

Some facts about business
method and software patents at
the USPTO and the EPO

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Overview

- A few remarks on NPEs
- Review previous findings in the US and Europe
- Present a summary of facts about Class 705 and their owners
 - Patents issued 1976 to 2006 (new NBER database)

Non-practicing entities

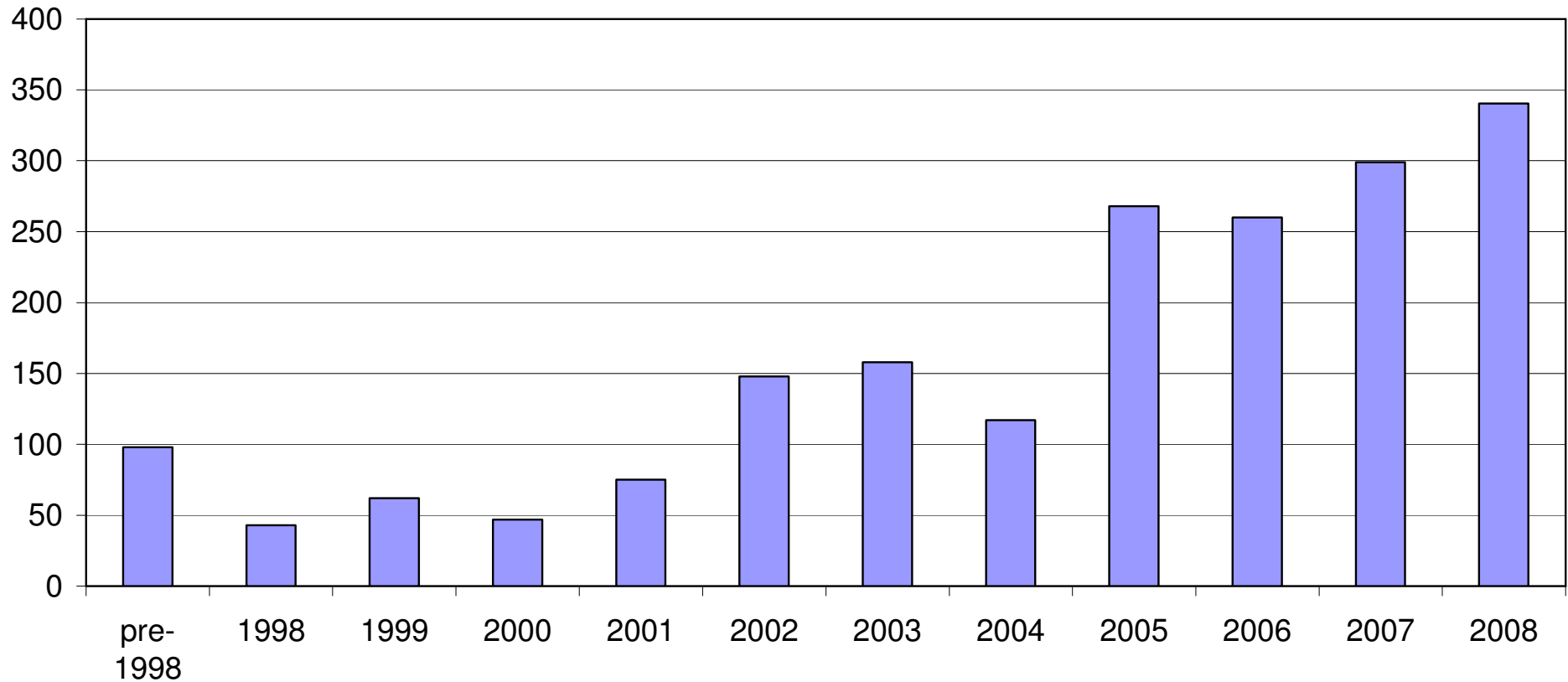
- **Definition:** a patent holder that does not practice the invention on which he holds a patent
 - **Benefits**
 - ◆ Allows efficient specialization in knowledge production
 - ◆ Reduces reliance on scale and trade secrecy, which may favor competition
 - ◆ Enables VC financing because increases the salvage value of knowledge-intensive firms
 - ◆ Anand and Khanna (2000) – stronger IPR associated with more and earlier tech licensing
 - **Costs**
 - ◆ “Potential infringing” not a level playing field
 - ◆ Current bargaining strength in negotiations probably too strong due to
 - Preliminary injunction threat (but, eBay)
 - Some low quality patents (but, KSR)
 - Reasonable royalty computations

