# OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG

# FAKULTÄT FÜR WIRTSCHAFTSWISSENSCHAFT

## FEMM – Working Paper Series – 2005

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**05028**

Philipp Reiß, Oliver Kirchkamp, Eva Poen:
Outside options: Another reason to choose the first-price auction

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Abstract:

In this paper we derive equilibrium bidding functions for first-price and second-price auctions with private values when bidders have outside options. We then study bidding behaviour with the help of experiments. We find that bidders respond to outside options and to variations of common knowledge about competitors' outside options, though bidders in first-price auctions show more overbidding with outside options than without. In second-price auctions overbidding is not affected by outside options. As expected first-price auctions yield more revenue than second-price auctions. This revenue-premium is higher in the presence of outside options.

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JEL: C92, D44

Keywords: Auction, First-Price, Second-Price, Outside options, Revenue dominance, Overbidding

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**05028**

Peter Reichling, Thomas Spengler, Bodo Vogt:
A Note on the Value Additivity of Certainty Equivalents

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Abstract:

We show that, if value additivity is required, the use of certainty equivalents in company valuation implie both constant absolute and constant relative risk aversion. An investor only exhibits constant absolute and constant relative risk aversion at the same time when he is risk neutral. However, this in turn makes the use of certainty equivalents redundant.

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JEL: G31, D81

Keywords: Company valuation, value additivity, certainty equivalent

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**05027**

Anja Olbrich:
The Optimal Negligence Standard ein Health Care under Suply-Side Cost Sharing

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Abstract:

This paper elaborates on the optimal negligence standard in a world where physicians choose damage prevention subject to erroneous court judgements and to the degree of supply-side cost sharing. Liability uncertainty in malpractice lawsuits leads some physicians to provide excessive prevention and others to underprovide, which results in a welfare loss compared to the pooled first-best equilibrium under perfect information. The standard that minimizes the welfare loss depends on the cost share: Under traditional, close to full cost reimbursement it is lower than the first-best standard, while under substantial supply-side cost sharing it increases and may exceed the first best.

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JEL:

Keywords:

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**05026**

Jean-Pierre Château:
Basle-2 revised standard approach and beyond: Credit risk valuation of short-term loan commitments

Abstract:

This research makes three contributions. The first one prices the credit risk of short-term bank commitments and determines their duration-dependent funding proportion. By combining these factors, the second one computes the 'fair' capital charge corresponding to the commitment 'true' credit risk; a charge that is then compared to the accounting-based ones computed with the Basel-1 and Basel-2 credit-conversion and principal-risk factors. The advantage of the fair-value procedure is that (i) the capital charges computed are quite moderate and internally consistent for all commitment types and (ii) the commitment put values impose some market discipline. The third one finally proposes a new two-dimensional risk-weighting system, which accounts for the borrower's rating ranges of public credit agencies.

05025    Gangolf Groh:
Price Rigidities and the Effects of Wage Policy

Abstract:

The paper analyzes the effects of wage policy intended to reduce unemployment under the assumption that prices do not automatically respond to lower wages. More precisely, it is assumed, that prices and nominal wages are not linked by equalizing marginal revenue and marginal costs, but that price adjustments come about via market entries which are indirectly triggered by a declining wage rate. It is shown, that in the case of only a weak price reaction a general nominal wage cut, although successful in the combat against unemployment, can be accompanied with undesirable side effects such as inefficiently high factor inputs, a lasting decrease in the real sum of salaries or even a decline in output. Furthermore, if overshooting in conjunction with market entries takes place, complex dynamics can occur. On the other hand, the optimistic scenarios in line with standard models of perfect or imperfect competition can be reproduced under the assumption, that the price adjustment is sufficiently strong.

