Incentive Compatible Financial Regulatory Scheme
and
Proportionality Principle

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Motivation

Research question:

how to achieve incentive compatible financial regulatory system?

Incentive compatible if any participant in the financial market gets gains in proportion to its contribution to social gains and pays costs in proportion to its effect on social costs. In other words, do not and cannot have an incentive to behave strategically in pursuit of net gain from its illegality.
Motivation

Incentive compatible framework needs balance between ex ante and ex post regulatory scheme:

Ex ante and ex post frameworks concern market integrity. Ex ante framework regulates a priori qualification as an eligible participant. Ex post regulates a posteriori responsibility for the result of market participation. Both qualification and responsibility should be proportionately harmonized.
Motivation

In Korea, serious distrust on financial regulation: “too much” ex ante qualification but “too little” ex post responsibility, sounding as if ex ante regulation is one of serious obstacles for financial development. See Table 1.
Motivation

2015.3.11. KIF Financial Trust Index

<table>
<thead>
<tr>
<th></th>
<th>No(%)</th>
<th>Yes(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairness, rationality of financial system</td>
<td>42.4</td>
<td>8.5</td>
</tr>
<tr>
<td>Efficiency of financial supervision</td>
<td>62.6</td>
<td>7.9</td>
</tr>
<tr>
<td>Consumer protection by supervisory organization</td>
<td>55.2</td>
<td>16.3</td>
</tr>
<tr>
<td>Appropriateness of financial policy</td>
<td>57.1</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Note: Fairness means leveling playing field, rationality includes credible beliefs and actions, no regulatory arbitrage, strategy-proof, and efficiency implies appropriate costs including compliance costs.
Motivation


“Regulators are always the last ones to the party after everybody in the market (the other bankers) know something is going on. Thus, in the context, regulators have a 100 percent failure rate……because they don’t know how to run bank.”

→ The discipline beaten is a priori regulatory discipline…
Motivation

Allison argument raises a fact and a lesson:

Firstly, hard for regulator to get information on what is going on earlier than or at the same time as market participant.

Secondly, ex ante regulatory principle under the assumption that regulators are wiser than or wise as much as market participant cannot be rational.
Motivation

Mostly strong ex ante rule stands on the assumption that a prior regulation can be ‘sensible’ in managing risks. But according to Allison’s argument, ex ante rule should be cautiously designed and modified under the assumption that any ex ante rule could be inaccurate, and it should be complemented with ex post liability rule in order to build incentive compatible regulatory framework. This cautious framework could be called as cautious or proportionate ex ante rule. However, as aforementioned, regulatory framework in Korea is “too much” ex ante but “too little” ex post framework as in Figure I-1, which is strong ex ante rule-based framework.
Motivation

Imbalance between ex ante and ex post regulation.
Motivation

It is historically unclear why financial regulation has taken the path of such strong ex ante approach in Korea. However, it is undeniable that the strong ex ante approach may be a reason why financial supervision and regulation has lost its effectiveness in the financial market: (1) a priori qualification does not guarantee a posteriori responsible behaviors. (2) Strong ex ante rules have often conflicted with market’s striving for innovations.
Motivation

Why is incentive compatible regulatory and penalty scheme important?

(1) Effective enforcement on the end or purpose of business activities. Incentive compatible regulatory enforcement should include not only ex ante qualifying examinations but also ex post investigations on behavioral wrongdoings. Then, it contributes to enhance the integrity of financial market by removing strategic behaviors of market participants.

(2) It targets ex post regulatory results so that it can cause to relax appropriate amount of ex ante rules that targets entry level qualifying conditions of financial firms’ business.
Motivation

Alternative mechanisms: which one incentive compatible?
Contents

1. What is incentive compatible regulatory and penalty scheme?
2. Legal strategy and law theory of regulatory social cost function
3. Elements for incentive compatible regulatory mechanism
4. Concluding remarks
Incentive compatible penalty scheme

Incentive compatibility: strategy-proof mechanism. Certain degree of illegality will get proportionate degree of penalty. No abusive behaviors.

