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What Is a Patent Worth? Evidence from the U.S. Patent “Lottery”

专利的价值是什么？
来自美国专利“中奖”的证据

JOAN FARRE-MENSA,
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and ALEXANDER
LJUNGQVIST*



Motivation

Benefit:

Deterring copycats;
attract investors and
customers

>

Cost:

Patents are abused and
costly, and impose a tax
on follow-on inventors

Startups may derive particularly large private benefits from patents, given that these firms typically have **few assets** other than their **ideas** early in their lives.

- How valuable are patents to startups
- How patents affect the growth and success of startups



Research design

Challenging:

Separating this **incremental benefit** from the **economic value** of the underlying invention

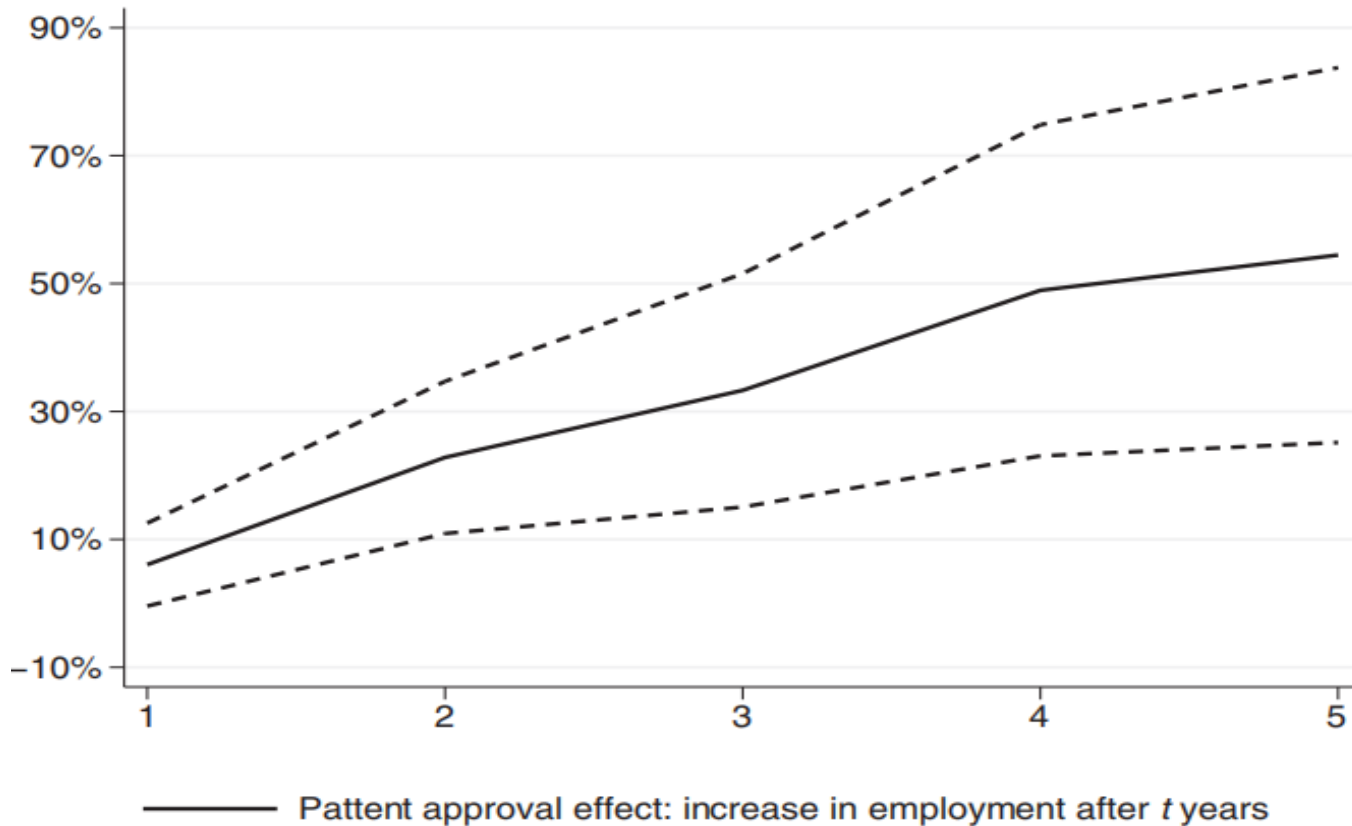
- **Identification strategy**
- **USPTO's review process** through an **instrumental variables**
- **lottery-like feature** (类似彩票的功能) **ideal experiment**
 - **First**, patent applications are assigned to examiners in a **quasi-random fashion** (随机方式) .
 - **Second**, **differ systematically** in their propensity to approve patents, such that more **lenient examiners are more likely to grant** a patent than are **stricter examiners**, **holding the quality of the invention constant**.



- 2001 -2013
- 34,215 first-time patent applications
- Startup's growth in **employment** and **sales** over **the next five years** by 54.5 and 79.5 percentage points
- **A cumulative 16 additional employees and \$10.6 million in additional sales** over the five years.
- Increases both the number of **subsequent patents** the firm is granted (56.5%) and **their quality** (**citations** 33%).