Complex products

- Too much bargaining power granted to the owner of a small share of the technology in a complex product
 - “willful” infringement - ignoring a cease and desist letter even if there is good reason to believe one is not infringing
 - “reasonable royalties” principle appears to yield excessive royalties in complex product cases
 - ◆ Lemley and Shapiro (2007) – court awarded royalties average 10% in electronics vs. 14% in chem/bio – seems too small a difference
 - Threat of “patent ambush” in SSOs?
- Cross-licensing does not help with NPEs

Number of new patent case filings by non-practicing entities (NPEs)

Source: Patent Freedom Copyright 2008



Preliminary work by Hall and Ziedonis (2007) confirms this pattern in semi-conductors. Lerner (2006) finds very high litigation rates for small entities in financial methods patenting; also Allison et al. 2009

Independent invention defense

- Problem of inadvertent infringement when there are many minor patents, not always clearly written
- Exacerbated by the imbalance in bargaining power between potential infringer and patentee
- Proposed by Shapiro (2007), among others
 - Obvious costs in terms of discovery, etc
 - Benefit – the fact of independent invention suggests that the invention was not “non-obvious” to persons having ordinary skill in the art
 - Shapiro shows that welfare is almost always higher if indep invention allowed

Independent invention defense

- Lemley (2007) - concern that racing with no guarantee of being the sole winner may discourage some high cost innovations; he suggests the following modifications:
 - Wilfulness – only copying, not indep invention
 - Prior user right instead (rules out simultaneous inventions)
 - Make simultaneous invention relevant for obviousness in court
 - Take indep invention into account when deciding to issue injunction

Empirical studies of bus meth patents

■ Business methods

- Defining them?
- Allison & Tiller 2003 – internet bus meth
- Wagner 2008 – postal meters; Europe

■ Financial

- Lerner 2006a, 2006b - litigation
- Duffy & Squires 2008 – financial innov patenting
- Hall 2007 – payment systems
- Hunt 2008 – do they increase R&D?
- Hall et al. 2009 – Europe
- Takalo & Komulainen 2008 – exchange; Europe

Summary of findings – bus meth

- Allison & Tiller 2003 – internet bus methods
 - 1423 internet patents in 705, 707, 709 issued 1990-99
 - Amt of prior art same as other patents, but more is non-patent
 - US inventors dominate, small firms and individuals do well compared to large firms
- Wagner 2008 – postal meters; Europe
 - 1901 bus meth apps found that are equivalent to class 705 US pats
 - Differ wrt claims, prior art refs, litigation; opposition rates of 44% in franking device (postage meter) industry

