

# Patent Litigation in the United States: Empirical Evidence & Implications for Reform



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Rosemarie Ziedonis

Ross School of Business, University of Michigan

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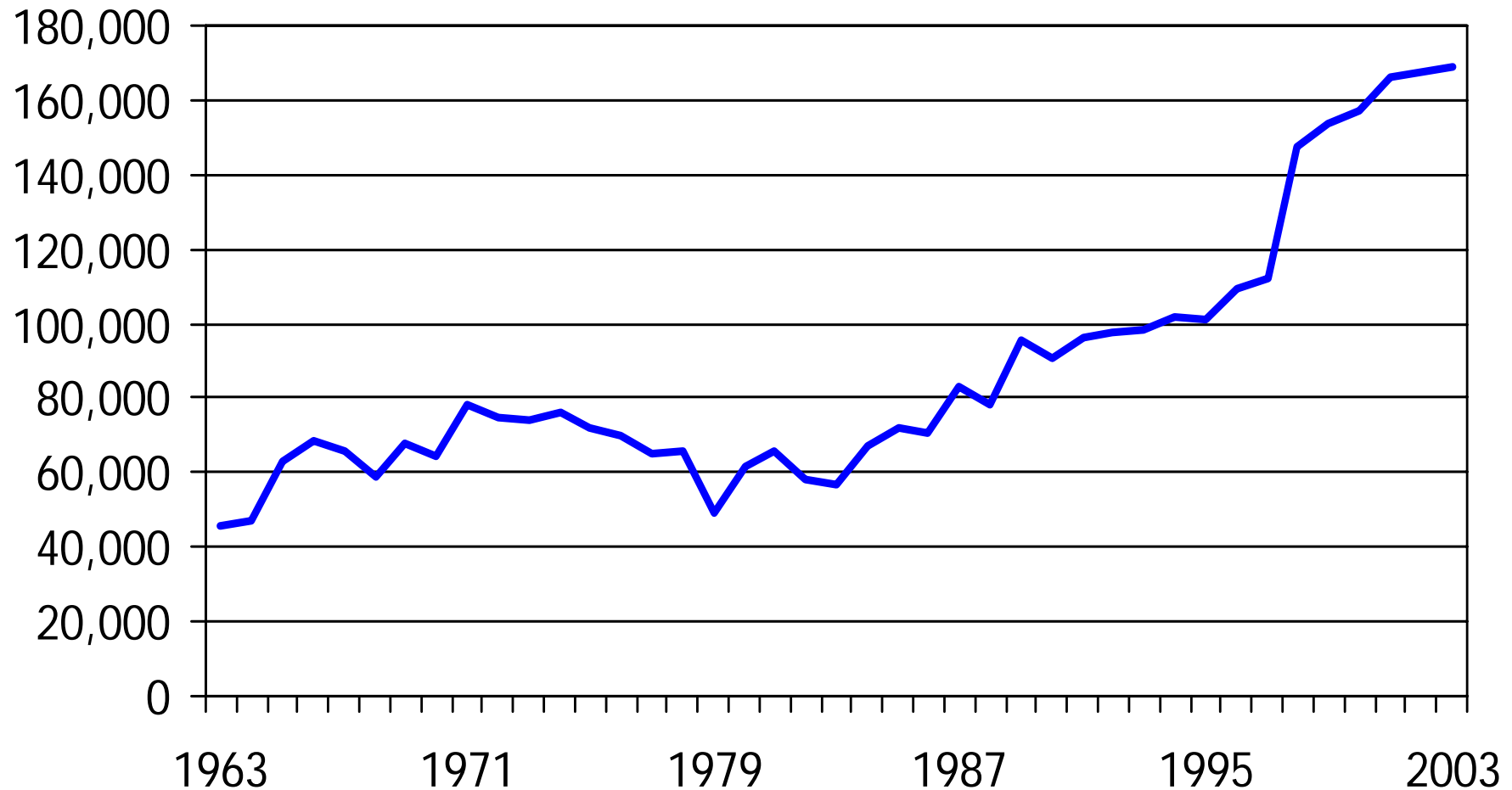


