970s onwards. Skill-biased technological change, trade with unskilled-abundant countries and changes in the (domestic) supply of skilled workers have been proposed as explanatory factors. By the method of eliminating the impossible, skill-biased technological change is argued to be the dominant explanation. This paper shows that the dismissal of the increased supply of skill - which is argued to be countervailing rising skill premiums - is premature. In a simple model, well embedded in the literature on R&D, knowledge accumulation and (semi-)endogenous growth, it is shown that the demand curve for skilled labour might well be upward sloping. Our key assumption is that skilled labour is employed in non-production activities that both generate and use knowledge inputs. It is shown that the tension between non-rivalness and appropriability of R&D output is crucial for the sign of the slope of the skill-demand curve. A necessary condition for an upward sloping demand curve is the ability of firms to appropriate the intertemporal returns from non-production activities.

Geralt Nekkers
"A regional insider-outsider model with cooperation and harassment"

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Abstract
In this paper we use a static two-region insider-outsider model with outsider search to test the robustness of Lindbeck and Snower's cooperation and harassment result. By assumption, within one and the same region the general Lindbeck-Snower result applies. Insiders use their cooperation and harassment activities strategically to successfully counteract any underbidding attempt on the part of the outsiders. It is concluded that the introduction of a spatial element

makes underbidding of insider wages possible at least theoretically, while at the same time challenging the standard view that worker migration will ultimately lead to wage equalization.

Maria Nijnik
"Economics of carbon sequestration by afforestation of waste and marginal agricultural lands of the Ukraine"

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Abstract
Afforestation, reforestation and forest preservation is an attractive economic alternative to reducing carbon emissions. The main objective of this paper is to assess the Ukraine's potential possibilities to contribute to carbon cycle and climate stability through the afforestation program and to estimate costs of practical implementation of such policy measures, to be able in the future, to compare them with the emission reduction option. I explore the potential of afforestation of waste and highly eroded unwooded lands within the State Forest Fund and also marginal agricultural lands as one of the options for the country to reduce C02 emissions. The first step presented in this paper, is to examine the case, when trees are planted for a period of 40 years, without considering future use of wood and land after timber harvesting (Van Kooten, Thompson and Vertinsky, 1993; Guy and Benowicz, 1998; Van Kooten and Bulte, 2000).

Björn de Groot, Siem Jan Koopman and **Marius Ooms**
"Time-series modeling of daily tax revenues"

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Abstract
This paper discusses a time-series model for daily tax revenues. The main feature of tax revenue series is the pattern within calendar months. Standard seasonal time series techniques need to be

modified, because the number of trading days per calendar month varies from month to month and from year to year. The model is an unobserved components model, with a trend and seasonal components that vary over time. The seasonality for inter-month and intra-month movements is modelled using stochastic cubic splines. The model is made operational and used to produce daily forecasts at the Dutch Ministry of Finance. A front-end for model configuration and data input is implemented with Visual C++, while the econometrics and graphical diagnostics are built around Ox, and Ssf Pack, which implements general procedures for the Kalman filter and state space models.

Tassew Woldehanna and **Arie Oskam**
"Are farmers completely rational consumers and do they suffer from a borrowing constraint?: The Dutch case"

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Abstract
In this paper, we clarify some confusing literature on the consumption behaviour of farmers by elaborating and testing a farm-level consumption model. Euler equations are derived for a constant relative risk aversion utility function for total consumption expenditure, household expenditure and other expenditures, including durables. According to the Euler equations, farm households do not optimise a lifetime utility function. Contrary to well-known explanations, farm households neither respond clearly to income uncertainty nor constrain their borrowing, but rather follow simple consumption rules, which are strongly influenced by habit formation.

Joulia Ossokina and Herman Vollebergh
"The tax treatment of interest expenditures of multinational enterprises"

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Abstract
This paper analyses the national tax treatment of interest expenditures of multinational enterprises in a non-cooperative world. It is shown that the international tax system generally leads to

distortions in the capital decisions of multinational firms. In contrast to the existing literature on the tax treatment of the expenditures of multinationals, it is found that the form and size of distortions can differ per country depending on the stake a country has in the multinational. Furthermore, internationalisation of the firm's operations and ownership is demonstrated to lead to less generous interest deduction rules of individual countries and in the limit may result in no deduction allowance at all.

Jolanda Peeters
"Globalisation and unemployment: An economic geography perspective"

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Abstract
We consider an economic geography model with services related linkages in order to investigate the impact of globalisation, defined as falling transportation costs of goods and producer services, on the labour market position of low-skilled workers. We include the possibility of unemployment for low-skilled manufacturing workers by introducing a minimum wage for these kind of workers. The degree of openness of the country turns out to be an important factor in explaining the diverging labour market experiences of several European countries.

