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# The Patentability of Financial Methods: The Market Participants' Perspectives

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# THE PATENTABILITY OF FINANCIAL METHODS: THE MARKET PARTICIPANTS' PERSPECTIVES

*Stefania Fusco\**

*In the last few years, there has been a renewed interest in the validity of patenting business methods. The issue appeared to be settled in 1998 with State Street Bank & Trust Co. v. Signature Financial Group, Inc. However, in 2008, the Federal Circuit, responding to a more restrictive approach toward the patent system adopted by the Supreme Court, began questioning the soundness of the policy to extend patent protection to business methods. The Federal Circuit's adjustment of its position occurred explicitly in In re Bilski when the court decided to rehear the case en banc and reconsider the conclusions previously reached in State Street. The Supreme Court subsequently granted certiorari on In re Bilski, and its Bilski decision in June 2010 exacerbated an already heated debate on the patentability of certain subject matters. Ultimately, this quandary about patentability revolves around the empirical question of whether the patent system in a specific sector is "doing its job" or, more specifically, whether the patent system is fostering the creation of additional business methods. To answer this question, I conducted an empirical investigation that involved structured interviews with market participants about the production and consumption of financial methods as a subset of*

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*business methods. The data collected in this study reveal that market participants are ambivalent about the benefits that both the financial market and their companies can derive from having exclusive rights on financial inventions. The data also provide a description of the financial market and its dynamics that is difficult to reconcile with the protection of business methods, as currently provided by the patent system. Thus, it raises serious doubts that, in the ten years between State Street and In re Bilski, patent protection has had any impact on innovation in the financial industry.*

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## I. INTRODUCTION

Should there be patents on financial methods? While the past decade has witnessed the development of a growing debate about what the boundaries of patentable subject matter are, one of the most contentious of these discussions revolved around the patentability of financial methods.

The patentability of business methods and financial methods received judicial imprimatur<sup>1</sup> through *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*<sup>2</sup> (*State Street*) that upheld this doctrine under the very lenient “useful, concrete and tangible result” test.<sup>3</sup> However, with its 2008 decision *In re Bilski*,<sup>4</sup> the U.S. Court of Appeals for the Federal Circuit (“Federal Circuit”) questioned the soundness of the policy of extending patent protection to this type of subject matter and concluded that Bilski’s method for hedging the consumption risk deriving from selling a commodity at a fixed price was not patentable.<sup>5</sup> Through this decision, the Federal Circuit significantly restricted the ability of inventors to obtain patents on financial methods as well as on several other inventions in different fields.<sup>6</sup> Indeed, after *In re Bilski*, to secure a patent on a process was no longer sufficient to show that an invention produces “a useful, concrete and tangible result.”<sup>7</sup> An applicant would now need to demonstrate also that her invention either was tied to a machine or transformed an article into a different state or thing.<sup>8</sup> In response, Bilski petitioned for a writ of certiorari that the U.S. Supreme Court

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1. The United States Patent and Trademark Office (USPTO) issued business method patents even before *State Street*, but very sporadically and with great uncertainty about their validity. See John Duffy, *Why Business Method Patents?* 63 STAN. L. REV. 1247, 1255–56 (2011); Josh Lerner, *Where Does State Street Lead? A First Look at Finance Patents, 1971 to 2000*, 57 J. FIN. 901, 928 (2002).

2. *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

3. *Id.* at 1373.

4. *In re Bilski*, 545 F.3d 943.

5. *Id.* at 963–66.

6. *Id.* at 958–61.

7. *Id.* at 959–60.

8. *Id.* at 960.

granted.<sup>9</sup> The resulting decision, however, did not shed much light on the many issues raised by *Bilski*.<sup>10</sup> On the one hand, the Court reaffirmed the patentability of business methods, but on the other hand, it did not provide significant guidance on the proper way to identify patentable processes.<sup>11</sup> Specifically, the Court clarified that, although the Federal Circuit's machine-or-transformation test is not the sole test for determining the patentability of certain inventions, it represents an "important clue" to accomplish this task.<sup>12</sup> Finally, the Court invited the Federal Circuit to develop other "limiting criteria that further the purposes of the Patent Act."<sup>13</sup>

Consequently, investigating the aftermath of *State Street*, most significantly its impact on innovation in the financial industry, becomes very important. Indeed, such an investigation can generate useful information on how the patent system operates in certain areas and contribute to an informed design of the aforementioned "limiting criteria" (i.e., contribute to the design of limiting criteria that, in practice, further the purpose of the Patent Act of incentivizing creative efforts). One way to provide a better understanding of the results produced by *State Street* is to discuss patent protection with individuals involved in the production of financial inventions.

Given this argument, the objective of this Article is to use structured interviews with financial innovators as a way to provide the market participants' perspectives about the patentability of financial methods. Part II of this Article discusses the methodology adopted for this series of interviews. Part III describes the collected data and attempts to reconcile patent theory with reality. Finally, the conclusion provides a summary of my interviews, results, and analysis and points to their significance for determining patentable subject matter.

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9. *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008), cert. granted sub nom. *Bilski v. Doll*, 129 S. Ct. 2735 (2009).

10. *Bilski v. Kappos*, 130 S. Ct. 3218, 3231 (2010).

11. *Id.* at 3228–30.

12. *Id.* at 3227.

13. *Id.* at 3231.

## II. THE INTERVIEW METHOD

Qualitative investigations have the advantage of providing results that can increase our understanding of participants' viewpoints.<sup>14</sup> I therefore decided to conduct a qualitative study that included interviews with market participants to expose the significance of patent protection for individuals engaged in financial innovation. Although not generalizable, the resulting data is still useful for the way it represents a range of perspectives on the incentive patent protection has provided to inventors in the financial industry after *State Street*.<sup>15</sup>

Before moving on to a detailed analysis of the conducted interviews, it is important to note that for this Article, "market participants" will refer to individuals in the United States<sup>16</sup> who occupy positions requiring a certain degree of knowledge about the creative process of financial methods. The logic behind this recruitment of participants operating within the United States was due to the fact that the United States is where the *State Street* decision is expected to have produced the strongest effect.<sup>17</sup> This means that regardless of whether their companies operate at an international or a domestic level, the creative process in which the subjects are involved occurs primarily within the United States. The characteristics of this study's participants and their companies are provided in the next subpart.

### A. Participants

To perform a qualitative investigation, I created a nonrandom sample of individuals working in the United States for different types of financial companies. Since the goal of this part of the research was to provide a wide range of financial innovators' perspectives, I

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14. SCOTT W. VANDERSTOEP & DEIRDRE D. JOHNSTON, RESEARCH METHODS FOR EVERYDAY LIFE: BLENDING QUALITATIVE AND QUANTITATIVE APPROACHES 167 (2009).

15. See *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

16. It is worth mentioning that the United States is virtually the only country in which financial methods can be patented.

17. In order for patent protection to constitute an incentive, individuals must know about the possibility of obtaining a patent for their inventions. Thus, it is plausible to infer that the result of a decision such as *State Street* has higher chances to be known and, thus, to produce the desired effect, within its legal system. See *State St. Bank & Trust Co.*, 149 F.3d 1368.

recruited interviewees who held positions that impinged on different levels of the financial methods' creative process. A complete list of the roles held by this study's participants is reported in Table 1. It includes top managers, portfolio managers, product managers, quants, investment bankers, investment advisers, and business managers. Figure 1 illustrates the distribution of the interviews in relation to the interviewees' positions.

To avoid reporting the viewpoint of just one segment of the targeted industry, I also recruited individuals working for companies of different kinds and sizes. In fact, the significance of patent protection for a local commercial bank can be substantially different from that of a multinational brokerage firm: the former may be interested in acquiring a patent to attract investors, the latter to defend itself from its competitors. Table 2 presents a summary of the participants' companies, including investment banking and securities dealing companies, commercial banks, software publishers, and securities brokerages firms. Blackrock,<sup>18</sup> JP Morgan,<sup>19</sup> Moody's KMV,<sup>20</sup> MSCI,<sup>21</sup> and UBS<sup>22</sup> are represented, among others. These companies are classified as small, medium, or large, depending on whether their revenue volume is less than \$100 million, between \$100 million and \$1 billion, or over \$1 billion. As illustrated in Figure 2, 17 percent of the companies contacted were small, 39 percent were medium, and 44 percent were large. Figure 3 describes the percentage of the sample that the contacted companies occupy, in relation to their industries. The two most prominent industries in the sample are "Investment Banking and Securities Dealing" and "Securities Brokerage."

