The Péreire Brothers: Bankers or Speculators? An Interpretation through Agency Theory Paradigm

Elisabeth Paulet
ESCEM Tours Poitiers

'... Le Crédit Mobilier a été, qu'on me pardonne l'expression,
un lanceur d'affaires. Pour lui l'intérêt du présent
domine presque toujours celui de l'avenir.'
V. BONNET , *La revue des deux mondes*, novembre 1865.

Although not quite new, agency theory is one part of decision theory which is developing dynamically at the present time. The well-known basic model of decision theory is related to a situation in which one person – the so-called decision maker – has to make a decision as well as to bear the consequences. The first section will describe the basic concept of this paradigm. As information is asymmetric between partners, control remains a crucial issue. The second part of this paper will deal with the definition of this control mechanism in order to determine which of the two principals - the shareholders of the firm or the bank with which the enterprise is involved - is able to exert this monitoring role effectively. After having discussed briefly the history of banking structure in France, we will apply it to the special case of Crédit Mobilier in order to analyse the limits of this theory in justifying the monitoring role of banks regarding their clients.

1. Introduction

Although not quite new, agency theory is one part of decision theory which is developing dynamically at the present time. The well-known basic model of decision theory is related to a situation in which one person – the so-called decision maker – has to make a decision, as well as to bear the consequences. This assumption is often unrealistic. Therefore, in agency theory the identity between the decision maker (the agent) and the usufructuary of the decision (the principal) is eliminated. A typical example concerns the management of a firm: the agent is the manager of the firm, the principal is the shareholders of the firm or the bank which finances the enterprise, or both.

Hence, the common element is the presence of at least two individuals. The first one (the agent) must choose an action from a number of alternative possibilities. The action affects the welfare of both the agent and the principal(s). The principal(s) has (have) the additional function of prescribing a payoffs rule; that is, before the agent chooses the action, the principal(s) determine(s) a rule that specifies the fee to be paid to the agent as a function of the principal's (principals') observation. The problem acquires interest only when there is uncertainty at some point and, in particular, when the information available to the participants is unequal.

Since the economic agents have asymmetric information, control remains one of the main factors of agency. The first part of this paper will define this control mechanism in order to determine which of the two principals – the shareholders of the firm or the bank with which the enterprise is involved – is able to exert effectively this monitoring role. After having discussed briefly the history of banking structure in France, we will apply it to the special case of Crédit Mobilier to analyse the limits of this theory in justifying the monitoring role of banks towards their clients.

2. Presentation of the financial theories

The financial theory of agency focuses on the relationships between different groups of security holders (equity and bondholders) in the context of the optimal financing of a firm. The agency theory considers two individuals: a principal who provides the capital and an agent (the manager) who carries out the practical work. Principals evaluate their wealth, which comes from their share in the value of the firm converted into cash. Agents evaluate their wealth which comes from their share in the firm's production function.

Agency problems arise because, acting in self-interest, agents do not invest their best efforts unless such investment is consistent with maximising their own wellbeing. The agency model is basically a formulation of the principal's problem of choosing the 'best' employment contract for the agent. 'Best' is defined in the context of Pareto optimality.

With a Pareto optimal contract, no other contract can improve the wellbeing of one party without reducing the wellbeing of the other.

Observability of the agent's work is really the core of the incentive problem in this theory. While the effort level affects the level of the firm's output (i.e. the end of the period value or cash flows), the output is also governed by random events that are beyond the agent's control. An agency problem arises when, by observing output alone, the consequences of the agent's efforts cannot be distinguished entirely from the consequences of other random events. In the tradition of the agency theory, the output (payoff) level is observable by both the principal and by the agent, but the effort level is observable only by the agent. First best contracts lead to an optimal risk-sharing between agent and principal. There is thus information asymmetry between the two parties. Applied to financial policy for firms, this theory explains:

a) why debt was relied upon as a source of capital before debt-financing offered any tax advantage relative to equity;

b) why shares are issued when financing a project.

This section of the paper analyses the theoretical framework concerning the role of banks in monitoring the enterprises with which they are involved. More generally, how do financial institutions affect the allocation of funds for investment?

