

**"EUROPEAN FINANCIAL REGULATION :  
A FRAMEWORK FOR POLICY ANALYSIS"**

by

Colin MAYER\*

and

Damien NEVEN\*\*

N° 90/54/BP

\* Price Waterhouse Professor of Corporate Finance, City University  
Business School, Frobisher Crescent, Barbican Center,  
London EC2Y 8HB, Great Britain

\*\* Associate Professor of Economics, INSEAD, Boulevard de Constance,  
Fontainebleau 77305 Cedex, France

Printed at INSEAD,  
Fontainebleau, France

**European Financial Regulation:  
A Framework for Policy Analysis**

Colin Mayer and Damien Neven

City University Business School and INSEAD

Revised

May 1990

The paper draws on work that Colin Mayer has done with Julian Franks in the past. As part of that work numerous discussions have been had with financial institutions and regulators in various countries. We are grateful to Tony Courakis, Julian Franks and John Vickers and participants at the CEPR/IMI Conference on European Financial Integration.

This paper is part of the Centre for Economic Policy Research "International Study of the Financing of Industry". The CEPR study is being financed by the Anglo-German Foundation, the Bank of England, the Commission of the European Communities, the Economic and Social Research Council, the Esmee-Fairbairn Charitable Trust, the Japan Foundation and the Nuffield Foundation. The second author is grateful to INSEAD for financial support under grant N° 2172R.

"The wages of labour vary according to the small or great trust which must be reposed with the workman. The wages of goldsmiths and jewellers are everywhere superior to those of many other workmen, not only of equal, but of much superior ingenuity, on account of the precious metals with which they are entrusted. We trust our health to the physician; our fortune and sometimes our life and reputation to the lawyer and attorney. Such confidence could not safely be reposed in people of a very mean or low condition"

Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, p105.

## 1. Introduction

The regulation of financial services is normally associated with banks. Banks transform short-term deposits into long-term loans. This leaves them exposed to withdrawals that necessitate the premature liquidation of long-term assets. If the net realizable value of assets falls below deposits, then banks are unable to service withdrawals in full and insolvency may result. Perceiving this risk, investors may be induced to withdraw their deposits from financially sound banks in anticipation of similar behaviour by others. Investment decisions by investors can therefore impinge on others and banks are prone to runs (Diamond and Dybvig (1984)). Furthermore, if a run on one bank can prompt a run elsewhere then there is a risk of contagion. In particular, if the ability of other banks to launch rescues of troubled banks is dependent on their own financial condition then investors may correctly infer information about the soundness of the financial system from bank failures (see Aghion, Bolton and Dewatripont (1988)). There are therefore externalities between investors and between institutions that justify regulation.

Systemic risks are not in general a feature of other financial institutions. Investment managers such as mutual funds and private client investment businesses do not usually offer debt contracts that guarantee particular rates of return. Instead, they act as agents for

investors who delegate portfolio selection and administration to an investment manager. Likewise, brokers merely effect transactions on behalf of others. In neither case are there similar externalities between investors to those that exist in banks. Furthermore, financial collapse is less contagious in some segments of the financial sector than in banks. There is little reason why the failure of one investment manager should have repercussions elsewhere particularly if portfolios under management can be transferred at low cost from one manager to another (see Franks and Mayer (1989)). In the case of brokers and market makers, failure can be of wider significance since client assets are closely associated with those of the firm. The collapse of a counterparty to a financial transaction can endanger others. There is therefore stronger justification for protection against systemic failure in brokers and dealers than in investment managers but in neither case is it as compelling as it is in banks.

What then is the rationale for the elaborate systems of regulation of non-bank financial institutions that exist in many countries? The market failure that is most commonly associated with non-bank financial institutions is imperfect information on the part of investors. It is costly for investors to establish the quality of firms offering financial services and, in the presence of a large number of small investors, there will be free-riding in the collection of information. As a consequence, there will be poor discrimination between low and high quality firms and prices charged for financial services will reflect some perceived average quality of financial institutions as a whole. This price may not provide high quality firms with adequate compensation for the expensive services that they provide and the average quality of financial institutions may therefore decline. In addition, firms may choose to provide lower quality services than recognized by consumers. There are, therefore, problems of adverse selection (Akerlof (1970)) and moral hazard.

In the context of financial institutions, poor quality can be associated with negligence, incompetence or dishonesty in the provision of services. Firms may have poor systems for managing client accounts or they may transact with low quality brokers and dealers. In

addition, there may be high incidence of employee fraud or, still more seriously, the firm may have been set-up to defraud clients.

Most financial regulation outside of banks is concerned with investor protection and not the prevention of systemic failure. In this regard, the regulation of non-bank financial institutions has greater affinity to the regulation of the professions than banks. The regulation of accountants, doctors and lawyers is usually discussed in relation to imperfect information (Shaked and Sutton (1980) and Shapiro (1986)). As a consequence, the form that regulation of non-bank financial institutions takes may be expected to be very different from that of banks.

The approach that different countries take to the regulation of financial services varies appreciably. In the U.K., until 1986, the regulation of non-banks was very rudimentary. The principle statute governing securities investments was the Prevention of Fraud (Investments) Act of 1958. With some exceptions, this required dealers in securities to be licensed and to be subject to certain rules regarding the way in which they conducted their business. However, the Act did not address broader questions concerning competence rather than honesty and following the collapse of several investment businesses at the end of the 1970s and the beginning of the 1980s, a comprehensive system of legislation was introduced (the Financial Services Act (1986)). This requires those who wish to establish an investment business to be screened and to be subject to rules regarding their conduct of business, the holding of clients' funds and their financial reserves.

In the US, the Securities and Exchange Commission is responsible for most protection of investors in non-banks. In the case of investment managers, there is little attempt to screen individuals or to require them to hold capital. Instead, most emphasis is placed on the monitoring of firms and the punishment of fraud. Brokers and dealers are required to hold capital but even here the primary concern is with detection and correction of fraud rather than prevention of incompetence.

The regulation of financial services on the Continent of Europe is a product of the close association of the provision of financial services with banks. This is most starkly exemplified by Germany where any institution involved in the managing or handling of securities is classified as a bank even if it is acting in a purely agency capacity. Financial institutions in general are therefore subject to the onerous regulation of banks irrespective of the nature of the services that they provide. This regulation includes capital requirements, rules governing the conduct of business, as well as initial screening of agents.

There is one other important difference in financial services regulation between countries. In the UK financial regulation is a distinctive blend of statutory and self-regulation. The Financial Services Act (FSA) established a supervisory body known as the Securities and Investments Board (SIB) which formulated a set of rules regarding the conduct and operation of investment businesses. However, unlike most regulators, the SIB does not in general regulate businesses itself. Instead, it delegates this function to a group of five Self-Regulating Organisations (SROs) that comprise members from different parts of the investment business. The power of the SROs derives from their ability to sanction and ultimately expel members. The significance of this stems from the fact that under the FSA, membership of an SRO or direct certification by the SIB is required of all investment businesses.<sup>1</sup> However, unlike other countries the SROs regulatory rules are not enshrined in statute and, the SROs themselves, not some agency of government, are responsible for their enforcement.

The advantage of self-regulation is perceived to be a greater degree of flexibility in the formulation and enforcement of rules than statutory regulation permits. Flexibility has been regarded as an important characteristic of the regulation of an industry in which there

---

<sup>1</sup> Members of certain professional organizations (such as accountants) and firms authorized under the Insurance Companies or Friendly Societies Acts are exempted.

has been rapid product innovation. On the other hand, there is concern that self-regulation does not provide adequate investor protection. The SROs may be prone to regulatory capture by their members and may not in any event have had adequate powers conferred upon them.

The appropriate design and implementation of financial regulation is of particular concern to European countries that at present employ very different forms of regulation. The European Commission is currently trying to establish common minimum standards of regulation of financial services. These will involve the imposition of statutory requirements that are sometimes widely divergent from existing regulations in force in member states. For example, current proposals do not require investment businesses that merely provide advice to hold capital. All other firms do: 50,000 ECUs if they do not handle clients' monies, 100,000 ECUs if they do, and 500,000 ECUs if they take positions on their own account. That compares with a minimum absolute capital requirement on investment managers in the UK of £5,000.

This paper is an examination of the regulation of financial services. It is concerned with the appropriate design and implementation of regulation. Section 2 examines the market failures that can arise in the provision of financial services. It reviews the existing literature on imperfect information and the regulation of the professions and examines the role of reputation in limiting abuses associated with imperfect information.

In Section 3, a model of the regulation of financial services is presented. This model is used to analyse the design of a regulatory framework for financial services. It contrasts capital requirements and the imposition of penalties as methods of discouraging abuse of investors by investment businesses. In section 4, the implementation of regulation is examined. Statutory legislation is contrasted with the self-regulatory organizations in which a desire on the part of members of the organization to maintain the value of invested capital encourages expulsion of deviant firms and restrictions on entry of new firms.

Section 5 uses the analysis of Sections 3 and 4 to evaluate different regulatory systems and recent proposals from the European Commission. In particular, it considers the role of self-regulation in providing investor protection.

Section 6 concludes the article.

## 2. Moral Hazard and Adverse Selection with Respect to Product Quality

The economics literature distinguishes **between three classes of goods**: "search goods" whose quality can be ascertained in advance of purchase, "experience goods" whose quality can only be determined after purchase and "credence goods" whose quality may never be established (see Nelson (1970) and Darby and Karni (1973)). Examples of search goods are consumer durables, such as clothes and furniture; examples of experience goods are such non-durables as wine and tobacco; and examples of credence goods are the quality of advice that a consumer receives regarding the timing of a car repair or a surgical operation. Evaluation of such advice may involve answering counterfactuals of the form of what would have happened if the advice had not been taken.

By their very nature financial services involve investments whose quality cannot be evaluated ex ante. At the very least, financial services therefore constitute experience rather than search goods. However, even ex post it may not be possible to establish whether a high quality service was provided. There are two reasons for this. First, it is difficult to evaluate financial performance. Performance measures are sensitive to the benchmark against which they are compared. For example, risk premia on portfolios depend on the chosen asset pricing model, the securities that are included in benchmark portfolios and the period over which risk is computed. Secondly, investors will typically not be able to disentangle the effects of bad luck on the one hand and incompetence, negligence or dishonesty on the other on portfolio performance. A high return may be earned from a lucky, dishonest firm and a low return from a competent, honest but unlucky firm. Financial services may therefore be best classified as credence goods.

The implication of financial services being experience or credence goods is that investors are susceptible to risks of adverse selection and moral hazard. The dishonest and incompetent can pose as the honest and competent; the negligent cannot be distinguished from the conscientious. As a consequence, as Leland (1979) demonstrates, markets with

informational asymmetries supply suboptimal quality levels. The prices that suppliers receive reflect average, not marginal, levels of quality offered in the market. Thus, so long as average quality exceeds marginal, there is an incentive for entry to occur which further depresses the average level of quality supplied.

Leland argues that this justifies regulation that imposes minimum standards. However, if regulation is set by the professions, Shaked and Sutton (1980) demonstrate that they have incentives to impose barriers to the entry of new members. Rents thereby accrue to existing members at the expense of consumers. Allowing for quality choices by the agents, Shapiro (1986) shows that licensing of professionals through the implementation of a minimum level of human capital investment leads to excessive training by providers of low quality. This is to the benefit of consumers seeking high quality services but to the detriment of those who wish to purchase low quality services at a low price. By contrast, where certification is used as a method of regulating entry, high quality sellers undertake excessive training to signal their quality. This raises the price of high quality services.

