

Regulation for CB-IB Co-evolution -Establishing Sound Ownership & Governance Structure

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contents

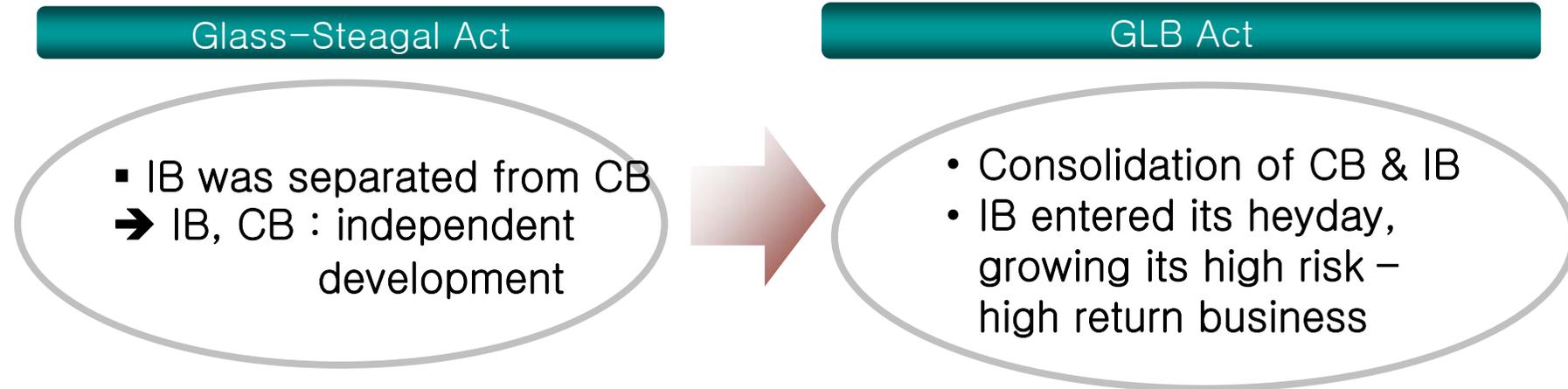
- I. Introduction
 - 1. Background of the Study
 - 2. Object and contents of the Study
- II. Model
- III. Pros and Cons of CIB
 - 1. General CIB
 - 2. Complex CIB-1
 - 3. Complex CIB-2
- IV. Desirable regulatory scheme for CIB co-evolution
 - 1. Basic Direction
 - 2. Regulatory Scheme Details

I. Introduction

1. Background of the Study

2. Object and contents of the Study

Background of the Study



Under GLB Act...

Global

Financial crisis

- The collapse of the stand-alone IB
- The fallout has spread to CB

The "Volcker Rule" represents a move away from the consolidation of CB and IB

Object and Contents of the Study

Study the pros and cons of CB+IB, and a desirable regulatory scheme in the context of vertical/horizontal integration theory

Vertical/horizontal integration compromises the efficiency of competitive markets?

No

- ❖ Free market economist
- Friedman, Stigler, Demsetz etc

Yes

- ❖ Imperfect market economist
- Bain, Arrow, Stiglitz etc

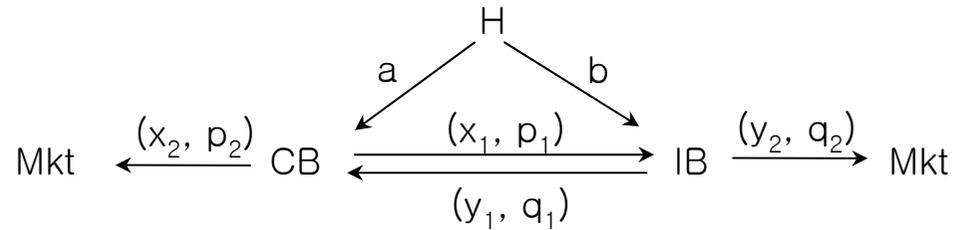
CB+IB generate an external/internal price gap, and damage the efficiency, fairness, and stability of financial market?