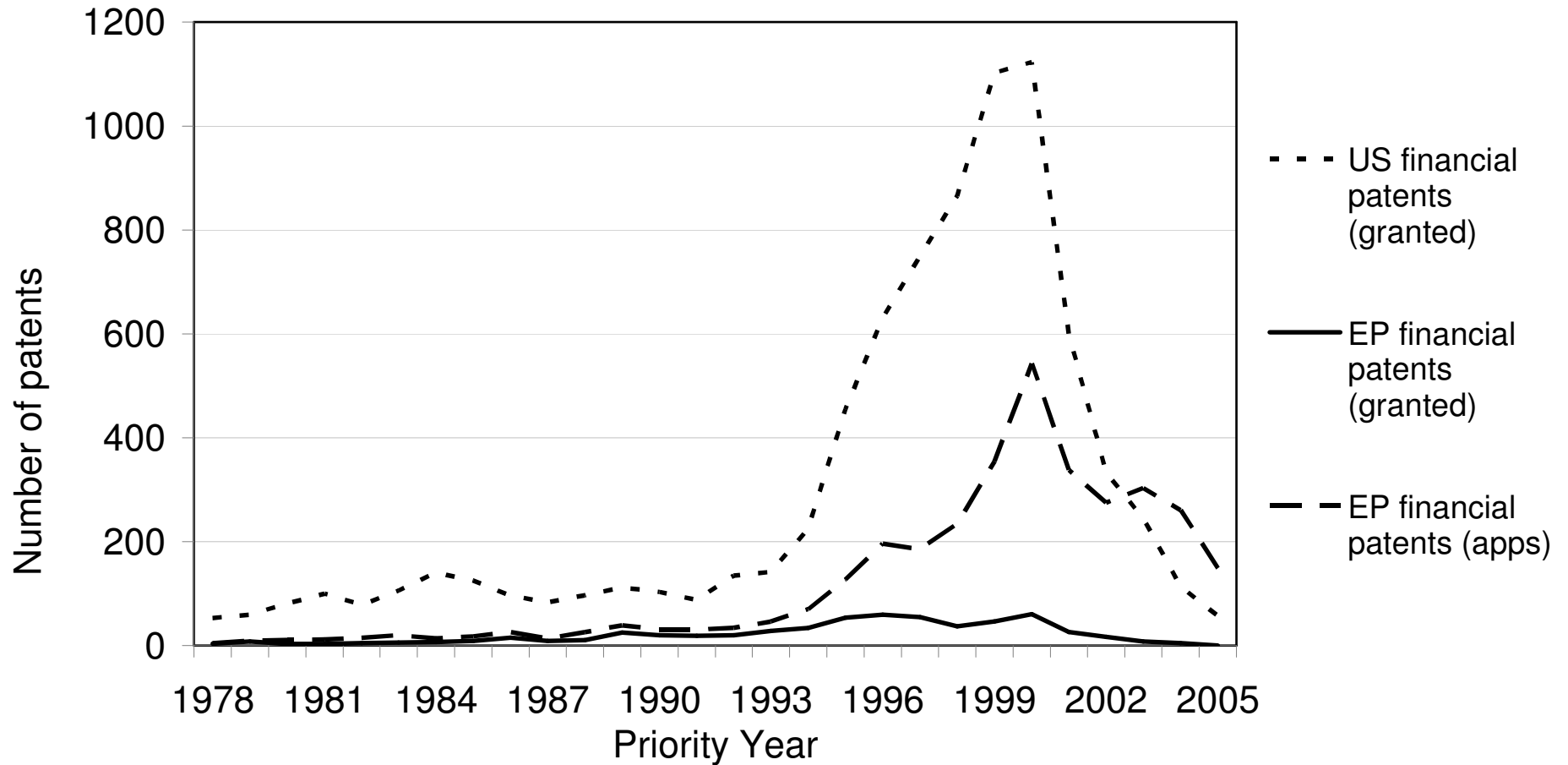
Summary of findings - financial

- Lerner 2006 – litigation through 2005 on pats issued 76-03 in subset of 705
 - Higher litigation rate than any other technology
 - Very highly litigated by small entities ($p > 1$)
- Hunt 2008 – do they increase R&D?
 - Little effect visible (based on tech employment)
- Duffy & Squires 2008 – financial innov. patenting
 - Long pendency
 - few in 705/35 (finance, e.g., banking, investment or credit) directed towards highly innovative financial products
- Takalo & Komulainen 2008 – 378 European exchange pats in IPC G06Q 40/00B
 - Growth follows US, most applicants US firms
 - Few granted, 45% opposition rate

Summary of findings – financial

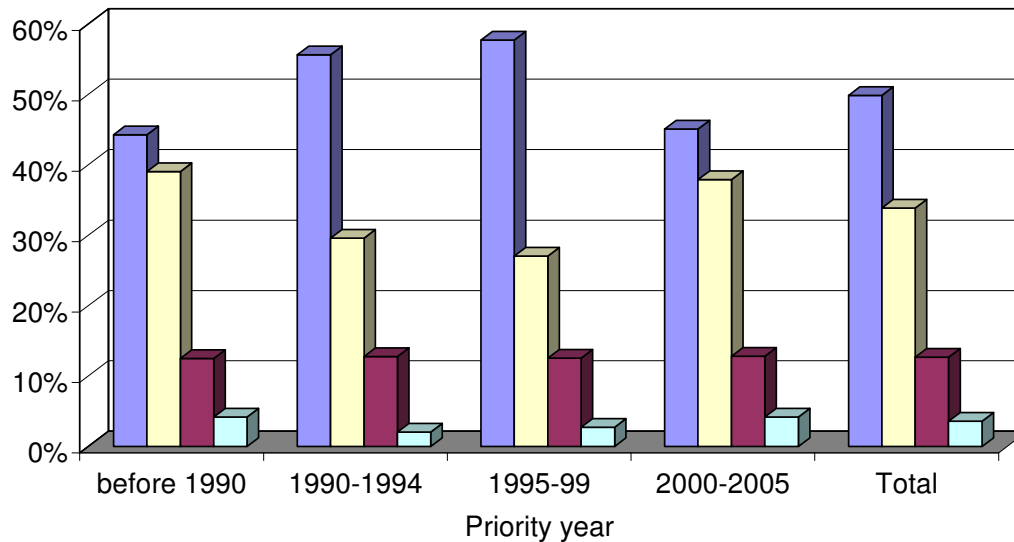
- Hall 2007 – payment systems pats
 - Held by equipment mfgs, large fin firms, new entrants
 - Slightly less than half in class 705
- Hall et al. 2009 – European applications defined by union of
 - EPO equiv of USPTO pats in fin class/subclass (Lerner)
 - EPO pats in IPC/ECLA fin-related classes
 - EPO pats in tech classes where “pure play” fin firms patent
 - Also required words transaction, financial, credit, payment, money, debit card, portfolio, or wallet in title or abstract
 - 3298 patents with priority year 1978-2005
 - 1% control sample of all EPO applications (18,523 patents)