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18. BLACKROCK, <http://www2.blackrock.com/global/home/index.htm> (last visited Aug. 22, 2011).

19. J.P. MORGAN, <http://www.jpmorgan.com/pages/jpmorgan> (last visited Aug. 22, 2011).

20. MOODY'S ANALYTICS, <http://www.moodyskmv.com> (last visited Aug. 22, 2011).

21. MSCI, <http://www.msci.com/> (last visited Aug. 17, 2011).

22. UBS, <http://www.ubs.com/> (last visited Aug. 17, 2011).



TABLE 1. Participants' Roles

Description	Number of Interviews
Top Managers	3
Quants	5
Investment Bankers	6
Portfolio Managers	6
Product Managers	4
Business Managers	3
Investment Advisers	2

FIGURE 1. Distribution of Interviews by Interviewee's Role

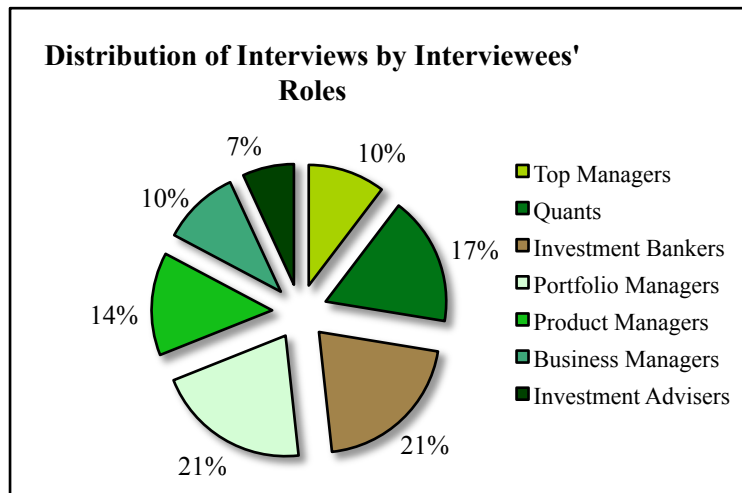


TABLE 2. Participants' Companies<sup>23</sup>

Name and URL	Industry	Size	I	P	C
BlackRock <a href="http://www2.blackrock.com">http://www2.blackrock.com</a>	Investment Banking and Securities Dealing	L	4	2	2
Cantor Fitzgerald <a href="http://www.cantor.com">http://www.cantor.com</a>	Investment Banking and Securities Dealing	L	1	1	
Duff & Phelps Corp. <a href="http://www.duffandphelps.com">http://www.duffandphelps.com</a>	Investment Banking	M	1	1	
FNBC of La Grange <a href="https://www.fnblg.com">https://www.fnblg.com</a>	Commercial Banking	M	2	1	1
Focus Business Bank <a href="http://www.focusbusinessbank.com">http://www.focusbusinessbank.com</a>	Commercial Banking	S	1	1	
Franklin Templeton <a href="http://www.franklintempleton.com">http://www.franklintempleton.com</a>	Investment Banking and Securities Dealing	L	1		1
Goldman Sachs <a href="http://www.goldman-sachs.co.nz/">http://www.goldman-sachs.co.nz/</a>	Investment Banking and Securities Dealing	L	1	1	
JP Morgan <a href="http://www.jpmorgan.com">http://www.jpmorgan.com</a>	Portfolio Management + Securities Brokerage <sup>24</sup>	L	2	1	1
Matthews International <a href="http://www.matthewsasia.com/">http://www.matthewsasia.com/</a>	Portfolio Management	M	1	1	
Morgan Stanley <a href="http://www.morganstanley.com/">http://www.morganstanley.com/</a>	Portfolio Management + Securities Brokerage <sup>25</sup>	L	2	1	1
MSCI <a href="http://www.msci.com/">http://www.msci.com/</a>	Software Publisher	M	1		1
Moody's KMV <a href="http://www.moodyskmv.com">http://www.moodyskmv.com</a>	Software Publisher	M	2	1	1
Northern Trust <a href="http://www.northerntrust.com">http://www.northerntrust.com</a>	Investment Advice	L	1	1	
Perry Capital <a href="http://www.perrycap.com">http://www.perrycap.com</a>	Portfolio Management	S	1		1
Towne Bancorp Inc. <a href="https://www.townebankaz.com">https://www.townebankaz.com</a>	Commercial Banking	M	1	1	
UC Regents <a href="http://www.universityofcalifornia.edu">http://www.universityofcalifornia.edu</a>	Portfolio Management	S	2	1	1
UBS <a href="http://www.ubs.com">http://www.ubs.com</a>	Investment Banking and Securities Dealing	L	3	2	1
William Blair & Co. <a href="https://www.williamblair.com">https://www.williamblair.com</a>	Portfolio Management + Securities Brokerage <sup>26</sup>	M	2	1	1

23. S = below \$100 million of revenues.

M = between \$100 million and \$999,999,999 of revenues.

L = over \$1 billion in revenues.

I = number of interviews.

P = interviews on the production of financial methods.

C = interviews on the consumption of financial methods.

24. "Portfolio Management" and "Securities Brokerage" are two separate industries. In this case the company belongs to both of the specified industries with equal weight.

25. See *supra* note 24.

Finally, a total of twenty-nine interviews were conducted, of which seventeen were about the *production* of financial methods and twelve were about the *consumption* of financial methods. Snowball sampling<sup>27</sup> was used to recruit participants for this study. A full description of this process can be found in Subpart C. Figure 4 additionally summarizes the distribution of the interviews in relation to company size, whereas Figure 5 depicts the distribution of the interviews in relation to the companies' industry. More than 50 percent of the interviews were conducted with individuals working for either investment-banking-and-securities-dealing companies or for portfolio-management companies. A detailed description of the questions used to interview the participants is reported in the next subpart of this Article.

FIGURE 2. Companies' Size

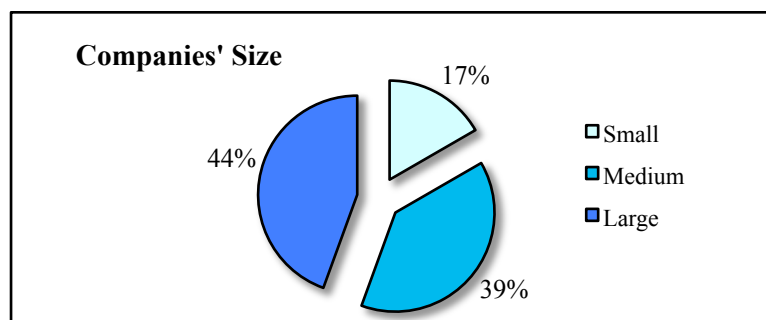
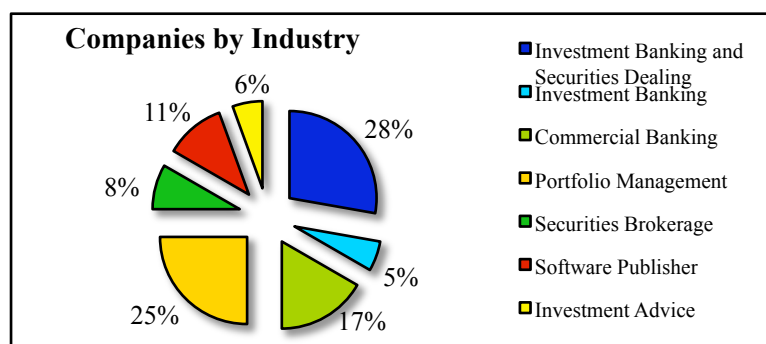