In seeking to correct distortions, regulation may therefore curtail competition, limit the range of quality offered to consumers and modify the trade-off between quality and price. Instead of regulation, reliance may be placed on mechanisms which provide information on quality and discourage deceptive supply of low quality. Guarantees will diminish uncertainty consumers face about product quality and reduce returns that firms earn from deceptively producing low quality. But guarantees are only effective if they can be enforced and where there is a risk of bankruptcy their value is limited.

Incentives may be improved by repeat purchases. Firstly, adverse selection may be diminished if high quality firms are able to distinguish themselves from low quality firms by initially charging low prices and it is not in the interests of low quality firms to mimic them (Nelson (1970)). Secondly, moral hazard will be reduced if firms wish to establish reputations for providing high quality services.

Two mechanisms for establishing reputations have been suggested. Shapiro (1983) describes a model in which high quality firms identify themselves by initially selling their products below cost. Consumers repeat purchases while quality is maintained and firms continue to provide high quality so long as the value of maintaining reputation exceeds costs saved by cutting quality. This requires a consumer to pay a premium for high quality products.

In the models of Kreps and Wilson (1982) and Milgrom and Roberts (1982) [KWMR] consumers experiment with different products. They entertain the possibility (however small) that firms have an incentive to supply high quality even in a "one-shot" game but cease purchasing if deceived about quality. Firms might then choose to supply high quality to avoid being classified as low quality firms. This strategy is profitable if the value of the reputation of being high quality exceeds the cost saving associated with deceiving consumers about quality.

Unlike the Shapiro model, the [KWMR] theory does not rely on firms having an infinite horizon. They still opt to supply high quality in periods preceding the terminal one to take advantage of high quality demand. In the Shapiro model, since firms cheat in the terminal period, they cheat in the penultimate period and therefore in the one before that; they therefore always cheat unless horizons are infinite.

Reputation therefore plays an important role in rectifying market failures created by asymmetric information. Financial services are no exception in this regard. Yet, there are reasons why reputation may be less effective in financial services than in other industries. Where firms handle clients' monies and assets, the losses that they can impose on investors are large. They can steal principal payments as well as the returns that they are supposed to earn for investors. Thus incentives to cheat are high, and few firms will have the reputation required to deter it.

Reliance on reputation may also create barriers to entry. Reputation takes time to acquire and requires experimentation on the part of investors (Diamond (1989)). Risk neutral or risk averse investors whose wealth can be appropriated by dishonest firms are unlikely to engage in experimentation. This suggests that a primary function of the regulator should be to reinforce incentives created by reputation and to diminish barriers to entry that exist in its absence.

In addition, the low prices that high quality firms charge in the Shapiro model may threaten their viability and encourage fraud.<sup>2</sup> This is similar to the moral hazard and adverse selection problems that high interest rates create in Stiglitz and Weiss's (1981) model on bank lending. Finally, the incentives to cheat may increase as reputations improve. For example it has been said that it was Johnson Matthey's strong reputation as a bank in the U.K. that allowed its irregular activities to remain undetected for so long.

This last point acts as a reminder that financial services may not only be experience but also credence goods whose quality is unobservable *ex post* as well as *ex ante*. Reputations may therefore be inadequate to sustain good behaviour. Conversely, reputations are vulnerable to incorrect assessments by markets; unless markets can perfectly evaluate quality, firms may suffer from unwarranted loss of reputation. For these reasons, reputation may have to be supplemented by regulation. The subsequent analysis adopts a framework that encompasses monitoring by both regulatory authorities and markets.

In the next two sections, the paper considers the design and implementation of regulations. Beyond screening, a regulator of a financial firm typically has powers to require it to hold capital and to impose penalties (both civil and criminal). The next section considers the appropriate balance between these forms of regulation.

---

<sup>2</sup> See Franks and Mayer (1989) for evidence that fraud has often been a response to financial crises.

### 3. Regulatory design

The purpose of this section is to set out a framework for analysing the design of regulation, i.e. the balance between capital requirements, penalties and quality control. The next section deals with the implementation of regulation. It investigates the alternatives of statutory or self-regulation.

We consider a market for financial services in which there are firms of varying quality  $x \in (\underline{x}, x^+)$ . Quality relates to the ability of personnel, their work-leisure preference and corporate organization. Quality affects the performance of firms as measured by their profits  $\pi(x)$  where  $\pi' > 0$  and  $\pi'' < 0$ . However, instead of supplying services honestly, firms can cheat investors and earn  $\pi_d > \pi(x)$  for all  $x \in (\underline{x}, x^+)$ . This higher return is earned entirely at the expense of investors. Firms can earn a return (or a present value of earnings) of  $V$  outside the industry.

Firms have capital of an amount  $C$  where  $0 \leq C \leq C^+(x)$  and  $C^+ \geq 0$ .  $C^+(x)$  is the least upper bound on the capital of firms with quality  $x$ . It increases with  $x$ , reflecting the greater value of high quality firms ceteris paribus. There is a uniform density of firms below  $C^+(x)$ , between  $\underline{x}$  and  $x^+$ . In this context, capital refers to net worth of firms at market value. It comprises not only the liquid and physical assets which are traditionally included in capital measures but also the goodwill associated with reputation and industry specific training. However, it excludes assets which cannot be appropriated by regulatory authorities and whose value is not affected by expulsion from the industry. In other words, the definition of capital that is relevant here is the sum of collateral provided by firms and sunk costs.

A regulatory framework is composed of a capital requirement (CR) and an ex post penalty (U). The penalty could be a fine or imprisonment. It is presumed in this section that misbehaviour is observed, so that if firms are caught, they incur the penalty and lose their capital. However, there is a probability  $(1 - \alpha)$  ( $0 \leq \alpha \leq 1$ ) that honest firms are deemed to have misbehaved. This reflects possible misconceptions on the part of regulators and investors about dishonesty in firms. For example, an announcement by regulators that enquiries are underway into the conduct of firms may in itself adversely affect public perception of their quality. As a consequence, firms' reputation may suffer even where inquiries subsequently fail to uncover evidence of misdemeanours. The problem of public reaction to regulatory conduct is recognised in the area of banking where risk of runs can be exacerbated by the intervention of regulators. That firms in financial services are also worried about public perceptions is suggested by their reluctance to disclose internal enquiries into employee fraud.

The converse problem of failure by the regulator to uncover fraud is not pursued here. It is shown in the appendix that it can be offset by an increase in the penalty U, without altering capital requirements. In other words, a change in probability of detection merely affects the ex post penalty and not ex ante screening through capital.

In what follows we describe firms' behaviour and the way in which regulation affects the set of active firms and their behaviour. The first condition determines which firms supply honestly. Firms will not deviate provided the following incentive compatibility condition is satisfied:

$$\pi(x) - (1 - \alpha)(U + C) \geq \pi_d - (U + C)$$

ie  $\pi(x) \geq \pi_d - \alpha(U + C)$

IC

In Figure 1, all firms to the right of (IC) supply honestly.

Assuming that they supply honestly (IC is satisfied), firms will decide to enter if and only if:

$$\pi(x) - (1 - \alpha)(U + C) \geq V \quad \text{EE}$$

All firms to the right of (EE) (and (IC)) in Figure 1 will decide to enter. EE assumes that firms that are erroneously deemed to have misbehaved still earn a profit  $\pi(x)$ .

Next, we introduce the least upper bound on firms' capital ( $C^+(x)$ ).

$$C \leq C^+(x) \quad \text{CC}$$

This condition delineates the population of firms in the range  $[\underline{x}, x^+]$ . It is shown as CC in Figure 1.

The last condition relates to the case where the incentive compatibility condition is not satisfied. Firms will then enter provided:

$$\pi_d - (U + C) \geq V \quad \text{ER}$$

Firms below ER in Figure 1 (and to the left of IC) enter and cheat.

These four conditions describe the behaviour of firms for given parameters ( $C^+(x), V, U, \alpha, \pi(x), \pi_d$ ). The interplay between the various constraints can be described as follows. The minimum quality ( $x^*$ ), which is consistent with both IC and EE, is associated with a level of capital  $C^*$ , such that:

$$C^* = \pi_d - U - V \quad (I)$$

$$\text{Accordingly, } x^* = \pi^{-1}[(1 - \alpha) \pi_d + \alpha V] \quad (II)$$

Since the level of capital associated with firms that are on the margin of entering and deviating (from ER) is the same as the level of capital associated with  $x^*$ , ER, IC and EE have a unique common intersection (as shown in Figure 1). This level of capital increases in  $\pi_d$  and falls with  $V$ . At the same time,  $x^*$  is increasing in  $\pi_d$  and  $V$  and decreasing in  $\alpha$  (given that since  $\pi_d > \pi(x)$ ,  $\pi_d > V$  from EE).

The behaviour of firms in Figure 1 can be summarised as follows. As CC has been drawn, there are no firms in the areas, A, B, C and D. However, if there were, firms in area A would enter and cheat; firms in area B would cheat but choose not to enter; firms in area C would behave honestly but would not have adequate incentive to enter; and firms in area D would like to enter, and would behave. Firms in areas E and F enter and are honest. Firms in areas G and H enter and cheat.

(INSERT FIGURE 1 HERE)

A capital requirement condition (CR) is now introduced. This states that:

$$C \geq CR \quad CR$$

It is shown as a dashed line in Figure 1.

The capital requirement prevents some firms in areas G and H in Figure 1, which would otherwise cheat, from entering. However, some honest firms in area F are excluded.

There is therefore a tradeoff between allowing dishonest firms to enter and excluding honest firms. Define the width  $ac$  in Figure 1, corresponding to firms with capital  $CR$ , as the quality width and  $bc$ , corresponding to quality levels over which firms do not cheat, as the acceptable width. If equal weight is attributed to cheating and inappropriate exclusion of firms,<sup>3</sup>  $CR$  will be set so that the acceptable width corresponding to that level of capital is half the quality width. An increase in the ratio of the acceptable to quality width reflecting either a steeper  $IC$  or  $CC$  schedule (for a given  $ER$ ) reduces the optimum level of  $CR$ . A reduction in the relation between quality and capital of either the population of firms (a steeper  $CC$  schedule) or the acceptable sample of firms (a steeper  $IC$  schedule) thus reduces the optimal capital requirement  $CR$ , for a given  $ER$ .

Furthermore, an upward shift of  $CC$  for a given set of  $IC$ ,  $EE$  and  $ER$  schedules reduces the ratio of the acceptable to the quality width and thus raises  $CR$  at the expense of increased exclusion of honest firms. Conversely, as the penalty  $U$  falls,  $IC$  and  $ER$  shift vertically upwards. From equation I and II, the intersection of  $IC$  and  $ER$  is also displaced vertically upwards. As a result, the ratio of the acceptable to the quality width falls.  $CR$  is therefore increased but by less than the fall in  $U$ . The tradeoff between exclusion of dishonest and honest firms is thus assisted by the association of capital resources with firm quality.

If the intersection,  $K$ , of  $EE$  and  $IC$  rises above  $CC$ , then minimum quality  $x^*$  has to increase. However, up to that point avoidance of cheating does not require a sacrifice of low quality firms, in contrast to the results on regulation discussed previously. For the remainder of this section, it is assumed that the optimum point of intersection falls on  $CC$ .<sup>4</sup>

---

<sup>3</sup> The relative weighting of cheating and excessive exclusion depends on (a) the effects of cheating on investment, (b) the distributional consequences of cheating and (c) the levels of competition. Little insight is provided by explicit modelling of the social welfare function.

<sup>4</sup> If there is an area  $D$  between  $CC$  and  $EC$  where the intersection of  $EE$  and  $IC$  meets  $CC$ , then the optimal value of  $U$  may exceed that associated with this point.

