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**Working Paper Series auf der OVGU-Journals-Plattform**

**19009**

**Rainer Kleber/Marc Reimann/Gilvan C. Souza/Weihua Zhang**

› Two-sided competition with vertical differentiation in both acquisition and sales in remanufacturing  
([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_09.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_09.pdf))

Abstract:

We study the competition between two remanufacturers in the acquisition of used products and the sales of remanufactured products. One firm has a market advantage; we consider two separate cases where either firm could have an acquisition advantage. The problem is formulated as a simultaneous game on a market that is vertically differentiated in both acquisition and sales, where both firms decide on their respective acquisition prices for used products, and selling prices for remanufactured products. A key finding is that a market advantage is significantly more powerful than an acquisition advantage. The firm with a market advantage can preempt the entry of the other firm, even if that firm has a significant acquisition advantage, but not the other way around. This is accomplished through an aggressive acquisition strategy, where the firm with a market advantage sets significantly higher acquisition prices.

JEL:

Keywords:

Supply chain management, closed-loop supply chains, remanufacturing, used product acquisition, price competition

**19008**

**Yue Huang/Jingjing Lyu**

› Chinese Language Learning Opportunities Abroad and International Student Mobility to China  
([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_08.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_08.pdf))

Abstract:

The number of overseas students in China has increased substantially over the last two decades, as has the number of Confucius Institutes (CIs) abroad. Using both official and self-compiled data on CIs abroad and overseas students in China, by country of origin, we investigate empirically whether Chinese language learning opportunities abroad have exerted a positive effect on the number of students who move to China for study. Using panel data for 182 countries over the period 2002 to 2014, we find evidence in fixed-effects regressions for a sizeable positive effect of the number of CIs in a country on the number of overseas students from that country in China. We also find evidence for effect heterogeneity by countries' geographic distance to China, the linguistic distance from their official language to Chinese, and their income levels.

JEL:

F22, I20, N35

Keywords:

Confucius Institute, Overseas Student, Migration, China

**19007**

**Carina Keldenich**

› Happy Homemakers or Desperate Housewives? Work, Parenthood and Women's Affective Well-Being  
([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_07.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_07.pdf))

**Abstract:** This paper analyzes how labor market status and motherhood relate to the affective well-being of women using Day Reconstruction Method data from the United Kingdom Time Use Survey 2014-15. Results indicate that women working full-time do not experience higher affective well-being throughout the day, as measured by the duration-weighted mean of self-reported enjoyment, than women in other labor market statuses. Indeed, women working part-time, self-employed women, homemakers and women on maternity leave are shown to have higher enjoyment scores than full-time employees. There is also a positive and significant correlation between motherhood and affective well-being. However, this relationship decreases in magnitude and becomes insignificant in some cases once the labor market status is controlled for, which could indicate that a shift towards labor market statuses that are more conducive to affective well-being mediates the relationship.

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**JEL:** D13, I30, J22

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**Keywords:** Affective Well-Being, Labor Market Status, Motherhood, Family Economics, Day Reconstruction Method

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**19006** **Yue Huang/Michael Kvasnicka**

› Immigration and Crimes against Natives: The 2015 Refugee Crisis in Germany  
([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_06.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_06.pdf))

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**Abstract:** In the 2015 refugee crisis, nearly one million refugees came to Germany, raising concern that crimes against natives would rise. Using novel county-level data, we study this question empirically in first-difference and 2SLS regressions. Our results do not support the view that Germans were victimized in greater numbers by refugees as measured by their rate of victimization in crimes with refugee suspects. Our findings are of great policy and public interest, and also of material relevance for the broader literature on immigration and crime which considers only crimes per capita or variants thereof, but never actual crimes by foreigners against natives. We show that this shortcoming can lead to biased inference.

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**JEL:** F22, J15, K42

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**Keywords:** Immigration, refugees, crimes, crimes against natives

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**19005** **Charlotte Köhler/Jan Fabian Ehmke/Ann Melissa Campbell/Catherine Cleophas**

› Flexible dynamic time window pricing for attended home deliveries  
([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_05.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_05.pdf))

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**Abstract:** In the challenging environment of attended home deliveries, pricing of different delivery options can play crucial role to ensure profitability and service quality of retailers. To differentiate between standard and premium delivery options, many retailers include time windows of various lengths and fees within their offer sets. Customers want short delivery time windows, but expect low delivery fees. However, longer time windows can help to maintain flexibility and profitability for the retailer. We present flexible dynamic time window pricing policies that measure the impact of short time windows on the underlying route plan during the booking process and set delivery fees accordingly. Our goal is to nudge customers to choose time windows that do not overly restrict the flexibility of route plans. To this end, we introduce three dynamic pricing policies that consider temporal and/or spatial routing and customer characteristics. We consider customer behavior through a nested logit model, which is able to mimic customer choice for time windows of multiple lengths. We perform a computational study considering realistic travel and demand data to investigate the effectiveness of flexible dynamic time window pricing. Our pricing policies are able to outperform static pricing policies that reflect current business practice.