Three imbalanced schemes:

<table>
<thead>
<tr>
<th></th>
<th>Ex ante</th>
<th>Ex post</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>0</td>
<td>0</td>
<td>Soy sauce with lots of fly-strikes</td>
</tr>
<tr>
<td>(2)</td>
<td>0</td>
<td>100</td>
<td>Soy sauce with minimized or no fly-strikes</td>
</tr>
<tr>
<td>(3)</td>
<td>100</td>
<td>0</td>
<td>No or minimized soy sauce for the afraid of fly-strike</td>
</tr>
<tr>
<td>(4)</td>
<td>50</td>
<td>50</td>
<td>Certain amount of soy sauce with certain amount of fly-strike</td>
</tr>
</tbody>
</table>
Rule-based vs. principle-based

Three options: (1) no regulation (2) principle-based (3) rule-based

(1) Ex ante: 0%  \rightarrow  Crowded market entry, activity  \rightarrow  Ex post: 0%

(2) Ex ante: 0%  \rightarrow  Market entry, activity  \rightarrow  Ex post: 100% investigation for illegality

(3) Ex ante: 100% restrictive rules  \rightarrow  No market entry  \rightarrow  Ex post: 0%

Soy sauce with lots of fly-strikes
Soy sauce with minimized or no fly-strike
No soy sauce for the afraid of fly-strike
Identically optimal and information asymmetry

Optimal results of A (rule-based) and B (principle-based) will be the same in terms of illegality under theoretical perfection without information asymmetry.

In reality, most of financially advanced countries adopts B rather than A-type approach.
Legal strategies


Three factors that determine legal strategy: information asymmetry, financial complexity and regulatory flexibility

(1) Information asymmetry. Without information asymmetry, a priori simple causation of illegality can be perfect, then ex ante can be optimal
Legal strategies

(2) In history, rule-based regulatory scheme came first when financial market is in the early stage and causation of any illegality was simple, and next it has evolved into principle-based scheme. For example, FCA, SEC, CFTC. CFTC: 1974 ex ante, 2000 ex post.


The choice between rules and principles depends on causation structure and costs (promulgation, enforcement, advice, compliance costs)

Examples

Traffic regulation: simple causation. No information asymmetry. Camera on highway enough. ➔ rule-based: “prohibit driving in excesses of 55 miles per hour on expressways” vs. Principle-based: “prohibit driving at an excessive speed on expressways”
Rules vs. Principles

Simple causation with obvious factors in limited range ➔ rule is better. For example, tax law. unilateral activity, numberless homogenous activity (=high frequency), no or weak need of proof.

bilateral activity, myriad unique accident (=low frequency), strong need of proof (forward or reverse burden of proof) ➔ principle

<table>
<thead>
<tr>
<th>Causation structure</th>
<th>Rule</th>
<th>Principle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>Complex</td>
<td></td>
<td>O</td>
</tr>
</tbody>
</table>
## Cost comparison

<table>
<thead>
<tr>
<th></th>
<th>Rule</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice cost</td>
<td>Less</td>
<td></td>
</tr>
<tr>
<td>Enforcement cost</td>
<td>Less</td>
<td></td>
</tr>
<tr>
<td>Promulgation cost</td>
<td></td>
<td>Less</td>
</tr>
<tr>
<td>Compliance cost</td>
<td></td>
<td>Less</td>
</tr>
</tbody>
</table>

Rule-based: costly in both promulgation and compliance, so that lots of complaints.

Consistent with the findings of KIF Financial Trust Index 2015.
# Over- and under-inclusiveness

<table>
<thead>
<tr>
<th></th>
<th>Rules</th>
<th>Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permissible range</td>
<td>limited</td>
<td>Contingently interpretable</td>
</tr>
<tr>
<td>Simplicity</td>
<td>Complex rule is undesirable</td>
<td>Simple standard is undesirable</td>
</tr>
<tr>
<td>Sanctions or penalty</td>
<td>Strictly liable for damages equal to the average harm. Charge of wrongdoing regardless of actual harm</td>
<td>“appropriately” responsible. Strictly liable for damages equal to the level of harm they cause and those who discharge harmless activity will not be held liable.</td>
</tr>
<tr>
<td></td>
<td>Sanction level=Average harm. Over-inclusive for small harm, under- for large harm</td>
<td>Sanction level: proportional to the harm level</td>
</tr>
</tbody>
</table>
Changing over time

As available information, condition, and perceived values change over time, principles are easier to keep up to date.

<table>
<thead>
<tr>
<th>Rule</th>
<th>Principle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptability</td>
<td>Inefficient. Hard to keep up to date</td>
</tr>
</tbody>
</table>
Math Analysis

r: rule-based
p: principle-based
n: number of risk-neutral individuals
h: Harm. density \( f(\cdot) \) on \([0,\infty)\)
x: cost of care
q: Probability. \( q'(x)<0, \ q''>0 \)
b: Promulgation cost
c: Advice cost
e: Enforcement cost
Social objective function

\[ SC = b + c + e + \int_{0}^{\infty} q(x(h)) hf(h) dh + \int_{0}^{\infty} x(h) f(h) dh \]

minimize the sum of legal costs (b, c, e), cost of care x, and expected harm

b: Promulgation cost

c: Advice cost

e: Enforcement cost

h: Harm. density f(·) on [0,∞)

x: cost of care

q: Probability. q’(x)<0, q”>0
Penalty strategies

h = mg or h > mg (additional externality): monetary gain from harmful activity
mp: monetary penalty against the harm

rule-based – fixed level of care and penalty as an average value of harm.