In what follows, we consider how the intersection,  $K$ , of  $ER$ ,  $EE$  and  $IC$  is affected by exogenous parameters.

(i) A decline in  $\alpha$

A reduction in  $\alpha$  shifts  $EE$  to the right (to  $EE'$ ) reflecting the lower incentive to enter on account of the higher risk of a random penalty (Figure 2).  $IC$  shifts up (to  $IC'$ ) because of the reduced incentive to good behaviour as the incremental penalty over the random risk of loss diminishes. From equations I and II, this is associated with a horizontal shift of the intersection  $K$  to  $K'$ .

(INSERT FIGURE 2 HERE)

At the initial position  $K$ , the capital constraint on the population of firms is binding. As the intersection between  $IC$  and  $EE$  is shifted to  $K'$ , the capital constraint is relaxed. As a result, the tradeoff between admitting honest and dishonest firms can be improved by lowering  $U$ . This raises  $IC$  and  $EE$  and, from equations I and II, has the effect of shifting their intersection vertically from  $K'$  to  $K''$ .  $CR$  also rises since an upward shift of  $IC$  reduces the ratio of acceptable to quality width, for any level of capital.

(ii) An increase in  $V$

An increase in  $V$  raises the minimum quality of firms entering the industry ( $x^*$  rises, see equation II as  $EE$  shifts to  $EE'$  in Figure 3) and from equation I,  $U + C$  falls at the intersection of  $IC$  and  $EE$ . However, the capital constraint is not binding and, as before, the tradeoff between excluding honest and dishonest firms can be improved by lowering the penalty  $U$  until  $K'''$  is reached. Again, the upward shift in  $IC$  raises  $CR$ .

(INSERT FIGURE 3 HERE)

(iii) An increase in  $\pi_d$

An increase in  $\pi_d$  worsens the incentive compatibility condition (it shifts from IC to IC') and elicits a higher penalty at the intersection of IC and EE (see equation I). As shown the capital constraint is not satisfied at  $K''$ . This can be avoided by raising  $U$ , thereby pushing IC' and EE downwards and shifting the intersection from  $K''$  to  $K'''$ . The IC corresponding to  $K'''$  still lies above the initial IC, so that CR rises.

Table 1 summarizes the influences on regulatory design. The level of capital requirement in relation to other penalties will be highest where (a) there is low precision in imposing penalties on firms and (b) the opportunity cost of entering an industry is high. Both capital and other penalties are high where the rewards to cheating are large. As previously noted, capital requirements are also highest where there is a close correspondence of actual and acceptable quality levels with capital.

Table 1 also reports the determinants of the minimum quality of honest firms and a measure of the cost imposed on honest firms by the regulatory system. The cost is the wedge between the returns that have to be offered to an honest firm to induce it to enter the industry and the return that it can earn elsewhere. From EE this is equal to  $(1 - \alpha)(U + C)$ , the expected value of the penalty that is incorrectly imposed on firms. Table 1 records that greater imprecision in imposing penalties and greater incentives to cheat raise both the minimum quality of honest firms and the cost imposed on honest firms. A higher opportunity cost of entering the industry raises the minimum acceptable quality of firms (because fewer honest firms want to enter) but reduces the cost of operating the system

(because dishonest firms are also discouraged from entering). By allowing capital requirements to be reduced at lower cost to quality, a weaker relation of quality to capital reduces the cost of regulation, for given  $x^*$ .

#### 4. Statutory versus Self-Regulation

The previous section has noted a tradeoff between exclusion of honest firms and inclusion of dishonest firms. Of course, more sophisticated legislation than that considered above could be enacted that stipulates the class of firms to which minimum capital requirements apply (i.e.  $x < x^*$ ), or imposes more severe penalties ( $U$ ) on just this group of firms. But legislation can only refer to verifiable parameters (see Hart and Moore (1989)) and many of the determinants of quality (such as organisational structure and conduct of business) are unlikely to be readily observable by third parties. The reason that statutory legislation is limited in this way is that it has to adjudicate between conflicting interests of investors and investment businesses.

On the one hand, it has already been noted that some investment services are credence goods, whose quality cannot be readily established ex post. In that case, there is a risk of rogue firms (in area G) escaping punishment. In response, investors may seek the assistance of private auditors in policing investment businesses. On the other hand, as agents of investors, auditors may be over-zealous in their pursuit of misdemeanours. They may fabricate evidence, provoke too high a rate of prosecution or extract side payments from firms wishing to avoid risks of public exposure.

A statutory system of legislation therefore has to strike a balance between the interests of investors and firms. Rules have to be formulated regarding the conduct of both investment businesses and those responsible for their monitoring and application have to be open to judicial enquiry. Since these rules have to be observable by third parties, it is not possible to make them a function of firm quality.

This raises the question of whether there is a self-enforcing mechanism that has the desired effect merely through the pursuit of **self interest**. Section 2 described models in which conflicts between ex ante and ex post can be resolved through a desire to preserve reputations. As an alternative to recourse to intertemporal considerations, cross-section aggregation across firms may assist.

The idea is as follows. Suppose that there is a group of firms, called a club, that comprises  $N$  identical honest members. Each member puts up the same capital  $C$  and agrees to the following rules. New members will only be admitted if they too subscribe capital  $C$ . If they cheat, they forego their capital and are subject to an additional penalty  $U$ . As before, there is a probability  $(1 - \alpha)$  that honest firms will be penalized (this risk being uncorrelated across firms).

Investors can call upon the capital of other members of the club to supplement a shortfall in the capital of any deviant member or a failure of the club to impose a full penalty  $U$ .<sup>5</sup> Other members' capital thus provides coinsurance for the risk that inadequate capital is required of new members or insufficient penalties are imposed on existing members.<sup>6</sup>

Does the club enforce its rules? Consider a two period model where firms apply for membership in the first period and in the second period either provide services honestly or cheat. If they cheat, then clubs may impose penalties. Consider first the second period and suppose an existing member cheats. By imposing a penalty the club collectively loses  $U + C$ . In contrast, if it fails to penalize, it loses up to  $\alpha NC$  (granted that by assumption

<sup>5</sup> To provide clubs with appropriate incentives to discourage cheating, the cost to the club of drawing on other members' capital has to be fractionally in excess of amounts raised. The cost of administering the scheme may account for this.

<sup>6</sup> In general, only partial insurance is provided. As shown below, to deter entry of dishonest firms the capital that the club guarantees has to be merely in excess of  $\pi_d - V$ . However, if all of a dishonest firm's profits are earned at the expense of investors then full compensation requires the payment of  $\pi_d$ .

it anyway imposes a capital cost of expected value  $(1 - \alpha) C$  on honest firms). Thus it will respond to the incidence of cheating by imposing the appropriate penalty if (and only if),

$$U + C \leq \alpha NC \quad (CI)$$

Now consider the first period and suppose a deviant firm has applied for membership. Assuming (CI) and that there is no discounting, it is willing to pay up to  $\pi_d - V - (U + C)$  for the privilege of entry to the club. If  $U$  and  $C$  are set at such a level that ER is not satisfied, then entry is discouraged. However, if the club fails to impose the full capital requirement entry may occur. As before the club has to make good any shortfall up to  $\alpha NC$  but can be bribed unless

$$\pi_d - V \leq \alpha NC \quad (CR)$$

From the ER condition, CR implies that there is an upper bound to the incentives to cheat that the club can credibly correct through selection of members. Furthermore, from equation I, conditions IC and EE, and the fact that  $\pi'(x) > 0$ , if CR is satisfied then CI is satisfied over the relevant range of IC. In Figure 1, if  $ER \leq \alpha NC$  then IC will be implemented as well as entry of dishonest firms refused.

The strength of self-regulation comes from the fact that there is no requirement that IC or ER conditions be verifiable by third parties. However, self-regulation is only effective for a restricted class of problems. It is more effective the greater the capital that members have invested in the club and which is at risk from deviant behaviour. Thus large clubs containing firms of high reputation will be able to police more serious crimes than small groups of poorly established firms. The effectiveness of clubs is also undermined by the risk that invested capital is involuntarily extinguished (low values of  $\alpha$ ).<sup>7</sup>

---

<sup>7</sup> Essentially a shortfall of  $\alpha$  below unity introduces discounting of future returns even in the absence of an explicit discount factor.

managers in general could be eliminated. That again is closer to the US system of regulation and is reflected in the European Commission's proposal capital rules.

Turning to the form of regulation, the previous section concluded that self-regulation will be feasible where potential investor losses are modest and where clubs containing several firms with large amounts of invested capital can be formed. It is least suited to investor protection where there is a serious risk of fraud and there are few well established firms. In the case of the UK, self-regulation is therefore least suited to the case of the Financial Intermediaries, Managers and Brokers Regulatory Association (FIMBRA) which draws its membership from independent investment brokers, managers and advisers. It is much better suited to the membership of the Investment Management Regulatory Organization (IMRO) which mainly comprises investment managers that are part of larger companies. Even in the case of IMRO, self-regulation would be less open to abuse if the possibility of client losses could be diminished by separating client funds and the positions that firms take on their own accounts.

Where investors are vulnerable to certain types of abuse then it may be possible to combine self- and statutory regulation. For example, statutory legislation and public policing of fraud and theft may be combined with self-regulation of negligence and incompetence. To a certain extent this is already common place where personal indemnity insurance is used to provide protection against negligence. There would appear to be considerable scope for clubs to extend this function.

Furthermore, a greater degree of competition between clubs could be entertained if the risk of self-regulatory organizations being captured by their members was diminished by public policing of fraud. At one extreme, free entry of clubs could be permitted provided that investors were aware of the quality of service being offered by members of a club (see Kay and Vickers (1988)). Competition between clubs would not then be very different from competition between firms.

First, both the appropriate design and form of regulation are sensitive to the structure of the industry. The financial sector undertakes a wide range of activities. Even leaving aside the distinction between banking and non-banking to which reference was made in the introduction, investment businesses differ in form, function and the risks that they pose to investors. It is thus unlikely that the same type of regulation will be appropriate for all investment businesses.

In particular, the parameters discussed in Section 3 differ markedly between firms. Firms that merely provide advice to clients on how to invest their portfolios without directly managing them pose comparatively few risks to investors. In comparison, firms that make markets in stocks handle large amounts of money and securities. Their risks of default are significantly diminished by holding capital. Thus investment advisers have relatively low and market makers high values of  $\pi_d$ . From Table 1, market makers should therefore be subject to more onerous capital requirements than investment advisers. Instead, greater reliance should be placed on the imposition of other penalties (U) on investment advisers. This is precisely the design of both EEC and US requirements: brokers and dealers are required to hold quite substantial amounts of capital; investment advisers are not.

Secondly, it may be possible to structure firms in such a way as to facilitate the imposition of certain regulatory systems. Investment managers that act on a discretionary basis can put investors' assets at risk. However, if the assets and monies of clients are separated from those of the firm and managed by a custodian then the risk of this occurring is substantially diminished. Since there is a poor relation between the quality of investment managers and the capital at their disposal ( $C^+(x)$  is high) (Franks and Mayer (1989) report cases of where capital has been accumulated at the expense of clients), according to Table 1, investment managers should not be required to hold much capital. Furthermore, a reduction in risks of fraud diminishes capital requirements. If investment managers were required to separate clients' funds from their own then capital requirements on investment

No attention has been given here to the dynamics of club formation or the equilibria that will prevail if free entry of clubs is **permitted**. For example, the club's criteria for selecting honest firms will only coincide with EE if the earnings of existing members are unaffected by a new entrant i.e. the demand for the club's services is elastic. Otherwise, the club will impose unduly demanding requirements on new entrants to ensure that sufficiently large rents can be extracted to compensate for more intense competition. The effect is similar to the club imposing a (shadow) increase in  $V$  in the EE condition; in terms of Figure 3, the club wishes to raise quality to the equivalent of  $K'$  and does this by increasing capital requirements from  $G$  to  $G''$ , thereby excluding (honest) firms in the area  $KK'K''$ .