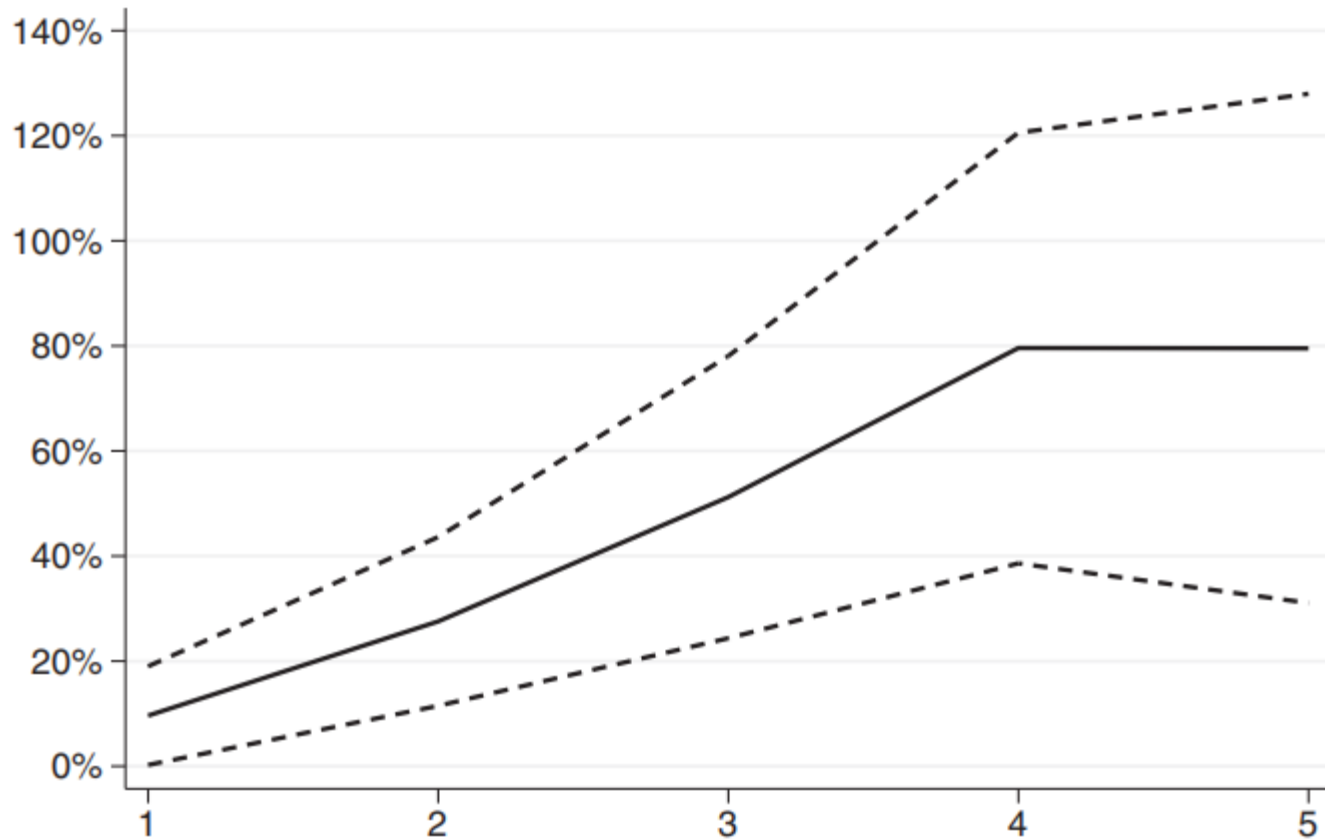
Panel A: Employment growth



The solid line shows the estimated patent approval effect
The dashed lines show 95% confidence intervals.



Panel B: Sales growth



— Patent approval effect: increase in sales after t years



Conclusion

- 55% higher employment growth and 80% higher sales growth more, and higher quality.
- In contrast to the large benefits associated with receiving a first patent, subsequent patents are much less obviously beneficial.
- Facilitate startups' access to external finance(外部融资) in contexts in which information frictions is especially high.
- Helps startups turn ideas into products and products into revenues
- Patent winners also pursue first patent boosts a startup's subsequent growth and innovation by facilitating access to funding from venture capitalists (风险投资者), banks, and public investors.



Measuring Innovation and Product Differentiation: Evidence from Mutual Funds

衡量创新与产品差异化：
来自共同基金的证据

LEONARD KOSTOVETSKY
JEROLD B. WARNER*



Background

➤ 1975 to 2016

- The number of mutual funds: 530 to 7,736
- The number of fund families: 297 to 824
- The number of Morningstar style classifications: fewer than 20 to over 100

➤ Investor demand for differentiated mutual funds can arise for various reasons.

- For example, “environmentally friendly”, independent of the return distribution; belief ; advertising
- **Previous papers in the literature**: a **fund’s securities holdings** (基金的证券持有数量) to capture differentiation



- **Large families:** economies of **scale and brand recognition**
(品牌认可)
 - **Small and new families:** product uniqueness
 - They cannot easily compete on **expenses and reputation**
(费用和声誉)

- How to make product introduction decisions?

- How to measure innovation and product differentiation?



