

# CHRISTIAN KIEDAISCH

## Personal Data

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Personal information: Citizenship: German

## Employment

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2011 - 2018 Postdoctoral Researcher at **University of Zurich, Department of Economics**  
2009 - 2011 Postdoctoral Researcher at **ETH Zurich, Professorship for Intellectual Property** (Prof. Stefan Bechtold)

## Education

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December 2009 **Toulouse School of Economics**, Ph.D. in Economics  
Dissertation Title: *Essays on Intellectual Property, Inequality, and Growth* (very honorable with congratulations)  
Advisor: Gilles Saint-Paul; Jury: Jacques Crémer, Vincenzo Denicolò, Reto Föllmi, André Grimaud  
2005 Toulouse School of Economics, Master 2  
“*Economic Theory and Econometrics*”  
2004 **LMU Munich**, Master of Arts in Economics  
2003 LMU Munich, Bachelor in Economics  
2001 - 2002 Portland State University, exchange program  
1999 - 2001 University of Konstanz, Vordiplom (undergraduate) in Economics

## Research Interests

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Macroeconomics, Industrial Organization

## Publication (details on page 4)

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*Intellectual Property Rights in a Quality-Ladder Model with Persistent Leadership*  
**European Economic Review**, Vol. 80, 194-213 (2015)

## Working Papers (details on pages 4-6)

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1. *Growth and Welfare Effects of Intellectual Property Rights when Consumers Differ in Income*
2. *Inequality and Demand-Driven Innovation: Evidence from International Patent Applications* (with Sabrina Dorn)
3. *Taste for Exclusivity and Intellectual Property Rights* (with Dominik Grafenhofer)
4. *The Saturation of Spending Diversity and the Truth about Mr Brown and Mrs Jones* (with Andreas Chai and Nicholas Rohde)

5. *Optimal Patent Strength under Financial Constraints*
6. *Varying Patent Strength and the Allocation of R&D across Sectors*
7. *Conspicuous Spending and the Income Distribution of Social Groups (with Andreas Chai and Wolfhard Kaus), revise and resubmit at Economic Inquiry*

**Work in Progress** (details on pages 6-7)

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8. *Superstar Innovators and the Effect of Intellectual Property Rights on Innovation*
9. *Forward Protection of Finite Duration*
10. *Encouraging Product Innovations by Facilitating their Creative Destruction (with Florian Hulfeld)*
11. *Inequality, Environmental Taxation, and Green Innovations*

**Refereeing Activities**

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Bulletin of Economic Research, Economic Modelling, Economics of Innovation and New Technology, European Economic Review, German Economic Review, Information Economics and Policy, International Economic Review, Journal of Economic Theory, Journal of the European Economic Association, Macroeconomic Dynamics, Scandinavian Journal of Economics, Scottish Journal of Political Economy

**Presentations**

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| 2018 | <i>ERWIT</i> , St. Gallen (poster session)<br><i>European University</i> , St. Petersburg<br><i>Inequality and Globalization</i> , Sarnen (poster session)<br><i>Université de Namur</i> , Namur  |
| 2017 | <i>RES PhD Meetings</i> , London (poster session)<br><i>Universitat de Barcelona</i> , Barcelona<br><i>IIOC</i> , Boston<br><i>EPAP Workshop on Demand Analysis</i> , Griffith University, Gold Coast   |
| 2016 | <i>Annual Congress of the European Economic Association</i> , Geneva<br><i>EARIE Annual Conference</i> , Lisbon<br><i>Inequality and Globalization</i> , Stoos  |
| 2015 | <i>Knowledge Transfer and Entrepreneurship</i> , Rimini   |
| 2014 | <i>Economic Inequality, Labor Markets and International Trade</i> , Ascona  |
| 2013 | <i>WWForEurope: Growth and Socio-ecological Transition</i> , Vienna<br><i>The Economics of Intellectual Property, Software and the Internet</i> , Toulouse<br><i>Verein für Socialpolitik Jahrestagung</i> , Düsseldorf<br><i>Economic Inequality and International Trade</i> , Diessenhofen  |
| 2012 | <i>Econometric Society European Meeting</i> , Málaga<br><i>EARIE Annual Conference</i> , Rome   |
| 2011 | <i>The Economics of Intellectual Property, Software and the Internet</i> , Toulouse<br><i>SEEK Kick-Off Conference</i> , Mannheim<br><i>The Law and Economics of IP and Competition Law</i> , Wildbad Kreuth<br><i>EARIE Annual Conference</i> , Stockholm<br><i>The Economics of Information and Communication Technologies</i> , Paris<br><i>V INTERTIC Conference</i> , Venice |
| 2010 | <i>Internal Seminar in Economic Sciences</i> , Heidelberg<br><i>Swiss IO Day</i> , Bern<br><i>The Law and Economics of IP and Competition Law</i> , Wildbad Kreuth<br><i>Annual Congress of the European Economic Association</i> , Glasgow<br><i>EARIE Annual Conference</i> , Istanbul  |
| 2009 | <i>ECORE summer school Market Evolution and Public Decision</i> , Bruxelles<br><i>Annual Congress of the European Economic Association</i> , Barcelona<br><i>EPIP Annual Conference</i> , Bologna   |