Figure 2: EP and US financial methods patenting



Fall after 2000 due to truncation

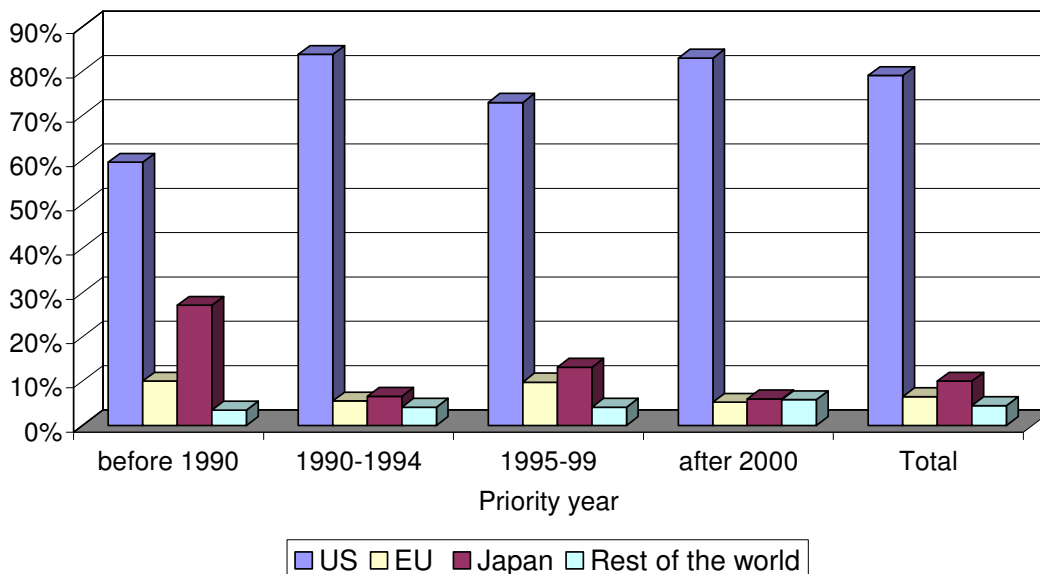
Regional distribution of EPO financial patent applications