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**JEL:**

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**Keywords:** Dynamic Pricing, Time Windows, Customer Acceptance, Attended Home Deliveries, Vehicle Routing with Time Windows, Route Flexibility

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**19004** **Jan Philipp Paeslack/Daniel Cracau**

› Wash and Waste? The Case of Unwashed Potatoes in Germany

Abstract:

In the recent food waste debate, potatoes represent an important factor with approximately half of the production being removed from the food supply chain. Because selling unwashed potatoes is known as a potential remedy to address this phenomenon, the present article investigates this case in detail. Focusing on the consumer perspective, a survey with a total of 307 participants has been conducted in Germany. The results reveal that information on the underlying benefits may positively influence consumers' attitudes towards unwashed potatoes. Positive attitudes towards the environment, suboptimal products in general and food loss avoidance significantly drive consumers' willingness to buy unwashed potatoes; the main factor for reluctance is the perceived inconvenience regarding preparation. Finally, a gender effect is observed with a discount being more effective for male consumers.

JEL: Q18; D12

Keywords: Food Waste Reduction; Unwashed Potatoes; Germany; Empirical Study

19003

**Hendrik Ritter/Karl Zimmermann**

› Cap-and-Trade Policy vs. Carbon Taxation: Of Leakage and Linkage

([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_03.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_03.pdf))

Abstract:

We assess a 2-period, non-cooperative equilibrium of an n country policy game where countries choose either (i) carbon taxes, (ii) cap-and-trade policy with local permit markets or (iii) cap-and-trade policy with internationally linked permit markets and potential central redistribution of permit revenues. Policy maker maximizes welfare, which depends on household consumption over time and environmental damage from period-1 resource use. We assume costless and complete extraction of this non-renewable resource, so damage only depends on speed of extraction. Tax policy is the least efficient option due to carbon leakage, which introduces a second externality adding to the environmental externality. Cap-and-trade policy does not show any leakage since all symmetric countries will employ caps. Its equilibrium thus only suffers from the environmental externality and welfare is higher than under carbon taxation. The policy scenario with linked permit markets and central redistribution yields an efficient outcome. The redistribution of revenues creates a negative externality which offsets the positive environmental externality.

JEL: H23, Q38, Q54, Q58

Keywords: Climate Policy, Carbon Tax, Cap-and-Trade Policy, Linked Permit Markets

19002

**Michael Redmond/Ann Melissa Campbell/Jan Fabian Ehmke**

› Data-Driven Planning of Reliable Itineraries in Multi-Modal Transit Networks

([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_02.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_02.pdf))

Abstract:

Multi-modal travel itineraries are based on traversing multiple legs using more than one mode of transportation. The more combinations of legs and modes, the more challenging it is for a traveler to identify a reliable itinerary. Transportation providers collect data that can increase transparency for reliable travel planning. However, this data has not been fully exploited yet, although it will likely form an important piece of future traveler information systems. Our paper takes an important step in this direction by analyzing and aggregating data from the operation of scheduled and unscheduled modes to create a reliability measure for multi-modal travel. We use a network search algorithm to evaluate itineraries that combine schedule-based long-distance travel with airlines with last-mile and first-mile drive times to efficiently identify the one with the highest reliability given a start time and travel time budget. Our network search considers multiple origin and destination airports which impacts the first and last mile as well as the flight options. We use extensive historical datasets to create reliable itineraries and compare these with deterministic shortest travel time itineraries. We investigate the amount of data that is required to create reliable multi-modal travel itineraries. Additionally, we highlight the benefits and costs of reliable travel itineraries and analyze their structure.

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JEL:

Keywords: Stochastic network search, Travel reliability, Multi-modal Schedule-based, Travel time distributions

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19001

**Rainer Kleber/Joao Quariguasi Frota Neto/Marc Reimann**

› Proprietary Parts as a Secondary Market Strategy

([https://www.fww.ovgu.de/fww\\_media/femm/femm\\_2019/2019\\_01.pdf](https://www.fww.ovgu.de/fww_media/femm/femm_2019/2019_01.pdf))

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Abstract:

Introducing proprietary parts to gain a competitive edge is a well-known, yet poorly understood strategy original equipment manufacturers (OEMs) adopt. In this paper, we consider an OEM which sells new products and competes with an independent remanufacturer (IR) selling remanufactured products. The OEM considers using proprietary parts to manage the secondary market for remanufactured products. Thereby, the OEM designs its product to balance the trade-off between the cost of proprietariness and the extra income from selling the proprietary parts to the IR. We observe that the OEM always chooses the smallest possible proportion of proprietary parts. This allows it to control the secondary market without the need to overly adjust the price charged for new products. Deterring market entry by the IR by pricing the proprietary parts prohibitively, an OEM strategy observed in several industries, is only optimal when the willingness-to-pay for remanufactured products is low. Otherwise, the OEM benefits more from sharing the secondary market products with the IR through the use of proprietary parts. Finally, we find that the OEM can also use proprietary parts to strategically deter entry by the IR and discourage it from collecting the cores. This can support the OEM's decision to engage in remanufacturing even in the case of a collection cost disadvantage. We show that - counterintuitively - the OEM may take up remanufacturing in situations where the IR would not. While the introduction of proprietary parts is detrimental to both IRs and consumers, OEM remanufacturing softens this loss for the consumers.

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JEL:

Keywords: Proprietary parts, product remanufacturing, closed-loop supply chains

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