- 2008 *XIII Workshop on dynamic Macroeconomics, Vigo*  
*Knowledge for Growth, Toulouse*
- 2007 *The Economics of Technology Policy, Ascona*  
*Summer School Knowledge, Science and Innovation, Aix en Provence*

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### Teaching Experience

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- 2012 – Supervising *Master Theses* (9) and *Bachelor Theses* (4)
- Spring 2015-2018 *Distribution and Growth* (Lectures, Master Level, in English)
- Fall 2016-2017 *Advanced Macroeconomics* (half of the Lectures, Master Level, in English)
- Spring 2013-2015 *Distribution and Growth* (Tutorials, Master Level, in English)
- Fall 2012 *Advanced Macroeconomics* (Tutorials, Master Level, in English)
- Fall 2010 Advising students for the *Workshop & Lecture Series on the Law & Economics of Intellectual Property* at ETH Zurich
- Spring 2009 *Macroeconomics 2a* (Tutorials, License 3 Economie, in French)
- Fall 2008 *Microeconomics* (Tutorials, License 3 Economie, in French)
- Spring 2008 *Introduction to Economic Growth* (Tutorials, License 3 AES, in French)

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### Awards

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- 2004 “Alumni Preis für Junge Volkswirte” (for best Master degree)

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### Professional Activities

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Administrative coordination of SNF-Sinergia grant: “[Inequality and Globalization: Demand versus Supply Forces and Local Outcomes](#)”. Coordination of scientific reporting for this grant and for the previous SNF-Sinergia grant “[Economic Inequality and International Trade](#)”.

Co-organization of the conference [Economic Inequality, Labor Markets and International Trade](#) (Ascona, 2014) and the workshops [Inequality and Globalization](#) ([Stoos, 2016](#); [Sarnen, 2018](#))

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### Language Skills

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German (native), English (fluent), French (fluent)

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### References

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## **Research by Christian Kiedaisch**

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### **Intellectual Property Rights in a Quality-Ladder Model with Persistent Leadership**

*European Economic Review*, Vol. 80, 194-213 (2015)

This paper analyzes the effects of intellectual property rights in a quality-ladder model of endogenous growth in which incumbent firms preemptively innovate in order to keep their position of leadership. Unlike in models with leapfrogging, granting forward protection, and imposing a non-obviousness requirement reduces growth. In the main case where entrants and incumbents have free access to the same R&D technology, infinite protection against imitation, granted independently of the size of the lead, maximizes growth. If entrants have to engage in costly catch up before they can undertake frontier R&D, growth is maximal for a finite (expected) length of protection against imitation.

### **1. Growth and Welfare Effects of Intellectual Property Rights when Consumers Differ in Income**

This paper analyzes how changing the expected length of intellectual property right (IPR) protection affects economic growth and the welfare of rich and poor consumers. The analysis is based on a product-variety model with non-homothetic preferences and endogenous markups in which, in accordance with empirical evidence, rich households consume a larger variety of goods than poorer ones. Unlike in models with homothetic preferences, the effect of intellectual property (IP) protection on growth depends on the distribution of income: when the length of IP protection is (uniformly) increased, growth increases when there is inequality among households consuming IP protected goods, but stays constant when there is no such inequality. When wealth is unequally distributed, reducing the length of IP protection for new but not for previously issued IPRs can increase growth. Given that increasing the length of IP protection increases growth, poorer households prefer a shorter length of protection than richer ones, although they consume fewer IP protected goods. It is, moreover, shown that rich (poor) households prefer long and narrow (short and broad) IP protection and that an increase in the discount rate can increase growth.