Of course, competition between clubs may help to avoid the imposition of unwarranted barriers to entry. However, by reducing returns to honest members of a club, intensified competition exacerbates risks of cheating (shifts IC out) and by reducing invested capital ( $C$ ) diminishes incentives on clubs to police effectively. Furthermore, the formation of clubs is impeded by problems in the initial identification of the quality of firms (recall that above it was simply assumed that the  $N$  initial members were honest). In practice, therefore the development of clubs raises similar problems to reputation building by firms and creates similar barriers to the entry of new clubs.<sup>8</sup>

## 5. Financial regulation in practice

Considerable care is required in attempting to draw policy conclusions from a simple model. However, the above analysis does suggest some relevant considerations.

---

<sup>8</sup> There are further questions associated with relaxing the assumption of homogeneous members of a club. What happens when the quality of firms can vary and clubs can initially contain both well established and unknown firms?

Unfettered competition is not appropriate where externalities exist in the form of risks of contagious failure. Harmonization of regulation is therefore still required for banks and possibly brokers and dealers whose financial failure can have widespread consequences for the operation of a financial system (see Mayer (1989a and b)). Elsewhere, attempts by the European Commission to establish common minimum levels of protection over and above the prevention of fraud are probably misguided. If investors are aware of the quality of service being offered by members of a club and if there is no risk of clubs defaulting on their obligation, countries or groups of firms within countries should be free to choose the quality of service that they supply.

A hierarchical system of regulation therefore emerges with international organizations being responsible for the coordination of regulation of systemic risks, national regulators being concerned with the prevention of fraud and self-regulatory organizations correcting negligence and incompetence. While this method of implementation is similar to that in the UK, the appropriate design is closer to that of the US.

## 6. Conclusions

This paper has investigated the design and implementation of financial regulation. It has noted that the rationale for the regulation of financial services is different from that of banks. Instead of systemic risks, market failures created by asymmetric information between investors and firms lie at the heart of concerns about financial services. Investors are unable to distinguish honest from dishonest, competent from incompetent and negligent from conscientious firms.

Reputation provides some correction for imperfect information. But a distinctive feature of financial services is the large penalty that misconduct by investment businesses can impose

on investors. That risk creates a significant barrier to the entry of new firms.

Regulation of financial services is therefore in large part concerned with reducing barriers to entry. It does this by extending the set of penalties that can be imposed on firms. Two classes of incentives were considered: capital requirements and direct penalties. The former has an advantage over the latter where there is a relation between the capital available to a firm and its quality.

However, capital requirements that are unable to distinguish between firms' quality exclude some honest firms. As a consequence, there is a tradeoff: capital requirements will be more onerous where there is a close relation between capital and quality and where there is less precision in imposing penalties.

The tradeoff reflects the limitations of statutory legislation. In resolving disputes between investors and firms, legislation is restricted to activities and outcomes that are verifiable by third parties. Quality of individuals and organizations may not fall into this category.

Instead, control may be best self administered. Self-regulatory organizations can be granted powers to impose capital requirements and penalize deviant firms, if only by expulsion from an industry. The question that self-administration raises is whether clubs have adequate incentives to enforce capital requirement rules and impose penalties. The paper suggests that such incentives do exist where firms have sufficient capital at stake, in the form, for example, of industry specific assets and where benefits from cheating are limited.

The implications of this paper for policy are that, (i) forms or regulation should differ between classes of investment services (e.g. investment management and broking), (ii) capital requirements should be limited in investment management where there is a poor relation between capital and quality, (iii) possible abuses in investment management should

be reduced through the separation of clients accounts to allow low capital requirements to be imposed, (iv) there is more opportunity for self-regulation by well established firms (such as members of IMRO rather than **FIMBRA** in the UK) and (v) in the absence of systemic risks, there is little justification for the harmonization of regulatory rules on clubs whose quality can be identified. Competition between clubs may be an important way of avoiding monopoly abuse.

## APPENDIX

The purpose of this appendix is to examine the effect of a failure to detect misbehaviour. Let  $\beta$  denote the probability that a dishonest firm is caught and assume that no honest firm is wrongly penalised ( $\alpha = 1$ ).

The four conditions can then be rewritten as

$$\begin{array}{ll} \pi(x) \geq \pi_d - \beta(U + C) & \text{IC} \\ \pi(x) \geq V & \text{EE} \\ C \leq C^+(x) & \text{CC} \\ \pi_d - \beta(U + C) \geq V & \text{ER} \end{array}$$

Since EE is independent of  $\beta$ , there is a unique value at  $(x, C)$  such that EE and CC are binding. Thus for IC and ER to intersect EE and CC at the same point  $\beta(U + C)$  must be constant. With  $C$  fixed

$$\beta/U \quad dU/d\beta = (-U + C^+(x))/U$$

so that for  $C^+ > 0$ , a rise in  $\beta$  is offset by a more than proportional fall in  $U$ .

## References

- Aghion, P., P. Bolton and M. Dewatripont, (1988), Interbank lending and contagious bank runs, mimeo
- Akerlof, G., (1970), The market for "lemons": qualitative uncertainty and the market mechanism, Quarterly Journal of Economics, 84, 488-500.
- Darby, M. and E. Karni, (1973), Free competition and the optimal amount of fraud, Journal of Law and Economics, 16, 67-88.
- Diamond, D. (1989), Reputation acquisition in debt markets, The Journal of Political Economy, 97, 828-862.
- Diamond, P. and D. Dybvig, (1983), Bank runs, deposit insurance and liquidity, Journal of Political Economy, 91, 401-419.
- Franks, J. and C. Mayer, (1989), Risk, regulation and investor protection: the case of investment management, Oxford, Oxford University Press.
- Hart, O. and J. Moore, (1989), Incomplete Contracts and Renegotiation, Econometrica, 56, 755-786.
- Kay, J. and J. Vickers, (1988), Regulatory reform in Britain, Economic Policy, 7, 278-351.
- Kreps, D. and R. Wilson, (1982), Reputation and imperfect information, Journal of Economic Theory, 27, 253-279.
- Leland, H., (1979), Quacks, lemons and licensing: a theory of minimum quality standards, Journal of Political Economy, 87, 1328-1346.
- Mayer, C., (1989a), Round table discussion on the appropriate level of regulation; the case of financial services, Economic Policy, 9, 473-476.
- Mayer, C., (1989b), The regulation of financial services; lessons from the UK for 1992, in J. Dermine (Ed), European banking after 1992, Oxford, Blackwell.
- Milgrom, P. and J. Roberts, (1982), Predation, reputation and entry deterrence, Journal of Economic Theory, 27, 280-312.
- Nelson, P., (1970), Information and consumer behaviour, Journal of Political Economy, 78, 311-329.
- Shaked, A. and J. Sutton, (1980), The self-regulating profession, Review of Economic Studies, 48, 217-234.
- Shapiro, C., (1983), Premiums for high quality products as rents to reputation, Quarterly Journal of Economics, 98, 659-680.
- Shapiro, C., (1986), Investment, moral hazard and occupational licensing, Review of Economic Studies, 53, 843-862.
- Stiglitz, J. and A. Weiss, (1981), Credit rationing in markets with imperfect information, American Economic Review, 71, 393-410.