# Outline

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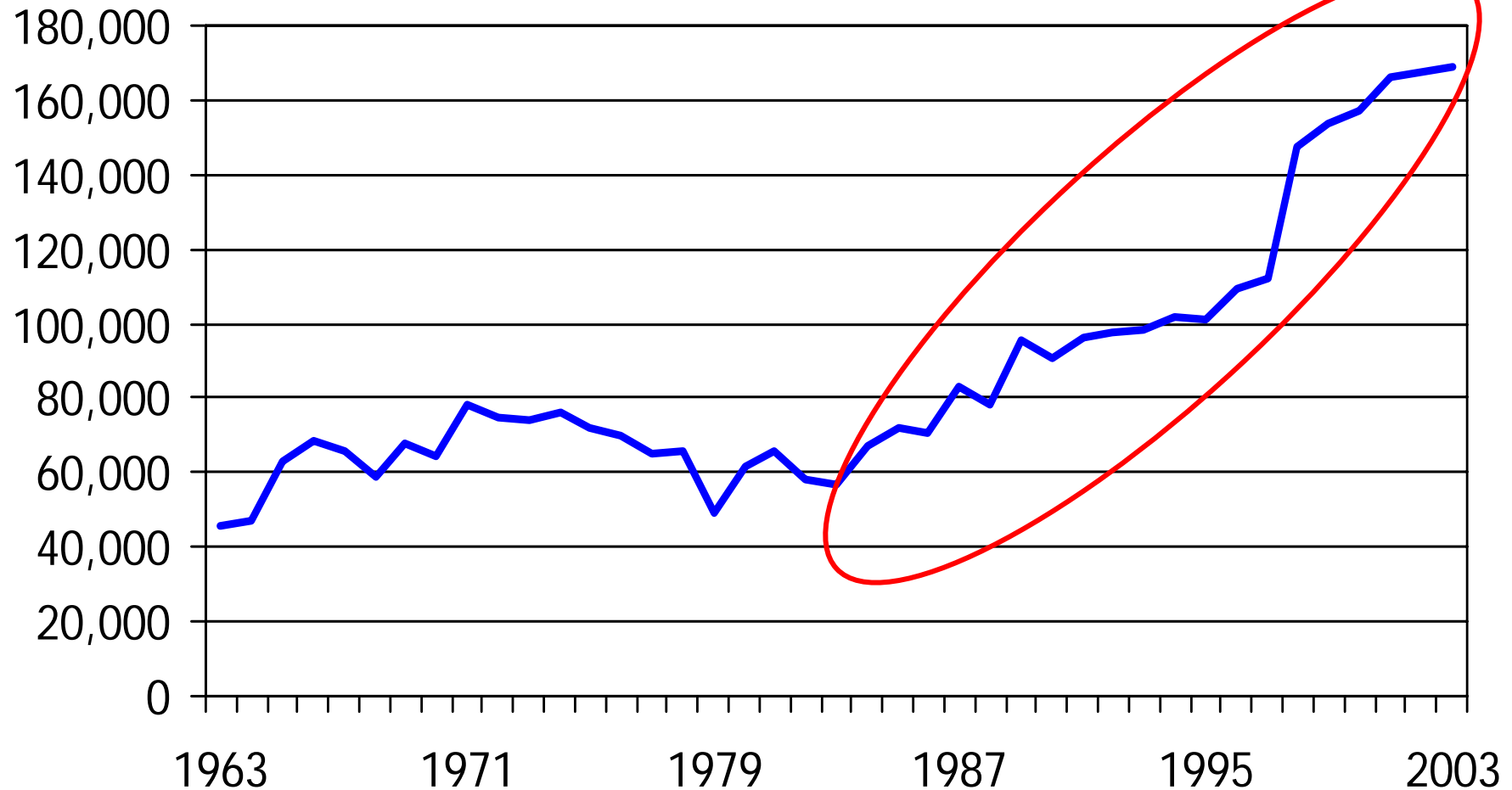
- Upward trends in the issuance and enforcement of US patents
- Two reasons for concern
  - Patent thickets
  - Enforcement costs
- A closer look: the semiconductor industry
- Implications for reform