Some authors who have already considered this question observe that financial systems differ significantly from one country to another and from one period to another. Thus, the question arises as to how these differences between financial systems affected the functioning of the different economies. This section will concentrate on two case studies – Japan and Germany – in order to contrast the results concerning these two countries with the result concerning Crédit Mobilier (cf. next section).

Mayer's paper[1] is the first to be examined. Mayer suggests there that there are systematic differences in performance between financial systems in which banks play a prominent role and financial systems in which banks are not so prominent. He proposes to explain these differences

[1] C. Mayer, 'New issues in corporate finance', *European Economic Review*, 32, (1988), pp. 1167-1188.

in performance by differences in mechanisms that reduce or eliminate moral hazard in the relationship between entrepreneurs and financiers. In particular, he suggests that the more bank-oriented systems of Germany and Japan involve more commitment to a long-term relationship on the part of the firm and the bank, which allows them to enjoy the benefits of long-term contracting.

In order to analyse how far ability to support long-term relations is the clue to assessing a financial institution, the focus will be on financial institutions (more specifically the role of banks in the provision of finance to industry) rather than on financial instruments.

The manager-debtholder literature has two sub-literatures. First there is the issue of the manager-bondholder conflict. There are numerous theoretical discussions on the role of bond covenants in controlling the manager's incentive to increase the firm's risk level. This literature has treated debt mostly as a homogeneous instrument with incentive which is in direct conflict with those associated with equity financing. Secondly, there is the borrower-lender literature which has developed from the simple examination of the incentive of the borrower to default on the bank loan to examining the role of the bank as the delegated monitor of a portfolio of borrowers, i.e., a monitoring role for the bank depositors[2]. These latter models have served to strengthen the argument that there is a unique information role and monitoring role in bank loans and that the phenomenon of credit-rationing is due to the nature of asymmetrical information in the market.

The validity of bank finance *vis-à-vis* market finance will then depend on the present financial systems, because these institutions might reduce or eliminate problems of moral hazard or asymmetric information in relationships between firms and financiers. Financiers have less information about firms than entrepreneurs or managers do. Moreover, they are subject to various types of moral hazard: moral hazard concerning managerial effort, moral hazard concerning the risk factor in the firm's strategies and moral hazard concerning the reported return realisation.

[2] D. Diamond, 'Financial intermediation and delegate monitoring', *Review of Economic Studies* 51, (1984), pp. 393-414.

These problems of moral hazard and asymmetric information cause difficulties for the provision of finance to industry. Intermediaries are used to reduce these difficulties by engaging in monitoring and control activities.

Diamond[3] presents an explicit example in which intermediation successfully reduces the agency costs. In his analysis, the feasibility of financial intermediation rests on two key propositions:

(i) The monitoring and control of a firm involve natural scale economies: a single intermediary can monitor and control the firm at least as effectively as one thousand shareholders - but much more cheaply.

(ii) If the intermediary has a well-diversified portfolio of firms that he finances, then relations between himself and his own financiers - the final investors - are not much affected by moral hazard and asymmetric information because his own return is more or less without risk.

Thus, for him, fixed-interest debt finance is feasible and does not involve any moral hazard.

Diamond's notion of financial intermediation as delegated monitoring (or delegated control) does not seem to be closely related to Gerchenkron's account[4] of bank involvement in firms at the early stage of or during industrial development. As Mayer points out, bank initiative and bank participation in entrepreneurial planning may be a way to obtain enough information and control to reduce the moral and informational hazards of finance to a tolerable level. We may therefore look at the imperfect-information approach to financial intermediation as the theoretical basis for Gerchenkron's view[5] that banks and bank involvement with firms were needed to provide external finance during the early stages of industrialisation in Germany when capital was 'scarce and not concentrated' and 'the distrust of industrial activities considerable'. In Diamond's terminology, Gerschenkron's assumption must have been that the sum of the monitoring costs of the banks and

[3]Diamond, *op. cit.*

[4] A. Gerschenkron, *Economic Backwardness in Historical Perspective*, (Harvard University Press: Cambridge 1962).

[5] Gerschenkron, *op.cit.*

the direct agency costs of bank deposits was less than the agency costs of direct financing – and perhaps even that the agency costs of direct financing were so high that this was never a real alternative.

Thus, according to this approach, supervision seems to be profitable for both the bank and the shareholders, who are ensured higher profits by reducing the agency costs. It will be interesting to analyse which type of contract is needed to exert such a control. In other words, is long-term commitment necessarily needed to control firms?