FIGURE 3. Companies by Industry



26. See *supra* note 24.

27. See *infra* Part II.C.

FIGURE 4. Distribution of Interviews by Companies' Size

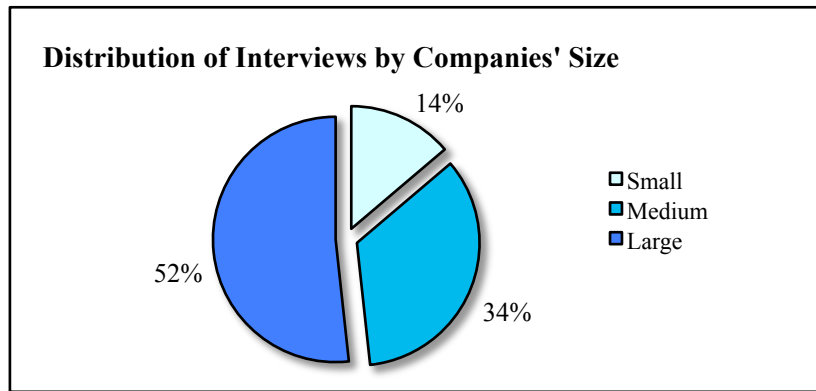
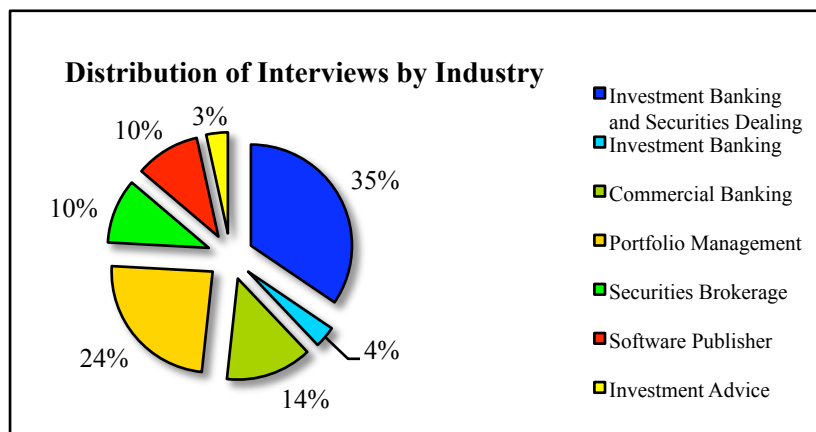


FIGURE 5. Distribution of Interviews by Industry



*B. Material*

As mentioned in Part I, I conducted structured interviews with financial market participants in order to collect the necessary data. Structured interviews require the creation of a set of questions that are then administered to the participants during the interviews.<sup>28</sup> The interviews are strictly limited to the predetermined questionnaire,

28. VANDERSTOEP & JOHNSTON, *supra* note 14, at 225.

with no flexibility for impromptu digressions or follow-up questions.<sup>29</sup> The advantage of this particular method of interviewing is that it provides comparable data from which themes and patterns can be identified.<sup>30</sup> However, because of its rigid format and the fact that the researcher herself prepared the questionnaire, structured interviews also present a higher risk of producing data that is biased by the investigator's a priori theories.<sup>31</sup> To reduce this risk, I adopted a two-step process involving a series of informal pilot interviews with a smaller group of individuals. The results of this initial investigation were subsequently used as a basis for formulating the questions adopted in the final set of interviews. Thus, input separate from my theories explicitly informed the final questionnaires.

More specifically, two questionnaires were created to perform this research. The first focused on the production of financial methods and involved twelve questions that explored the following issues:

- the interviewee's viewpoint on financial innovation;
- the interviewee's viewpoint on incentives to innovate in the financial industry;
- the interviewee's opinion about the level of competition in the financial market; and
- the interviewee's knowledge of the possibility of patenting financial methods and her opinion about the effectiveness of this measure in fostering innovation in the financial industry.

The second questionnaire focused, on the other hand, on the consumption of financial methods and involved six questions that explored the following issues:

- the interviewee's viewpoint about financial innovation;
- the interviewee's viewpoint about the sophistication of today's financial market compared to the market in the past; and
- the interviewee's opinion about the level of competition inherent in today's financial market.

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29. *Id.*

30. *Id.*

31. *Id.*

The complete list of questions used in both sets of interviews is included in the Appendix.

Finally, Figure 6 reveals that more than 50 percent of the interviews about the production of financial methods were conducted with individuals working for companies whose industry was either “Investment Banking and Securities Dealing” or “Commercial Banking.” No interviews exploring the consumption of financial methods were conducted with individuals working in the “Investment Banking” or the “Investment Advice” industry. As evidenced by Figures 8 and 9, the majority of the interviews on the production and consumption of financial methods were with individuals working for large companies.

FIGURE 6. Interviews on Production of Financial Methods by Industry

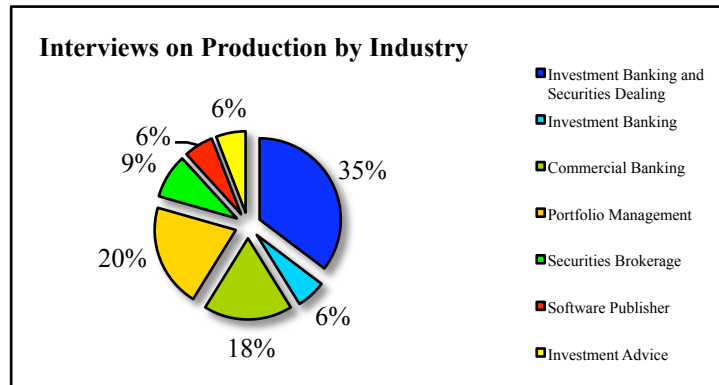


FIGURE 7. Interviews on Consumption of Financial Methods by Industry

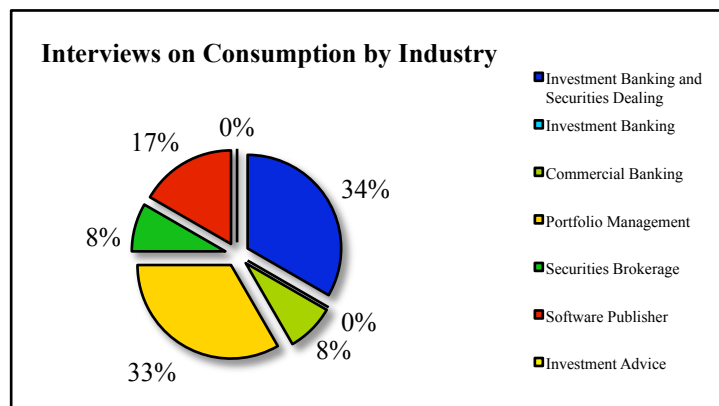


FIGURE 8. Interviews on Production of Financial Methods by Companies' Size

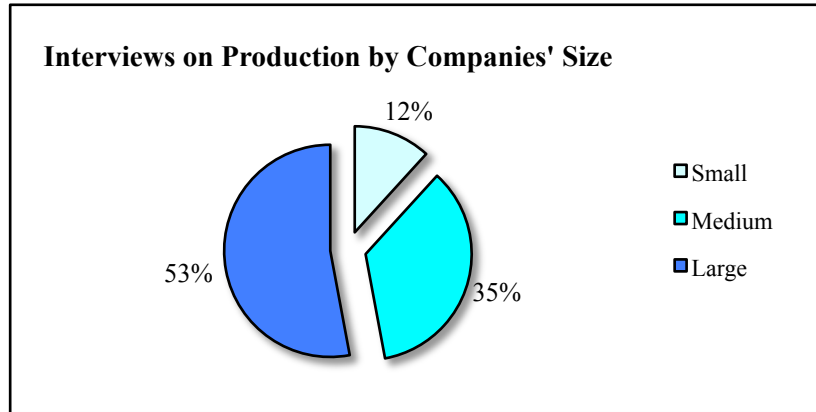
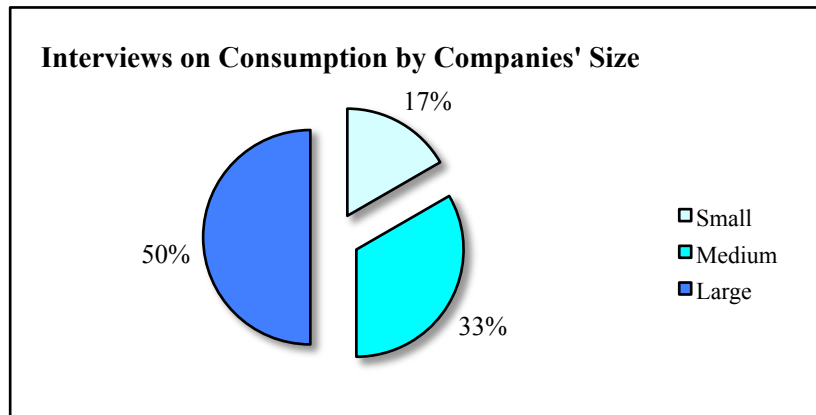