# Fact #1: Increasing Issuance of US Patents



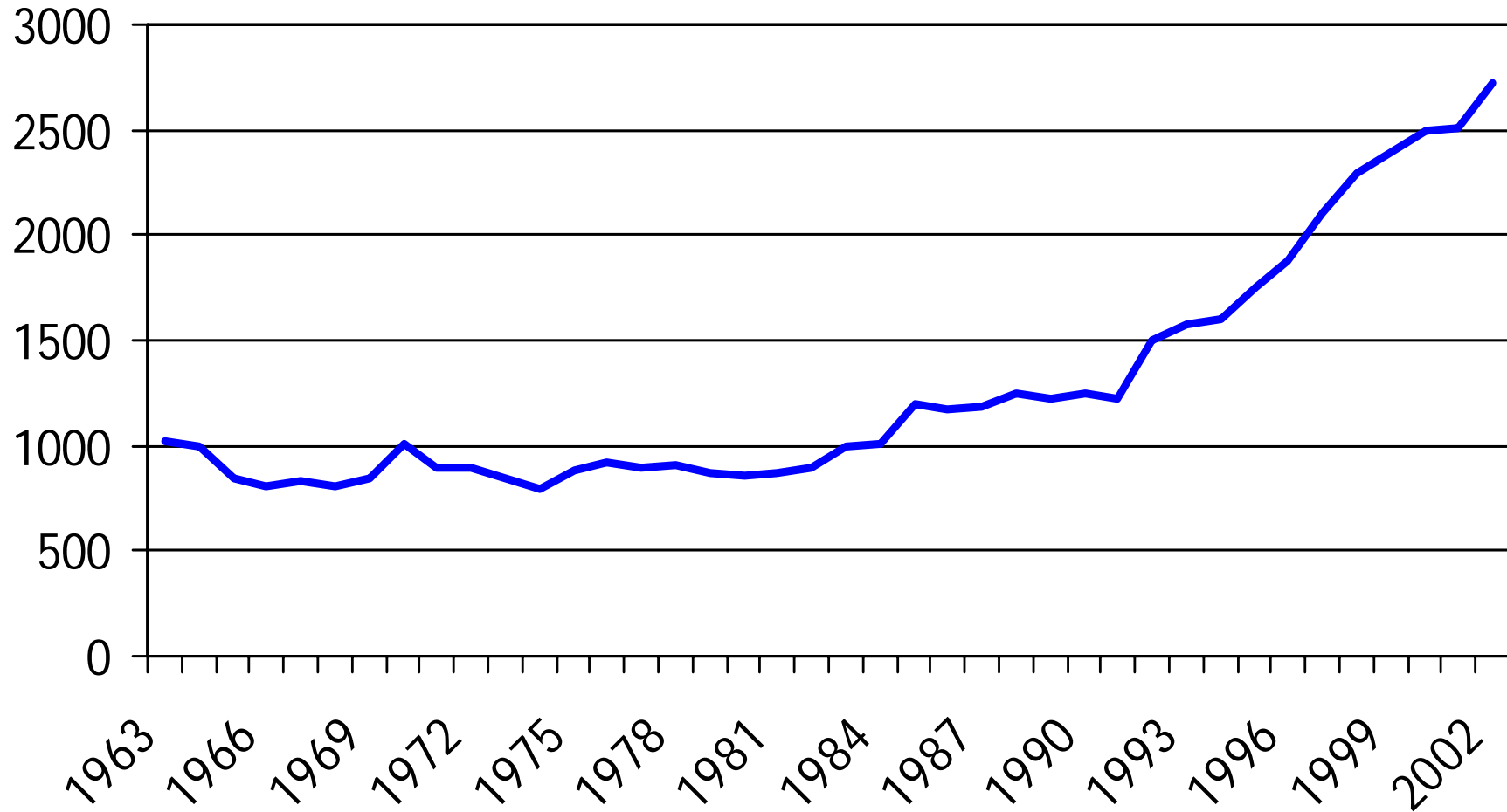
Annual # utility patents granted in US  
Source: uspto.gov