85% owned by firms

EPO fin pats owners
less heavily
concentrated in the
US than USPTO
owners

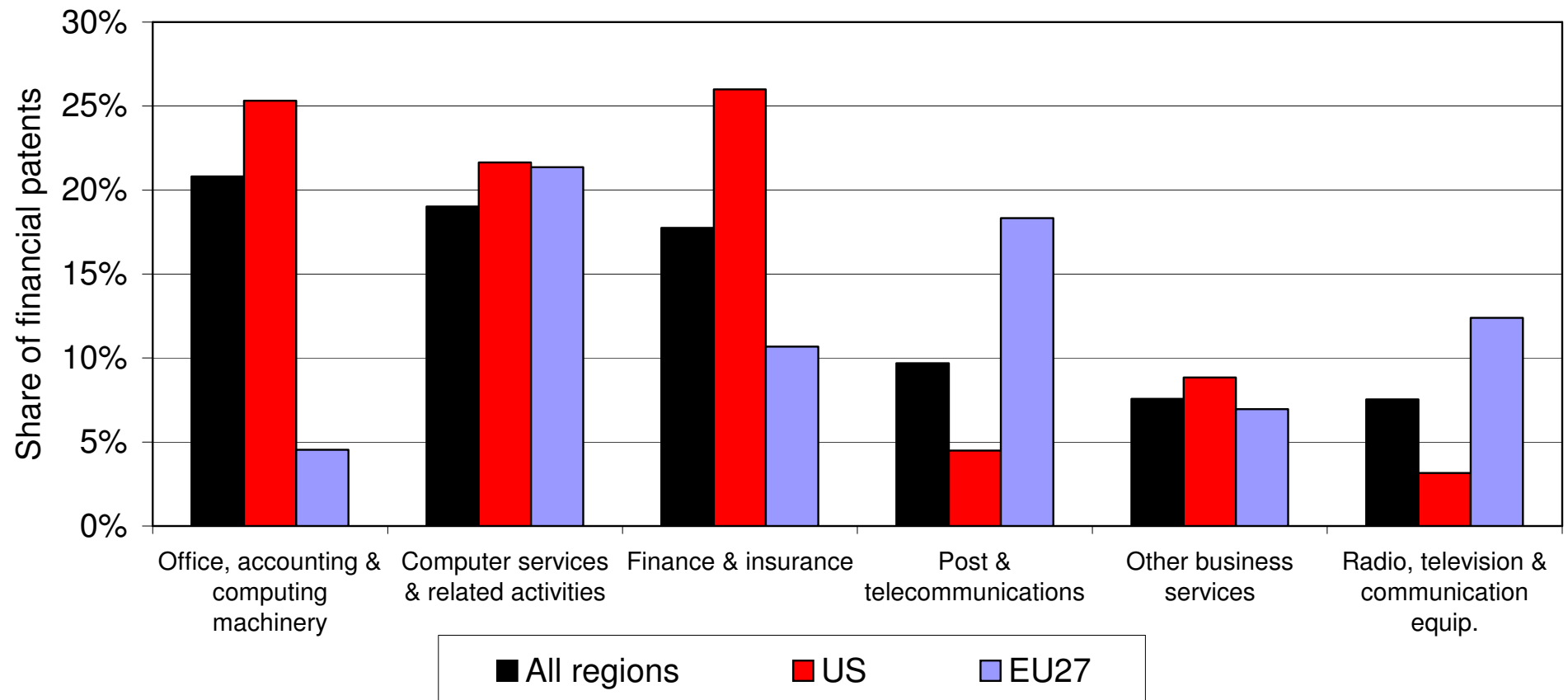
Regional distribution of USPTO financial patent applications



But more than other
EPO patents (not
shown)

Hall Thoma Torrisi 2009

Top 6 Sectors with financial patents



Hall Thoma Torrisi 2009

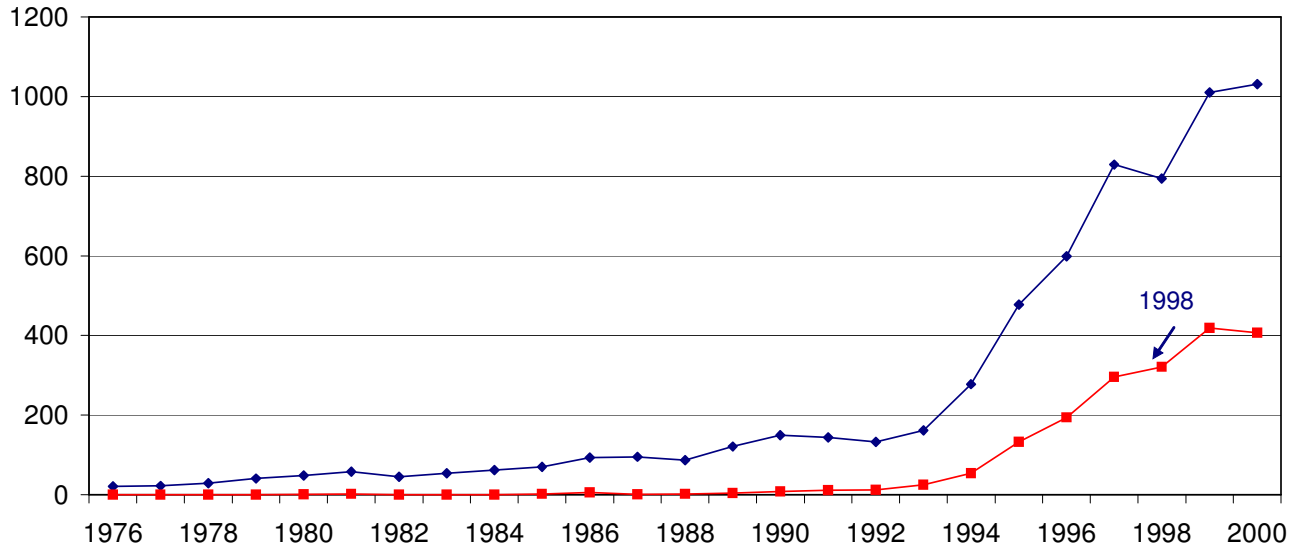
	Hypothesis	Result
1a	fin pats have longer decision lags	1.2 years longer
1b	fin pats have lower grant probability	34% vs 64%
2	prob a fin pat is opposed is higher	9% vs 6.5%
3	grant is less likely if fewer forward cites, more claims, more XY-type backward cites	yes
4a	more valuable fin pats more likely to be opposed (more frwd cites, larger family)	yes
4b	more controversial fin pats more likely to be opposed (more claims, XY cites)	yes, but claims not significant