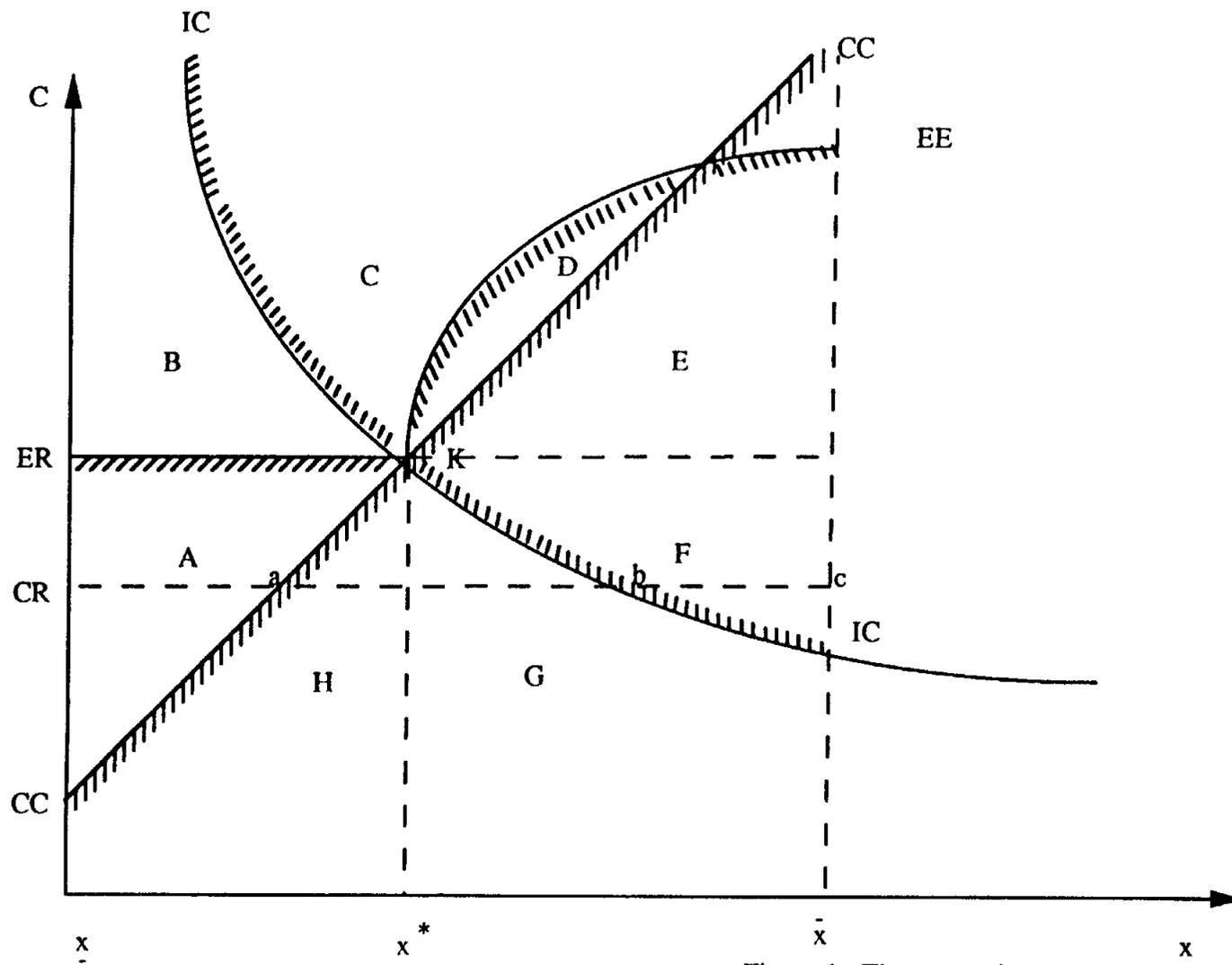


Figure 1 : The constraints

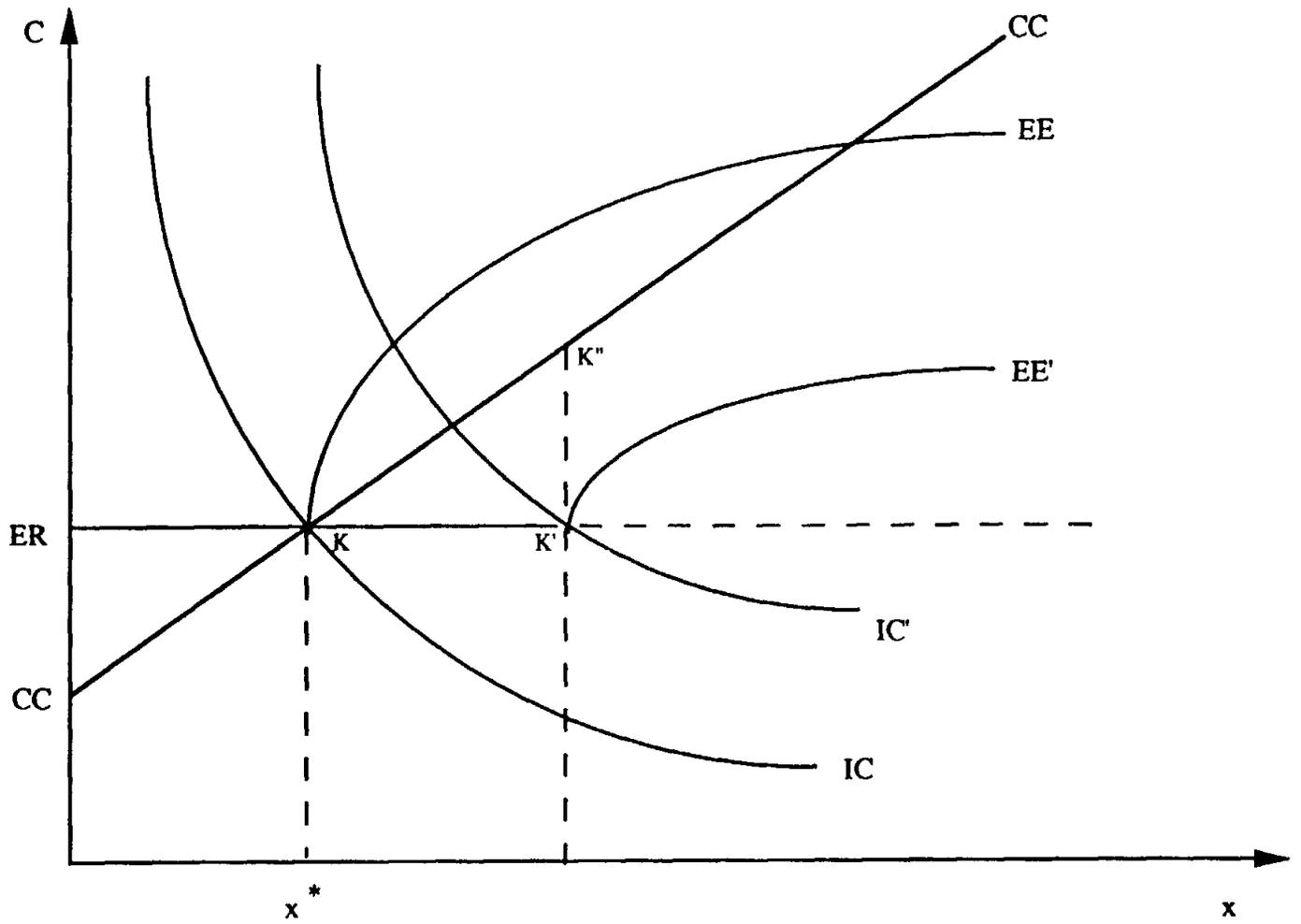


Figure 2 : The effect of lowering  $\alpha$

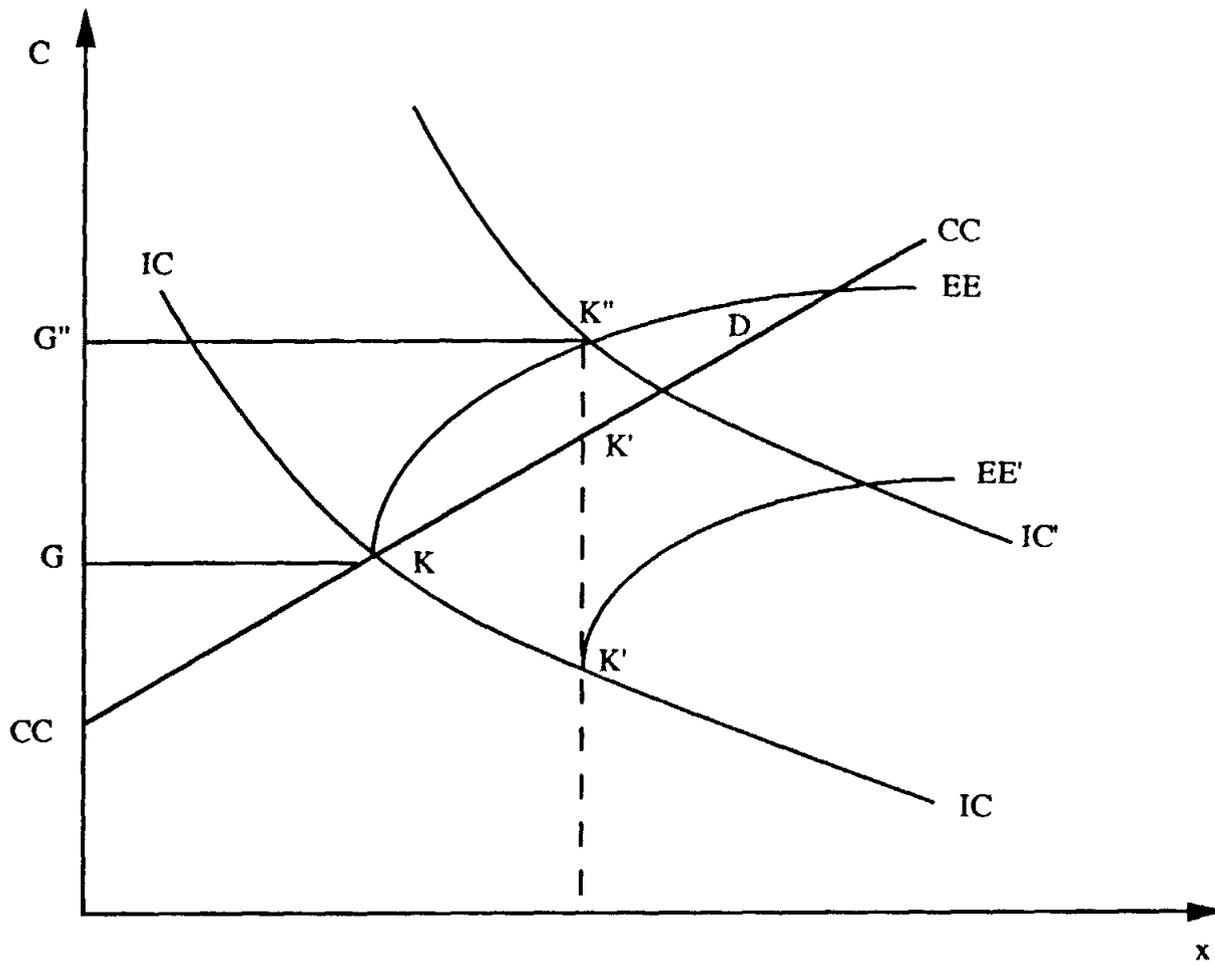


Figure 3 : The effects of raising  $\bar{V}$  and  $\Pi_d$

TABLE 1 : SOME DETERMINANTS OF THE DESIGN OF FINANCIAL REGULATION

PARAMETER	U	$C_R$	$x^*$	Cost of regulation
Weaker relation of capital resources to acceptable and actual firm quality	Unchanged	Falls	Unchanged	Falls
Less precision in imposing penalties	Falls	Rises	Rises	Rises
Better opportunities elsewhere	Falls	Rises	Rises	Falls
Greater rewards to cheating	Rises	Rises	Rises	Rises

INSEAD WORKING PAPERS SERIES

1986

- |       |  |  |       |   |  |
|-------|--|--|-------|---|--|
| 86/01 | Arnoud DE MEYER  | "The R & D/Production interface".  | 86/16 | B. Espen ECKBO and<br>Herwig M. LANGOHR   | "Les primes des offres publiques, la note<br>d'information et le marché des transferts de<br>contrôle des sociétés". |
| 86/02 | Philippe A. NAERT<br>Marcel WEVERBERGH<br>and Guido VERSWIJVEL         | "Subjective estimation in integrating<br>communication budget and allocation<br>decisions: a case study", January 1986.                    | 86/17 | David B. JEMISON  | "Strategic capability transfer in acquisition<br>integration", May 1986.   |
| 86/03 | Michael BRIMM  | "Sponsorship and the diffusion of<br>organizational innovation: a preliminary view".   | 86/18 | James TEBOUL<br>and V. MALLERET   | "Towards an operational definition of<br>services", 1986.  |
| 86/04 | Spyros MAKRIDAKIS<br>and Michèle HIBON                                 | "Confidence intervals: an empirical<br>investigation for the series in the M-<br>Competition" .  | 86/19 | Rob R. WEITZ  | "Nostradamus: a knowledge-based forecasting<br>advisor".   |
| 86/05 | Charles A. WYPLOSZ   | "A note on the reduction of the workweek",<br>July 1985.   | 86/20 | Albert CORHAY,<br>Gabriel HAWAVINI<br>and Pierre A. MICHEL                      | "The pricing of equity on the London stock<br>exchange: seasonality and size premium",<br>June 1986.                 |
| 86/06 | Francesco GIAVAZZI,<br>Jeff R. SHEEN and<br>Charles A. WYPLOSZ         | "The real exchange rate and the fiscal<br>aspects of a natural resource discovery",<br>Revised version: February 1986.                     | 86/21 | Albert CORHAY,<br>Gabriel A. HAWAVINI<br>and Pierre A. MICHEL                   | "Risk-premia seasonality in U.S. and European<br>equity markets", February 1986.                                     |
| 86/07 | Douglas L. MacLACHLAN<br>and Spyros MAKRIDAKIS                         | "Judgmental biases in sales forecasting",<br>February 1986.  | 86/22 | Albert CORHAY,<br>Gabriel A. HAWAVINI<br>and Pierre A. MICHEL                   | "Seasonality in the risk-return relationships<br>some international evidence", July 1986.                            |
| 86/08 | José de la TORRE and<br>David H. NECKAR                                | "Forecasting political risks for<br>international operations", Second Draft:<br>March 3, 1986.   | 86/23 | Arnoud DE MEYER   | "An exploratory study on the integration of<br>information systems in manufacturing",<br>July 1986.                  |
| 86/09 | Philippe C. HASPELASH  | "Conceptualizing the strategic process in<br>diversified firms: the role and nature of the<br>corporate influence process", February 1986. | 86/24 | David GAUTSCHI<br>and Vithala R. RAO  | "A methodology for specification and<br>aggregation in product concept testing",<br>July 1986.                       |
| 86/10 | R. MOENART,<br>Arnoud DE MEYER,<br>J. BARBE and<br>D. DESCHOOLMEESTER. | "Analysing the issues concerning<br>technological de-maturity".  | 86/25 | H. Peter GRAY<br>and Ingo WALTER  | "Protection", August 1986.   |
| 86/11 | Philippe A. NAERT<br>and Alain BULTEZ                                  | "From "Lydiametry" to "Pinkhamization":<br>misspecifying advertising dynamics rarely<br>affects profitability".                            | 86/26 | Barry EICHENGREEN<br>and Charles WYPLOSZ  | "The economic consequences of the Franc<br>Poincare", September 1986.  |
| 86/12 | Roger BETANCOURT<br>and David GAUTSCHI                                 | "The economics of retail firms", Revised<br>April 1986.  | 86/27 | Karel COOL<br>and Ingemar DIERICKX  | "Negative risk-return relationships in<br>business strategy: paradox or truism?",<br>October 1986.                   |
| 86/13 | S.P. ANDERSON<br>and Damien J. NEVEN                                   | "Spatial competition à la Cournot".  | 86/28 | Manfred KETS DE<br>VRIES and Danny MILLER                                       | "Interpreting organizational texts.  |
| 86/14 | Charles WALDMAN  | "Comparaison internationale des marges brutes<br>du commerce", June 1985.  | 86/29 | Manfred KETS DE VRIES   | "Why follow the leader?".  |
| 86/15 | Mihkel TOMBAK and<br>Arnoud DE MEYER                                   | "How the managerial attitudes of firms with<br>FMS differ from other manufacturing firms:<br>survey results", June 1986.                   | 86/30 | Manfred KETS DE VRIES   | "The succession game: the real story.  |
|       |  |  | 86/31 | Arnoud DE MEYER   | "Flexibility: the next competitive battle",<br>October 1986.   |
|       |  |  | 86/31 | Arnoud DE MEYER,<br>Jinichiro NAKANE,<br>Jeffrey G. MILLER<br>and Kasra FERDOWS | "Flexibility: the next competitive battle",<br>Revised Version: March 1987   |
|       |  |  | 86/32 | Karel COOL<br>and Dan SCHENDEL  | Performance differences among strategic group<br>members", October 1986.   |