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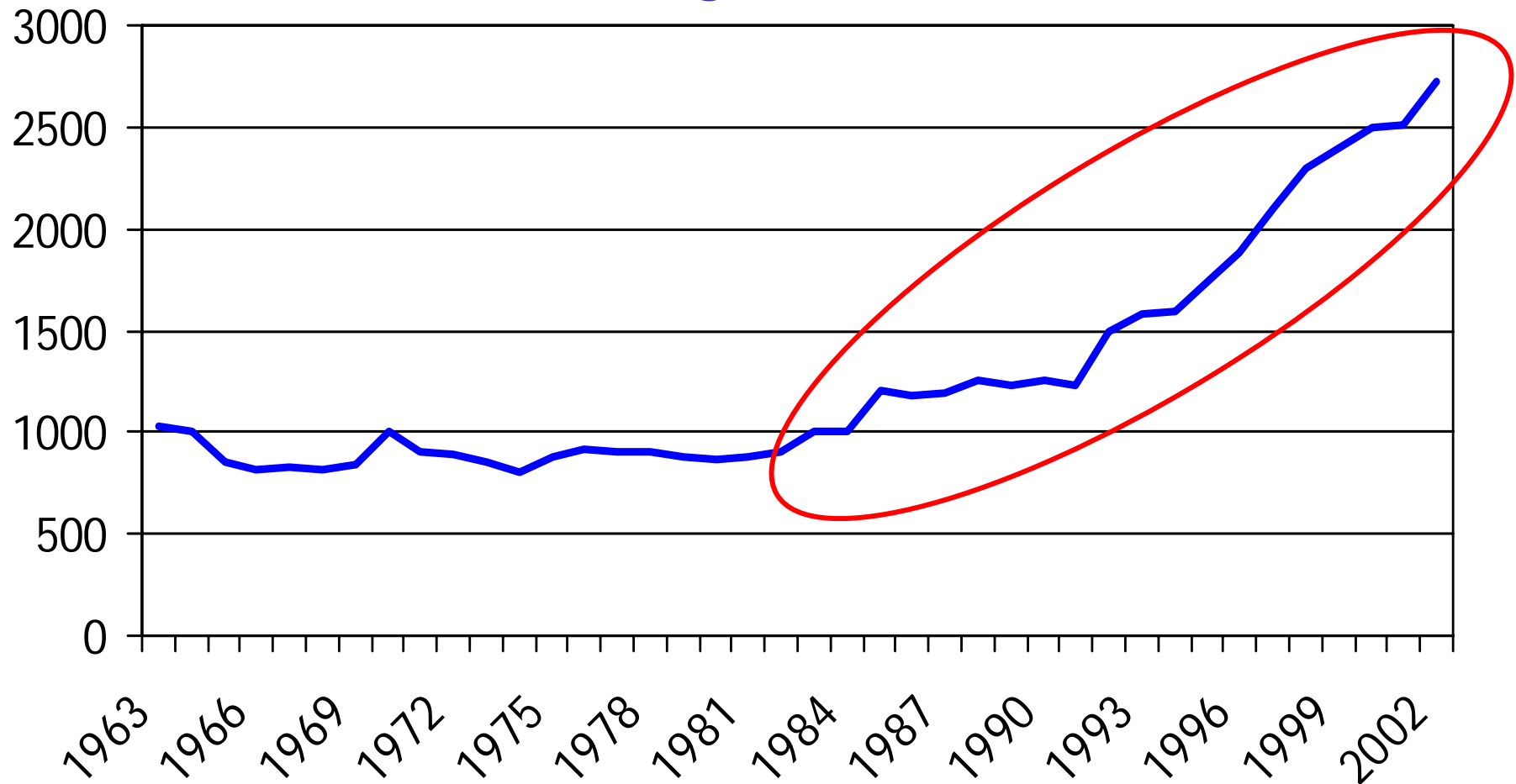
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## Fact #2: Increasing Numbers of Patent Lawsuits Being Filed