Main work

- We use the synopsis of the “Principal Investment Strategies” (PIS) section of the prospectus(招股说明书中“主要投资策略”)
- Differentiate their product and reduce search costs for clienteles with different tastes for fund attributes.
 - **Patriot Fund, 2012.** invests primarily in common stocks included in the S&P 500 index that pass the fund’s “patriotic” investment screen, which attempts to weed out companies that do business with terror-sponsoring



Conclusion

- we **fill this gap** in the literature using **text from the PIS section** of fund disclosures as reproduced by Morningstar
- Innovation is driven by **small and new families**
- Unique strategies **attract more inflows** in the first three years, and **investors respond more** to text-based uniqueness than other measures such as holdings or returns uniqueness.
- Investors in **established funds(成熟的基金)** **do not** appear to give up much to **obtain unique strategies**.



Relationship Trading in Over-the-Counter Markets

场外市场的交易关系

TERRENCE HENDERSHOTT,
DAN LI, DMITRY LIVDAN,
and NORMAN SCHURHOFF*



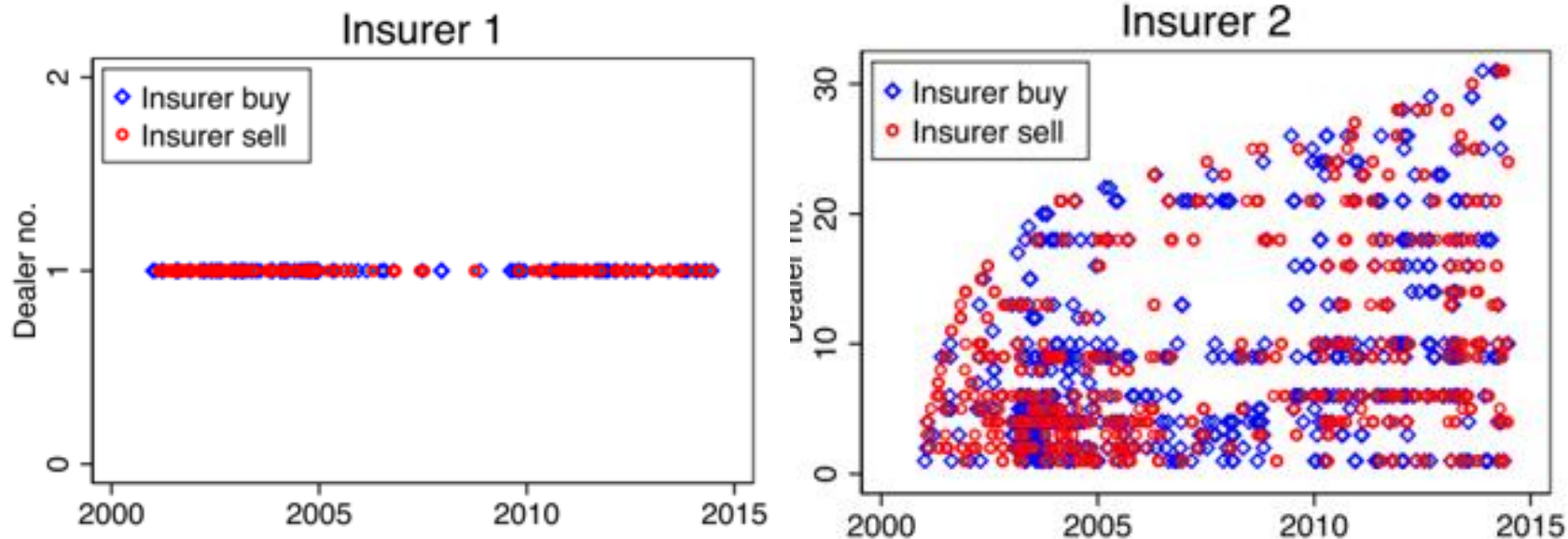


Figure 1. Two types of dealer-client trading networks

A: 一家单一经销商; B: 多家

保险公司倾向于小型但持久的经销商网络

约1/3的保险公司与单个经销商进行交易。小部分保险公司与40家经销商交易

总体程度分布遵循幂定律。



Main work

- Comprehensive regulatory corporate bond trading data for all U.S. insurance companies (保险公司的综合监管公司债券交易数据)
- 2001–2014
- More than 4,300 insurers and their dealers
- Examine investors' choice of trading network size and the relation between network size and the transaction prices
- A model of decentralized trade (分散交易)
 - trade off the benefits: repeat business (更少的经销商的重复交易的收益) and faster execution quantitatively (更多经销商更快的执行利益)
 - Optimal network size, N^* , and transaction prices.



Conclusion

- We examine the **network of trading relationships** between **insurers** (保险公司) and **dealers** (交易商) in the **over-the-counter (OTC)** corporate bond market.
- **trading network size:**
 - **one-third: single** dealer; **other insurers:** large dealer **networks**.
- **transaction prices:**
 - Execution prices (执行价格) **nonmonotone**(非单调)
 - initially **declining** but increasing once **exceed 20 dealers**.



