

# Xin Zhang

## Office Contact Information

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## Contact Information

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## TSE Placement Officers

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## EDUCATION

### Doctoral Studies

<i>Ph.D. in Economics</i> , Toulouse School of Economics	2021–2026 (expected)
<i>Visiting Scholar</i> , Northwestern University, Department of Economics	Jan–Apr 2025

### Prior Education

<i>M.Sc. in Economic Theory and Econometrics</i> , Toulouse School of Economics	2019–2021
<i>B.Sc. in Economics and Management</i> , Zhongnan University of Economics and Law	2015–2019

## REFERENCES

### Pierre Dubois

Toulouse School of Economics  
pierre.dubois@tse-fr.eu

### Isis Durrmeyer

Toulouse School of Economics  
isis.durrmeyer@tse-fr.eu

### Thierry Magnac

Toulouse School of Economics  
thierry.magnac@tse-fr.eu

## RESEARCH INTERESTS

**Primary field:** Industrial Organization

**Secondary fields:** Health Economics, Food Economics

## TEACHING EXPERIENCE

### Teaching Assistant

Toulouse School of Economics	
Game Theory, Master	2022, 2023, 2024
Intermediate Econometrics, Master	2024
Introductory Econometrics, Undergraduate	2024
Empirical Industrial Organization, Master	2023
Industrial Organization, Undergraduate	2023

## OTHER POSITIONS

- Research Assistant** to Isis Durrmeyer, Toulouse School of Economics 2022
- Conducted demand and supply estimations using nationally aggregated data in the gasoline industry.
- Research Assistant** to Mathias Reynaert, Toulouse School of Economics 2021, 2020
- Conducted demand estimation and web-scraped data to analyze European food policy.
- Research Assistant** to Jie Shuai, Zhongnan University of Economics and Law 2016–2018
- Analyzed firms' price discrimination strategies using theoretical modeling.
- Intern** at Guotai Junan Securities, Wuhan 2017
- Developed and maintained client relationships.

## AWARDS AND FELLOWSHIPS

- Mobility grant, Toulouse School of Economics 2025
- Doctoral fellowship, Toulouse School of Economics 2020-2026
- Student research award, Zhongnan University of Economics and Law 2019

## PUBLICATION

**Endogenous Third-Degree Price Discrimination in Hotelling Model with Elastic Demand**  
with Yixue Huo, Jie Shuai, and Tong Zhang, *Journal of Economics*, 127, 125-145 (2019)

## WORKING PAPER

**Patent Challenge and Generic Entry** - Job market paper  
with Hanlin Zhao

Pharmaceutical innovation depends on strong primary patents that allow originators to recoup R&D costs. However, drug companies often engage in evergreening that prolongs patent protection by filing follow-on patents with little therapeutic gain. We study a policy lever that works with market forces to screen out weak follow-on patents: the Hatch-Waxman Act, which incentivizes challenges to evergreening patents by granting the first successful challenger a period of marketing exclusivity. We investigate how the length of first-filer exclusivity shapes generic firms' incentives to initiate challenges, which can curb the extra monopoly protection created by evergreening while preserving incentives for genuine discovery and protecting consumer welfare through earlier generic entry. Using a two-stage structural model that endogenizes challenge and entry decisions, we estimate the fixed costs of generic entry with moment inequalities. We find that the current 180-day exclusivity raises challenge rates by about 4 percentage points. Extending exclusivity primarily activates challenges in markets that would otherwise go unchallenged: a two-year exclusivity increases the challenge rate to 15.38%. Effective exclusivity is highly heterogeneous across therapeutic classes: reaching a 20% challenge rate requires roughly two years for antimicrobials but less than one year for blood products or genitourinary drugs.

**Tax Exemption for Feminine Sanitary Products: Evidence from the U.S Market**

Feminine sanitary products are essential for women; however, unlike other necessities that are tax-exempt, they are often subject to taxation. This paper employs a Difference-in-Difference approach to

examine the impact of repealing the tax on sanitary products in the U.S. market. The results suggest an incomplete pass-through of the tax exemption. Nevertheless, the repeal did not significantly improve affordability once consumers' substitution from smaller to larger pack sizes is taken into account. Furthermore, we evaluate policy options using a constant expenditure model to compare the tax repeal with four alternative interventions. We find that providing low-income consumers with a \$2 coupon offers the greatest improvement in product access, albeit at the cost of higher overall prices.

## WORK IN PROGRESS

### **Consumer Demand with Unobserved Stockpiling and Intertemporal Price Discrimination**

with Pierre Dubois and Thierry Magnac

### **Prescribing Behavior in Medical Deserts**

with Philippe Choné, Pierre Dubois and Lionel Wilner

## PRESENTATIONS

**2025** TSE Empirical Micro Workshop, IO Lunch Seminar at Northwestern University, Brown Bag Seminar at Kellogg School of Management

**2024** TSE IO Workshop, EEE Luchon workshop

**2023** TSE IO Workshop

**2017** CES Annual Conference, China

## OTHER ACTIVITIES

**Service:** Mentor, Women in Economics Mentorship Program, TSE (2022–2023);

Co-organizer, TSE IO Workshop (2023–2024) and IO Reading Group (2024–2025)

## OTHER INFORMATION

### **Empirical & Technical Skills:**

- Applied econometrics: DID, staggered DID, triple differences, event studies, TWFE, RDD, instrumental variables, panel data methods.
- Structural modeling and estimation: demand models, dynamic models, counterfactual simulations.
- Large-scale data analysis: administrative and scanner data.
- Programming: Stata, R, Python, MATLAB, SAS.

**Communication:** Teaching experience in econometrics; presenting papers to general audiences

**Languages:** English (fluent), French (intermediate), Mandarin (native)

**Citizenship:** China