

**FEMM - Working Paper Series - 2011**

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11029 Dirk Bethmann  
› Marriage Regimes

Abstract:

Marriage regimes exist in many guises and forms. Economists have studied monogamy and polygyny, the two most commonly encountered types, and pointed to various benefits that can explain why and which individuals form conjugal unions in each regime. However, many of these same benefits should favor polygamy over monogamy more generally, including polyandrous and cenogamous marriages, which are only rarely observed in practice. We show that human reproductive technology in combination with regime-specific potential for conflict among parents of the same and opposite sex over resources devoted to own children can explain why monogamy is most common, polygyny frequent, polyandry rare, and cenogamy virtually non-existent. Within-wives conflicts over resources also provide an alternative explanation for why polygyny has historically been less common than monogamy and why the former has declined in many parts of the world over the last century.

JEL: J12, J13, D02

Keywords: Marriage Regimes, Monogamy, Polygyny, Polyandry, Paternal Uncertainty, Reproductive Capacity

11028 Jochen H. F. Güntner  
› How do international stock markets respond to oil demand and supply shocks?

Abstract:

Building on Kilian and Park's (2009) structural VAR analysis of the effects of oil demand and supply shocks on the U.S. stock market, this paper studies the responses of a broader set of stock markets in six OECD member countries. The focus is on the differences and commonalities in the response of stock prices in net oil exporting and net oil importing economies during 1974-2011. Structural oil price shocks aid our understanding of historical fluctuations in stock returns - in particular of the 2008 stock market crash. I find that unexpected shortfalls in global oil supply have no significant impact on the stock market in any of the six countries. While an increase in global aggregate demand consistently raises oil prices and cumulative stock returns, the effect is more persistent for net oil exporters and more pronounced for Norway. Other, e. g., precautionary oil demand shocks have a detrimental impact on the stock market in oil importing countries, a statistically insignificant effect for Canada, and a significantly positive effect for Norway. Oil prices account for a larger fraction of the forecast error variance in global relative to national stock returns.

JEL: C32, O57, Q41, Q43

Keywords: Net oil exporters; Oil price shocks; Stock market returns; Structural VAR estimation

11027 Franziska Krüger  
› DISCONFIRMATION AND SATISFACTION IN THE LIGHT OF CULTURE - AN ANALYSIS FOR CHINESE AND U.S. AMERICAN CONSUMERS

Abstract:

Literature indicates that culture influences consumers' expectations on a product or service, how they

perceive performance, handle disconfirmation resulting from the comparison of expectations and perceived product or service performance, as well as their satisfaction. The study compares the confirmation/disconfirmation-paradigm between Chinese and U.S. American consumers. The influence of Hofstede's (2001) cultural dimension on disconfirmation and satisfaction is examined. The results show that the process of customer satisfaction differs across national borders. For U.S. American consumers the perceived performance has a stronger effect on satisfaction than for Chinese consumers. A direct influence of expectations on satisfaction can be observed only for Chinese consumers. Uncertainty avoidance and power distance influence customers' disconfirmation and satisfaction. The findings of the study contribute to current marketing literature and management practice in order to explain differences in cross-cultural consumer behaviour. The implications relate to the management of expectations, product development, and quality management.

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JEL:

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Keywords:

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11026

Sören Koch/Gerhard Wäscher

> A Grouping Genetic Algorithm for the Order Batching Problem in Distribution Warehouses

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Abstract:

Order picking is a warehouse function that deals with the retrieval of articles from their storage locations in order to satisfy certain customer demands. Combining several single customer orders into one (more substantial) picking order can increase the efficiency of warehouse operations. The Order Batching Problem considered in this paper deals with the question of how different customer orders should be grouped into picking orders, such that the total length of all tours through the warehouse is minimized, which are necessary to collect all requested articles. For the solution of this problem, the authors introduce a Grouping Genetic Algorithm. This genetic algorithm is combined with a local search procedure which results in a highly competitive hybrid algorithm. In a series of extensive numerical experiments, the algorithm is benchmarked against a genetic algorithm with a standard item-oriented encoding scheme. The results show that the new genetic algorithm based on the group-oriented encoding scheme is preferable for the Order Batching Problem, and that the algorithm provides high quality solutions in reasonable computing times.