FIGURE 9. Interviews on Consumption of Financial Methods by Companies' Size



### C. Procedure

As mentioned in Subpart B, snowball sampling was used to recruit the study participants. Snowball sampling is a technique in which an initial group of individuals is sampled for a first round of interviews.<sup>32</sup> Then, a sample for the second round of interviews is

32. See *id.* at 27; see also Leo A. Goodman, *Snowball Sampling*, ANNALS OF MATHEMATICAL STAT., Mar. 1961, at 148, 148 (defining the snowball sampling procedure); Douglas D. Heckathorn, *Respondent-Driven Sampling: A New Approach to the Study of Hidden Populations*, 44 SOC. PROBS. 174, 174 (1997) (discussing the benefits of snowball sampling).

created by recruiting individuals identified by the participants in the first round.<sup>33</sup> Subsequently, the second-round participants identify potential new interviewees, and the sample for a third round of interviews is selected.<sup>34</sup> The investigator repeats this process as many times as necessary to reach the desired number of total participants for the specific study.<sup>35</sup> Thus, from round to round, the overall size of the study's sample grows like a snowball.<sup>36</sup> The main advantage of this technique is that it uses the participants' relationships with other individuals to identify interviewees of interest to the research, and thus facilitates the recruitment of knowledgeable interviewees.<sup>37</sup> Nevertheless, the sample selected in this way most probably will not be a representative one. In fact, this lack of randomness is the main limitation of snowball sampling.<sup>38</sup> Thus, this technique is mostly used for qualitative studies such as this one.<sup>39</sup>

Specifically, in this case I began recruiting participants by building on the personal relationships I have with three individuals who work for financial companies and whose positions require them to be involved in the production or consumption of financial products.<sup>40</sup> I conducted the first round of interviews with these participants and, at the end of each meeting, I asked them to recommend two contacts working for financial companies of a possibly different kind or size. I repeated this process three times. At the end of the third round, I had completed a total of twenty-nine interviews<sup>41</sup> with both producers and consumers of financial

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33. VANDERSTOEP & JOHNSTON, *supra* note 14, at 27.

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *Id.* at 28.

39. *See id.* at 187.

40. As pointed out by Heckathorn, "ideally, a randomly chosen sample serves as initial contacts, though in practice ease of access virtually always determines the initial sample." Heckathorn, *supra* note 32, at 174. This means that the initial sample can be biased by the specific characteristics of the researcher's personal network (school, place of work, personal relationship, etc.) (i.e., all the individuals in the initial sample might have similar characteristics, other than the one for which they are relevant for the specific study, that can bias the data they provide). And, because those initial individuals refer the other participants, the same bias can spread throughout the entire sample of the study. To mitigate this problem I used three independent sources for the initial recruitment.

41. Although at the end of each interview I asked for two additional contacts, ultimately, most of the participants provided between zero and four contacts.



methods. Most of the interviews were conducted either in person or by phone. A few participants answer the questionnaire by e-mail.<sup>42</sup> I stopped recruiting additional participants when the criterion of redundancy was met.<sup>43</sup>

The interviews' results and their detailed analysis form the subject of the next part of this Article.

### III. THE MARKET PARTICIPANTS' PERSPECTIVE

The decision to conduct interviews with producers and consumers of financial methods was dictated by the desire to test the effect of patent protection introduced in the financial industry in terms of both higher incentives and higher levels of knowledge in the market. In fact, it is expected that if patent protection had any impact on innovation during the time between *State Street* and *In re Bilski*, both sides of the financial methods production process—the demand and supply side—should be able to acknowledge such an outcome. The results of the interviews with both groups and their analysis are reported in the following subparts.

#### *A. Interviews About the Production of Financial Methods*

The results of the interviews on the production of financial methods, with respect to the extension of patent protection to these methods, are presented here. The first part of the questionnaire administered to the interviewees involved questions that sought to determine the interviewees' viewpoints on financial innovation in general, its dynamics, and the specific innovative process of their companies. The second part of the investigation involved a number of questions that focused on the participants' understandings of the mechanisms of patent protection and its extension into the financial

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42. Since for this project I opted for structured interviews, the fact that a few of the participants requested to answer the questionnaire by e-mail did not represent an obstacle for the collection of the data for this study. Indeed, as mentioned in Part II.B, in this case no room was left for impromptu transitions and follow-up questions that benefit the most from in person or by phone interviews. *See supra* Part II.B. Also, all of the individuals who completed questionnaire by e-mail afterward offered to further discuss their answers either by phone or in person.

43. In qualitative researches the sample size is considered to be sufficient when the criterion of redundancy is satisfied (i.e., "when the inclusion or recruitment of an additional respondent does not significantly add new information and understanding"). *See* VANDERSTOEP & JOHNSTON, *supra* note 14, at 188.

industry. Finally, the interviews concluded with the participants' assessments of the level of competition in today's financial market compared to the level in the pre-*State Street* era.

The interviewees unanimously agreed<sup>44</sup> that the past ten years have been a period of significant increase in financial innovation.<sup>45</sup> Participants identified several reasons for this phenomenon, ranging from increased liquidity and lower interest rates,<sup>46</sup> to increased computing power and a better understanding of sophisticated analytical models,<sup>47</sup> to reduction of operational costs of making portfolios and posting collaterals,<sup>48</sup> to globalization<sup>49</sup> and changes in regulations.<sup>50</sup> However, the causes that emerged most consistently from the interviewees' answers were clients' demand for products that could generate new sources of revenue and more sophisticated instruments to transfer risk.<sup>51</sup> Only one of the interviewees mentioned the extension of patent protection to financial methods as one of the causes of innovation in the financial industry.<sup>52</sup>

Furthermore, when asked about the factors that specifically drove their companies to innovate,<sup>53</sup> these study participants reported that the main factor was the need to satisfy clients' demands and generate profits.<sup>54</sup> Other answers pointed more generically to the search for opportunities to increase investment returns,<sup>55</sup> build a profile,<sup>56</sup> and search for ways to get around regulations<sup>57</sup> and

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44. Interviews About Production of Financial Methods (Nov. 2008–Feb. 2010) (on file with author).

45. See Question 1, *infra* Appendix Part A (“Do you think that the number of new types of securities and new types of financial processes has increased over the past ten years?”).

46. Interview with P10, Inv. Banker, BlackRock (Feb. 2010) (on file with author).

47. Such as the Black & Scholes' model. See Interview with P5, Managing Dir., Goldman Sachs (Feb. 2010) (on file with author).

48. *Id.*

49. Interview with P1, Inv. Adviser, N. Trust (Nov. 2008) (on file with author).

50. Interview with P8, Portfolio Manager, Moody's KMV (Mar. 2009) (on file with author).

51. See Interviews About Production of Financial Methods, *supra* note 44.

52. Interview with P6, Top Manager, FNBC of La Grange (Nov. 2008) (on file with author).

53. See Question 4, *infra* Appendix Part A (“In your opinion, what are the specific factors that drive your company to innovate?”).

54. See Interviews About Production of Financial Methods, *supra* note 44.

55. Interview with P12, Portfolio Manager, Matthews Int'l (Mar. 2009) (on file with author).

56. See Interview with P5, *supra* note 47.

57. See Interview with P1, *supra* note 49.

competition.<sup>58</sup> Again, only one of the interviewees mentioned the prospect of obtaining a patent as a motive to innovate in his company.<sup>59</sup>

The majority of the interviewees were ambivalent<sup>60</sup> about whether financial industry research and development (R&D) spending is justifiable in terms of the return that companies receive from innovative products.<sup>61</sup> Two of the interviewees emphasized that investing in innovation only makes sense for major Wall Street firms.<sup>62</sup> One of the participants seemed to be open to this option, but only for those products for which there is a clear and significant client demand.<sup>63</sup> On the other hand, five out of seventeen interviewees were in favor of R&D spending,<sup>64</sup> because, as one of them explained, this kind of strategy puts companies ahead of the learning curve for a few years and, by the time other producers become competitive, innovators have a chance to consolidate their hold on clients, to the point that it becomes inconvenient for them to change providers.<sup>65</sup>

With respect to the issue of financial companies holding the exclusive right to sell their innovative products,<sup>66</sup> interviewees were split.<sup>67</sup> Those in favor of this solution emphasized the importance of being able to charge monopoly prices.<sup>68</sup> They also stressed that without patent protection “small businesses would be defenseless.”<sup>69</sup> Two of the participants wanted patent protection for financial

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58. Interview with P4, Top Manager, Towne Bancorp (Nov. 2008) (on file with author).