  x and mp are fixed. If fixed x satisfied, no penalty.

principle-based – proportionate value for each harm.

  mp is proportional to mg or h when h is larger than mg
Penalty strategies

Principle-based

Rule-based

\[ m_p(h) \]

\[ h \]

\[ \bar{h} \]
Social Cost Function

Under the legal strategies,

\[ SC_{rule} = b_r + c_r + e_r + \int_0^\infty q(x(h)_r)(h - \overline{m}_p)f(h)dh + \bar{x}_r \]

\[ SC_{principle} = b_p + c_p + e_p + \int_0^\infty q(x(h)_p)(h - mp(h))f(h)dh + \int_0^\infty x(h)_p f(h)dh \]
# Social Cost Function

## Traffic

<table>
<thead>
<tr>
<th>Condition</th>
<th>Social Cost Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>$SC_{rule} &lt; SC_{principle}$</td>
<td>$c_r = 0 = e_r, \int q_r = 0, SC_{rule} = \overline{x_r} + b_r$</td>
</tr>
<tr>
<td></td>
<td>$b_p = 0, \int q_p = 0 = \int x_p, SC_{principle} = \overline{x_r} + n(c_p + e_p)$</td>
</tr>
</tbody>
</table>

## Financial

<table>
<thead>
<tr>
<th>Condition</th>
<th>Social Cost Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>$SC_{rule} &gt; SC_{principle}$</td>
<td>$c_r = 0 = e_r, \int q_r \gg 0, \overline{x_r} + b_r &gt; 0, SC_{rule} = \int q_r + \overline{x_r} + b_r \gg 0$</td>
</tr>
<tr>
<td></td>
<td>$b_s = 0, c_s + e_s &gt; 0, \int q_p = 0, \int x_p &gt; 0, SC_{principle} = \int x_p &gt; 0$</td>
</tr>
</tbody>
</table>
Benefit from illegality: upper incentive

For the harm beyond $\bar{h}$, no incentive of care. Care only when benefit is smaller than penalty for the stipulated in the article. Aggressive abuse when illegal profit is larger.
Comparative Effect of penalty scheme of rule vs. principle

\[ SC_{\text{rule}}: \int_0^\infty p(x(h)_r)(h - \overline{mp})f(h)dh \implies \text{Gogol if } h^* > \overline{h}. \quad 0, \text{otherwise} \]

\[ SC_{\text{principle}}: \int_0^\infty p(x(h)_s)(h - mp)f(h)dh \implies \text{zero}. \]
4 Elements for principle-based mechanism

(1) Rational Principle: FSA case
(2) legal framework: SEC, CFTC case
(3) Legal infra for ex post: SEC, CFTC administrative judge.
Rational principles: FSA Case

FSA (2007). “Principles-based regulation focusing on the outcomes that matter”

<table>
<thead>
<tr>
<th>Principle of principles</th>
<th>11 principles areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrity</td>
<td>Business conduct</td>
</tr>
<tr>
<td>Due care (skill, diligence, regard)</td>
<td>Business conduct, interest of customer, information and communication</td>
</tr>
<tr>
<td>Adequacy</td>
<td>Risk management, financial resource management, market conduct, client’s asset protection</td>
</tr>
<tr>
<td>Fairness</td>
<td>Interest of consumer, conflict of interest between firm and customer</td>
</tr>
<tr>
<td>Openness</td>
<td>Disclosure to regulator</td>
</tr>
</tbody>
</table>

CFTC establishment 1975.

1) Section 4(c) of the Commodity Exchange Act

2) New flexible structure replaces the current one-size-fits all style of regulation...the framework also replaces our prescriptive rules with flexible “core principles.” (Letter of then Chairman William J. Rainer to the Senate Committee, February 22, 2000)
Administrative Law Judge (ALJ)

SEC, CFTC and federal agencies:

1) ALJ: Administrative Procedure Act. 1946.

2) Oaths and affirmations, subpoenas, conduct prehearing conference, issue defaults, rule on motions and the admissibility of evidence

3) ALJ orders sanctions (suspension/revocation), disgorgement, civil penalties, censures, cease-and-desist orders etc.
Monetary civil penalty


Monetary civil penalty is a fine issued in civil court which penalizes a violator who profited from an illegal or unethical action. The penalty is typically equal to the gains made from the activity.
Research Question Again

How to achieve incentive compatible financial regulation?

It can be achieved by the balanced or at least stronger ex post (principle-based) approach.
The End