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JEL:

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Keywords:

Warehouse Management, Order Picking, Order Batching, Genetic Algorithms.

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11025

Karl Inderfurth/Josephine Clemens

> Supply chain coordination by risk sharing contracts under random production yield and deterministic demand

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Abstract:

From a large body of research studies we know that properly designed contracts can facilitate coordinated decision making of multiple actors in a supply chain (SC) so that efficiency losses for the SC as a whole can be avoided. In a newsvendor-type SC with stochastic demand it is well-known that due to the double marginalization effect a simple wholesale price contract will not achieve coordination. More complex contracts, however, do so, especially those which enable an appropriate sharing of risks between the SC actors. While the effectiveness of risk sharing contracts is well understood for SC situations with random demand and reliable supply, we do not know much about respective SC coordination problems if demand is deterministic, but supply is unreliable due to random production yield. For a buyer-supplier SC representing the latter SC setting, it is analyzed how the distribution of risks affects the coordination of buyer's ordering and supplier's production decision. In a basic random yield, deterministic demand setting both parties are exposed to risks of over-production or underdelivery, respectively, if a simple wholesale price contract is applied. The resulting risk distribution will always be such that SC coordination cannot be achieved. It can be shown, however, that two more sophisticated contract types with penalty and reward elements for the supplier can change the risk distribution in such a way that SC coordination is possible under random yield. Additionally, it is proved that also the wholesale price contract will guarantee SC coordination if the supplier has a second (emergency) procurement source at her disposal that is more costly, but reliable. Moreover, restricting oneself to wholesale price contracts it is shown that it can be beneficial to both parties to utilize this emergency

source even if it is not profitable from a SC perspective.

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JEL:

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Keywords: Supply chain coordination, contracts, random yield, risk sharing, emergency procurement

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11024 Siegfried Berninghaus/Stephan Schosser/Bodo Vogt  
› Complexity of Networking - An Experimental Study of the Network Hawk Dove Game

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Abstract: Complexity of strategies is central for human decision making and attracted interest of different game theorists in the recent years. Nevertheless, behavioral economists have neglected the importance of complexity in their analyses. In this paper, we analyze network formation and action selection in a Hawk Dove Game with focus on complexity aspects. We conduct experiments with three variants of the game which are equivalent from a game theoretic perspective, but differ from a complexity theoretic perspective. Our results show, that complexity of decision making has an impact on the strategies played and that efficiency is higher the less complex the decision problem is.

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JEL:

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Keywords:

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11023 Dirk Bethmann/Michael Kvasnicka  
› WAR, MARRIAGE MARKETS AND THE SEX RATIO AT BIRTH

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Abstract: In belligerent countries, male-to-female sex ratios at birth increased during and shortly after the two world wars. These rises still defy explanation. Several causes have been suggested (but not tested) in the literature. Many of these causes are proximate in nature, reflecting behavioral responses to the dramatically changed marriage market conditions for women and men that were induced by war-related declines in adult sex ratios. Based on county-level census data for the German state of Bavaria in the vicinity and aftermath of World War II, we explore the reduced-form relationship between changes in adult and offspring sex ratios. Our results suggest that war-induced shortfalls of men significantly increased the percentage of boys among newborns.

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JEL:

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Keywords: World War II, Adult Sex Ratio, Marriage Markets, Sex Ratio at Birth

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11022 Elisabeth Kutschka  
› Quality Upgrading, Skill Demand and International Trade: The Case of German Manufacturing

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Abstract: The present paper contributes to the ongoing debate about how international trade can affect the demand for skills in industrial countries by estimating the impact of quality competition on the relative demand for low skilled workers in German manufacturing between 1995 and 2004. Results reveal a statistically significant negative effect albeit relatively small in size with quality competition accounting for approximately 5% of the overall decline in low skilled workers' wage bill share. This effect entirely stems from quality competition with other advanced countries. The influence of trade in different qualities with newly industrializing economies is negligible.