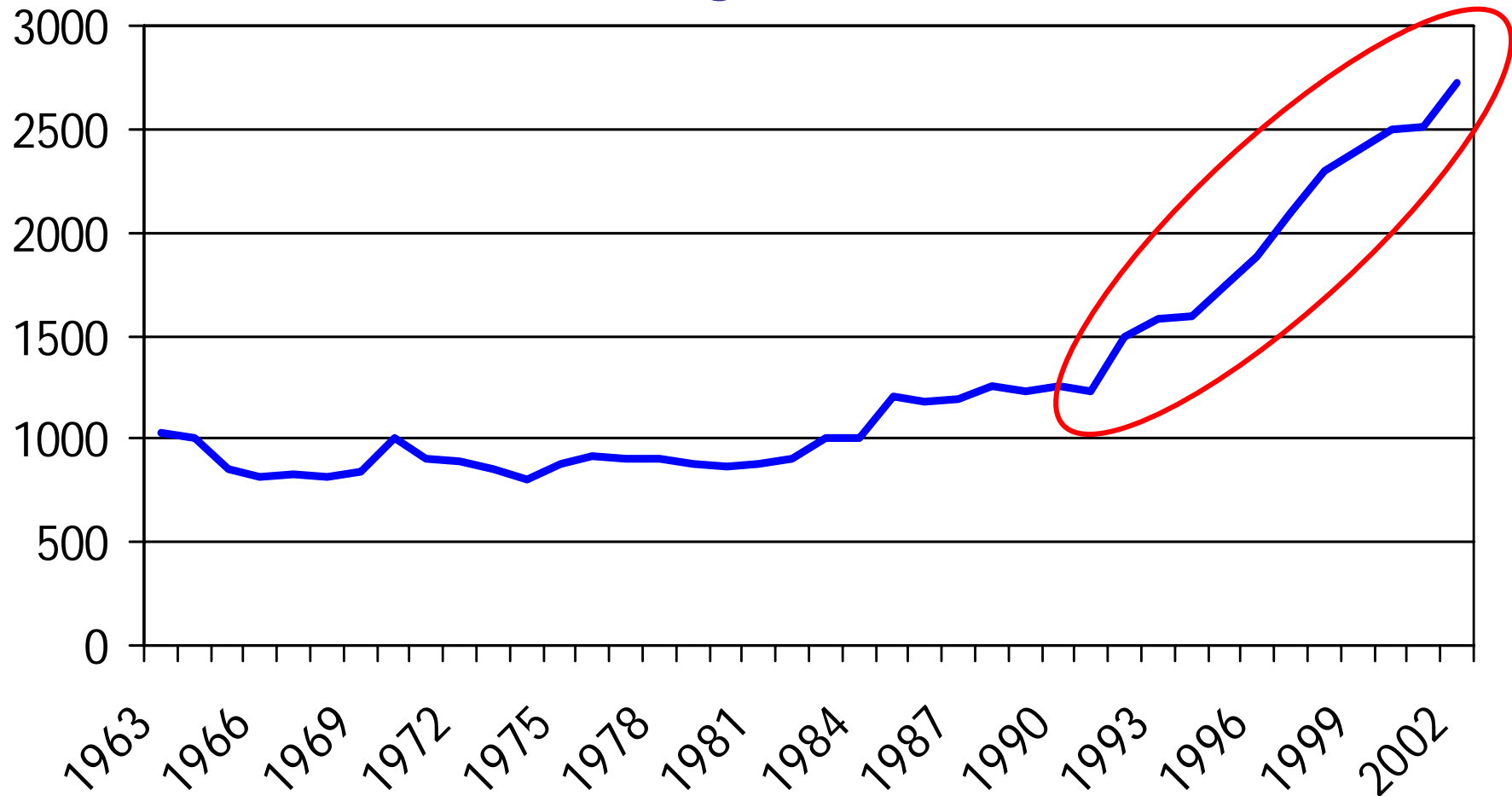
Annual # of patent lawsuits initiated in the United States  
Estimated from Jaffe & Lerner (2004), p.14, Figure I.2.