- 86/33 Ernst BALTENSPERGER and Jean DERMINE "The role of public policy in insuring financial stability: a cross-country, comparative perspective", August 1986, Revised November 1986.
- 86/34 Philippe HASPELAGH and David JEMISON "Acquisitions: myths and reality", July 1986.
- 86/35 Jean DERMINE "Measuring the market value of a bank, a primer", November 1986.
- 86/36 Albert CORHAY and Gabriel HAVAVINI "Seasonality in the risk-return relationship: some international evidence", July 1986.
- 86/37 David GAUTSCHI and Roger BETANCOURT "The evolution of retailing: a suggested economic interpretation".
- 86/38 Gabriel HAVAVINI "Financial innovation and recent developments in the French capital markets", Updated: September 1986.
- 86/39 Gabriel HAVAVINI Pierre MICHEL and Albert CORHAY "The pricing of common stocks on the Brussels stock exchange: a re-examination of the evidence", November 1986.
- 86/40 Charles VYPLOSZ "Capital flows liberalization and the EMS, a French perspective", December 1986.
- 86/41 Kasra FERDOVS and Wickham SKINNER "Manufacturing in a new perspective", July 1986.
- 86/42 Kasra FERDOVS and Per LINDBERG "FMS as indicator of manufacturing strategy", December 1986.
- 86/43 Damien NEVEN "On the existence of equilibrium in hotelling's model", November 1986.
- 86/44 Ingemar DIERICKX Carmen MATUTES and Damien NEVEN "Value added tax and competition", December 1986.
- 1987
- 87/01 Manfred KETS DE VRIES "Prisoners of leadership".
- 87/02 Claude VIALLET "An empirical investigation of international asset pricing", November 1986.
- 87/03 David GAUTSCHI and Vithala RAO "A methodology for specification and aggregation in product concept testing", Revised Version: January 1987.
- 87/04 Sumantra GHOSHAL and Christopher BARTLETT "Organizing for innovations: case of the multinational corporation", February 1987.
- 87/05 Arnoud DE MEYER and Kasra FERDOVS "Managerial focal points in manufacturing strategy", February 1987.
- 87/06 Arun K. JAIN, Christian PINSON and Naresh K. MALHOTRA "Customer loyalty as a construct in the marketing of banking services", July 1986.
- 87/07 Rolf BANZ and Gabriel HAVAVINI "Equity pricing and stock market anomalies", February 1987.
- 87/08 Manfred KETS DE VRIES "Leaders who can't manage", February 1987.
- 87/09 Lister VICKERY, Mark PILKINGTON and Paul READ "Entrepreneurial activities of European MBAs", March 1987.
- 87/10 André LAURENT "A cultural view of organizational change", March 1987.
- 87/11 Robert FILDES and Spyros MAKRIDAKIS "Forecasting and loss functions", March 1987.
- 87/12 Fernando BARTOLOME and André LAURENT "The Janus Head: learning from the superior and subordinate faces of the manager's job", April 1987.
- 87/13 Sumantra GHOSHAL and Nitin NOHRIA "Multinational corporations as differentiated networks", April 1987.
- 87/14 Landis GABEL "Product Standards and Competitive Strategy: An Analysis of the Principles", May 1987.
- 87/15 Spyros MAKRIDAKIS "METAFORCASTING: Ways of improving Forecasting. Accuracy and Usefulness", May 1987.
- 87/16 Susan SCHNEIDER and Roger DUNBAR "Takeover attempts: what does the language tell us?", June 1987.
- 87/17 André LAURENT and Fernando BARTOLOME "Managers' cognitive maps for upward and downward relationships", June 1987.
- 87/18 Reinhard ANGELMAR and Christoph LIEBSCHER "Patents and the European biotechnology lag: a study of large European pharmaceutical firms", June 1987.
- 87/19 David BEGG and Charles VYPLOSZ "Why the EMS? Dynamic games and the equilibrium policy regime, May 1987.
- 87/20 Spyros MAKRIDAKIS "A new approach to statistical forecasting", June 1987.
- 87/21 Susan SCHNEIDER "Strategy formulation: the impact of national culture", Revised: July 1987.
- 87/22 Susan SCHNEIDER "Conflicting ideologies: structural and motivational consequences", August 1987.
- 87/23 Roger BETANCOURT David GAUTSCHI "The demand for retail products and the household production model: new views on complementarity and substitutability".

87/24	C.B. DERR and André LAURENT	"The internal and external careers: a theoretical and cross-cultural perspective", Spring 1987.	87/41	Gavriel HAWAVINI and Claude VIALLET	"Seasonality, size premium and the relationship between the risk and the return of French common stocks", November 1987
87/25	A. K. JAIN, N. K. MALHOTRA and Christian PINSON	"The robustness of MDS configurations in the face of incomplete data", March 1987, Revised: July 1987.	87/42	Damien NEVEN and Jacques-F. THISSE	"Combining horizontal and vertical differentiation: the principle of max-min differentiation", December 1987
87/26	Roger BETANCOURT and David GAUTSCHI	"Demand complementarities, household production and retail assortments", July 1987.	87/43	Jean GABSZEWICZ and Jacques-F. THISSE	"Location", December 1987
87/27	Michael BURDA	"Is there a capital shortage in Europe?", August 1987.	87/44	Jonathan HAMILTON, Jacques-F. THISSE and Anita WESKAMP	"Spatial discrimination: Bertrand vs. Cournot in a model of location choice", December 1987
87/28	Gabriel HAWAVINI	"Controlling the interest-rate risk of bonds: an introduction to duration analysis and immunization strategies", September 1987.	87/45	Karel COOL, David JEMISON and Ingemar DIERICKX	"Business strategy, market structure and risk-return relationships: a causal interpretation", December 1987.
87/29	Susan SCHNEIDER and Paul SHRIVASTAVA	"Interpreting strategic behavior: basic assumptions themes in organizations", September 1987	87/46	Ingemar DIERICKX and Karel COOL	"Asset stock accumulation and sustainability of competitive advantage", December 1987.
87/30	Jonathan HAMILTON V. Bentley MACLEOD and J. F. THISSE	"Spatial competition and the Core", August 1987.	<u>1988</u>		
87/31	Martine QUINZII and J. F. THISSE	"On the optimality of central places", September 1987.	88/01	Michael LAWRENCE and Spyros MAKRIDAKIS	"Factors affecting judgemental forecasts and confidence intervals", January 1988.
87/32	Arnoud DE MEYER	"German, French and British manufacturing strategies less different than one thinks", September 1987.	88/02	Spyros MAKRIDAKIS	"Predicting recessions and other turning points", January 1988.
87/33	Yves DOZ and Amy SHUEN	"A process framework for analyzing cooperation between firms", September 1987.	88/03	James TEBOUL	"De-industrialize service for quality", January 1988.
87/34	Kasra FERDOVS and Arnoud DE MEYER	"European manufacturers: the dangers of complacency. Insights from the 1987 European manufacturing futures survey, October 1987.	88/04	Susan SCHNEIDER	"National vs. corporate culture: implications for human resource management", January 1988.
87/35	P. J. LEDERER and J. F. THISSE	"Competitive location on networks under discriminatory pricing", September 1987.	88/05	Charles WYPLOSZ	"The swinging dollar: is Europe out of step?", January 1988.
87/36	Manfred KETS DE VRIES	"Prisoners of leadership", Revised version October 1987.	88/06	Reinhard ANGELMAR	"Les conflits dans les canaux de distribution", January 1988.
87/37	Landis GABEL	"Privatization: its motives and likely consequences", October 1987.	88/07	Ingemar DIERICKX and Karel COOL	"Competitive advantage: a resource based perspective", January 1988.
87/38	Susan SCHNEIDER	"Strategy formulation: the impact of national culture", October 1987.	88/08	Reinhard ANGELMAR and Susan SCHNEIDER	"Issues in the study of organizational cognition", February 1988.
87/39	Manfred KETS DE VRIES 1987	"The dark side of CRO succession", November 1987	88/09	Bernard SINCLAIR- DESGAGNÉ	"Price formation and product design through bidding", February 1988.
87/40	Carmen MATUTES and Pierre REGIBEAU	"Product compatibility and the scope of entry", November 1987	88/10	Bernard SINCLAIR- DESGAGNÉ	"The robustness of some standard auction game forms", February 1988.
			88/11	Bernard SINCLAIR- DESGAGNÉ	"When stationary strategies are equilibrium bidding strategy: The single-crossing property", February 1988.