How Does Credit Supply Expansion Affect the Real Economy? The Productive Capacity and Household Demand Channels

信贷供给扩张如何影响实体经济？

提高生产能力与刺激家庭需求

ATIF MIAN, AMIR SUFI,
and EMIL VERNER*



Background

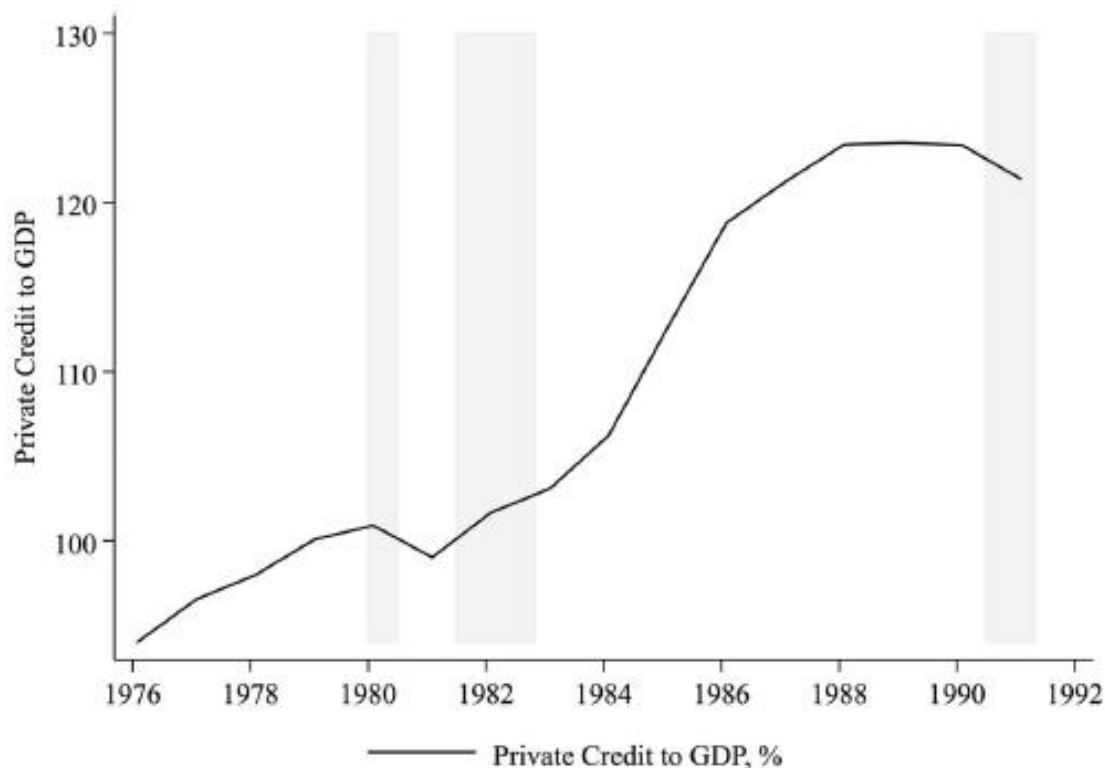


Figure 1. Aggregate credit supply: Private credit to GDP

1980年代, 美国提供信贷环境:

首先, 信贷供应总量出现了扩张。

图1: 1982-1988, 信贷与GDP之比增长达21.8个百分点



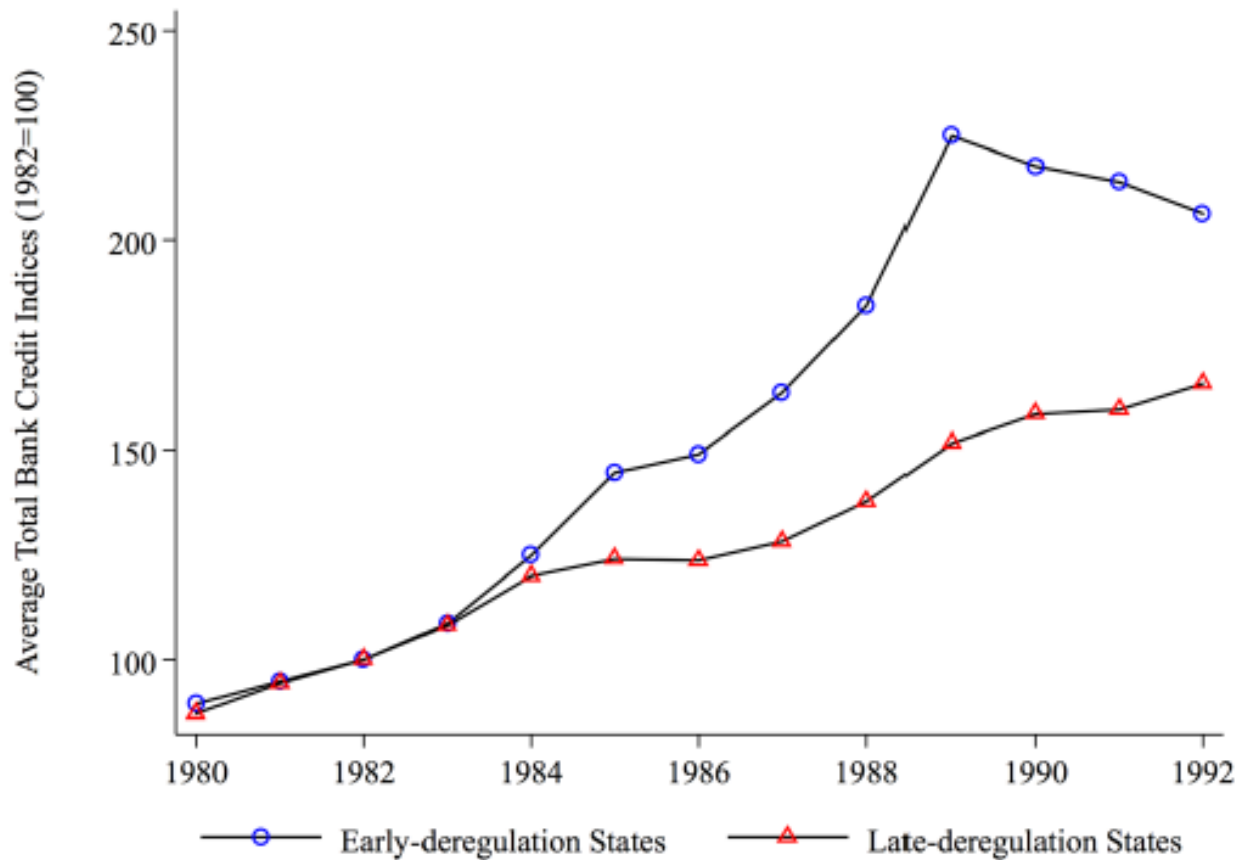


Figure 2. Credit expansion in early and late deregulation states

其次，信贷扩张的影响因州受地域而异。

图2，更早开始放宽管制的州，银行总信用增长平均高出42个百分点。



Main work

- Implement the test using both a **natural experiment** 1980s and an international panel of 56 countries over the last several decades.
- Two potential channels:
 - **First**, a credit expansion may allow **constrained** firms to **borrow and grow**, thereby increasing the economy's productive capacity (提高经济生产力) .
 - **Second**, a credit expansion may allow **households to borrow and consume more**, increasing overall household demand (增加整体家庭需求) .



Conclusion

- The methodology is implemented in the context of bank **deregulation** (放松管制背景下实施) across the United States in the 1980s.
- **Household demand** was an **important channel** through which banking deregulation **affected the real economy** (实体经济).
- Such **credit expansions** (信贷扩张) **amplify the business cycle** (商业周期) and **lead to more severe recessions** (经济衰退).
- This result is explained in part by downward nominal wage **rigidity** (名义工资刚性下降), **banking sector losses** (银行部门亏损), and **elevated household debt** (家庭债务增加).



Glued to the TV: Distracted Noise Traders and Stock Market Liquidity

电视迷：分心的噪声交易者与股市的流动性

JOEL PERESS and
DANIEL SCHMIDT*



Background

- The literature on **limited attention** (有限关注) :
 - focuses on informed agents—speculators and market makers
- Less: **noise traders**
- There are **two main challenges** to identifying the effect of noise traders' attention on markets.
 - **First, stocks' fundamentals**, which raises questions about whether any observed pattern is caused by **attention itself** or by **news**.
 - **Second**, many attention-grabbing events affect **investors** at large and **not just noise traders**.



Research design

➤ Overcome these problems:

- (I) divert, rather than attract, investors' attention
- (II) sensational news; appeal to irrational, “biased” investors. (非理性、有偏见)

➤ Exogenous, temporarily distract traders.

Football and movie star O.J. Simpson on October 3, 1995.

- Long-distance telephone call volume **declined, postponed using bathrooms** . New York Stock Exchange (NYSE) plunged by 41% in the first five minutes, 76% in the next five minutes, before abruptly recovering.
- **More “biased” investors** are more prone to distraction, which confirms that our sensational news episodes **primarily distract noise traders**.
- **On distraction days, liquidity worsens by 1% to 6%, volatility falls by 3%, and price reversals are reduced by 4%.**



➤ **news pressure** (新闻压力)

- measures the **median** number of minutes that U.S. news broadcasts devote to the **first three news** segments.

➤ 1968 to 2014

➤ 551 days (distraction events)

➤ **Three subperiods:**

- 1968–1992
- 1993–2006: Internet
- 2007–2014: algorithmic traders (算法交易者), particularly high-frequency traders (尤其是高频交易者)