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## Reasons not to be concerned

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- Parallel trends partly reflect “healthy” demand-side & supply-side factors:
  - Increased importance of intangible assets within US economy (Blair & Wallman, 2001)
  - As more patents issue, more are “at risk” for dispute
- Reassuring empirical results:
  - Patent litigation is still a rare event (Lanjouw and Schankerman (LS) 2003)
  - Disputes tend to involve more valuable inventions (LS 2003; Allison et al. 2004)
  - Entities with repeated dealings tend to “work things out” (LS 2003; Somaya 2003)





# More troublesome evidence

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- Patent “thickets” emerging in sectors ranging from semiconductors and software to genomics and nanotechnology (Shapiro, 2001)
- In semiconductors, rate of patenting has outpaced R&D spending since mid-1980s at an accelerating rate (Hall and Ziedonis, 2001)
  - Driven by aggressive patenting by capital-intensive firms ( “block others before being blocked”; improve position in license negotiations)
  - Interviews corroborate recent FTC and Congressional testimonies
    - Large financial risks posed by threat of preliminary injunction
    - Dissemination of information curtailed due to willful infringement concerns
    - Substantial indirect costs (both in \$ and time) associated with evaluating patents of even dubious quality
    - Possible redirection of effort away from R&D activities



# Patent Enforcement Costs

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- Substantial and rising (Ellis, 1999; AIPLA Surveys)
- Two areas of concern:
  - Increase manufacturers' incentives to settle even frivolous disputes?
  - Disproportionately affect innovative activities of small firms?
    - Smaller firms are more likely to “opt out” of the patent system due to anticipated costs of enforcement (Cohen et al., 2001)
    - Patents owned by small firms are more frequently litigated (LS 2003)



# A Closer Look: Patterns of Patent Litigation within Semiconductors

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- Objectives:
  - Trace patent lawsuits initiated by or brought against firms within one industry over a long period of time (1973-2001)
  - At the firm level, estimate patent litigation rates relative to R&D spending (not just patents awarded)
  - Examine *why* patents owned by small firms appear more likely to be litigated
- Limitations:
  - Intra-industry study
  - “Tip of the iceberg” -- disputes resulting in lawsuits being filed
- Sample: 136 dedicated US semiconductor firms
  - Manufacturers
  - Design firms (“technology specialists”)
    - Design and sell own products (e.g., Xilinx, Altera)
    - Design and license (e.g., Qualcomm, Rambus)



# Main Findings

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- Contrasting estimates of the “rareness” of patent litigation
  - Declining rates relative to patents awarded
  - Increasing rates relative to R&D spending
- Continued acceleration in pace of “patent portfolio races” among manufacturers since mid-1990s
- Manufacturers more likely than design firms to be sued by patent owners outside the industry and independent inventors
- Design firms enforce their patent rights aggressively
  - Litigate 1 out of every 4 patents in portfolios (on average)
  - Typical suit involves direct competitors in niche product markets



# Implications for Reform

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- Efforts to curb over-zealous & low-quality patenting are well placed – an implicit “tax” on innovation
- Streamlining the patent litigation process could disproportionately benefit:
  - Manufacturers vulnerable to IP-related “hold-up”
  - “Technology specialists” that rely heavily on patents to appropriate returns to R&D
- Do not solve a “patent troll” problem with a “non-practicing entity” solution
  - As evidenced within semiconductors, the latter category can include highly innovative, R&D-intensive firms.