05024    Barbara Pirchegger:
Hedging, Hedge Accounting, and Speculation in a Rational Expectations Equilibrium

Abstract:

This paper explains corporate hedging as well as speculation in a two period rational expectations model. A risk averse manager represents a firm that is priced in a risk neutral market. The manager enters into a cash flow hedge of a forecast transaction by taking a short position in the futures market. When the futures position is chosen, the manager possesses private information regarding the firm's production capacity. Mandatory disclosure of the futures position in the financial statements allows the market to draw inferences over the manager's information. These inferences affect the market's pricing decision and in turn the manager's hedging decision. The futures position taken is chosen not only to reduce price risk exposure but to signal some desired capacity level. In equilibrium, however, the market anticipates the manager's strategy and is not fooled.
Considering varying managerial preferences, we analyze three settings. In the basic setting speculation occurs whenever the manager prefers high market values in both periods. In the second setting we add transaction costs and find that speculation is less likely the higher the costs. Finally, we introduce uncertainty regarding the manager's preferences. If the market needs to determine prices based on expected preferences, incentives to speculate are mitigated in equilibrium but still present.

| 05023 | Ludwig von Auer: |
| | Hedonic Price Measurement: The CCC Approach |

Abstract:

An accurate measurement of general price inflation is an essential prerequisite for sound economic analysis and prudent policy-making. Numerous hedonic regression studies (predominantly focusing on computers) have suggested that due to significant product quality changes over time, driven onward by technical progress, national statistical agencies are not compiling and releasing unbiased price-trend estimates. This paper argues, however, that the estimation method commonly applied in hedonic studies is an unsatisfactory one. Therefore, an alternative estimation procedure is introduced. Utilizing this novel technique, a quality-adjusted twelve-year price-trend for laser printers (1992 to 2003) is estimated and compared with the officially published price-trend.

| JEL: | C23, C43, L63 |

| Keywords: | Hedonic Regression, Price Index, Measurement Bias, Technical Progress, Laser Printer, Information Technology |

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| 05022 | Ludwig von Auer, John E. Brennan: |
| | Bias and Inefficiency in Quality-Adjusted Hedonic Regression Analysis |

Abstract:

Numerous quality-adjusted hedonic price-trend studies based on computer prices have provided support to widely held suspicions that officially released price indices are not accurately measuring the price declines occurring in many information technology (IT) products. If verifiable, then general price inflation is being overestimated and, consequently, real GDP is being underestimated. Existing evidence, however, is inconclusive. First, empirical findings for IT-products other than computers are extremely rare and, secondly, estimation bias is inherent in the hedonic regression technique most commonly employed. This paper presents an unbiased method together with an estimated quality-adjusted price trend for laser printers (1993-2004).

| JEL: | C29; C43; L63 |

| Keywords: | Hedonics, Price Index, Measurement Bias, Technical Progress, Laser Printer |

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| 05021 | Benjamin B. Gansel, Matthias G. Raith, Helge M. Wilker: |
| | Die Hochschule als regionaler Impulsgeber für Unternehmensgründungen - Eine empirische Untersuchung des Technologietransfers der Universität Magdeburg von 1990-2004 |

Abstract:

Die Schaffung von Arbeitsplätzen gilt als ein Fundamentalziel der Wirtschaftspolitik. Dementsprechend sollte auch die Förderpolitik auf die Gründung wachstumsstarker Unternehmen ausgerichtet sein. Da Wachstumsstärke ex ante nur schlecht messbar ist, stellt sich die Frage nach geeigneten Indikatoren für die Förderung. In diesem Beitrag untersuchen wir Unternehmensgründungen aus der Hochschule als Indikator für Wachstumsstärke. Anhand der Daten des GEM Länderberichts Deutschland für das Jahr 2004 zeigen wir zunächst, dass die Wahrscheinlichkeit für einen Hochschulabsolventen, ein potenziell wachstumsstarkes Unternehmen zu gründen, fast doppelt so hoch ist wie für jemanden ohne Hochschulabschluss. Da Gründungen aus der Hochschule häufig im Umfeld der Hochschule angesiedelt sind, ist ein sichtbarer Effekt auf die Entwicklung des regionalen Arbeitsmarktes zu erwarten. Als Beispiel analysieren wir den Technologietransfer der Universität Magdeburg in Form von Neugründungen für den Zeitraum von 1990 bis 2004. Von besonderem Interesse ist der Einfluss von Infrastruktur- und Ausbildungsmaßnahmen auf die Quantität und Qualität von Unternehmensgründungen. Unsere Analyse suggeriert, dass wachstumsstarke Gründungen eine entsprechende Infrastruktur erfordern, aber nicht nachhaltig dadurch generiert werden können. Nachhaltigkeit erfordert vielmehr eine auf Gelegenheiten ausgerichtete Gründerunterstützung in Form von Ausbildung und Begleitung.