Maarten van Ravenswaaij
"Aggressive orders and limit order book behaviour on the Paris Bourse"

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Abstract
Using the order classification of Biais, Hillion and Spatt (1995), this paper analyses the most aggressive orders for a sample of large and smaller stocks traded on the Paris Bourse. Aggressive orders immediately result in trades and move prices. Transition probabilities confirm the diagonal effect found in other studies. We also find that the diagonal effect dies out rather slowly. The construction of a window around the occurrence of the most aggressive orders enables us to analyse the behaviour of several limit order book characteristics. The paths of the best quotes are not symmetric for the aggressive buy and sell orders, suggesting price increases and price

decreases are generated differently. Moreover, aggressive buy orders more often generate positive returns in the first two hours and the last hour of the day, whereas sell orders more often generate a negative return in the middle of the day. The development of the bid-ask spread and the duration clearly indicate that traders who use aggressive orders wait for favourable spreads and then quickly submit their order. For the sample of stocks, the Paris Bourse is found to be a liquid and resilient market, with depth at the best quotes and spreads returning to the level before the aggressive order quickly.

A. Lans Bovenberg and **Harry ter Rele**
"Generational accounts for the Netherlands: An update"

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Abstract:
This paper extends the standard generational accounting methodology by incorporating prospective changes in the economic environment, assigning the benefits of government purchases to generations, distinguishing between public consumption and public investment, and transforming the generational accounts into government budgets. It applies the methodology to the Netherlands. An expected increase in labor-force participation almost offsets the adverse effect of aging on the sustainability of the Dutch public finances. Since the rise in labor-force participation occurs before the bulk of the aging, the government will have to run sizable fiscal surpluses in the next decades in order to create the budgetary room for higher age-related government expenditures in later decades.

Jan Rouwendal, Erik Verhoef, Piet Rietveld, and Bert Zwart
"Congestion caused by speed differences"

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Abstract
We study interaction between the trips of two types of drivers on a two-lane road. The driver types are identified by their desired speeds. The difference in desired speeds causes congestion because slow drivers force fast drivers to reduce their speed. Optimal tolls can be computed, but the bottom line of this exercise is that either laissez faire (no tolling or traffic restrictions) or prohibition of slow drivers to enter the road is in practice (i.e. taking into account costs

associated with tolling) the optimal policy. A simulation model used used to study how this situation is changed if the possibility of overtaking is introduced into the model.

Joan Muysken, **Mark Sanders** and Adriaan van Zon
"Wage divergence and asymmetries in unemployment in a model with biased technical change"

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Abstract
In an attempt to explain the different responses in mainland Europe and the US to a fall in demand for low skilled labour, we present a model with two levels of skills and two classes of goods - low and high skilled intensive, respectively. In case of full employment two distinct labour market regimes emerge in response to skill biased technical change. Either wage divergence between skilled and unskilled workers occurs, or a reallocation of labour takes place, while relative wages do not change. The introduction of wage bargaining allows for unemployment. This leads to three possible labour market regimes and shows that skill biased technical change always causes wage divergence but wage responses are moderated by higher unemployment of low skilled workers.

Zsolt Sandór
"Methods for estimating demand for differentiated products: The case for the automobile market"

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Abstract
We present two methods for estimating the effects of automobile characteristics on consumers' demand. A common problem in obtaining efficient estimates is the low variation of the car characteristics. The first method is based on the idea that using additional data for estimating the same parameters will improve the efficiency of the estimates. The additional data are obtained from a choice experiment in which respondents choose from hypothetical autos. We describe how to design the experiment in such a way to provide as much information as possible on the parameters of interest. The second method models correlation between observed car

characteristics by factor analysis imposing a simple correlation structure induced by this. The idea was inspired by a factor analysis on prices and characteristics of cars. This way we also accommodate the low variation of the characteristics since we add more information.

Mark Schonewille
"Human capital and labour productivity"

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Abstract
Over the past decade, researchers are increasingly dealing with the effects of several forms of training. Whereas Gary Becker stated that employers pay for specific training and employees for general training, it is often argued that employers provide general training as well and that this has a positive effect on labour productivity. Yet, it can be show that labour productivity is negatively affected by off-the-job and positively affected by on-the-job training, if a time series is used. Assuming that off-the-job training is often of a general nature, while on-the-job training is more specific, this is a surprising result. Moreover, although it is often argued that under-investment in higher education is a problem, the results in this paper show that intermediate skills are of major importance.

Lambert Schoonbeek and Peter Kooreman
"The impact of advertising in a duopoly model"

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Abstract
We investigate the impact of advertising in a simple static differentiated duopoly model. In order to do that, we compare the situation where the firms compete with two strategic variables - i.e. the prices and the advertising expenditures - with the situation where the firms only compete in prices and do not advertise at all. We characterize in terms of the model parameters the circumstances in which the profits, prices and/or outputs of each firm are greater (smaller) in the Nash equilibrium with advertising than in the Nash equilibrium without advertising.