### **2. Inequality and Demand-Driven Innovation: Evidence from International Patent Applications** (with Sabrina Dorn)

This paper studies how the distribution of income across consumers affects innovation by affecting the demand for new goods. Within a model with non-homothetic preferences, we show that inequality is more likely to be harmful for innovation when innovations become more incremental, but that it is more likely to be beneficial when the size of the population is increased. The model is extended to a multi-country setting in which it is shown that inequality affects the number of patent flows (subsequent filings of patents that are already granted elsewhere) towards a country in the same way as it affects innovation. In an empirical analysis based on a large panel data set from PATSTAT, we find that inequality is more likely to increase and less likely to decrease international patent flows towards a country the larger the size of the population and the lower GDP of the country is. These results are in line with the model predictions and robust to the inclusion of many control variables.

### **3. Taste for Exclusivity and Intellectual Property Rights** (with Dominik Grafenhofer)

This article analyzes the effects of intellectual property right protection on innovation in a quality-ladder model in which part of the consumers value being the exclusive consumers of the newest generation of a good. In the case of a monopoly innovator, we show that reducing IP

protection can increase the average innovation rate by regularly destroying exclusivity and thereby creating incentives to invent new exclusive goods. In the case where R&D is undertaken by entrants, the innovation rate, however, increases in the strength of IP protection for most market structures. In each case, we derive the welfare-maximizing strength of IP protection. When goods are durable the results are the same when incumbents can commit to buyback programs but change when secondary markets emerge.

#### **4. The Saturation of Spending Diversity and the Truth about Mr Brown and Mrs Jones**

*(with Andreas Chai and Nicholas Rohde)*

Several cross-country studies show that rising household income leads to consumption spending being spread more evenly across different spending categories (Clements et al., 2006). We argue that this result is likely due to aggregation. Using more disaggregated UK household level spending data, we show that the spending diversity of households only rises up to a certain income level and then starts to decline as households concentrate more of their spending on particular expenditure categories that differ across households. It is precisely because of this growing heterogeneity on the household level that the average spending diversity of the population can nevertheless always rise in income. We build a model to capture this observed pattern and use it to show that ignoring preference heterogeneity across households and focusing on a model with representative households leads to an underestimation of the value of product variety.

#### **5. Optimal Patent Strength under Financial Constraints**

This paper analyzes how the optimal strength of patents on basic inventions is affected by financial constraints on the side of either inventors or developers. The lower the net wealth of a developer is, the more difficult it becomes for an inventor to license her invention to him as she has to rely more heavily on royalties that are only paid in the case of success and discourage the developer from exerting costly effort. Because of this, the distortions arising from patents on inventions are larger if more developers are financially constrained and it is optimal to reduce patent protection in this case. If the inventor is financially constrained, it is, however, optimal to grant stronger patent protection as inventions become more costly due to additional agency costs.

#### **6. Varying Patent Strength and the Allocation of R&D across Sectors**

This paper analyzes the effects of a varying strength of patent protection on the incentives to undertake sector-specific cost-saving innovations in a product-variety model with hierarchical preferences. If the majority of households does not derive profit income from patents, a reduction in patent strength can lead to an increase in overall innovation. The reason for this is that weaker patents transfer some of the cost savings to consumers and allow them to purchase a larger variety of goods, which increases the market size and therefore the incentives to innovate in sectors that produce more luxurious goods. Households that do not derive income from patents prefer weaker patents and their preferred extent of patent protection can either increase or decrease in the size of the market.