| JEL: | |

| Keywords: | Technologietransfer, Unternehmensgründung, Hochschule, Gelegenheiten, GEM |

| 05020 | Horst Gischer, Mike Stiele: |
| | Testing for Banking Competition in Germany: Evidence from Savings Banks |

**Abstract:**

In this paper we adopt the Panzar-Rosse approach to assess the competitive conditions for German banks in the years 1993 - 2002. Using disaggregated annual data from more than 400 savings banks (Sparkassen) the empirical results indicate monopolistic competition, the cases of monopoly and perfect competition are strongly rejected. It appears that by lending to small and mid-size enterprises as well as to private customers, the savings banks have found a niche wherein competitive pressure is rather modest. Small banks seem to enjoy even more market power. Furthermore, we find no significant evidence for a better performance of larger banks in our sample.

| JEL: | G21, L10 |
| Keywords: | banking, competition, market behaviour |

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| 05019 | John D. Hey, Tibor Neugebauer, Abdolkarim Sadrieh: |
| | An Experimental Analysis of Optimal Renewable Resource Management: The Fishery |

**Abstract:**

This paper experimentally studies the extraction decisions of a sole-owner in a fishery, the population dynamics of which behave according to the standard deterministic logistic growth model. Four treatments were implemented which differed in the level of information supplied to the experimental subjects. The theoretical solution was used to evaluate the behaviour of experimental subjects. The data reveal high efficiency losses due to the lack of information on population dynamics and stock size. Efficiency varied between treatments according to the information conditions.

| JEL: | C91, D81, Q22 |
| Keywords: | Experimental economics, renewable resources, dynamic decision making, decisions under risk and uncertainty, misperceptions of feedback |

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| 05018 | Daniel Haile, Abdolkarim Sadrieh, Harrie A.A. Verbon: |
| | Self-Serving Dictators and Economic Growth |

**Abstract:**

A new line of theoretical and empirical literature emphasizes the pivotal role of fair institutions for growth. We present a model, a laboratory experiment, and a simple cross-country regression supporting this view. We model an economy with an unequal distribution of property rights, in which individuals can free ride or cooperate.
Experimentally we observe a dramatic drop in cooperation (and growth), when inequality is increased by a selfserving dictator. No such effect is observed when the inequality is increased by a fair procedure. Our regression analysis provides basic macroeconomic support for the adverse growth effect of the interaction between the degree and the genesis of inequality. We conclude that economies giving equal opportunities to all are not likely to suffer retarded growth due to inequality in the way economies with self-serving dictators will.

| JEL: | C91, D60, K40, O40, P51 |
| Keywords: | inequality, corruption, weak institutions, growth, intentions, dynamic public goods |

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| 05017 | Heike Hennig-Schmidt, Bettina Rockenbach, Abdolkarim Sadrieh: |
| | In Search of Workers' Real Effort Reciprocity - A Field and a Laboratory Experiment |

**Abstract:**

We present a field experiment to assess the effect of own and peer wage variations on actual work effort of employees with hourly wages. Work effort neither reacts to an increase of the own wage, nor to a positive or negative peer comparison. This result seems at odds with numerous laboratory experiments that show a clear own wage sensitivity on effort. In an additional real-effort laboratory experiment we show that explicit cost and surplus information that enables to exactly calculate employer's surplus from

the work contract is a crucial pre-requisite for a positive wage-effort relation. This demonstrates that employee's reciprocity requires a clear assessment of the surplus at stake.