Compare to US Class 705 pats

- Using 2008 primary reclassification, patents granted 1976-2006
- Other includes job scheduling, price determination, copy protection, postal metering, data record management, etc

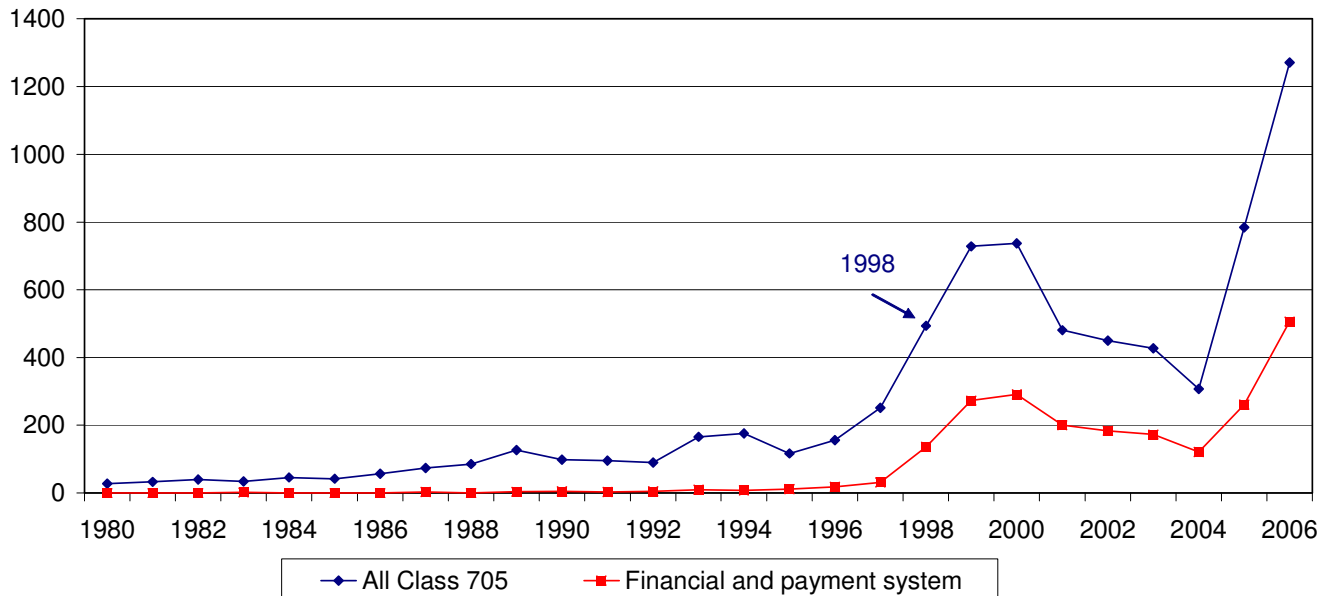
Class 705	Patents granted
Financial	1,421
Payment system	1,439
Other	5,129
All	7,343