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JEL: C23, F16, J23

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Keywords: international trade, quality differentiated products, labour demand

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11021 Martin Fochmann/Martin Jacob  
› Behavioral Explanation of Tax Asymmetries

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Abstract: This note develops a behavioral explanation for the existence of an asymmetric tax treatment of gains

and losses when investors are loss averse. We find that loss offset rules should be more restrictive for investors which are (1) more risk averse in case of gains, (2) less risk seeking in case of losses, or (3) more loss averse. Our findings have important policy implications. Tax authorities often implement identical loss offset rules for different investor clienteles. However, there should be specific loss offset rules for investors who differ in risk attitude as well as in loss aversion.

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JEL:

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Keywords: Asymmetric Taxation, Loss Offset Rules, Loss Aversion, Behavioral Economics

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11020 Martin Fochmann/Joachim Weimann  
> The Effects of Tax Salience and Tax Experience on Individual Work Efforts in a Framed Field Experiment

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Abstract: We conduct a framed field experiment with 245 employed persons (no students) as subjects and a real tax, which is levied on the subjects' income from working in our real effort task. In our first three treatments, the net wage is constant but gross wages are subject to different constant marginal tax rates (0, 25%, 50%). It turns out that the effort is significantly higher under the tax than in the no tax treatment. Subjects perceive a too high net wage because they underestimate the tax. We conjecture that tax perception depends on the tax rate, the presentation of the tax and the experience subjects have with taxation. These conjectures are confirmed in four further treatments employing a direct and an indirect progressive tax scale. It turns out that simple flat taxes are particularly prone to being misperceived because their simplicity reduces the tax salience.

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JEL: C91, D14, H24

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Keywords: Field experiment, real effort experiment, tax perception, tax salience, tax experience, behavioral economics

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11019 Lora R. Todorova/Siegfried K. Berninghaus/Bodo Vogt  
> A Simple Questionnaire Can Change Everything - Are Strategy Choices in Coordination Games Stable?

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Abstract: This paper presents results from an experiment designed to study the effect of self reporting risk preferences on strategy choices made in a subsequently played 2x 2 coordination game. The main finding is that the act of answering a questionnaire about one's own risk preferences significantly alters strategic behavior. Within a best response correspondence framework, this result can be explained by a change in either risk preferences or beliefs. We find that self reporting risk preferences induces an increase in subjects' risk aversion while keeping their beliefs unchanged. Our findings raise some questions about the stability of strategy choices in coordination games.

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JEL: D81, C91, C72

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Keywords: coordination game, questionnaire, risk preferences, beliefs, best response correspondence

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11018 Mohsen Afsharian/Anna Kryvko/Peter Reichling  
> Efficiency and Its Impact on the Performance of European Commercial Banks

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Abstract: The paper empirically analyzes the impact of the degree of efficiency on key performance figures of publicly traded European banks in the period from 2005 to 2009. Efficiency is measured by constructing non-parametric frontiers using the technique of data envelopment analysis on the cost, revenue, and profit sides. Decomposition of overall efficiency provides a detailed insight into effective risk and performance drivers in the banking industry. The results of our paper suggest that an increase in pure technical efficiency is related to more volatile assets, which is reflected in lower market values. Allocative and scale efficiency, however, boost capital market performance.