'Monitoring' ought to be understood in a broad sense, meaning any form of collecting information about a firm, its investment prospects and its behaviour. The information that is collected is useful because it helps to distinguish 'bad' projects and/or to punish 'bad' behaviour. The literature contains the following examples: firstly, monitoring the firm's return realisations makes it possible to enter into contracts in which financiers' claims depend on the firm's returns (Diamond[6], Gale and Hellwig[7]); secondly, monitoring the firm's characteristics, i.e. a creditworthiness test, makes it possible to avoid bad loans (Broeckler[8]); and thirdly, monitoring the firm's behaviour during the loan application stage makes it possible to avoid giving loans to firms which follow too risky an investment strategy.

In all these examples, the role of monitoring is straightforward. The main distinction is between monitoring which takes place before a contract is agreed and monitoring when under contract. The former is useful in reducing the proportion of bad loans, the latter is useful in improving performance under the given contract.

Monitoring that takes place before a contract is written may give rise to some interesting problems of market competition concerning the contract. This competition will be pointed out in the following section, when describing the role of Crédit Mobilier in French industrialisation. In particular, the struggle between the Péreires, founders of the bank, and the Rothschilds regarding the railway companies illustrates this point perfectly.

[6] Diamond, *op.cit.*

[7] Gale and Hellwig, 'Incentive Compatible Debt Contracts: the One Period Problem', *Review of Economic Studies*, (1985), pp. 647-663.

[8] T. Broeckler, 'Credit-worthiness tests and interbank competition', *Econometrica* 58, (1990), pp. 393-414.

Monitoring that takes place after a contract has been entered into stresses the length of the commitment between the firms and the bank that provides the funds. Mayer[9] suggests that financial intermediation may lengthen firms' investment horizons. He considers a model with two investment periods. There are two types of firms, 'good' and 'bad'. Firms can choose between two investment strategies, short-term and long term. Both strategies require identical amounts of funds in both investment periods. However, the long-term strategy has a relatively high expected payoff in the second investment period. Model parameters are specified in such a way that 'bad' firms should not receive funds in either period. However, *ex ante*, there is no way for financiers to distinguish 'bad' firms from 'good' firms. After the first investment period, a partial distinction may be possible because there are two sources of information: the costless observation of first-period returns and costly monitoring. In the absence of monitoring, banks interpret low first-period return realisations as an indication of poor quality, and so discontinue financing. Anticipation of such behaviour induces firms to opt for the short-term investment strategy, even though the long-term strategy may eventually be more profitable.

This theoretical consideration can be illustrated by two examples: France and Germany. The policy of German banks regarding investment in companies was essentially on a short-term basis and concerned enterprises where the expected profit was quite high (the mining industry). However, this does not mean that the German banks never undertook risky projects in the late nineteenth century. According to Tilly (1986)[10], these banks used their information advantages and their freedom from liquidity worries to engage in investment strategies that involved high risks as well as high returns. In fact, the commitment of a German bank in a risky project resulted in a careful control of the company's performance. This idea will be further developed in the two following sections when interpreting the empirical work proposed for Crédit Mobilier. This bank had quite a different policy regarding the control it could exert on the companies with which it was involved. Despite the

[9] Mayer, *New Issues in Corporate Finance*, *op. cit.*

[10] R. Tilly, 'German banking 1850-1914: development assistance for the strong', *Journal of European Economic History*, 15 (1) Spring, (1986) pp. 113-152.

fact that it undertook risky projects, the supervisory role was very limited and sometimes totally ineffective.

So the real question is 'how' monitoring fits into the overall relationship between the intermediary and the firm. Monitoring as a form of collecting information about the firm is useful only because the information that is collected has consequences for behaviour and resource allocation within the relationship. The notion of financial intermediation as delegated monitoring must encompass such uses of information, as well as the act of collecting the information.

This consideration refers us to the idea of incentive contracts which were presented in the preceding section. It is sufficient to recall the basic concept. From the theory of optimal incentive contracts, we know that even noisy monitoring will improve performance under an optimal incentive contract (see Grossmann and Hart).[11] On combining this result with Diamond's procedure, outlined above, we obtain a new version of financial intermediation as delegated monitoring, one that emphasises the incentive effects rather than the distinguishing effects of monitoring.