59. See Interview with P6, *supra* note 52.

60. See Interviews About Production of Financial Methods, *supra* note 44 (twelve out of seventeen interviewees were ambivalent).

61. See Question 5, *infra* Appendix Part A (“Do you think that the return a company receives for its innovative products justifies its R&D spending? Why or why not?”).

62. See Interview with P5, *supra* note 47; Interview with P14, Inv. Banker (Dec. 2008) (on file with author).

63. Interview with P4, *supra* note 58; Interview with P13, Portfolio Manager, UC Regents (Mar. 2009) (on file with author).

64. See Interviews About Production of Financial Methods, *supra* note 44.

65. Interview with P11, Quant, Morgan Stanley (Nov. 2008) (on file with author).

66. See Question 7, *infra* Appendix Part A (“Do you think your company would benefit (i.e., increase its value) from having the exclusive right to sell its innovative products?”).

67. Eight interviewees were in favor of having the exclusive right of selling their product and eight were not. One of the participants was not sure about this option. See Interviews About Production of Financial Methods, *supra* note 44.

68. E.g., Interview with P15, Quant, Blackrock (Apr. 2009) (on file with author).

69. Interview with P6, *supra* note 52.

methods, but only for a short period of time.<sup>70</sup> In contrast, those who did not support exclusive rights for financial innovations were concerned about the fact that such rights would ultimately divert their company's focus away from maintaining satisfied clients,<sup>71</sup> who liked "open architecture, and the ability to use best practices, over proprietary products."<sup>72</sup> Furthermore, a top manager of one of the biggest U.S. investment banks did not think that exclusive rights on financial inventions would increase her company's value.<sup>73</sup> As she explained:

[I]f . . . products were easily patentable, on the whole [her company] would have lower revenue, as [it] would be prevented from trading securities/derivatives invented by others for an extended period. [Indeed], [w]hile profit margins decline when all the big banks figure a structure out, there is still a profit margin. [Additionally,] [i]f [her company] couldn't trade credit default swaps until 2015 because another bank was able to persuade the patent office that they had been the ones to invent the product in 1998, it would make a serious dent to [its] revenues. (Not to mention really hurt the customer base due to the monopolistic pricing).<sup>74</sup>

The interviewees were also substantially split<sup>75</sup> on the issue of the temporary absence of competition for certain financial products.<sup>76</sup> Three participants were unsure about their position on this point; specifically, one of them explained that it really depends on the period of time during which the monopoly persists.<sup>77</sup> She asserted that financial firms "tend to accrue some short-term benefit from

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70. Interview with P9, Prod. Manager, UBS (Nov. 2008) (on file with author); *see* Interview with P5, *supra* note 47.

71. *E.g.*, Interview with P1, *supra* note 49.

72. Interview with P3, Bus. Manager, J. William Blair & Co. (Nov. 2008) (on file with author).

73. Interview with P5, *supra* note 47.

74. *Id.*

75. Eight were in favor, seven were not, and three were unsure. Interviews About Production of Financial Methods, *supra* note 44.

76. *See* Question 8, *infra* Appendix Part A ("Do you see any problem with a temporary absence of competition for certain products sold in the financial markets?").

77. *See* Interview with P5, *supra* note 47.

being the inventor of a really good product,<sup>778</sup> both because of the reputation that they develop with certain clients and because it takes months for their competitors to acquire the relevant information about the new product and fully understand it.<sup>79</sup> In her opinion, a monopoly that lasted for an amount of time equivalent to that needed for competitors to catch up with the innovator (i.e., something on the order of six months) would probably not do much harm to the market or the clients.<sup>80</sup> However, she doubted that this solution would be workable from an administrative point of view because she expected endless disputes to originate from the issue of whether a financial product “is ‘innovative enough’ to deserve protection, regardless of how well-written (and seemingly precise) [the patent] statute [is].”<sup>81</sup> She concluded that by the time the “how innovative” problem was resolved, the six-month period would have long expired.<sup>82</sup>

The main concern of the interviewees who opposed a temporary monopoly power on certain financial products rested on the likelihood of hurting consumers’ interests.<sup>83</sup> They pointed to the fact that in this sector, consumer protection is weak and competition mitigates the absence of consumer protection.<sup>84</sup> They emphasized how an absence of competition not only results in inefficient pricing<sup>85</sup> but also reduces the companies’ incentives to improve existing products.<sup>86</sup> Finally, from the companies’ perspective, the interviewees pointed out the fact that it is difficult to build a market for a product if there is little or no competition. Having competition is thus advantageous because

- “competitors help with marketing the benefits of a product;
- competitors allow [companies] to differentiate;

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78. *Id.*

79. *Id.*

80. *Id.*

81. *Id.* (“[Defining] ‘how innovative’ something needs to be to get protection would be very difficult [because] [o]n a constant basis, trades are done which build on multiple different precedents, or tweak just a few things from a previous trade.”).

82. *Id.*

83. *E.g.*, Interview with P5, *supra* note 47.

84. *E.g.*, Interview with P7, Product Manager, UBS (Nov. 2008) (on file with author).

85. Interview with P12, *supra* note 55.

86. *E.g.*, Interview with P14, *supra* note 62.

- competitors validate that there is a need for the product in the marketplace; and
- institutional clients are wary of taking a risk with a firm [...] if there is no comparable product [offered] by a competitor.”<sup>87</sup>

Other participants did not envision any problem with a monopoly on financial products<sup>88</sup> for two reasons. First, they considered the absence of competition to be simply equivalent to a regular first-mover advantage,<sup>89</sup> and second, they believed that many of the downsides associated with patent protection would be ultimately cured by licensing.<sup>90</sup>

Six out of seventeen interviewees were unaware of the fact<sup>91</sup> that securities and financial processes could be patented.<sup>92</sup> Table 3 summarizes the roles and industries to which these participants belong.

TABLE 3. Interviewees Who Did Not Know About Patent Protection

Interviewee	Role	Industry
P3	Business Manager	Portfolio Management + Securities Brokerage
P4	Top Manager	Commercial Banking
P7	Product Manager	Investment Banking and Securities Dealing
P8	Portfolio Manager	Software Publisher
P11	Quant	Portfolio Management + Securities Brokerage
P12	Quant	Portfolio Management + Securities Brokerage

No particular element emerges from these interviewees’ profiles that could explain their lack of knowledge regarding patent protection in their industry; thus, this result does not appear to be

87. *E.g.*, Interview with P1, *supra* note 49.

88. *See* Interview with P5, *supra* note 47; Interview with P6, *supra* note 52.

89. *E.g.*, Interview with P17, Inv. Banker, JP Morgan (Nov. 2008) (on file with author).

90. *E.g.*, Interview with P6, *supra* note 52.

91. *See* Interviews About Production of Financial Methods, *supra* note 44.

92. *See* Question 9, *infra* Appendix Part A (“Did you know that securities and financial processes can be patented? If so, what made you aware of this fact?”).

related to either the industries or the roles of this study's participants. The interviewees who knew about patent protection for this subject matter acquired this information principally from in-house seminars and from their companies' patent activities. Again, the viewpoint of a top manager of one of the major U.S. investment banks is significant:

Yes, [I knew about the possibility of having patents on financial methods]. But nobody takes that seriously. In my area of expertise, Wall Street firms have in years past taken out patents, and nobody respects them. Nor do patent-holders ever litigate [them] to my knowledge. They probably expect they would lose since we'd show the judge all the building blocks to the trade were widely known. It seems firms only get patents for purposes of marketing to clients: "We invented this—look, we got the patent." This game seems to be over for now—I haven't heard of anyone taking out a patent in my area in three to four years, while I heard of a few instances before then.<sup>93</sup>

In addition, of those eleven interviewees who were aware of patent protection for financial methods, only four<sup>94</sup> were convinced that it could foster innovation in their industry.<sup>95</sup> One of these subjects indicated the role that the patent system played in the "explosion" of data processing as one example of what she expected to happen in finance after *State Street*.<sup>96</sup>

Finally, although virtually all of the interviewees agreed<sup>97</sup> that today's financial market is more competitive than it was ten years ago,<sup>98</sup> only two of them were concerned about their competitors'

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93. Interview with P5, *supra* note 47.