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**05016**     Bettina Rockenbach, Abdolkarim Sadrieh, Barbara Mathauschek:
Teams Take the Better Risks

Abstract:

Many important economic and political decisions are made by teams. May this observation be explained by a higher compliance of team decisions with the principles of economic rationality? The paper reports an experimental comparison of individual and team decisions in situations in which individual decisions were observed to be systematically inconsistent with the principles of rational choice, in particular Expected Utility Theory (EUT) and Portfolio Selection Theory (PST). We find almost no evidence for the greater compliance of team decisions than of individual decisions with the principles of EUT. However, there is substantial evidence for the consistency of team decisions with the PST. Compared to individuals, teams accumulate significantly more expected value at a significantly lower total risk (measured in SD).

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**05015**     Karl Inderfurth:
Risk and Safety Stock Management in Production Planning and Inventory Control with Stochastic Demand and Yield

Abstract:

Production planning and inventory control is facing challenging risk management problems if it is confronted with uncertainties from both the demand and the process side. By analyzing the respective planning problems with methods of stochastic inventory control it is possible to gain remarkably deep insights into the way how optimal reorder and safety stock management responds to joint demand and yield risks. These insights can be exploited to assess and improve the simple type of risk management rules employed in MRP systems to cope with uncertainties in demand and production yield.

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**05014**     Andreas Knabe:
Implementing Endogenous Inside Options in Nash Wage Bargaining Mdoels

Abstract:

The game-strategic foundation of the Nash bargaining solution by a Rubinstein (1982) alternating-offers game shows that in wage bargaining models the threat point should be the inside, instead of the outside option. So far, this insight has been largely ignored in the labor economics literature. Our model provides a new way to implement inside options into Nash wage bargaining models. The solution to the dynamic bargaining system resulting from the endogeneity of inside options can serve as a basis for richer, though still easily applicable, models of wage bargaining that are more in accordance with their game-theoretical underpinnings. The dynamics of the model also provide a theoretical justification for temporarily delayed labor market responses to policy changes.

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**05013**     Jeannette Brosig, Magdalena Margreiteo, Joachim Weimann:
Endogenous group formation and the provision of public goods: the role of promises and lies

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| Abstract: | |
| JEL: | |
| Keywords: | |

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**05012** Peter Reichling, Mark Wappler:
Bilanzielle Ausfallwahrscheinlichkeitsschätzung und Bonitätsaufschläge: Ein europäischer Branchenvergleich

Abstract:

Die Kreditkonditionen enthalten in der Folge von Basel II zwei wichtige Komponenten: die Ausfallkosten und die bonitätsabhängigen Refinanzierungskosten. Beide Komponenten werden wesentlich von der Ausfallwahrscheinlichkeit bestimmt, zu deren Schätzung bilanzorientierte Ratingfunktionen veröffentlich vorliegen. Die von der Europäischen Kommission zur Verfügung gestellten Jahresabschlußdaten erlauben unter Verwendung dieser Funktionen einen europäischen Vergleich branchendurchschnittliche Unternehmen im Hinblick auf Ausfallwahrscheinlichkeit und Bonitätsspread.

As a consequence of Basel II, credit interest rates comprise two important components: default cost and rating-dependent refinancing cost. Both components are determined considerably by the probability of default. Published balance sheet-based rating functions enable us to estimate this probability. The application of these functions to the balance sheet data provided by the European commission permits an European comparison of industry-average enterprises in terms of probabilities of default and credit spreads.

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| JEL: | C53, G21, G33 |
| Keywords: | Bilanzanalyse, Ausfallwahrscheinlichkeit, Bonitätsspread, Balance sheet analysis, probability of default, credit spread |

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**05011** Andreas Werblow, Stefan Felder, Peter Zweifel:
Population ageing and health care expenditure: a school of 'red herrings'?