- ❖ External/internal price gap (or price discrimination) is a source of unfair trade
- Williamson etc

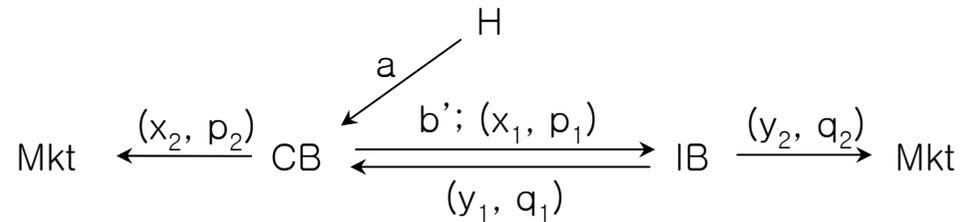
II. Model

Model

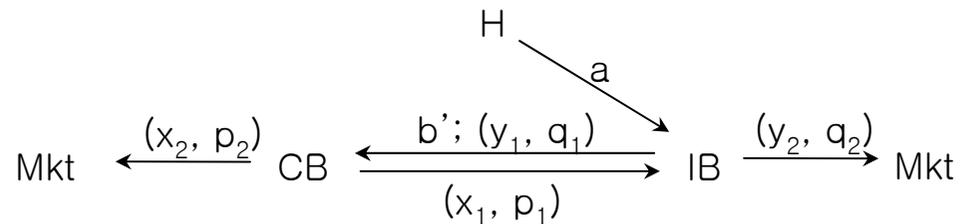
General CIB



Complex CIB-1

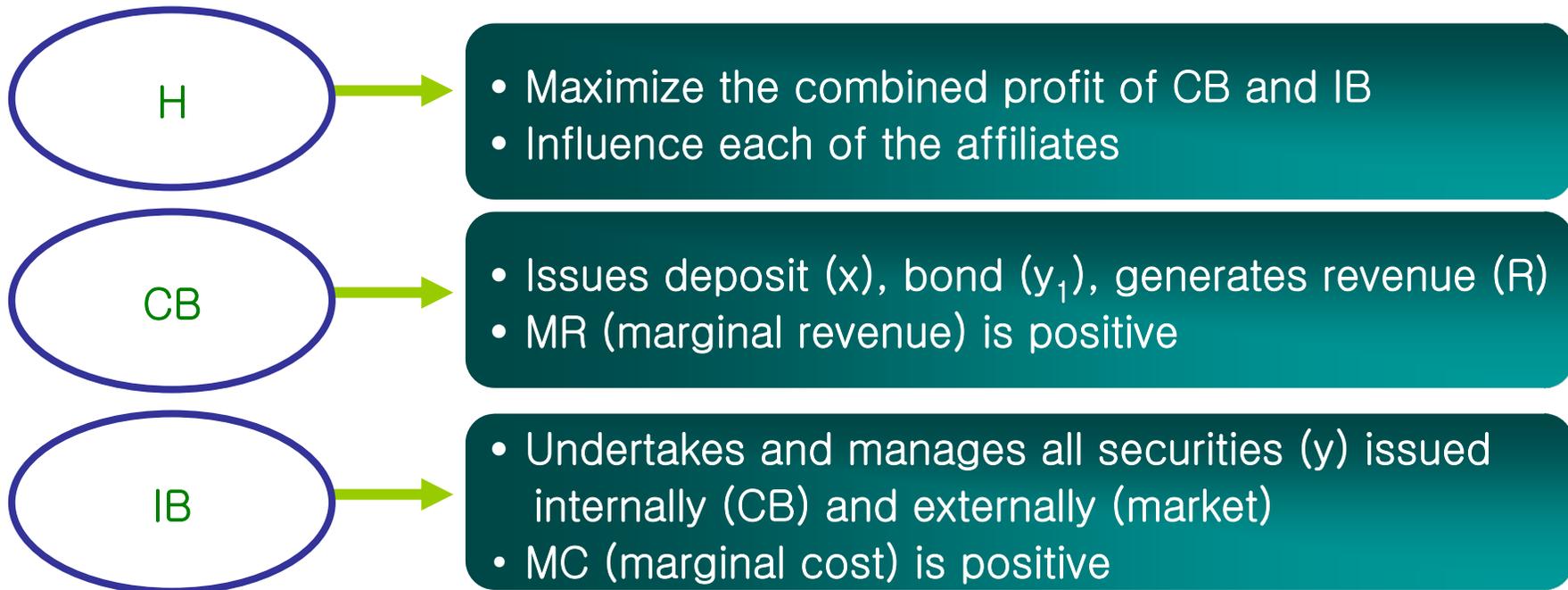


Complex CIB-2



- * H is financial group or holding company
- * a, b, b' are amount of share (larger than 0, smaller than 1)