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JEL:	C33, C61, D24, G21
Keywords:	Data Envelopment Analysis (DEA), Efficiency, European Banks, Bank Performance
11017	Clemens Hetschko/Andreas Knabe/Ronnie Schöb > Changing Identity: Retiring from Unemployment
Abstract:	Using data from the German Socio-Economic Panel from 1984-2009, we follow persons from their working life into their retirement years and find that, on average, employed people maintain their life satisfaction upon retirement, while long-term unemployed people report a substantial increase in their life satisfaction when they retire. These results are robust to controlling for changes in other life circumstances and suggest that retiring is associated with a switch in the relevant social norms that causes an increase in identity utility for the formerly unemployed. This is supportive of the idea that, by including identity in the utility function, results from the empirical life satisfaction literature can be reconciled with the economic theory of individual utility.
JEL:	I31, J26
Keywords:	life satisfaction, retirement, unemployment, identity, social norm
11016	Katrin Heinicke/Stephan L. Thomsen > Qualifikation und Fähigkeiten: Ein empirischer Vergleich von Sachsen-Anhalt mit ausgewählten Bundesländern
Abstract:	Dieses Papier beschreibt die Qualifikation der Bevölkerung sowie den Bestand kognitiver und nicht-kognitiver Fähigkeiten in Sachsen-Anhalt im Vergleich zu anderen ausgewählten Bundesländern. Grundlage der Untersuchung sind Daten aus dem Mikrozensus und dem Sozio- Ökonomischen Panel. Zunächst werden schulische und berufliche Bildungsabschlüsse betrachtet. Erweitert werden die Analysen um die Ergebnisse kognitiver Kurztests und die Untersuchung von sieben Persönlichkeitseigenschaften zur Abbildung der nicht-kognitiven Fähigkeiten. Die ermittelten Ergebnisse werden auf ihre volkswirtschaftliche Relevanz hin interpretiert.
JEL:	
Keywords:	
11015	Katrin Heinicke/Stephan L. Thomsen > Das zusätzliche Bildungsangebot in Sachsen-Anhalt: Eine Bestandsaufnahme
Abstract:	Das vorliegende Papier gibt einen Überblick über das zusätzliche Bildungsangebot im Land Sachsen-Anhalt. Als zusätzlich werden dabei solche Maßnahmen und Programme verstanden, die neben dem Regelschul-, Ausbildungs- und Studiensystem auf Initiative unterschiedlicher Akteure eingerichtet werden. Ziel des Überblicks ist es, die Vielfalt dieses Angebots im Hinblick auf die Zielsetzungen, aber auch auf die Verteilung entlang des Bildungswegs von der Elementarbildung bis zum Hochschulstudium und der Weiterbildung im Erwerbsleben zusammenfassend und übersichtlich darzustellen. Am Ende werden die Auswahl und Ausgestaltung der Programme auf der Grundlage ausgewählter Ergebnisse der bildungsökonomischen Forschung diskutiert und weitergehender Forschungsbedarf identifiziert.
JEL:	
Keywords:	
11014	Karl Inderfurth/Peter Kelle/Rainer Kleber > Dual Sourcing Using Capacity Reservation and Spot Market: Optimal Procurement Policy and Heuristic Parameter Determination
Abstract:	

This contribution focuses on the cost-effective management of the combined use of two procurement options: the short-term option is given by a spot market with random price, whereas the long-term alternative is characterized by a multi period capacity reservation contract with fixed purchase price and reservation level. A reservation cost, proportional with the reservation level, has to be paid for the option of receiving any amount per period up to the reservation level. A long-term decision has to be made regarding the reserved capacity level, and then it has to be decided - period by period - which quantities to procure from the two sources. Considering the multi-period problem with stochastic demand and spot price, the structure of the optimal combined purchasing policy is derived using stochastic dynamic programming. Furthermore, a simple heuristic procedure is developed to determine the respective policy parameters. Finally, we present a comprehensive numerical study showing that our heuristic policy performs very well.

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JEL: C61, M11

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Keywords: Dual sourcing, capacity reservation, spot market, procurement policy, stochastic dynamic programming

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11013 Abdolkarim Sadrieh/Marijke Kloof/Miriam Mezger/Lisette Schulz  
› Kangaroo Seminars for Knowledge Transfer in Fast-Growing Research Fields