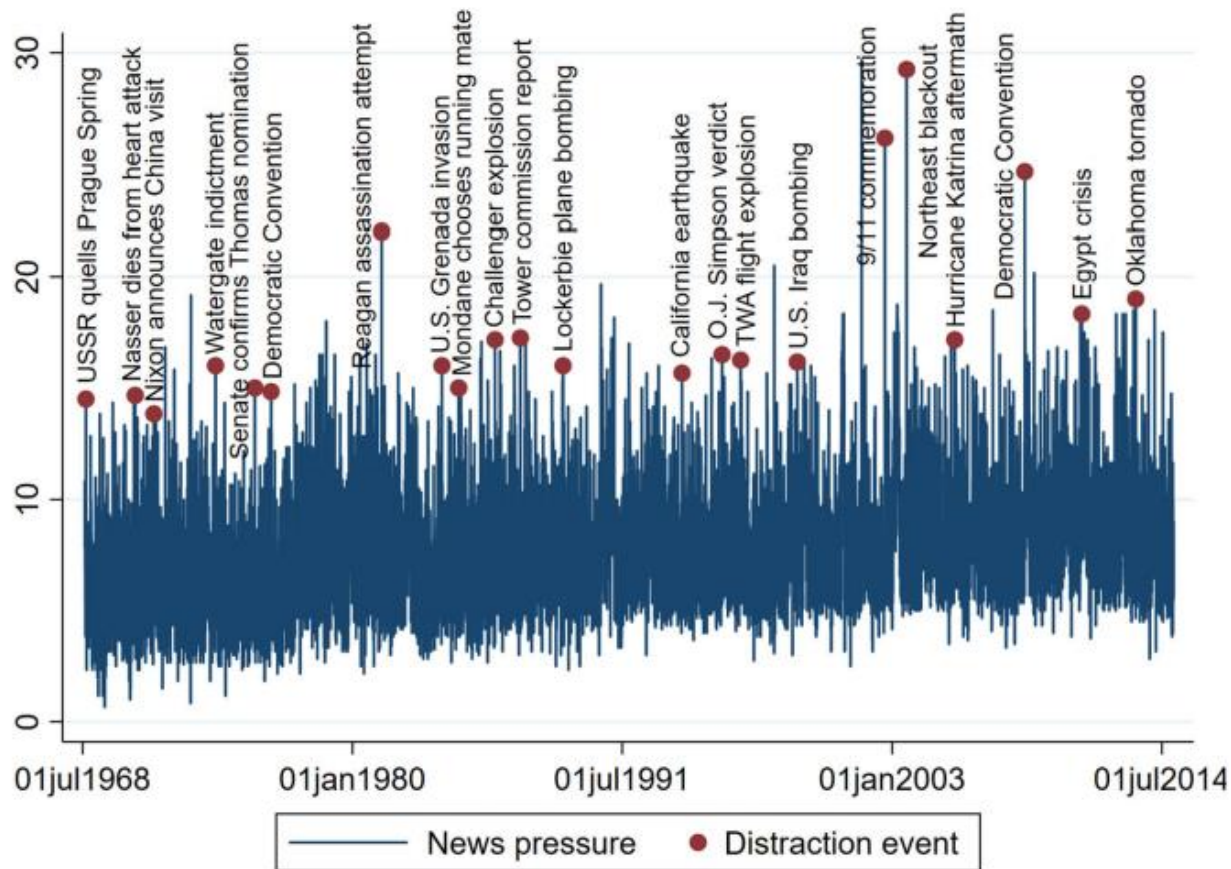


Figure 1. Daily news pressure and distraction events.

图1. 蓝线表示1968-2014年间每日新闻压力。红点表示本文中使用的注意力分散事件，指某一年中新闻压力最高的日子



Conclusion

- In this paper, we study the impact of **noise traders'** (噪声交易者) **limited attention** (有限关注) **on financial markets**. Specifically, we exploit episodes of **sensational news** (exogenous to the market) that distract noise traders.
- We find that on “**distraction days,**” **trading activity, liquidity, and volatility decrease**, and prices **reverse less** among stocks owned predominantly by **noise traders**.
- These outcomes **contrast sharply** with those due to the inattention of informed **speculators and market makers** (投机者和做市商).



Tax-Efficient Asset Management: Evidence from Equity Mutual Funds

**节税资产管理：
来自股票型共同基金的证据**

CLEMENS SIALM and
HANJIANG ZHANG*



Background

- Create value for their investors through **active trading strategies**.
 - Substantial trading costs persistent superior performance—difficult (French, 2008)
 - **Investment taxes**--An additional cost of active fund management that is often ignored both in academia and in practice.
- **Dividend income and their realized capital gains**
 - different rates, **short-term** capital gains, less than one year, are **higher** rates than **long-term** capital gains.



Research design

➤ Model

- a stylized model with different investment strategies and heterogeneous tax clienteles. (不同投资策略和不同税收客户的程式化模型)

➤ Empirical

- 1990 to 2016
- 48,567 annual fund observations
- Tax efficiency and fund performance
 - Reduce the tax burdens by deferring the realization of capital gains, by accelerating the realization of capital losses, and by avoiding securities with high dividend yields



Conclusion

- Higher : small-capitalization and value portfolios(high realizations of capital gains)
- Funds' tax burdens are **positively** related to turnover, fund age, and the capital gains overhang.
- Funds that impose **higher tax burdens** on their investors **do not offset** these **tax costs** with superior before-tax performance.
- Tax-efficient funds seem to outperform tax-inefficient funds both before and after taxes through superior investment ability, lower trading costs, and careful tax management.