Abstract:

This paper revisits the debate on the 'red herring', viz. the claim that population ageing will not have a significant impact on health care expenditure (HCE). It decomposes HCE into seven components, includes both survivors and deceased individuals and applies a two-part model to the demand for health care services, using a large Swiss data set. It finds no age effect on HCE for almost all components of HCE when proximity to death is controlled for, and points to differences between individuals receiving long-term care (LTC) services and non-LTC individuals. For the latter a flat or even a falling age curve for all components of HCE except for inpatient care is observed. LTC patients are high user of health care services, their conditional HCE generally shows a decreasing age profile, while the probability of being in need of LTC markedly increases in old age. A 'school of red herrings' can be claimed to exist except for long-term care where ageing appears to matter regardless of proximity to death.

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| JEL: | I12, J14 |
| Keywords: | Ageing, proximity to death, health care expenditure, long-term care |

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**05010** Bodo Sturm:
The Influence of Information and Experience on Market Power in Emissions Trading Markets Ruled by a Multiple Unit Double Auction - Some Experimental Evidence

Abstract:

In this article, we discuss selected methodological problems of previous Double Auction experi-ments and test the hypothesis that a Multiple Unit Double Auction (MUDA) is able to prevent market power in an emissions trading market. Additionally, we analyze how the information sub-jects receive about the market structure and different levels of subjects' experience influence the behavior. Based on a larger number of independent observations than analyzed in previous stud-ies, the experiment generates two

main results. Firstly, emissions trading markets ruled by a MUDA realize a high degree of efficiency eve
under market power conditions. However, a MUDA is, in general, not able to restrict market power. We
observe persistent price discrimina-tion in two market power environments, i.e. the distribution of profits
is strongly shifted in favor of the strong market side without greatly harming efficiency. This result is
independent of the in-formation to subjects about the market structure. Secondly, when subjects are
experienced, the ef-ficiency is higher and the ability of the strong market side to exercise market power
declines strongly. However, the variability of behavior is large and the strong market side is still able to
re-alize supracompetitive profits in some groups.

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| JEL: | |
| Keywords: | emissions trading, market power, experimental economics, Double Auction |

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| 05009 | Claudia Beinert, Peter Reichling, Bodo Vogt:<br>Die Trennschärfe von Ratingfunktionen |

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| Abstract: | |

Die Einschätzung der Bonität stellt einen zentralen Erfolgsfaktor im Kreditgeschäft jeder Bank dar und
erfolgt insbesondere in der Folge von Basel II über Ratingmodelle. Solche Modelle aggregieren mit Hilfe
einer Ratingfunktion vielfältige Informationen über den Kreditnehmer zu einem Rating, das eine Aussage
über die Ausfallwahrscheinlichkeit des Schuldners ermöglichen soll.
Zur Überprüfung der Vorhersagekraft von Ratings diskutieren wir Maße der Trennschärfe von
Ratingfunktionen. Zur Beurteilung und für den Vergleich von Ratingfunktionen ziehen wir neben den in
der Literatur diskutierten Maßen auch stochastische Dominanzkriterien herhan. Die dargestellten
Eigenschaften und Zusammenhänge werden empirisch für die Ratings der Agenturen Standard & Poor's
sowie Moody's Investors Service aufgezeigt.

The estimate of creditworthiness represents a central success factor in the loan business of each bank.
In particular, it is provided by rating models as a consequence from Basel II. Such models use rating
functions to aggregate various information about the rating applicant. The rating allows a statement
about the default probability of a debtor.
We discuss different measures of the discriminative power of rating function to examine the forecast
strength of ratings. Beside the measures discussed in the literature, we also consult stochastic
dominance criteria to evaluate and compare rating functions. The represented characteristics and
relations are applied empirically to the ratings of Standard & Poor's and Moody's Investors Service.

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| JEL: | C52, G21, G33 |
| Keywords: | Kreditrisiko, Rating Accuracy, Trennschärfemaße, Credit risk, discriminative power |

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| 05008 | Erkki Koskela, Ronnie Schöb:<br>The structure of labour taxation and unemployment in efficiency wage models |

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| Abstract: | |

We use an efficiency wage framework to analyze tax reforms that leave the tax wedge unaffected both i
the case of constant and endogenous outside options. An increase in the wage tax rate and a reduction
of the payroll tax such that the ratio of gross wage rate to net-of-tax wage remains constant, does not
affect the labour market allocation. But an increase in the wage tax rate and a reduction of the payroll ta
such that the sum of the tax rate remains unaffected, lowers employment and in the long-run Nash
equilibrium with endogenous outside option this policy reform also lowers effort.