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Abstract: We introduce, discuss, and provide an empirical appraisal of kangaroo seminars as a new instrument for knowledge transfer in fast-growing research fields. By promoting active project-based and cooperative learning, kangaroo seminars combine educational goals with the institutional goal of fast knowledge transfer between academic institutions and private and public enterprises. The key feature that sets kangaroo seminars apart from other case-based and project-based educational formats is a two-phase concept with an intensive learning course updating the students' abstract knowledge in phase one and a collaborative applied project in phase two. The project collaboration is realized by giving the student teams the opportunity to obtain an inside view of the cooperating enterprise in radically short, but highly focused internships. These internships inspired the term "kangaroo seminars," because we like to compare the role of the participating students to that of kangaroo offspring seeing the world from a position inside the pouch of the kangaroo mother, i.e. seeing the project case from a position inside the participating enterprise's organization. Our empirical appraisal is based on four kangaroo seminars in online marketing that we conducted from 2008 to 2010 cooperating with 22 small and mid-sized enterprises. Our experience shows that the desired three-way knowledge transfer procedure can be established properly and that it leads to high levels of self-reported satisfaction amongst the participating students and firms. Furthermore, firms not only report high levels of compliance with the solution concepts developed in the seminars, but also record substantially higher growth rates of their workforce (about 16%) than the overall growth of employment in the region (under 1%). Combining the high level of satisfaction and the growth rates reported by the firms, we cautiously conclude that the kangaroo seminars may have played a positive role in the economic development of the participating enterprises.

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JEL: A20, D83, O30

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Keywords: active teaching techniques, innovative teaching methods, alternative teaching approaches

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11012 Horst Gischer/Toni Richter  
› 'Global Player' im Bankenwesen - ökonomisch sinnvoll oder problembehaftet?

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Abstract:

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JEL:

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Keywords:

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11011 Sebastian Henn/Verena Schmid  
› Metaheuristics for Order Batching and Sequencing in Manual Order Picking Systems

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Abstract:

Order picking deals with the retrieval of articles from their storage locations in order to satisfy customer requests. A major issue in manual order picking systems concerns of the transformation and consolidation of customer orders into picking orders (order batching). In practice, customer orders have to be completed by certain due dates in order to avoid delay in the shipment to customers or in production. The composition of the picking orders, their processing times and the sequence according to which they are released have a significant impact on whether and to which extent given due dates are violated. This paper presents how metaheuristics can be used in order to minimize the total tardiness for a given set of customer orders. The first heuristic is based on Iterated Local Search, the second one is inspired by the Attribute-Based Hill Climber, a heuristic based on a simple tabu search principle. In a series of extensive numerical experiments, the performance of these metaheuristics is analyzed for different classes of instances. We will show that the proposed methods provide solutions which may allow for operating order picking systems more efficiently. Solutions can be improved by 46% on average, compared to the ones obtained by standard constructive heuristics such as an application of the Earliest Due Date rule.

JEL:

Keywords: Warehouse Management, Order Batching, Batch Sequencing, Due Dates, Iterated Local Search, Attribute-Based Hill Climber

11010

Karen Puttkammer/Rainer Kleber/Tobias Schulz/Karl Inderfurth  
> Simultane Maschinenbelegungs- und Personaleinsatzplanung in KMUs anhand eines Fallbeispiels aus der Druckereibranche

Abstract:

In dem vorliegenden Beitrag zur Produktionslogistik wird die auftragsorientierte Fertigung von Druckaufträgen in der maschinellen Werkstattproduktion klein- und mittelständischer Unternehmen (KMU) am Fallbeispiel einer Akzidenzdruckerei betrachtet. Wesentliche Planungsaufgaben stellen dabei die Maschinenbelegungs- und die Personaleinsatzplanung mit der Qualifikation der Mitarbeiter als verbindendem Element dar. In der Literatur und der praktischen Anwendung werden die Teilprobleme weitgehend getrennt voneinander betrachtet und häufig sukzessive gelöst. Ein solches Vorgehen ist jedoch insbesondere in KMUs problematisch, da Interdependenzen zwischen den Teilproblemen nicht in ausreichendem Maße berücksichtigt werden können. Solche liegen beispielsweise vor, wenn qualifiziertes Personal die Prozesse an den Maschinen durchgehend begleiten muss, dieses aber nur eingeschränkt zur Verfügung steht. In diesem Beitrag wird ein multikriterielles Optimierungsmodell für die Simultanplanung von Maschinenbelegung und Personaleinsatz vorgestellt. Der zu lösende Zielkonflikt entsteht dadurch, dass die Optimierung von Zeitzielen in der Maschinenbelegungsplanung, wie beispielsweise die Minimierung von Verspätungen, im Widerspruch zu einem die Kosten minimierenden kompakten Personaleinsatz steht. Durch die Formulierung des Modells kann maßgeblich zum Verständnis der Problemstruktur beigetragen werden.