88/12	Spyros MAKRIDAKIS	"Business firms and managers in the 21st century", February 1988	88/29	Naresh K. MALHOTRA, Christian PINSON and Arun K. JAIN	"Consumer cognitive complexity and the dimensionality of multidimensional scaling configurations", May 1988.
88/13	Manfred KETS DE VRIES	"Alexithymia in organizational life: the organization man revisited", February 1988.	88/30	Catherine C. ECKEL and Theo VERMAELEN	"The financial fallout from Chernobyl: risk perceptions and regulatory response", May 1988.
88/14	Alain NOEL	"The interpretation of strategies: a study of the impact of CEOs on the corporation", March 1988.	88/31	Sumantra GHOSHAL and Christopher BARTLETT	"Creation, adoption, and diffusion of innovations by subsidiaries of multinational corporations", June 1988.
88/15	Anil DEOLALIKAR and Lars-Hendrik RÖLLER	"The production of and returns from industrial innovation: an econometric analysis for a developing country", December 1987.	88/32	Kasra FERDOWS and David SACKRIDER	"International manufacturing: positioning plants for success", June 1988.
88/16	Gabriel HAWAWINI	"Market efficiency and equity pricing: international evidence and implications for global investing", March 1988.	88/33	Mihkel M. TOMBAK	"The importance of flexibility in manufacturing", June 1988.
88/17	Michael BURDA	"Monopolistic competition, costs of adjustment and the behavior of European employment", September 1987.	88/34	Mihkel M. TOMBAK	"Flexibility: an important dimension in manufacturing", June 1988.
88/18	Michael BURDA	"Reflections on "Wait Unemployment" in Europe", November 1987, revised February 1988.	88/35	Mihkel M. TOMBAK	"A strategic analysis of investment in flexible manufacturing systems", July 1988.
88/19	M.J. LAWRENCE and Spyros MAKRIDAKIS	"Individual bias in judgements of confidence", March 1988.	88/36	Vikas TIBREVALA and Bruce BUCHANAN	"A Predictive Test of the NBD Model that Controls for Non-stationarity", June 1988.
88/20	Jean DERMINE, Damien NEVEN and J.F. THISSE	"Portfolio selection by mutual funds, an equilibrium model", March 1988.	88/37	Murugappa KRISHNAN Lars-Hendrik RÖLLER	"Regulating Price-Liability Competition To Improve Welfare", July 1988.
88/21	James TEBOUL	"De-industrialize service for quality", March 1988 (88/03 Revised).	88/38	Manfred KETS DE VRIES	"The Motivating Role of Envy : A Forgotten Factor in Management", April 88.
88/22	Lars-Hendrik RÖLLER	"Proper Quadratic Functions with an Application to ATAT", May 1987 (Revised March 1988).	88/39	Manfred KETS DE VRIES	"The Leader as Mirror : Clinical Reflections", July 1988.
88/23	Sjur Didrik FLAM and Georges ZACCOUR	"Equilibres de Nash Cournot dans le marché européen du gaz: un cas où les solutions en boucle ouverte et en feedback coïncident", Mars 1988	88/40	Josef LAKONISHOK and Theo VERMAELEN	"Anomalous price behavior around repurchase tender offers", August 1988.
88/24	B. Espen ECKBO and Hervig LANGOHR	"Information disclosure, means of payment, and takeover premia. Public and Private tender offers in France", July 1985, Sixth revision, April 1988.	88/41	Charles WYPLOSZ	"Assymetry in the EMS: intentional or systemic?", August 1988.
88/25	Everette S. GARDNER and Spyros MAKRIDAKIS	"The future of forecasting", April 1988.	88/42	Paul EVANS	"Organizational development in the transnational enterprise", June 1988.
88/26	Sjur Didrik FLAM and Georges ZACCOUR	"Semi-competitive Cournot equilibrium in multistage oligopolies", April 1988.	88/43	B. SINCLAIR-DESGAGNE	"Group decision support systems implement Bayesian rationality", September 1988.
88/27	Murugappa KRISHNAN Lars-Hendrik RÖLLER	"Entry game with resalable capacity", April 1988.	88/44	Essam MAHMOUD and Spyros MAKRIDAKIS	"The state of the art and future directions in combining forecasts", September 1988.
88/28	Sumantra GHOSHAL and C. A. BARTLETT	"The multinational corporation as a network: perspectives from interorganizational theory", May 1988.	88/45	Robert KORAJCZYK and Claude VIALLET	"An empirical investigation of international asset pricing", November 1986, revised August 1988.
			88/46	Yves DOZ and Amy SHUEN	"From intent to outcome: a process framework for partnerships", August 1988.

- 88/47 Alain BULTEZ, Els GIJSBRECHTS, Philippe NAERT and Piet VANDEN ABEELE "Asymmetric cannibalism between substitute items listed by retailers", September 1988.
- 88/48 Michael BURDA "Reflections on 'Wait unemployment' in Europe, II", April 1988 revised September 1988.
- 88/49 Nathalie DIERKENS "Information asymmetry and equity issues", September 1988.
- 88/50 Rob WEITZ and Arnoud DE MEYER "Managing expert systems: from inception through updating", October 1987.
- 88/51 Rob WEITZ "Technology, work, and the organization: the impact of expert systems", July 1988.
- 88/52 Susan SCHNEIDER and Reinhard ANGELMAR "Cognition and organizational analysis: who's minding the store?", September 1988.
- 88/53 Manfred KETS DE VRIES "Whatever happened to the philosopher-king: the leader's addiction to power, September 1988.
- 88/54 Lars-Hendrik RÖLLER and Mihkel M. TOMBAK "Strategic choice of flexible production technologies and welfare implications", October 1988
- 88/55 Peter BOSSAERTS and Pierre HILLION "Method of moments tests of contingent claims asset pricing models", October 1988.
- 88/56 Pierre HILLION "Size-sorted portfolios and the violation of the random walk hypothesis: Additional empirical evidence and implication for tests of asset pricing models", June 1988.
- 88/57 Wilfried VANHONACKER and Lydia PRICE "Data transferability: estimating the response effect of future events based on historical analogy", October 1988.
- 88/58 B. SINCLAIR-DESGAGNE and Mihkel M. TOMBAK "Assessing economic inequality", November 1988.
- 88/59 Martin KILDUFF "The interpersonal structure of decision making: a social comparison approach to organizational choice", November 1988.
- 88/60 Michael BURDA "Is mismatch really the problem? Some estimates of the Chelwood Gate II model with US data", September 1988.
- 88/61 Lars-Hendrik RÖLLER "Modelling cost structure: the Bell System revisited", November 1988.
- 88/62 Cynthia VAN HULLE, Theo VERMAELEN and Paul DE WOUTERS "Regulation, taxes and the market for corporate control in Belgium", September 1988.
- 88/63 Fernando NASCIMENTO and Wilfried R. VANHONACKER "Strategic pricing of differentiated consumer durables in a dynamic duopoly: a numerical analysis", October 1988.
- 88/64 Kasra FERDOVS "Charting strategic roles for international factories", December 1988.
- 88/65 Arnoud DE MEYER and Kasra FERDOVS "Quality up, technology down", October 1988.
- 88/66 Nathalie DIERKENS "A discussion of exact measures of information assymetry: the example of Myers and Majluf model or the importance of the asset structure of the firm", December 1988.
- 88/67 Paul S. ADLER and Kasra FERDOVS "The chief technology officer", December 1988.
- 1989
- 89/01 Joyce K. BYRER and Tawfik JELASSI "The impact of language theories on DSS dialog", January 1989.
- 89/02 Louis A. LE BLANC and Tawfik JELASSI "DSS software selection: a multiple criteria decision methodology", January 1989.
- 89/03 Beth H. JONES and Tawfik JELASSI "Negotiation support: the effects of computer intervention and conflict level on bargaining outcome", January 1989.
- 89/04 Kasra FERDOVS and Arnoud DE MEYER "Lasting improvement in manufacturing performance: In search of a new theory", January 1989.
- 89/05 Martin KILDUFF and Reinhard ANGELMAR "Shared history or shared culture? The effects of time, culture, and performance on institutionalization in simulated organizations", January 1989.
- 89/06 Mihkel M. TOMBAK and B. SINCLAIR-DESGAGNE "Coordinating manufacturing and business strategies: I", February 1989.
- 89/07 Damien J. NEVEN "Structural adjustment in European retail banking. Some view from industrial organisation", January 1989.
- 89/08 Arnoud DE MEYER and Hellmut SCHÜTTE "Trends in the development of technology and their effects on the production structure in the European Community", January 1989.
- 89/09 Damien NEVEN, Carmen MATUTES and Marcel CORSTJENS "Brand proliferation and entry deterrence", February 1989.
- 89/10 Nathalie DIERKENS, Bruno GERARD and Pierre HILLION "A market based approach to the valuation of the assets in place and the growth opportunities of the firm", December 1988.

- 89/11 Manfred KETS DE VRIES and Alain NOEL "Understanding the leader-strategy interface: application of the strategic relationship interview method", February 1989.
- 89/12 Wilfried VANHONACKER "Estimating dynamic response models when the data are subject to different temporal aggregation", January 1989.
- 89/13 Manfred KETS DE VRIES "The impostor syndrome: a disquieting phenomenon in organizational life", February 1989.
- 89/14 Reinhard ANGELMAR "Product innovation: a tool for competitive advantage", March 1989.
- 89/15 Reinhard ANGELMAR "Evaluating a firm's product innovation performance", March 1989.
- 89/16 Wilfried VANHONACKER, Donald LEHMANN and Fareena SULTAN "Combining related and sparse data in linear regression models", February 1989.
- 89/17 Gilles AMADO, Claude FAUCHEUX and André LAURENT "Changement organisationnel et réalités culturelles: contrastes franco-américains", March 1989.
- 89/18 Srinivasan BALAK-RISHNAN and Mitchell KOZA "Information asymmetry, market failure and joint-ventures: theory and evidence", March 1989.
- 89/19 Wilfried VANHONACKER, Donald LEHMANN and Fareena SULTAN "Combining related and sparse data in linear regression models", Revised March 1989.
- 89/20 Wilfried VANHONACKER and Russell WINER "A rational random behavior model of choice", Revised March 1989.
- 89/21 Arnoud de MEYER and Kasra FERDOWS "Influence of manufacturing improvement programmes on performance", April 1989.
- 89/22 Manfred KETS DE VRIES and Sydney PERZOW "What is the role of character in psychoanalysis? April 1989.
- 89/23 Robert KORAJCZYK and Claude VIALLET "Equity risk premia and the pricing of foreign exchange risk" April 1989.
- 89/24 Martin KILDUFF and Mitchel ABOLAFIA "The social destruction of reality: Organisational conflict as social drama" April 1989.
- 89/25 Roger BETANCOURT and David GAUTSCHI "Two essential characteristics of retail markets and their economic consequences" March 1989.
- 89/26 Charles BEAN, Edmond MALINVAUD, Peter BERNHOLZ, Francesco GIAVAZZI and Charles WYPLOSZ "Macroeconomic policies for 1992: the transition and after", April 1989.
- 89/27 David KRACKHARDT and Martin KILDUFF "Friendship patterns and cultural attributions: the control of organizational diversity", April 1989.
- 89/28 Martin KILDUFF "The interpersonal structure of decision making: a social comparison approach to organizational choice", Revised April 1989.
- 89/29 Robert GOGEL and Jean-Claude LARRECHE "The battlefield for 1992: product strength and geographic coverage", May 1989.
- 89/30 Lars-Hendrik ROLLER and Mihkel M. TOMBAK "Competition and Investment in Flexible Technologies", May 1989.
- 89/31 Michael C. BURDA and Stefan GERLACH "Intertemporal prices and the US trade balance in durable goods", July 1989.
- 89/32 Peter HAUG and Tawfik JELASSI "Application and evaluation of a multi-criteria decision support system for the dynamic selection of U.S. manufacturing locations", May 1989.
- 89/33 Bernard SINCLAIR-DESGAGNE "Design flexibility in monopsonistic industries", May 1989.
- 89/34 Sumantra GHOSHAL and Nittin NOHRIA "Requisite variety versus shared values: managing corporate-division relationships in the M-Form organisation", May 1989.
- 89/35 Jean DERMINE and Pierre HILLION "Deposit rate ceilings and the market value of banks: The case of France 1971-1981", May 1989.
- 89/36 Martin KILDUFF "A dispositional approach to social networks: the case of organizational choice", May 1989.
- 89/37 Manfred KETS DE VRIES "The organisational fool: balancing a leader's hubris", May 1989.
- 89/38 Manfred KETS DE VRIES "The CEO blues", June 1989.
- 89/39 Robert KORAJCZYK and Claude VIALLET "An empirical investigation of international asset pricing", (Revised June 1989).
- 89/40 Balaji CHAKRAVARTHY "Management systems for innovation and productivity", June 1989.
- 89/41 B. SINCLAIR-DESGAGNE and Nathalie DIERKENS "The strategic supply of precisions", June 1989.
- 89/42 Robert ANSON and Tawfik JELASSI "A development framework for computer-supported conflict resolution", July 1989.
- 89/43 Michael BURDA "A note on firing costs and severance benefits in equilibrium unemployment", June 1989.
- 89/44 Balaji CHAKRAVARTHY and Peter LORANGE "Strategic adaptation in multi-business firms", June 1989.
- 89/45 Rob WEITZ and Arnoud DE MEYER "Managing expert systems: a framework and case study", June 1989.