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| JEL: | H22, J41, J48 |
| Keywords: | efficiency wages, structure of labour taxation, endogenous outside option |

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| 05007 | Monica Adya, Edward J. Lusk, Moncef Balhadjali:<br>Do Principles Aid Forecasts? A test of trained and untrained judgment using Rule-based Forecasting |

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| Abstract: | |

Recent undertakings in forecasting have called for the assimilation of forecasting knowledge in the form
of practical principles that can better inform practitioners, researchers, and educators. In this paper, we

examined one aspect of this intent - whether the use of forecasting principles can improve forecast accuracy. Our study used forecasting principles modeled in Rule-based Forecasting (RBF) and explored the following fundamental question: Can principles from RBF guide non-experts towards improved forecast accuracy? To investigate this, we compared forecasts generated by participants who received instruction in the RBF procedures to those who did not. We also compared these results to those generated by the automated-RBF system. Using multiple error measures, we observe that forecasts from the trained group were about 23 to 16% more accurate than those from the untrained group. Forecasts from the automated RBF system were superior to the trained group by about 6-12% across the six horizons. Participant responses to post-study questionnaires revealed that while more training and exposure to RBF was desirable, subjects were satisfied with the level of instruction that they received in the classroom setting.

| JEL: | |
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| Keywords: | Time Series, RBF, Non-Expert User Group, Forecasting Expertise. |

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| 05006 | Bettina Büttner: |
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| | Entry barriers, regulation, and growth |

**Abstract:**

Over the past decade, GDP growth rates of large continental European countries were notably different from those of other OECD countries, especially the US. Empirical studies show that differences in product market regulations provide one important explanation for this development. This paper addresses this stylised fact and analyses how entry barriers affect long-run growth rates within a Schumpeterian endogenous R&D growth model. It is shown that reductions of entry fees, a shortening of start-up procedures, as well as the deregulation of public ownership industries are positively related with the growth rate of the economy.

| JEL: | O38, O41 |
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| Keywords: | Endogenous Growth, Start-up costs, Deregulation. |

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| 05005 | Ludwig von Auer, Bettina Büttner: |
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| | Old Age Pension Reform and Intergenerational Redistribution |

Abstract:

In today's world, falling fertility and rising life expectancy have destabilized the public pension systems of most developed countries. To immunize their pension systems from these unfavorable demographic trends, many countries have begun replacing their existing pay-as-you-go (PAYG) systems with fully funded ones. This study demonstrates that a fundamental redesign of the PAYG system appears to be a better option. The analysis is based on a simple overlapping generations framework. In contrast to past research, fertility decisions are modeled as being dependent on the financial incentives inherent in the prevailing pension system.

| JEL: | H55 |
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| Keywords: | Public Pension, Fertility, Pay-As-You-Go, Fully Funded, Retirement |

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| 05004 | Bernd Erichson: |
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| | Ermittlung von empirischen Preisresponsefunktion durch Kaufsimulation |

Abstract:

Preisresponsefunktionen für Produkte und Marken gehören zum Basisinstrumentarium der Wirtschaftstheorie, ihre empirische Ermittlung auf Basis von realen Marktdaten aber stößt aus vielfältigen Gründen auf Schwierigkeiten. Eine wichtige Alternative zur Datengewinnung bildet daher die Simulation von Kaufverhalten in Laborexperimenten oder Feldbefragungen. Der Beitrag gibt einen Überblick über mögliche Verfahren. Insbesondere konzentriert er sich auf kompetitive Kaufsimulationen, bei denen die Abhängigkeit der Markenwahl von Preisvariationen untersucht wird. Es wird ein Modell inklusive Messmethodik und Computersoftware präsentiert. Die Messmethodik impliziert die Schätzung von individuellen Nutzenwerten und Kaufwahrscheinlichkeiten durch Anwendung der Logit-Choice-Analyse.