JEL:

Keywords:

11009

Karina Gose/Abdolkarim Sadrieh  
> Fair Wages When Employers Face the Risk of Losing Money

Abstract:

We study the behavior of employers and employees in a gift exchange game and find that employers offer lower wages when there is the risk of losing money. This, however, does not lead to lower effort level choices. In fact, effort per wage unit is significantly higher in the treatment with potential employer losses. This result can be in line with social comparison theories that are based on relative payoff differences. Alternatively, this result is also in line with the hypothesis that the risk of losing money increases the credibility of the employer's trust signal and, thus, the employee's reciprocity.

JEL:

C92, D22, J41

Keywords:

fair wage, efficiency wage, social comparison, loss aversion

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11008 Elmar Lukas/Andreas Welling  
› The Impact of Managerial Flexibility on Negotiation Strategy and Bargaining Power

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Abstract: Using a dynamic real options approach we show that in a sequential bargaining framework managerial flexibility is strengthening the first-mover advantage by undermining the bargaining power of the second mover. Furthermore we compare the results of the sequential framework with the results of cooperative bargaining.

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JEL: G3, G70, D81

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Keywords: real option, game theory, sale, negotiation, flexibility, ultimatum game

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11007 Tobias Schulz  
› Optimal and predefined policies for the static lot sizing problem in a two stage recovery system

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Abstract: Analyzing static lot sizing problems has always attracted a considerable interest in scientific literature. A commonly applied methodology to solve the trade-off between setup and holding costs is to order the Economic Order Quantity (EOQ) whenever the corresponding inventory is depleted. Yet, this simple proceeding can only be applied as long as there is only a single source of supply. Recovery systems, however, obtain in general two sources of supply, remanufacturing product returns and fabricating new products. Therefore, a more sophisticated approach needs to be taken into account for this kind of problem setting. This contribution focusses on extending the current knowledge in this field of research by showing that non-equal remanufacturing batches propose a significant cost reduction for some parameter classes. Furthermore, a more general optimization approach is introduced that allows to evaluate the solution quality of the preset policy structures.

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JEL:

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Keywords:

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11006 Eike B. Kroll; Judith N. Trarbach; Bodo Vogt:  
› Determining risk preferences for pain

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Abstract: The QALY concept is the commonly used approach in research to evaluate the efficiency of therapies in cost utility analysis. We investigate the risk neutrality assumption for time of the QALY concept: can time be included as a linear factor? Various studies show that this assumption does not hold empirically. However, the results are based on hypothetical questionnaires rather than decisions with real consequences. Experimental economists argue that experiments are necessary to avoid hypothetical bias. Our study provides the first experimental analysis of health related decision making. Using the cold pressor test we can analyze decisions when subjects face real consequences. Analog to the hypothetical studies, our experimental results of real decisions provide no linear time preferences. In conclusion, the QALY concept needs to be modified by a weighting factor for time.

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JEL:

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Keywords:

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11005 Jörg Rieger; Kirsten Rüchardt; Bodo Vogt:  
› Arbitrage opportunities between NYSE and XETRA?: A comparison of simulation and high frequency data

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Abstract: This paper investigates both the no-arbitrage condition and the efficiency of financial markets by comparing two stock markets: the New York Stock Exchange (NYSE) and the German Exchange Electronic Trading System (XETRA). We analyze German stocks that are traded simultaneously at both



exchanges using high frequency data for XETRA, the NYSE, and the foreign exchange rates. Converting Euro-prices into Dollar-prices reveals possibilities to explore the efficiency as well as arbitrage opportunities of these two stock markets using the phenomenon of stock price clustering. We see the result of differing extents of clustering on both exchanges, thus violating the no-arbitrage condition. We propose a trading strategy that exploits these differences. Furthermore, we compare our empirical findings with the results we obtain from simulating financial markets and conclude that simulations based on the no-arbitrage condition are not consistent with our empirical observations.