- |       |  |   |       |  |  |
|-------|--|---|-------|--|--|
| 89/46 | Marcel CORSTJENS,<br>Carmen MATUTES and<br>Damien NEVEN                          | "Entry Encouragement", July 1989  | 89/64 | Enver YUCESAN and<br>(TM) Lee SCHRUBEN                 | "Complexity of simulation models: A graph<br>theoretic approach", November 1989                                |
| 89/47 | Manfred KETS DE VRIES<br>and Christine MEAD                                      | "The global dimension in leadership and<br>organization: issues and controversies",<br>April 1989     | 89/65 | Soumitra DUTTA and<br>(TM, Piero BONISSONE<br>AC, PIN) | "MARS: A mergers and acquisitions reasoning<br>system", November 1989  |
| 89/48 | Damien NEVEN and<br>Lars-Hendrik ROLLER  | "European integration and trade flows",<br>August 1989  | 89/66 | B. SINCLAIR-DESGAGNE<br>(TM,EP)                        | "On the regulation of procurement bids",<br>November 1989  |
| 89/49 | Jean DERMINE   | "Home country control and mutual recognition",<br>July 1989   | 89/67 | Peter BOSSAERTS and<br>(FIN) Pierre HILLION            | "Market microstructure effects of government<br>intervention in the foreign exchange market",<br>December 1989 |
| 89/50 | Jean DERMINE   | "The specialization of financial institutions,<br>the EEC model", August 1989                         |       |  |  |
| 89/51 | Spyros MAKRIDAKIS  | "Sliding simulation: a new approach to time<br>series forecasting", July 1989                         |       |  |  |
| 89/52 | Arnoud DE MEYER  | "Shortening development cycle times: a<br>manufacturer's perspective", August 1989                    |       |  |  |
| 89/53 | Spyros MAKRIDAKIS  | "Why combining works?", July 1989   |       |  |  |
| 89/54 | S. BALAKRISHNAN<br>and Mitchell KOZA   | "Organisation costs and a theory of joint<br>ventures", September 1989                                |       |  |  |
| 89/55 | H. SCHUTTE   | "Euro-Japanese cooperation in information<br>technology", September 1989                              |       |  |  |
| 89/56 | Wilfried VANHONACKER<br>and Lydia PRICE  | "On the practical usefulness of meta-analysis<br>results", September 1989                             |       |  |  |
| 89/57 | Taekwon KIM,<br>Lars-Hendrik ROLLER<br>and Mihkel TOMBAK                         | "Market growth and the diffusion of<br>multiproduct technologies", September 1989                     |       |  |  |
| 89/58 | Lars-Hendrik ROLLER<br>(EP,TM) and Mihkel TOMBAK                                 | "Strategic aspects of flexible production<br>technologies", October 1989                              |       |  |  |
| 89/59 | Manfred KETS DE VRIES,<br>(OB) Daphna ZEVADI,<br>Alain NOEL and<br>Mihkel TOMBAK | "Locus of control and entrepreneurship: a<br>three-country comparative study", October 1989           |       |  |  |
| 89/60 | Enver YUCESAN and<br>(TM) Lee SCHRUBEN   | "Simulation graphs for design and analysis of<br>discrete event simulation models", October 1989      |       |  |  |
| 89/61 | Susan SCHNEIDER and<br>(All) Arnoud DE MEYER                                     | "Interpreting and responding to strategic<br>issues: The impact of national culture",<br>October 1989 |       |  |  |
| 89/62 | Arnoud DE MEYER<br>(TM)  | "Technology strategy and international R & D<br>operations", October 1989                             |       |  |  |
| 89/63 | Enver YUCESAN and<br>(TM) Lee SCHRUBEN   | "Equivalence of simulations: A graph theoretic<br>approach", November 1989                            |       |  |  |

1990

90/01 TH/EP/AC	B. SINCLAIR-DESGAGNE	"Unavoidable Mechanisms", January 1990	90/16 FIN	Richard LEVICH and Ingo WALTER	"Tax-Driven Regulatory Drag: European Financial Centers in the 1990's", January 1990
90/02 EP	Michael BURDA	"Monopolistic Competition, Costs of Adjustment, and the Behaviour of European Manufacturing Employment", January 1990	90/17 FIN	Nathalie DIERKENS	"Information Asymmetry and Equity Issues", Revised January 1990
90/03 TH	Arnoud DE MEYER	"Management of Communication in International Research and Development", January 1990	90/18 MKT	Wilfried VANBONACKER	"Managerial Decision Rules and the Estimation of Dynamic Sales Response Models", Revised January 1990
90/04 FIN/EP	Gabriel HAVAVINI and Eric RAJENDRA	"The Transformation of the European Financial Services Industry: From Fragmentation to Integration", January 1990	90/19 TM	Beth JONES and Tawfik JELASSI	"The Effect of Computer Intervention and Task Structure on Bargaining Outcome", February 1990
90/05 FIN/EP	Gabriel HAVAVINI and Bertrand JACQUILLAT	"European Equity Markets: Toward 1992 and Beyond", January 1990	90/20 TM	Tawfik JELASSI, Gregory KERSTEN and Stanley ZIONTS	"An Introduction to Group Decision and Negotiation Support", February 1990
90/06 FIN/EP	Gabriel HAVAVINI and Eric RAJENDRA	"Integration of European Equity Markets: Implications of Structural Change for Key Market Participants to and Beyond 1992", January 1990	90/21 FIN	Roy SMITH and Ingo WALTER	"Reconfiguration of the Global Securities Industry in the 1990's", February 1990
90/07 FIN/EP	Gabriel HAVAVINI	"Stock Market Anomalies and the Pricing of Equity on the Tokyo Stock Exchange", January 1990	90/22 FIN	Ingo WALTER	"European Financial Integration and Its Implications for the United States", February 1990
90/08 TH/EP	Tawfik JELASSI and B. SINCLAIR-DESGAGNE	"Modelling with MCDSS: What about Ethics?". January 1990	90/23 EP/SM	Damien NEVEN	"EEC Integration towards 1992: Some Distributional Aspects", Revised December 1989
90/09 EP/PIN	Alberto GIOVANNINI and Jae VON PARK	"Capital Controls and International Trade Finance", January 1990	90/24 FIN/EP	Lars Tyge NIELSEN	"Positive Prices in CAPM", January 1990
90/10 TM	Joyce BRYER and Tawfik JELASSI	"The Impact of Language Theories on DSS Dialog", January 1990	90/25 FIN/EP	Lars Tyge NIELSEN	"Existence of Equilibrium in CAPM", January 1990
90/11 TM	Enver YUCESAN	"An Overview of Frequency Domain Methodology for Simulation Sensitivity Analysis", January 1990	90/26 OB/EP	Charles KADUSHIN and Michael BRIMM	"Why networking Fails: Double Binds and the Limitations of Shadow Networks", February 1990
90/12 EP	Michael BURDA	"Structural Change, Unemployment Benefits and High Unemployment: A U.S.-European Comparison", January 1990	90/27 TM	Abbas FOROUGH and Tawfik JELASSI	"NSS Solutions to Major Negotiation Stumbling Blocks", February 1990
90/13 TM	Soumitra DUTTA and Shashi SHEKHAR	"Approximate Reasoning about Temporal Constraints in Real Time Planning and Search", January 1990	90/28 TM	Arnoud DE MEYER	"The Manufacturing Contribution to Innovation", February 1990
90/14 TM	Albert ANGEHRN and Hans-Jakob LÜTHI	"Visual Interactive Modelling and Intelligent DSS: Putting Theory Into Practice", January 1990	90/29 FIN/AC	Nathalie DIERKENS	"A Discussion of Correct Measures of Information Asymmetry", January 1990
90/15 TM	Arnoud DE MEYER, Dirk DESCHOOLEMEESTER, Rudy MOENAERT and Jan BARBE	"The Internal Technological Renewal of a Business Unit with a Mature Technology", January 1990	90/30 FIN/EP	Lars Tyge NIELSEN	"The Expected Utility of Portfolios of Assets", March 1990
			90/31 MKT/EP	David GAUTSCHI and Roger BETANCOURT	"What Determines U.S. Retail Margins?", February 1990
			90/32 SM	Srinivasan BALAK- RISHNAN and Mitchell KOZA	"Information Asymmetry, Adverse Selection and Joint-Ventures: Theory and Evidence", Revised, January 1990
			90/33 OB	Caren SIEHL, David BOWEN and Christine PEARSON	"The Role of Rites of Integration in Service Delivery", March 1990

90/34 PIN/EP	Jean DERMINE	"The Gains from European Banking Integration, a Call for a Pro-Active Competition Policy", April 1990	90/50 EP	Daniel COHEN and Charles WYPLOSZ	"Price and Trade Effects of Exchange Rates Fluctuations and the Design of Policy Coordination", April 1990
90/35 EP	Jae Won PARK	"Changing Uncertainty and the Time-Varying Risk Premia in the Term Structure of Nominal Interest Rates", December 1988, Revised March 1990	90/51 EP	Michael BURDA and Charles WYPLOSZ	"Gross Labour Market Flows in Europe: Some Stylized Facts", June 1990
90/36 TM	Arnoud DE MEYER	"An Empirical Investigation of Manufacturing Strategies in European Industry", April 1990	90/52 FIN	Lars Tyge NIELSEN	"The Utility of Infinite Menus", June 1990
90/37 TM/OB/SM	William CATS-BARIL	"Executive Information Systems: Developing an Approach to Open the Possibles", April 1990	90/53 EP	Michael Burda	"The Consequences of German Economic and Monetary Union", June 1990
90/38 MKT	Wilfried VANHONACKER	"Managerial Decision Behaviour and the Estimation of Dynamic Sales Response Models", (Revised February 1990)			
90/39 TM	Louis LE BLANC and Tavfik JELASSI	"An Evaluation and Selection Methodology for Expert System Shells", May 1990			
90/40 OB	Hanfred KETS DE VRIES	"Leaders on the Couch: The case of Roberto Calvi", April 1990			
90/41 PIN/EP	Gabriel HAVAVINI, Itzhak SWARY and Ik HWAN JANG	"Capital Market Reaction to the Announcement of Interstate Banking Legislation", March 1990			
90/42 MKT	Joel STECKEL and Wilfried VANHONACKER	"Cross-Validating Regression Models in Marketing Research", (Revised April 1990)			
90/43 PIN	Robert KORAJCZYK and Claude VIALLET	"Equity Risk Premia and the Pricing of Foreign Exchange Risk", May 1990			
90/44 OB	Gilles AHADO, Claude FAUCHEUX and André LAURENT	"Organisational Change and Cultural Realities: Franco-American Contrasts", April 1990			
90/45 TM	Soumitra DUTTA and Piero BONISSONE	"Integrating Case Based and Rule Based Reasoning: The Possibilistic Connection", May 1990			
90/46 TM	Spyros MAKRIDAKIS and Michèle HIBON	"Exponential Smoothing: The Effect of Initial Values and Loss Functions on Post-Sample Forecasting Accuracy"			
90/47 MKT	Lydia PRICE and Wilfried VANHONACKER	"Improper Sampling in Natural Experiments: Limitations on the Use of Meta-Analysis Results in Bayesian Updating", Revised May 1990			
90/48 EP	Jae VON PARK	"The Information in the Term Structure of Interest Rates: Out-of-Sample Forecasting Performance", June 1990			
90/49 TM	Soumitra DUTTA	"Approximate Reasoning by Analogy to Answer Null Queries", June 1990			