94. See Interviews About Production of Financial Methods, *supra* note 44.

95. See Question 10, *infra* Appendix Part A ("If yes, do you think that patent protection is effective in fostering innovation in your industry? If so, can you provide some specific examples? If not, why not?").

96. See *State St. Bank & Trust Co. v. Signature Fin. Grp. Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008); Interview with P6, *supra* note 52.

97. See Interviews About Production of Financial Methods, *supra* note 44 (sixteen out of seventeen interviewees agreed); Interview with P17, *supra* note 89 (stating that it depends on the financial product offered).

98. See Question 12, *infra* Appendix Part A ("Do you think that the market in which your company operates is much less competitive today as compared to how it was ten years ago? If so, can you provide some examples?").

patent strategies.<sup>99</sup> In this respect, one participant specified that the real problems “come not from [their] true competitors, but from ‘patent trolls.’”<sup>100</sup> The causes identified for the increased competitiveness in the financial market ranged from the higher involvement of foreign banks in the United States (and vice versa),<sup>101</sup> to a larger number of financial instruments present in the market, to a change in investors who are much more demanding today than they were in the past.<sup>102</sup>

### *B. Interviews About the Consumption of Financial Methods*

This subpart summarizes the results of the interviews exploring the consumption of financial methods in the ten years between *State Street* and *In re Bilski*. The first part of the questionnaire used for these interviews consisted of two questions designed to determine participants’ senses of the financial innovation that has emerged in the past ten years. The second part of the questionnaire was dedicated to the interviewees’ understandings of the financial market and of its players. Finally, the last question focused on the competitiveness of today’s financial market for product providers.

There was little variation in the interviewees’ answers with respect to the consumption of financial methods. The participants concurred fairly consistently on one of the possible outcomes. In fact, they stated unanimously<sup>103</sup> that the number of new types of securities and financial processes had increased over the past ten years.<sup>104</sup> With the exception of one participant,<sup>105</sup> they also

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99. Interview with P8, *supra* note 50; see Interview with P4, *supra* note 58; Question 11, *infra* Appendix Part A (“In your opinion, is your company concerned about its competitors’ patenting strategies? If so, how would you define the risk that your company faces in this regard? Are there any countermeasures that your company is adopting or is considering adopting? Briefly, what are they? If not, why not?”).

100. See Interview with P1, *supra* note 49.

101. See Interview with P5, *supra* note 47.

102. See Interview with P15, *supra* note 68.

103. Interviews About Consumption of Financial Methods (Nov. 2008–Feb. 2010) (on file with author).

104. See Question 1, *infra* Appendix Part B (“Do you think that the number of new types of securities and new types of financial processes has increased over the past ten years?”).

105. Interview with C9, Portfolio Manager, UC Regents (Mar. 2009) (on file with author) (interviewee stating that “‘in essence’ [we have today] the same kinds of securities and financial processes”).



concurrent<sup>106</sup> on the fact that the products available today are different from those available in the past.<sup>107</sup> According to the interviewees, the main difference between present and past products has been the explosion of derivatives<sup>108</sup> that characterized the present period. Specifically, one participant said that “various new securities were invented to cover specific investment needs.”<sup>109</sup> From a different perspective, she added that “[today’s] processes are more complex and mathematically oriented.”<sup>110</sup>

Most of the interviewees<sup>111</sup> thought that the financial market had become more sophisticated in the last ten years compared to in past decades.<sup>112</sup> The reasons for such a change ranged from client demand for certain kinds of products, to an increase in the amount of money present in the market, to more competition.<sup>113</sup>

However, two participants disagreed with the rest of the sample because, as they explained, the term “sophistication” also meant to them that something in the financial market had improved (i.e., it had become “more in tune with their needs”).<sup>114</sup> These participants found today’s market being characterized by more products that are more complex but that are not necessarily of higher quality.<sup>115</sup> Thus, according to these participants, today’s market is definitely more difficult to understand than it was ten years ago, but it is not necessarily more sophisticated.<sup>116</sup>

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106. See Interviews About Consumption of Financial Methods, *supra* note 103.

107. See Question 2, *infra* Appendix Part B (“Do you think there is any difference between the types of financial products (securities and financial processes) available on the market today and those that were available ten years ago? If so, what kinds of differences have you noticed?”).

108. See Interviews About Consumption of Financial Methods, *supra* note 103 (eight out of twelve interviewees thought that the financial market has become more sophisticated, two of the interviewees disagreed with this statement, and two others did not know).

109. Interview with C10, Quant, BlackRock (Apr. 2009) (on file with author).

110. *Id.*

111. See Interviews About Consumption of Financial Methods, *supra* note 103.

112. See Question 3, *infra* Appendix Part B (“Do you think that the financial market has become more sophisticated in the last ten years compared to how it was in the past? If so, what do you think are the reasons for such sophistication?”).

113. See Interviews About Consumption of Financial Methods, *supra* note 103.

114. Interview with C5, Prod. Manager, Moodys KMV (Mar. 2009) (on file with author).

115. *Id.*

116. Interview with C1, Bus. Manager, J. William Blair & Co. (Nov. 2008) (on file with author).

Furthermore, nine out of twelve interviewees<sup>117</sup> thought that in order to be competitive, a company today needs more advanced products,<sup>118</sup> “[because] mature [financial] markets allow little potential to outperform peers . . . [and] the use of innovative instruments can [help] . . . generate marginally greater returns.”<sup>119</sup> Some good examples of this situation are exchange traded funds (ETFs) and advanced quantitative products (“quant funds”).<sup>120</sup> One of the participants who disagreed with the majority of the interviewees, however, emphasized that, at this time, in order to be successful, what is needed is the “right” kind of products rather than the more “advanced” ones, and also more regulation and enforcement thereof.<sup>121</sup> Another interviewee, whose business is market-neutral equity strategy, did not think that there was a need for more advanced products “[because] . . . value is created via the underlying asset the security represents . . . more than . . . by purchasing incrementally more sophisticated products . . . to manage risk.”<sup>122</sup> Finally, one of the interviewees said that the need for more advanced products depends on the consumers and market segment.<sup>123</sup>

From a different perspective, financial product providers were considered to be sufficiently innovative<sup>124</sup> by 50 percent of the interviewees.<sup>125</sup> Of these participants, two thought that providers could be even “too innovative,” to the point of creating risk that investors did not foresee.<sup>126</sup> Four out of twelve interviewees did not have a clear position on this matter, while two did not find providers

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117. See Interviews About Consumption of Financial Methods, *supra* note 103.

118. See Question 4, *infra* Appendix Part B (“Do you think that to be competitive in today’s market firms need more advanced financial products? In other words, do you think that there is a need in the market for more innovation? Why or why not?”).

119. Interview with C8, Portfolio Manager, Franklin Templeton (Apr. 2009) (on file with author).

120. See Interview with C4, Prod. Manager, UBS (Nov. 2008) (on file with author); Interview with C10, *supra* note 109.

121. See Interview with C9, *supra* note 105.

122. Interview with C2, Bus. Manager, Perry Capital (Feb. 2010) (on file with author).

123. Interview with C6, Inv. Banker, Blackrock (Feb. 2010) (on file with author).

124. See Question 5, *infra* Appendix Part B (“In your opinion, are your financial product providers sufficiently innovative? If so, in what way? Does your company seek more advanced products?”).

125. See Interviews About Consumption of Financial Methods, *supra* note 103.

126. See Interview with C2, *supra* note 122; Interview with C5, *supra* note 114.

innovative enough.<sup>127</sup> One of the two interviewees explained this by pointing to the high complexity of today's instruments and markets, and stating how better tools are needed more than ever before to successfully deal with them.<sup>128</sup> The same interviewee also stated that since returning to a simpler stage of financial development is not realistic anymore, the best course of action would certainly seem to be developing better (i.e., more sophisticated) products that can be fully understood.<sup>129</sup>

Finally, the interviewees were markedly unanimous<sup>130</sup> about the level of competition faced by financial product providers today.<sup>131</sup> They are of the belief that because a significant growth in the demand for sophisticated products can generate greater returns, more participants entered the financial market in the past ten years than they did in past decades.<sup>132</sup> Indeed, as one of the interviewees emphasized, "the pie [got] larger and . . . attract[ed] more market participants."<sup>133</sup>

### C. Discussion

This subpart provides a brief analysis of the investigation summarized in the previous subparts. Regarding the issue of financial methods, a first observation is that the results of the interviews confirm the presence of significant financial innovation in the ten years between *State Street* and *In re Bilski*. The interviewees identified several financial causes for this phenomenon, the most important of which appears to be client demand for more advanced products. This fact emerged for the market in general and for the individual companies; furthermore, it is consistent with the financial literature.<sup>134</sup> On the other hand, patent protection—the focus of this

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127. See Interviews About Consumption of Financial Methods, *supra* note 103.