Basic Assumption



- Any financial products : homogeneous

$$x_1 + x_2 \equiv X, \quad x_1 = \alpha X, \quad x_2 = (1 - \alpha)X$$

$$y_1 + y_2 \equiv Y, \quad y_1 = \beta Y, \quad y_2 = (1 - \beta)Y$$

- Profit function is composed of asset (+), and liability (-)

- Time preference rate is zero

Objective function

Profit functions...

CB



$$\begin{aligned} \pi_{CB} &= -p_1x_1 - p_2x_2 + R(x_1, x_2) - q_1y_1 \\ &\equiv -p_1\alpha X - p_2(1-\alpha)X + R(X) - q_1\beta Y \end{aligned}$$

IB



$$\begin{aligned} \pi_{IB} &= q_1y_1 + q_2y_2 - C(y_1, y_2) + p_1x_1 \\ &\equiv q_1\beta Y + q_2(1-\beta)Y - C(Y) + p_1\alpha X \end{aligned}$$

H



General CIB

$$a\pi_{CB} + b\pi_{IB}$$



Complex CIB-
1

$$a\pi_{CB} + ab'\pi_{IB}$$



Complex CIB-
2

$$a\pi_{IB} + ab'\pi_{CB}$$

III. Pros and Cons of CIB

1. General CIB
2. Complex CIB-1
3. Complex CIB-2
4. Remaining Problems

General CIB

Max $\{X, Y, \alpha, \beta\}$

$$a[-p_1\alpha X - p_2(1 - \alpha)X + R(X) - q_1\beta Y] + b[q_1\beta Y + q_2(1 - \beta)Y - (Y) + p_1\alpha X]$$

❖ 1st Order Condition

$$p^*_1 = aMR_X / (a - b), \quad p^*_2 = MR_X, \quad q^*_1 = bMC_Y / (b - a), \quad q^*_2 = MC_Y$$

❖ External/Internal Price Gap

$$p^*_1 - p^*_2 = bMR_X / (a - b)$$

$$q^*_1 - q^*_2 = aMC_Y / (b - a)$$

General CIB

If $a > b$

pros

- ❖ $q^*_1 < 0, q^*_2 > q^*_1$ → The IB acquires liquidity from the CB not by underwriting, but by repurchasing
- ❖ $p^*_1 > p^*_2$ → The CB supports the IB by providing above market deposit rates
- ❖ That is, the IB might expand its market dominance or recoup losses

cons

- ❖ The CB could be exploited by IB through a tunneling method, which might cause the CB to become insolvent and harm the efficiency, fairness and stability of the financial markets
- ❖ That is, depositors and shareholders of the CB might suffer serious damage, which may endanger the payment system

If $b > a$

pros

- ❖ $p^*_1 < 0, p^*_2 > p^*_1$ → The CB can acquire liquidity from the IB by taking in customers' deposits etc.
- ❖ $q^*_1 > q^*_2$ → The IB can support the CB by underwriting the CB's bonds at below market interest rates
- ❖ That is, the CB might expand its market dominance or recoup its losses, which would not harm payment system, however

cons

- ❖ The IB could be exploited by the CB through a tunneling method, which might cause the IB to become insolvent and harm the fairness of the financial markets
- ❖ That is, the investors and shareholders of the IB might suffer serious damage

Complex CIB-1

Max $\{X, Y, \alpha, \beta\}$

$$a[-p_1\alpha X - p_2(1-\alpha)X + R(X) - q_1\beta Y] + ab'[q_1\beta Y + q_2(1-\beta)Y - C(Y) + p_1\alpha X]$$

❖ 1st Order Condition

$$p^*_1 = MR_X / (1 - b'), \quad p^*_2 = MR_X, \quad q^*_1 = b' MC_Y / (b' - 1), \quad q^*_2 = MC_Y$$