#### **7. Conspicuous Spending and the Income Distribution of Social Groups** *(with Andreas Chai and Wolfhard Kaus, R&R at Economic Inquiry)*

Using South African household expenditure data, we analyze how the spending of a household on visible goods, such as jewellery and clothes, depends on the distribution of income within its social group. We find that this spending is positively correlated with the share of peers who possess a similar income level to the household, what we dub the 'local income share'. Moreover, we find that the spending of a household on visible goods is positively correlated with the average income

of peers that are poorer than this household. We interpret this as evidence for cascade effects through which income changes among the poorest in the social group can trigger adjustments in the visible spending patterns of the wealthy. In line with previous research (Charles et al., 2009), we also find that visible spending of a household is negatively correlated with the average income of its reference group. We present a simple model of status competition based on Hopkins and Kornienko (2004) that synthesizes these effects and can account for our results.

### **8. Superstar Innovators and the Effect of Intellectual Property Rights on Innovation**

This paper analyzes how the effect of intellectual property rights (IPRs) on innovation depends on the distribution of innovation rents across the population. This is done in an endogenous growth model with non-homothetic preferences, endogenous markups, and an intensive consumption margin. Innovation rents emerge because there are inframarginal inventors who generate more valuable inventions than the marginal inventors do. Comparing balanced growth paths, I find that increasing IPR protection increases growth when there is no inequality but that it can reduce growth when innovation rents accrue to a minority of rich superstar innovators. The reason for this is that an increase in IPR protection that increases the rents of superstar innovators decreases the demand for innovative goods as rich (superstar) households who already consume all innovative goods spend incremental income on non-innovative service goods. While reducing IP protection reduces the incentives to innovate when demand is given, it can therefore increase them when it leads to a sufficient increase in mass demand for innovative goods.

*Note:* This project improves upon the analysis in paper 6, which is based on a simple two-period model without an intensive consumption margin and without variable markups.

### **9. Forward Protection of Finite Duration**

Within a quality-ladder model of endogenous growth this paper analyzes the growth-maximizing provision of forward patent protection. It is assumed that forward protection does not allow firms to collude and to increase prices and that it merely allows the blockage of follow-on R&D. Like in the previous literature, granting forward protection of infinite duration reduces growth compared to the case where no forward protection is granted. However, it is shown that granting forward protection of finite duration in combination with infinite protection against imitation increases the (average) rate of growth above the level that is attained without forward protection. This result suggests that cumulative innovation might be encouraged if innovators are granted protection against follow-on innovations that only lasts for a limited period of time and if they are after this period only protected against direct imitation.

### **10. Encouraging Product Innovations by Facilitating their Creative Destruction**

(with *Florian Hulfeld*)

This project studies the effects of patent breadth in a product-variety model with non-homothetic preferences in which there are both product and cost-reducing process innovations. Patent breadth is modeled as the share of the profits that a product innovator obtains from a subsequent process innovator that creatively destroys his market. When patent breadth is increased, it becomes less profitable to undertake process innovations and the probability that a product innovation is creatively destroyed falls. Unlike in standard two-stage innovation race models, increasing patent breadth, however, also reduces the incentives to undertake product innovations, so that the maximal number of product innovations are carried out when there is no patent breadth at all. The reason for this is the following: by encouraging efficiency-enhancing process innovations, a reduction in patent breadth increases total profits and total income, which again feeds back into an increased demand for product innovations. This on the one hand implies larger markups for not creatively replaced product innovators and compensates them for the increased risk of

creative destruction, and in addition makes it profitable for additional product innovators to enter the market.

### **11. Inequality, Environmental Taxation, and Green Innovations**

This paper analyzes the interaction between environmental taxation, inequality, and sector-specific green innovations in a general equilibrium model with non-homothetic preferences in which the variety of goods that a household consumes increases in income. If the environmental tax is set at an intermediate level, it is only profitable to undertake green innovations in sectors the goods of which are consumed by many agents. Then, a redistribution from rich to poor households increases the measure of mass-consumption sectors in which green innovations are undertaken and also reduces total pollution. If the environmental tax is so high that it becomes profitable to undertake green R&D even in sectors that exclusively sell to a few rich households, a redistribution of income from poor to rich households, however, increases the measure of sectors in which green R&D is undertaken and also reduces total pollution. Generalizing the results to the case of many income groups, it is shown that an increase in the environmental tax rate makes it more likely that inequality is beneficial for green innovations and that it leads to reduced overall pollution.