Class 705 patents issued through the end of 2006
by application year



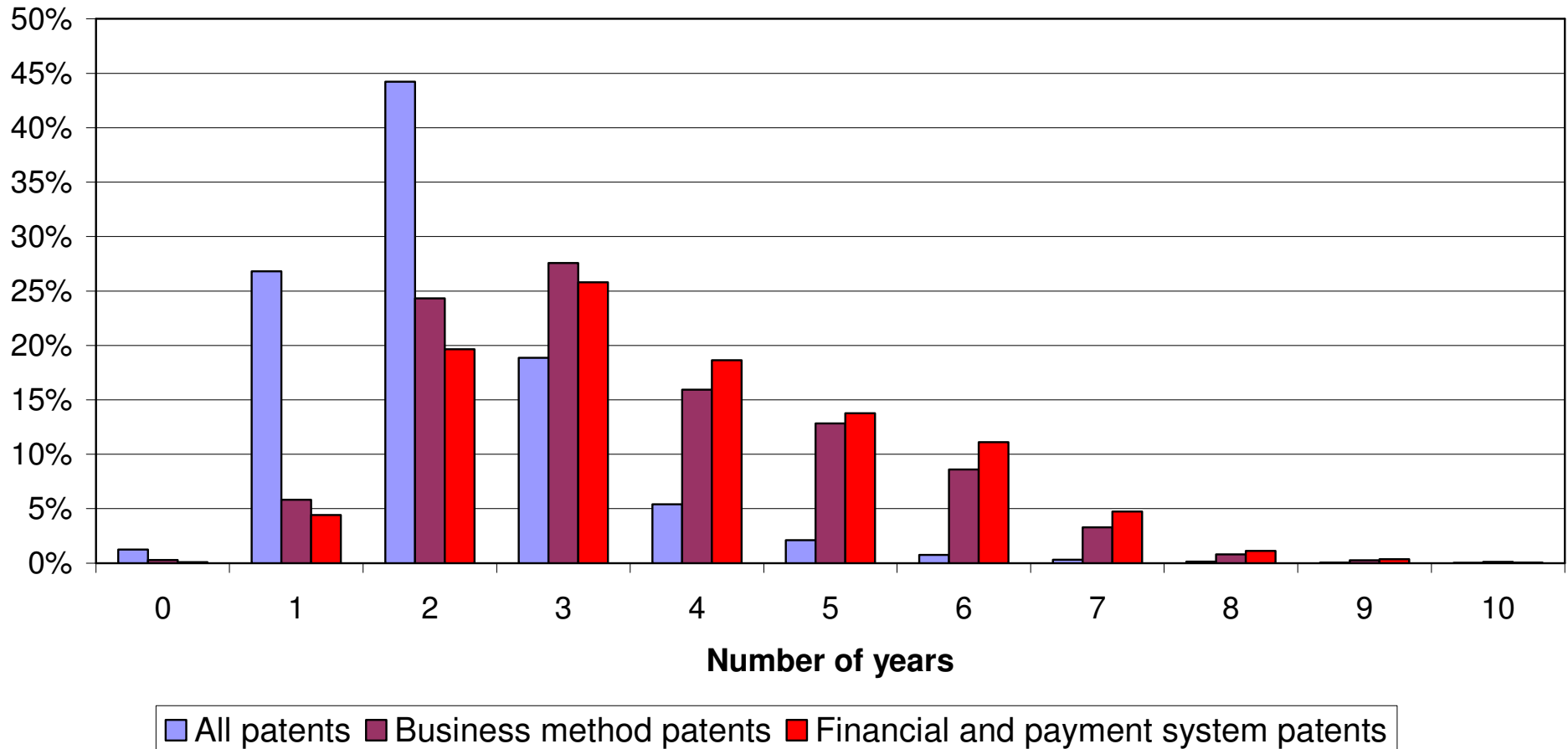
Growth in apps jumps with Alappat and only slightly after State Street