❖ External/Internal Price Gap

$$p^*_1 - p^*_2 = b' MR_X / (1 - b')$$

$$q^*_1 - q^*_2 = MC_Y / (b' - 1)$$

pros

- ❖ $q^*_1 < 0, q^*_2 > q^*_1$ ($\because 0 \leq b' \leq 1$)
- ☞ The IB acquires liquidity from the CB not by underwriting but by repurchasing
- ❖ $p^*_1 > p^*_2$ ($\because 0 \leq b' \leq 1$)
- ☞ The CB supports the IB by providing above market deposit rates
- ❖ That is, the IB might expand its market dominance or recoup losses

cons

- ❖ The CB could be exploited by IB through a tunneling method, which might cause the CB to become insolvent and harm the efficiency, fairness and stability of the financial markets
- ❖ That is, depositors and shareholders of the CB might incur substantial losses, and it may endanger the payment system

Complex CIB-2

Max $\{X, Y, \alpha, \beta\}$

$$a[q_1\beta Y + q_2(1 - \beta)Y - C(Y) + p_1\alpha X] + ab'[-p_1\alpha X - p_2(1 - \alpha)X + R(X) - q_1\beta Y]$$

❖ 1st Order Condition

$$p^*_1 = b'MR_X / (b' - 1), \quad p^*_2 = MR_X, \quad q^*_1 = MC_Y / (1 - b'), \quad q^*_2 = MC_Y$$

❖ External/Internal Price Gap

$$p^*_1 - p^*_2 = MR_X / (b' - 1)$$

$$q^*_1 - q^*_2 = b'MC_Y / (1 - b')$$

pros

- ❖ $p^*_1 < 0, p^*_2 > p^*_1$ ($\because 0 \leq b' \leq 1$)
 - ☞ The CB can acquire liquidity from the IB by receiving customers' deposits etc.
- ❖ $q^*_1 > q^*_2$ ($\because 0 \leq b' \leq 1$)
 - ☞ The IB support the CB by underwriting the CB's bond at lower interest rate than market rate
- ❖ That is, the CB might expand its market dominance or recoup losses, which would not harm the payment system, however

cons

- ❖ The IB could be exploited by the CB through a tunneling method, which might cause the IB to become insolvent and harm the fairness of financial market
- ❖ That is, investors and shareholders of IB might incur substantial losses

Remaining Problems

Common problems of Complex CIBs

➔ Fictitious capital problem

For Complex CIBs, a (H's share) does not play any role in the optimization problem

➔ H has incentive to own and control the CB or IB with as little a share as possible

Model Characteristics or Limits

➔ IB market is efficient, but the CB market is not

Marginal cost pricing is applied in the IB market, but marginal revenue pricing is applied in the CB market, where monopolistic elements exists

IV. Desirable regulatory scheme for CIB co-evolution

1. Basic Direction

2. Regulatory Scheme Details

1) Advance preparation for regulation

2) Regulation of Ownership/Governance structures

Basic Direction

CB &IB do not harm
the efficiency, fairness, and stability of financial market



Conglomerate of CB &IB
should be permitted



If not,

Apply arm's length rule
(includes separation
of CB&IB)

Advance preparation for regulation

Screen whether CB+IB harms the efficiency, fairness, and stability of financial

Efficiency Test

1st stage (market test)

Investigate competitive pressure
ex) market price, entry barriers
market share,
elasticity of demand

2nd stage (firm-level test)

Investigate illegal assistance
by internal/external price gap,
exercising irregular voting right

3rd stage (causality test)

Analyze the causal link
between illegal assistance
and competitive pressure

Fairness Test

Investigate whether the exercise of voting rights contains unfair elements

Stability Test

Investigate whether the insolvency of a CB (or IB) caused by illegal assistance generates systemic risk

To assess systemic risk, analyze the portfolio structure and interdependence among financial groups, CBs, and IBs, etc.
ex) strong integration → high interdependence → high systemic risk

Regulation of Ownership/Governance structures

IF the CB+IB Failed 3 Tests,
the ownership or governance structure should be

❖ In this paper...

a, b,
b'=0

=

- Restrictions on/Prohibition of bundling,
- Reinforcing the Chinese Wall,
- Restrictions on/Prohibition of cross-investment or voting rights
- Exits (i.e., share sale) etc

Simple CIB case...