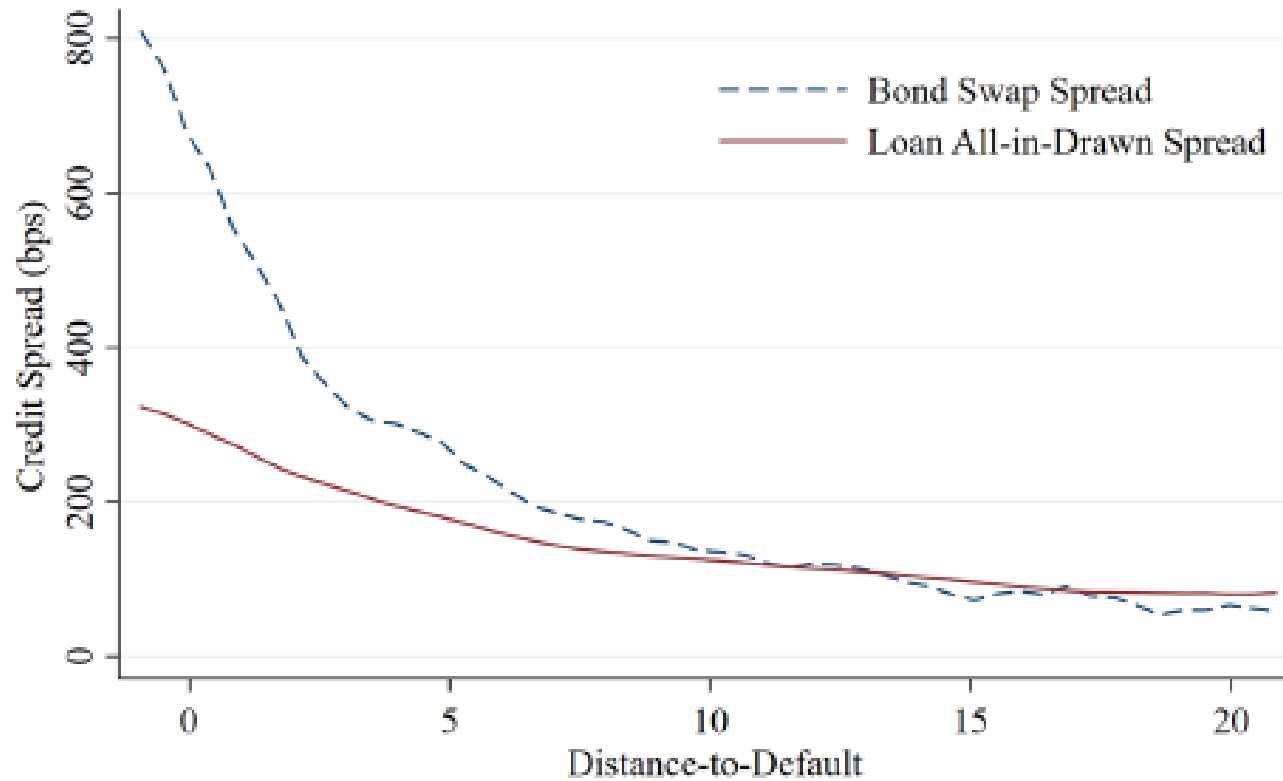
Does Borrowing from Banks Cost More than Borrowing from the Market?

向银行借贷比向市场借贷成本高吗？

MICHAEL SCHWERT*



Main work



Main work

- To quantify the magnitude of this premium, I apply a **structural model of credit risk** (信用风险的结构模型)
- The model extends Merton (1974) to value senior and junior debt claims as options on the firm's assets.
- The analysis uses a novel sample of loans matched with **bond spreads** from the same firm on the **same date** (匹配同一日期同一公司的债券利差).



Conclusion

- This paper investigates the pricing of bank loans relative to capital market debt.
- **Banks** earn significantly **higher** rates than implied by the pricing of credit risk in the capital markets.
- Investment-grade firms: the costs of bank and bond credit are similar ; noninvestment-grade bank is less costly
- Why ? **Loans** offer many benefits **beyond** what firms receive from **bonds**
 - 能够在短时间内筹集大量债务，借贷金额和还款期限的灵活性等解释了溢价。



Contribution

- This paper is the **first to apply credit pricing models** to the **loan market** and to compare the pricing of **loans and bonds** in a clean setting.
- The results on secured and unsecured bond spreads(有无担保债券利差) are also the first application of **credit pricing models** (信用定价模型) to bonds of different seniority.
- This paper raises questions about the **cost of capital in the syndicated loan market** (银团贷款市场)



The Market for Conflicted Advice

冲突的咨询市场

BRIANA CHANG and
MARTIN SZYDLOWSKI*



Background

- Advisers have conflicts of interest and compete for heterogeneous customers through information provision.
- The competitive equilibrium features information dispersion (信息分散) and partial disclosure (信息部分披露).
- The key equilibrium objects are the distribution of information quality, the value of information to customers, the profits of advisers, and the matching patterns.



Main work

- Equilibrium model (two-sided heterogeneity)
 - Quality of advice, customers' investment decisions, and their choice of advisers are determined jointly in a frictionless matching market.
 - We then use this model to analyze how regulation may affect customers' welfare, taking into account how advisers adjust their quality of advice in equilibrium.
 - We account for both customer and adviser heterogeneity.
 - Customers differ in the quality of their ex ante information, while advisers differ in the value of their expertise.



Contribution

- **Conflicted fees** (竞争性收费) lead to **distorted information** (信息失真), they are **irrelevant** (不会降低) for customers' welfare
- **Banning conflicted fees** (禁止竞争性收费) improves only the information quality, not customers' welfare.
- Instead, financial literacy education for the least informed customers can **improve all customers' welfare** because of a **spillover effect**.



Informed Trading and Intertemporal Substitution

信息化交易与跨期替代

YIZHOU XIAO*
CUHK Business School
(香港中文大学商学院)





Assistant Professor

Xiao, Yizhou

BA (Renmin); MA (Peking U); PhD (Stanford)

Biography

- Prof. Yizhou Xiao joined The Chinese University of Hong Kong (CUHK) Business School in 2016 as an Assistant Professor of Finance.
- **primary research :**
 - asymmetric information on trading
 - asset pricing
 - entrepreneurial finance
- **PhD** in Finance from Stanford University Graduate School of Business, **MA** in Economics from Peking University and **BA** in Finance from Renmin University of China.