128. Interview with C11, Quant, MSCI (Apr. 2009) (on file with author).

129. *Id.*

130. See Interviews About Consumption of Financial Methods, *supra* note 103.

131. See Question 6, *infra* Appendix Part B ("Do you think that in today's market financial product providers face more or less competition compared to what they faced ten years ago? If you think there has been a change, to what do you attribute this change in competition?").

132. See Interviews About Consumption of Financial Methods, *supra* note 103.

133. Interview with C8, *supra* note 119.

134. See, e.g., Ian Cooper, *Innovations: New Market Instruments*, 2 OXFORD REV. ECON. POL'Y, Winter 1986, at 1, 7–10, 16–17; Stephen A. Ross, *Institutional Markets, Financial Marketing, and Financial Innovation*, 44 J. FIN. 541, 541–42 (1989); Enrique Schroth, *Innovation, Differentiation, and the Choice of an Underwriter: Evidence from Equity-Linked*

research—has been reported by only one interviewee as a possible incentive to innovate in the financial industry.<sup>135</sup>

Conflicting opinions revolved around the issue of exclusive rights on financial products. From the companies' perspective, some interviewees did not see a clear advantage to having patent protection because they feared a loss in revenue derived from the ability to trade their competitors' products. In other words, according to these interviewees, it is more advantageous in this industry for a company to be able to copy its competitors' products than to have the exclusive right to sell its own products. The reason for this, firstly, is that innovators do enjoy an initial<sup>136</sup> de facto monopoly on their inventions and, secondly, is that the profit margins in dealing with new products still exist even when competitors begin to copy them.

Furthermore, from a product perspective, patent protection does not appear to be optimal because clients are reluctant to invest in very exotic inventions for which there is no established market. In this regard, interviewees expressed a concern about driving their clients away not to mention hurting them. According to this study's participants, competition (i.e., copying) is necessary in the financial market because it makes the products both known and widespread. However, there were conflicting opinions, because a number of interviewees did not see much difference between having a legal monopoly and having a de facto one (i.e., a first-mover advantage) for innovative products.

Moreover, since the interviewees were also ambivalent about the benefit of investing in innovation (i.e., higher returns for their companies derived from active R&D spending), it appears plausible to conclude that, in this industry, the interest in the main tool used by other sectors to recoup these kinds of expenses (i.e., patent protection) is not of great significance. The lack of interest for patent

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*Securities*, 19 REV. FIN. STUD. 1041 (2006); William L. Silber, *The Process of Financial Innovation*, 73 AM. ECON. REV. (PAPERS & PROC.) 89, 89–92 (1983); Craig Pirrong, *A Growing Market*, REGULATION, Summer 2002, at 30, available at <http://www.cato.org/pubs/regulation/regv25n2/v25n2-6.pdf>.

135. Interview with P6, *supra* note 52.

136. The duration of this period is probably different for different products. Both P5 and P11 discussed this point but with a different length of time in mind; P5 talked about a six-month period whereas P11 considered a couple of years of first-mover advantage. Interview with P5, *supra* note 47; Interview with P11, *supra* note 65. A possible explanation for this result is that probably the amount of time needed to reverse a security is different than the one required for an investing model or other products.

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protection is also evidenced by the fact that about one-third of the interviewees did not even know about the possibility of patenting their inventions. Among those who did know, only two were somewhat worried about their competitors' patent activities. One of the participants explained:

[We are] not concerned about it. It seems to be a farce, just a marketing ploy. We've never had our legal counsels advis[ing] us that we need[] to be careful not to infringe on a patent (naturally we ask them to take a look), and the whole [of Wall] Street has executed structures on which one bank markets to clients that [it] holds a patent.<sup>137</sup>

Some relevant deductions can also be made from an analysis of the interviews about the consumption of financial methods, the most important of which is the general consensus that characterized the interviewees' opinions on the issues discussed.

Similar to the interview results on the production of financial methods, results from the investigation on the consumption of financial methods confirmed that the past decade has been a period of great financial innovation, in which the new products that emerged were not only more numerous, but also significantly different, from their predecessors.

From this investigation it appears that the financial market has become much more sophisticated than it was in the past and that companies need to rely on advanced products in order to successfully operate in it. Nevertheless, the participants were ambivalent about the issue of whether providers of financial products are innovative enough. Thus, a possible assessment of today's condition of the financial market is that, notwithstanding the recent explosion of new products, there is still a significant need for innovation. From a different perspective, it is interesting that the entrance of many more players was not sufficient to completely satisfy this need for innovation.

Finally, and more specifically for the purpose of this study, it is possible to say that in considering the increased competitiveness of the financial market, the persistent demand for more advanced products, and the primary purpose of patent protection to foster

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137. Interview with P5, *supra* note 47.

innovation, significant doubts begin to emerge about the role that the patent system had in this sector after *State Street*.

*D. From a Different Perspective:  
Reconciling Theory and Reality*

Over the years, several theories have been advanced to explain the purpose of the patent system.<sup>138</sup> For this investigation, prospect theory and its insight into the advantages of patent protection over trade secrets is of particular interest.<sup>139</sup> This is because, before *State Street*, the financial industry relied almost exclusively on trade secrets to protect inventions.<sup>140</sup>

The prospect theory shows that patent protection is superior to trade secrets because it “avoid[s] duplication of effort, create[s] . . . incentive[s] to invest in development, lower[s] the cost of contracting for complementary resources . . . and lower[s] the . . . cost of maintaining control over the valuable discovered resource[s].”<sup>141</sup>

Nevertheless, the results of the interviews discussed in this Article seem to indicate that innovators in the financial industry did not entirely appreciate the benefits provided by patent protection and, supposedly, continued to operate (at least up to a certain level) through trade secrets.

Thus, is it possible to reconcile the results of this investigation with prospect theory? To answer this question it is necessary to understand whether the advantages produced by the patent system and highlighted by prospect theory constitute real pluses for the financial industry, as they are for other fields.

While it is possible to argue that the financial industry could operate more efficiently if its companies would reduce duplicative investments in finding solutions for their clients and share

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138. See, e.g., Mark F. Grady & Jay I. Alexander, *Patent Law and Rent Dissipation*, 78 VA. L. REV. 305 (1992); Edmund Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990); A. Samuel Oddi, *Un-Unified Economic Theories of Patents—the Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267 (1996).

139. Kitch, *supra* note 138, at 266–67.

140. See, e.g., Robert P. Merges, *The Uninvited Guest: Patents on Wall Street* 15 (UC Berkeley Pub. L. & Legal Theory Res. Paper Series, Paper No. 126, 2003), available at <http://ssrn.com/absact=410900>.

141. Grady & Alexander, *supra* note 138, at 314.

information with their competitors, other aspects associated with patent protection are more questionable.

In particular, it seems that financial companies have less of a need to reduce the costs derived from entering into contracts with firms that possess complementary information and resources.<sup>142</sup> This is because most of the required information and resources are provided directly by their clients who, as discussed in Part II, are the driving force of innovation in this field—not only in terms of supplying inspiration for additional inventions but also in terms of financing and accessing markets.

Similarly, clients are the main incentive for investments in improvements.<sup>143</sup> In these cases, acquiring control over the main invention through a patent does not determine additional R&D investment in the development of related financial methods, unless clients demand them.

Finally, of limited relevance are the savings derived by not having to maintain the secrecy of an invention.<sup>144</sup> This is because, as this study has shown, financial companies want their competitors to copy them and, in this way, signal to the market that their products are valid and needed.<sup>145</sup>

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142. See generally Kitch, *supra* note 138, at 277 (stating that a patent system lowers the costs of entering into contracts with firms possessing complementary information and resources).

143. *Id.* at 276.

144. *Id.* at 279.