Theo van de Klundert and **Sjak Smulders**
"Loss of technological leadership of rentier economies: A two-country endogenous growth model"

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Abstract
History shows that rich countries may lose their productivity advantage by changing to a rentier economy with large investments abroad. In our two-country two-sector model with firm-specific knowledge and perfect international capital markets, the initially most productive country is being overtaken by the initially backward country. The two countries share the same structural parameters but have different initial knowledge stocks. The larger the initial productivity gap is, the larger is the leader's productivity loss, which implies path-dependency. The existence of a non-tradables sector drives the result. The leading economy gradually accumulates net foreign assets. Interest receipts are spent on imports and non-tradables. Labor is shifted from tradables production and research to non-tradables.

Robert Lensink and **Elmer Sterken**
"The option to wait to invest and equilibrium credit rationing"

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Abstract
Stiglitz and Weiss (1981) show that firms considering risky projects have higher reservation interest rates and hence it is optimal for a bank to reduce loan supply. In this note we show that when risk involved in an investment will be resolved in the future, investors with riskier projects have a greater return from waiting. More risky projects have lower reservation interest rates and hence there is no motive for banks to ration credit demand.

Jan-Egbert Sturm and Jakob de Haan
"How robust is the relationship between economic freedom and economic growth?"

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Abstract
Using various indicators for economic freedom, it is shown that increases in economic freedom are robustly related to economic growth. This conclusion holds even if the impact of outlying observations is taken into account. The level of economic freedom is not related to growth.

Oddvar M. Kaarbøe and **Alexander F. Tieman**
"Equilibrium selection under different learning modes in supermodular games"

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Abstract
We apply the dynamic stochastic framework proposed by recent evolutionary literature to the class of strict supermodular games when two simple behavior rules coexist in the population, imitation and myopic optimization. We assume that myopic optimizers are able to see how well their payoff does relative to what they can get in the stage game and therefore experiment more in low payoff states. A clear-cut equilibrium selection result is obtained: the payoff dominant equilibrium emerges as the unique long run equilibrium. Furthermore, the expected waiting time until the payoff dominant equilibrium is reached is relatively short, even in the limit as the population size grows large.

Nico Valckx
"The information value of stock returns and interest rates for unexpected inflation"

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Abstract
In this paper, we investigate the information content of stocks and bonds for unexpected inflation. We use the dynamic accounting framework of Campbell and Shiller (1988) and Campbell and Ammer (1993) to decompose asset price movements into several factors, including an inflation factor. Taking the inflation factor as the dependent variable, we obtain an expression for inflation with asset price components as explanatory variables. An empirical examination for the US, Germany and Japan learns that unexpected inflation is best explained by the inflation factor contained in bond returns. The inflation factor contained in stock indices does not tell much about unexpected movements of inflation.

Maarten C.M. Vendrik
"Bandwagon and habit effects on female labor force participation"

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Abstract
This paper develops a dynamic model of bandwagon and habit effects on female labor force participation. The model is used to explain remarkable patterns in the long-run development of the participation rate of married women in the Netherlands and other OECD countries. It is formulated in terms of meso-economic (i.e., on the level of social groups) and macroeconomic variables, but it is derived in a systematic (be it approximative) way from an underlying microeconomic labor supply model. A rather general analysis shows that the bandwagon and habit effects on the participation dynamics are essentially different. The non-linear bandwagon dynamics is shown to imply long-run elasticities of the participation rate with respect to the wage rate and other exogenous variables which vary with the level of the participation rate according to a hump-shaped profile. The implications of such a profile for the long-run dynamics of the participation rate of married women are derived.

Lucio Vinhas de Souza
"EMU and enlargement: Current strategies of exchange rate linkages"

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Abstract
The objective of this paper is to briefly present the current linkages that the eventual future member states of the European Union have with the common European currency area, the Euroarea.

Arno van der Vlist
"Patterns of new household formation and residential career"

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Abstract
This paper presents a unified framework for analysing new household formation and residential career. Our theoretical model predicts that rates of both departure from a parent's home and residential relocation depends on housing market factors. In our empirical analysis we allow household formation and residential mobility to depend on elapsed duration, and unobserved heterogeneity. Results indicate among others that new household formation depend crucially on the calendar year, whereas residential relocation seems to be less affected by calendar year effects.

Aico van Vuuren
"Measuring the equilibrium effect of unemployment benefits dispersion"

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Abstract
We analyze the impact of unemployment benefits and minimum wages using an equilibrium search model which allows for dispersion of benefits and productivity levels, job-to-job transitions, and structural and frictional unemployment. The estimation method uses readily available aggregate data on marginal distributions of unemployment durations as well as wages and benefit levels. Different causes of structural and frictional unemployment are investigated. We investigate the efficiency of the imposition of a single benefit level for all household types and the introduction of an Earned Income Tax Credit.

Paper abstracts