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ABSTRACT

- I examine the possibility of information-based trading in a **multi-period** consumption setting.
- I develop a **necessary and sufficient condition** for trade to occur.
- When agents have **heterogeneous time-inseparable** preferences (异质时间不可分割的偏好), information differentially affects relative preferences **for current and future consumption**, making information-based trading mutually **acceptable**.
- The **no-trade** result continues to hold if there is **no aggregate shock** (总量冲击), or if agents have **either homogeneous or time-separable** preferences.



Background

- Researchers **have considered** many explanations for trade, such as **heterogeneous beliefs, liquidity trading**
- **Dynamic consumption** (动态消费) generally has **not been** considered.
- I extend the original **single-period consumption no-trade model** (单周期消费无贸易模型) to **multi-period consumption** (多周期消费) settings and identify **intertemporal consumption** (跨期消费) smoothing as a mechanism that generates information-based trading (基于信息的交易的机制)



Future research

- For instance, studying **strategic trading** when agents care about **consumption smoothing** may provide new insights.
- Future research on the relationships between **intertemporal substitution** (跨期替代), **trading volume** (交易量), and **dynamic trading patterns** (动态交易模式) may also improve our understanding of markets.



Risk Management in Financial Institutions

金融机构的风险管理

ADRIANO A. RAMPINI, S.
VISWANATHAN, and
GUILLAUME VUILLEMEY*



ABSTRACT

- We study risk management in financial institutions using data on **hedging** of **interest rate** and **foreign exchange risk**.
- We find strong evidence that institutions with **higher net worth** **hedge more**, controlling for risk exposures, across institutions and within institutions over time.
- For identification, we exploit **net worth shocks** resulting from **loan losses due to declines in house prices**.
- Institutions that sustain such shocks **reduce hedging** significantly relative to otherwise-similar institutions.
- The **reduction in hedging** is differentially **larger** among institutions with **high** real estate exposure.
- The evidence is **consistent with** the theory that **financial constraints** **impede** both **financing** and **hedging**.



Main work

- **A novel identification strategy** using net worth shocks resulting from loan losses that are due in turn to house price declines. (因房屋价格下降而导致的贷款损失)
- Panel data on U.S. financial institutions, focusing on bank holding companies (BHCs).
- **2009 as the treatment year**
- **Difference-in-differences and triple-differences**
- **Financial constraints** are a major determinant of hedging.



Securitization, Ratings, and Credit Supply

证券化、评级与信贷供应

BRENDAN DALEY, BRETT
GREEN, and VICTORIA
VANASCO*



ABSTRACT

- We develop a framework to explore the effect of **credit ratings** on **loan origination**.
- We show that ratings endogenously **shift** the economy from a **signaling equilibrium**, in which banks **inefficiently retain loans** to **signal quality**, toward an **originate-to-distribute equilibrium** with zero retention and **inefficiently low lending standards**.
- Ratings increase overall efficiency, provided that the **reduction in costly retention** more than compensates for the origination of some negative net present value loans.
- We study how banks' ability to screen loans affects these predictions and use the model to analyze commonly proposed policies such as mandatory "skin in the game."



Shorting in Speculative Markets

投机市场中的做空

MARCEL NUTZ and JOS
E A. SCHEINKMAN*



ABSTRACT

- In models of trading with **heterogeneous beliefs** following Harrison-Kreps, **short selling** is **prohibited** and agents face constant marginal costs-of-carry.
- The **resale option** (转售期权) guarantees that prices **exceed** buy-and-hold prices (买入并持有价格) and the difference is identified as a **bubble**.
- We propose a model where risk-neutral agents face **asymmetric increasing marginal** (不对称的边际递增) costs on **long and short positions** (多头和空头仓位).
- Here, agents also value an **option to delay**, and a Hamilton-Jacobi-Bellman equation quantifies the influence of costs on prices.
- An unexpected decrease in shorting costs may **deflate a bubble** (泡沫破灭), linking financial innovations that facilitated **shorting of mortgage-backed securities** (卖空按揭证券) to the **collapse of prices** (价格暴跌).



Beyond Random Assignment: Credible Inference and Extrapolation in Dynamic Economies

随机分配之外：动态经济中的可信推理和推断法

CHRISTOPHER A.
HENNESSY and ILYA A.
STREBULAEV*



ABSTRACT

- We derive analytical relationships between shock responses (冲击反应) and theory-implied (理论隐含) causal effects (comparative statics比较静态分析) in dynamic settings with linear profits (线性利润) and linear-quadratic stock accumulation costs (线性一元二次股票积累成本).
- For permanent profitability shocks, responses can have incorrect signs, undershoot, or overshoot depending on the size and sign of realized changes.
- For profitability shocks that are i.i.d., uniformly distributed (均匀分布), binary (二元), or unanticipated and temporary (非预期和临时性的收益冲击), there is attenuation bias (衰减偏误), which exceeds 50% under plausible parameterizations.
- We derive a novel sufficient condition for profitability shock responses to equal causal effects: martingale profitability (马丁格尔盈利).
- We establish a battery of sufficient conditions for correct sign estimation, including stochastic monotonicity (随机单调性).
- Simple extrapolation (简单外推法) /error correction formulas (误差修正公式) are presented.



Thank You