JEL: C00; D40; G12

Keywords: financial markets; simulation; no-arbitrage condition; stochastic processes

11004 Sebastian Henn; Sören Koch; Harald Gerking; Gerhard Wäscher:  
> A U-Shaped Layout for a Manual Order Picking System

Abstract: In manual order picking systems, order pickers walk or ride through a warehouse in order to collect items requested by customers. The performance of such a system is significantly dependent on its layout which determines the lengths of the order pickers' tours and the corresponding picking times. Whereas for classic warehouse layouts all picking aisles are arranged in parallel to each other, in the warehouse layout presented here the picking aisles are arranged around a U-shaped central aisle. This layout has been developed for order picking systems in which slow-moving items are prevalent. A new routing strategy for such a warehouse is presented and an analytical expression for the expected tour length per picking order is derived. By comparing this estimation with those of routing schemes in classic warehouse layouts, it is demonstrated in which situations such U-shaped layouts allow for operating warehouses more efficiently.

JEL:

Keywords: Logistics, Warehouse Management, Order Picking, Layout, Picker Routing

11003 Karl Inderfurth; Stephanie Vogelgesang:  
> Concepts for Safety Stock Determination under Stochastic Demand and Different Types of Random Production Yield

Abstract: We consider a manufacturer's stochastic production/inventory problem under periodic review and present concepts for safety stock determination to cope with uncertainties that are caused by stochastic demand and different types of yield randomness. Order releases follow a linear control rule. Taking manufacturing lead times into account it turns out that safety stocks have to be considered that vary from period to period. We present an approach for calculating these dynamic safety stocks. Additionally, to support practical manageability we suggest two approaches for determining appropriate static safety stocks that are easier to apply.

JEL:

Keywords: stochastic demand, random yield, lot sizing, safety stocks

11002 Holger Müller:  
> TO BE OR NOT TO BE PRICE-CONSCIOUS - A SEGMENT-BASED ANALYSIS OF COMPROMISE EFFECTS IN MARKET-LIKE FRAMINGS

Abstract: Numerous researchers have investigated the compromise effect, according to which a middle option of consideration set is assumed to be perceived more attractive by consumers, thus becoming more likely to be chosen than the extreme options. However, a closer examination of the experimental designs that were used in previous studies on compromise effects clearly reveals a lack of realism in terms of forced choices between fictitious options in hypothetical choice settings of student samples. In two consecutive studies, this article demonstrates that the compromise effect is robust even in an enhanced design that

incorporates basic conditions of real purchase decisions in lab-based experiments. Specifically, the relative share of the middle option increases significantly in an overall analysis when experienced consumers make unforced decisions between real brands in a binding choice context. However, segmented analysis indicates substantial differences, meaning that (1) the compromise effect is strong and significant among quality-seeking consumers; whereas (2) the compromise effect is weak and insignificant among price-conscious subjects.

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JEL: M-31

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Keywords: Compromise Effect, Experimental Designs, Price Consciousness, Purchase Decisions

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11001 Sebastian Henn, Sören Koch, Gerhard Wäscher:  
>Order Batching in Order Picking Warehouses: A Survey of Solution Approaches

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Abstract: Order picking is a warehouse function dealing with the retrieval of articles from their storage location in order to satisfy a given demand specified by customer orders. Of all warehouse operations, order picking is considered to include the most cost-intensive ones. Even though there have been different attempts to automate the picking process, manual order picking systems are still prevalent in practice. This article will focus on order batching, one of the main planning issues in order picking systems. Order Batching has been proven to be pivotal for the efficiency of order picking operations. With respect to the availability of information about the customer orders, order batching can be distinguished into static batching and dynamic batching. Improved order batching reduces the total picking time required to collect the requested articles. According to experience from practice, this can result in significant saving of labor cost and into a reduction of the customer order's delivery lead time. The aim of this contribution is to provide comprehensive insights into order batching by giving a detailed state-of-the-art overview of the different solution approaches which have been suggested in the literature. Corresponding to the available publications, the emphasis will be on static order batching. In addition to this, the paper will also review the existing literature for variants and extensions of static order batching (e.g. due dates, alternative objective functions). Furthermore, solution approaches for dynamic order batching problems (like time window batching) will be presented.

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JEL:

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Keywords: Order picking system, Order batching, Travel time minimization

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