Class 705 patents issued through the end of 2006
by grant year



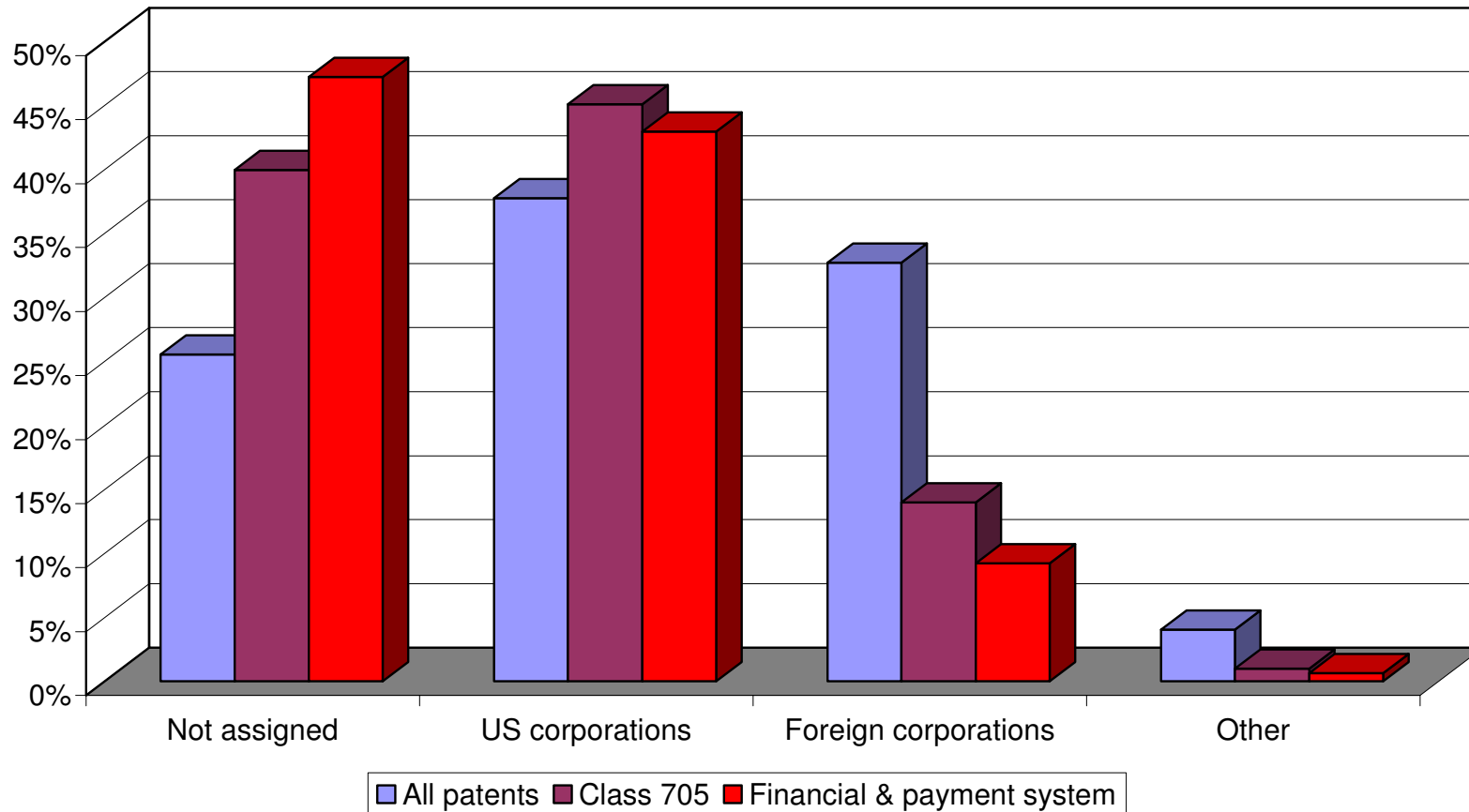
Grants increase before and after State Street, but fall in the early 2000s and then jump up again

Approximate grant lag distribution



Bus meth pats take 1.4 years longer to be granted;
1.7 years if financial or payment system patents, as in
earlier work.

US Patent assignees



Many more unassigned, many fewer owned by foreign corporations; but more highly concentrated ownership

Top 100 firms: 24% all pats; 34% bm pats; 30% fp pats

Summary

- Business method patents difficult to define using US class; financial patents easier
- In both US and Europe:
 - Rapid growth in applications after 1995
 - More valuable than other patents – more opposition and litigation
 - Take 1+ years longer to grant
 - Reference more non-patent prior art
 - Effects on innovative activity unclear
 - Small entities are the majority of the plaintiffs in litigation

Data issues

- Given the extreme heterogeneity of patenting behavior and value, one can always find a case study in the patent area to support any particular position
- Therefore, evaluating the importance of many of these problems depends on looking at the data more broadly
- But much relevant data is either difficult to come by, or very selective due to differences in firm reporting practices

Data issues

- Two types of data especially desirable:
 - Better and more consistent litigation data - financial settlements in patent suits.
 - ◆ Firms that rely on the court system and public services to settle disputes should be obligated to report the details of any settlement reached.
 - ◆ Would this cause settlements to happen before a suit is filed?
 - Financial data for licensing – essential if we are going to understand the markets for technology
 - ◆ require reporting of patent licenses in some standardized way.

Data and value

- Determining valuation a severe problem, given the paucity of public markets for patents
 - Ocean Tomo, Yet2.com promising
 - In principle, data on litigation settlements and licensing transactions would help establish value benchmarks and improve the operation of the market
 - mergers, alliances reported, why not licensing?