Price response functions of products or brands are a basic element of economic theory, but their empirical estimation based on real market data faces many difficulties. Therefore the simulation of purchase behaviour poses an important alternative for data gathering. This paper gives on overview on available methods. Special emphasis is given to brand choice situations. A model plus measurement methodology and computer software is presented. The measurement methodology includes the estimation of individual utility values and purchase probabilities of brands by use of logit choice analysis

JEL:

Keywords:

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05003

Thomas Riechmann:

Dynamic Behavior in Minimum Effort Coordination Games. Some Theory of Group Size and Inter-Group Competition as Coordination Devices

Abstract:

This paper presents a model of individual behavior in minimum effort coordination games, focusing primarily on the effects of the number of players and the introduction of intergroup competition. It is shown that independent of the number of players and the number of competing groups, the most inefficient equilibrium is always the stochastically stable one. Yet, it turns out that the `security' of more efficient equilibria increases with a decrease of the number of players and with an increase of the number of competing groups.

JEL: C72, C92

Keywords: Minimum Effort Coordination, Group Competition, Stochastic Stability, Dynamic Games

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05002

Karl Inderfurth:

Stochastische Bestandsdisposition in integrierten Produktions- und Recyclingsystemen

Abstract:

Produktrecycling bringt im Fall der Verknüpfung mit regulärer Produktion zusätzliche Koordinationsaufgaben für die Produktionsplanung und -steuerung in einem Unternehmen mit sich. Das zu beobachtende hohe Maß an Unsicherheit beim Anfall von Recyclingobjekten verstärkt die Komplexität dieser Aufgaben. Dies trifft sowohl bei externen Rückflüssen von Recyclinggütern in Form von Altprodukten als auch bei internen Rückflüssen in Form von fehlerhaften Produkten oder Nebenausbringungen aus Produktionsprozessen zu. In der vorliegenden Arbeit wird untersucht, wie unter derartigen stochastischen Bedingungen, die auch Unsicherheiten auf der Bedarfsseite einschließen können, eine Bestandsdisposition aussehen müsste, durch die Produktions- und Recyclingentscheidungen optimal aufeinander abgestimmt werden. Für den praktischen Einsatz wird eine einfach anzuwendende Dispositionsregel vorgeschlagen, deren Parameter auf der Grundlage heuristischer Überlegungen mit wenig Aufwand nahezu optimal festgelegt werden können. Es wird gezeigt, wie das Design der Dispositionsregel und die Bestimmung der Dispositionsparameter an den Fall externer bzw. interner Produktrückflüsse jeweils spezifisch angepasst werden muss.

Production planning and control becomes more challenging when regular production is combined with remanufacturing or rework activities within a company. An additional complicating factor is given by the high degree of uncertainty observed for return flows of both used products coming from outside customers and defective products occurring in inside manufacturing processes. The paper investigates how under these stochastic conditions, also including demand uncertainty, optimal inventory control can be performed in order to coordinate production and remanufacturing/rework decisions. For practical application a simple control rule is presented, and a sound procedure for calculating effective control parameters is developed, based on sophisticated heuristic considerations. It is shown how both the control rule and the determination of control parameters has to be adapted appropriately to the cases of remanufacturing external and reworking internal returns.

JEL: C61, M11

| 05001 | Stefan Felder: |
| | When Bayes meets von Neumann and Morgenstern: physicians' decisions at the ICU |

Abstract:

This paper presents and empirically tests a simple model addressing the behavior of physicians treating terminally ill persons. The patient related data include the survival probabilities as predicted by the physicians 24 and 48 hours after ICU admittance, the daily costs of treatment and the length of stay as well as the survival status at the time of their hospital discharge. The empirical evidence vindicates the two main hypotheses of the model: the physicians' spending at the ICU is i) for high survival probabilities negatively correlated with the predicted survival probability, as an increase of the predicted survival chance renders the treatment of the patient outside the ICU more attractive, and ii) positively correlated with the amount of new information either bad or good, a behavior consistent with Bayesian learning.

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