145. The fact that financial companies want their competitors to copy them appears to be somewhat in tension with the previous discussion of financial companies relying on trade secrets to protect their inventions. See Merges & Nelson, *supra* note 138, at 843–44. However, this study indicates that financial companies enjoy on average a six-month *first-mover-advantage* in which the invention is kept as a “secret” and monopolist profit is made. See, e.g., Interview with P5, *supra* note 47; *supra* Part III.A. Subsequently, innovators “expect” their competitors to copy them and, in this way, signal to the market that their invention is valid. See, e.g., Interview with P1, *supra* note 47; *supra* Part III.A. Furthermore, in 2003 Herrera and Schroth showed that the advantage enjoyed by the first mover mainly comprises information asymmetry and not the invention per se. Helios Herrera & Enrique Schroth, *Profitable Innovation Without Patent Protection: The Case of Derivatives 4* (Feb. 25, 2003) (unpublished manuscript) (on file with the International Center for Financial Asset Management and Engineering), available at <http://ssrn.com/abstract=384822>. In other words, they showed that financial innovators retain an advantage over their competitors even when the invention is copied. See *id.* This is because of the information they acquire from dealing directly with their clients in the development of the invention (i.e., because of their higher understanding of the invention or their clients’ needs). See *id.* Consequently, it appears that in the financial industry trade secret protection is relevant for a few initial months after the issuance of the invention in the market.

It is therefore possible to conclude that the superiority of patent protection over trade secrets is highly questionable in the context of the financial industry.

#### IV. CONCLUSIONS

More than thirteen years after the issuance of the *State Street* decision, the patentability of financial methods remains controversial. *In re Bilski* brought the importance of correctly determining the boundaries of patentable subject matter to everyone's attention. For several years, this aspect of the patent system has been almost completely disregarded. At the heart of the problem is the question of whether the patent system in the financial sector is "doing its job" of fostering the creation of additional business methods.

To answer this question, I conducted structured interviews with market participants about the production and consumption of financial methods as a subset of business methods.

The results of this investigation do not provide direct evidence of the impact of patent protection on financial innovation, but they are quite significant. From this study, it appears that patent protection has not been responsible for the innovation that occurred in the financial industry in the time between *State Street* and *In re Bilski*. Indeed, the interviewed market participants were ambivalent about the benefits that both the financial markets and their companies could derive from having exclusive patent rights on their inventions. During the interviews about the production of financial methods, participants expressed concerns about the possibility of hurting their clients, of not having a market to attract their clients, and ultimately of not being able to produce revenues from trading on their competitors' products. Importantly, the study's participants provided a description of the financial market and of its dynamics that does not align with the protection of business methods, as currently provided by the patent system.

On the other hand, the interviews about the consumption of financial methods provided useful information about the level of competition in the financial industry and the need for additional innovation and more creative producers. However, no specific effect from the patent system has been identified by these interviews.



Also, an analysis of this study's results through the lens of prospect theory raises doubts about the superiority of patent protection over trade secrets in the financial industry.

If patent protection did not represent an incentive in the financial industry, though, why did inventors in this sector submit so many applications?<sup>146</sup> One of the interviewees suggested that patent protection has been used as a marketing tool to boost companies' profiles.<sup>147</sup> Alternatively, a previous investigation suggests<sup>148</sup> that these patents may not be true financial patents but software patents with a financial component. In this latter case, it seems that it would probably make more sense to study them within the software industry context rather than within the financial one. Clearly, more investigation is necessary to shed light on this point.

Finally, it is important to spend a few moments addressing the significance of this study's results, as they relate to the recent Supreme Court decision in *Bilski v. Kappos*. As previously discussed, the present investigation shows that after *State Street*, patent protection did not appear to have produced additional innovations within the financial industry. The obvious consequence of this finding is that the Federal Circuit was right in deciding *In re Bilski* because in the past ten years, proprietary rights have been granted on financial knowledge, but society has not received anything meaningful in return. Thus, the Supreme Court should have supported a full application of the machine-or-transformation test.

Unfortunately, though, this conclusion does not take into account the way that *Bilski v. Kappos* involves processes in general and not just financial methods. Because of this, *Bilski v. Kappos* can have significant implications for innovation in many fields, other than the financial industry, that are of great importance for society and, potentially, could derive significant benefit from patent protection. Now, the Supreme Court has given the Federal Circuit a

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146. See Duffy, *supra* note 1.

147. Interview with P5, *supra* note 47.

148. In a previous article, I investigated patent applications submitted and patents issued on securities in the ten years between *State Street* and *In re Bilski*. Most of the claimed inventions assigned to the subclasses of interest (subclasses 35, 36R, and 37 of class 705) represented categories of financial innovations other than securities. Specifically they were *technological implementations* of different financial processes. Stefania Fusco, *Is the Use of Patents Promoting the Creation of New Types of Securities?* 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 243, 266 (2009).

new opportunity to address the issue of the patentability of processes in a way that goes beyond the specifics of one industry and more closely reflects the goal of the patent system: to foster innovation.

## APPENDIX

*A. Questions for Producers of  
Financial Method Products*

1. Do you think that the number of new types of securities and new types of financial processes has increased over the past ten years?
2. If you answered yes to Q1, in your opinion, what is the main cause for this increase in financial innovation?
3. If you answered no to Q1, do you believe that there are an adequate number of incentives in the financial industry to engender innovation?
4. In your opinion, what are the specific factors that drive your company to innovate?
5. Do you think that the return a company receives for its innovative products justifies its R&D spending? Why or why not?
6. In your opinion, what is the main source of income for your company?
7. Do you think your company would benefit (i.e., increase its value) from having the exclusive right to sell its innovative products?
8. Do you see any problem with a temporary absence of competition for certain products sold in the financial markets?
9. Did you know that securities and financial processes can be patented? If so, what made you aware of this fact?
10. If yes, do you think that patent protection is effective in fostering innovation in your industry? If so, can you provide some specific examples? If not, why not?
11. In your opinion, is your company concerned about its competitors' patenting strategies? If so, how would you define the risk that your company faces in this regard? Are there any countermeasures that your company is adopting or is considering adopting? Briefly, what are they? If not, why not?
12. Do you think that the market in which your company operates is much less competitive today as compared to how it was ten years ago? If so, can you provide some examples?

*B. Questions for Consumers of  
Financial Method Products*

1. Do you think that the number of new types of securities and new types of financial processes has increased over the past ten years?
2. Do you think there is any difference between the types of financial products (securities and financial processes) available on the market today and those that were available ten years ago? If so, what kinds of differences have you noticed?
3. Do you think that the financial market has become more sophisticated in the last ten years compared to how it was in the past? If so, what do you think are the reasons for such sophistication?
4. Do you think that to be competitive in today's market firms need more advanced financial products? In other words, do you think that there is a need in the market for more innovation? Why or why not?
5. In your opinion, are your financial product providers sufficiently innovative? If so, in what way? Does your company seek more advanced products?
6. Do you think that in today's market financial product providers face more or less competition compared to what they faced ten years ago? If you think there has been a change, to what do you attribute this change in competition?

ADDENDUM:  
ADDITIONAL TABLES AND FIGURES

TABLE 4. Interviews' Summary

Categories	Total Number
Companies	18
Interviews	29
Interviews on Production of Financial Methods	17
Interviews on Consumption of Financial Methods	12

TABLE 5. Classification of Companies

<b>Industries</b> <sup>149</sup>
Commercial Banking
Investment Advice
Investment Banking and Securities Dealing
Securities Brokerage
Software Publisher
Portfolio Management
<b>Investment Banking and Securities Dealing</b>
BlackRock
Cantor Fitzgerald
Franklin Templeton
Goldman Sachs
UBS

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149. The classification of the participants' companies has been inspired by the North American Industry Classification System (NAICS). "[The NAICS] is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy." *NAICS Main Page*, U.S. CENSUS BUREAU, <http://www.census.gov/eos/www/naics/> (last visited Nov. 16, 2011).

**Investment Banking**

Duff &amp; Phelps Corp

**Commercial Banking**

FNBC of La Grange

Focus Business Bank

Towne Bancorp Inc.

**Portfolio Management**

JP Morgan (50%)

Matthews International

Morgan Stanley (50%)

Perry Capital

UC Regents

William Blair &amp; Co. (50%)

**Securities Brokerage**

JP Morgan (50%)

Morgan Stanley (50%)

William Blair &amp; Co. (50%)

**Software Publisher**

MSCI

Moody's KMV

**Investment Advice**

Northern Trust