Simple
CIB



b=0 for efficient, fair, and stable CB market

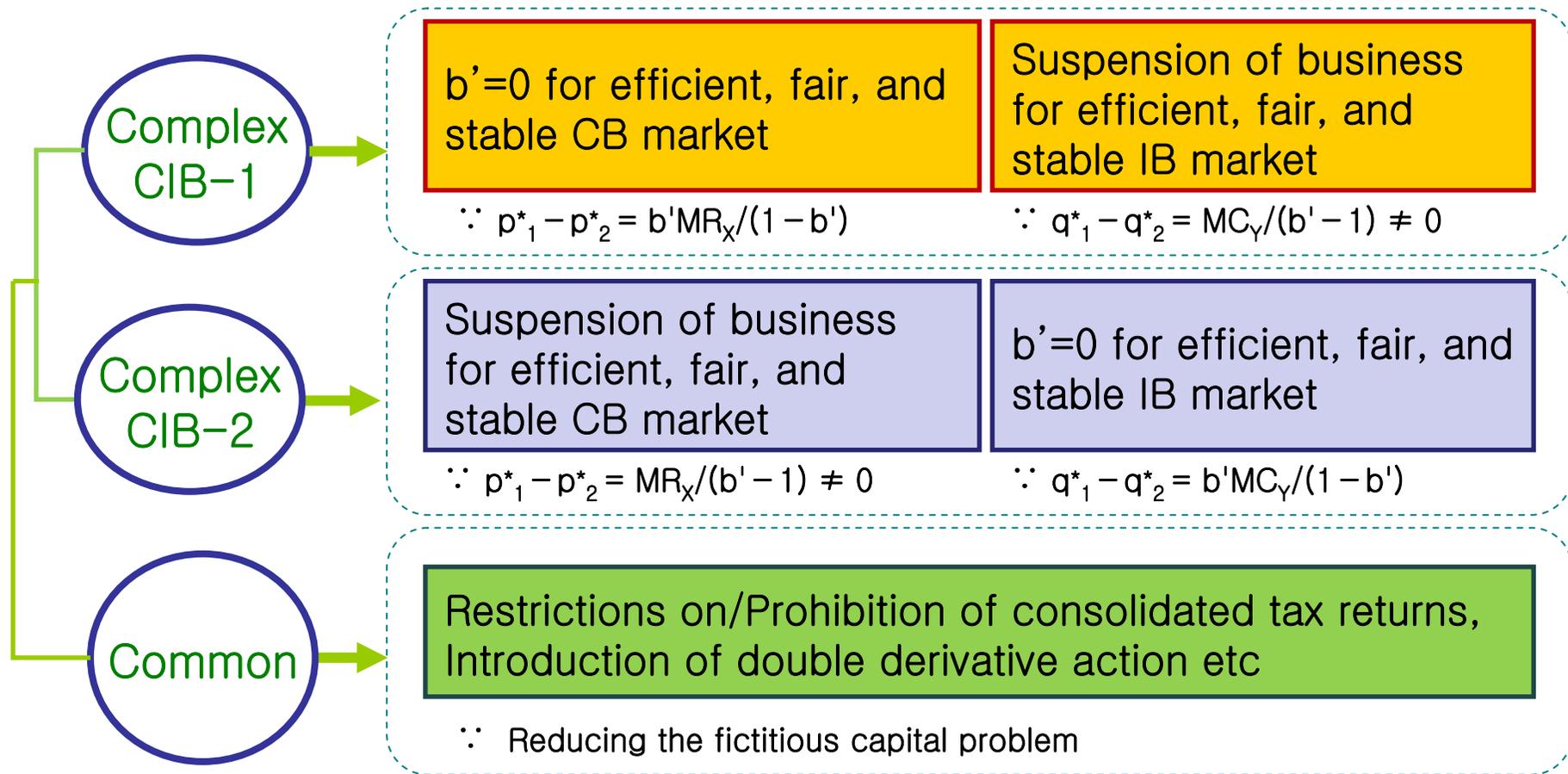
$$\therefore p^*_1 - p^*_2 = bMR_X / (a - b)$$

a=0 for efficient, fair, and stable IB market

$$\therefore q^*_1 - q^*_2 = aMC_Y / (b - a)$$

Regulation of Ownership/Governance structures (cont.)

Complex CIBs case.....





EOD