It is interesting to apply this to the financial systems of the late nineteenth century. Monitoring as an element in an incentive-contract relation is not all that far from the studies of Gerschenkron and Mayer. Consider Gerschenkron's observation that banks played a key role in the cartelisation of German industry. Any cartel is subject to a moral hazard problem in that the individual firm has an incentive to undercut and to serve more than its allotted share of the market. Banks that are involved with several firms in the same industry have an incentive to restrain such behaviour in order to increase the aggregate gross return they can earn from the industry.

Until now we have studied how the interdependence between information provision to firms and information collection about firms affects the functioning of financial intermediation as delegated monitoring. It will be interesting to discuss how this delegation takes place effectively. This will lead us to discuss the advantage of a close relationship between bank and firms. Mayer[12] considers that financial intermediation with a

[11] S.J. Grossman and O.D. Hart, 'An analysis of principal agent problem', *Econometrica*, 51, January, (1983), pp. 7-46.
[12] Mayer, *New Issues in Corporate Finance, op. cit.*

close relationship between the bank and the firm constitutes a mechanism of commitment. In particular, Mayer suggests that Japanese banks are more willing to engage in corporate rescues than financiers elsewhere because the bank-firm relationship in Japan involves a mutual long-term commitment. Some rather striking quantitative evidence on this point is provided by Hoshi *et al.*[13]: analysing a sample of Japanese firms, it is seen that the cost of financial distress is significantly less for firms that have a close relationship with a "main bank" than for firms that do not. In particular, firms that have close banking ties "appear to invest more and perform better" than firms that do not have such ties.

We should now ask now to what extent a system of corporate finance based on intermediation through a "main bank" should be regarded as internally stable? Mayer (1988) seems to believe that the superior performance of such a system is a guarantee of its persistence over time. In contrast, Gerschenkron regards it as being transitory, with firms depending on external financing through banks only until they have sufficient internal finances available.[14]

Similar patterns can also be observed in other countries. Thus Hoshi *et al.*[15] report that in Japan, too, the larger, more profitable companies avail themselves of the newly developing organised markets to become more independent of their banks.

In the long term, there is a certain tendency for firms to free themselves from such relations, using markets, competition among banks and, above all, reliance on internal rather than external financing.

Firms' freeing themselves from close banking relations is not without costs. Hoshi *et al.*[16] state that the costs of financial distress in Japan are

[13] T. Hoshi, A. Kashyap and D. Scharfstein, *The Role of Banks in Reducing the Costs of Financial Distress in Japan,* (Massachussetts Institute of Technology: Cambridge Mass. 1989).
[14] Gerschenkron, *op. cit.*
[15] T. Hoshi, A. Kashyap and D. Scharfstein, 'Corporate structure, liquidity and investment: evidence from Japanese industrial groups', *Quarterly Journal of Economics*, February, (1991), pp. 33-60. T. Hoshi, A. Kashyap and D. Scharstein, "Bank monitoring and investment: evidence from the changing structure of Japanese corporate banking relationships", in R. Glenn Hubbard (eds.) *Asymmetric Information, Corporate Finance, and Investment*, (University of Chicago Press: National Bureau of Economic Research 1990).
[16] Hoshi *et al.*, *The Role of Banks in Reducing the Costs of Financial Distress in Japan, op. cit.*

significantly larger for firms without close banking relations than for firms with close banking relations. Hoshi *et al*., report a similar observation for firms that are not in financial distress: hence being free of relations with a "main bank" goes hand in hand with a significant increase in the sensitivity of current investment to fluctuations in current earnings and liquidity.[17] Bank loans are less used and/or are less available to smooth over fluctuations in earnings.

From the perspective of Jensen and Meckling it might be argued that internal financing has priority because the agency costs of internal financing are lower than the agency costs of external bank or market financing.[18] This is also the explanation given by Myers and Majluf in the context of a model of asymmetric information and signalling.[19] Internal financing is taken to have no agency costs because it represents the use of funds available to the firm itself. External financing does not have agency costs (signalling costs, simple inefficiencies) because information asymmetries preclude the attainment of a first best allocation in the arrangement between the firm and its outside financers.

Accordingly, the Hoshi *et al.* observation concerning investment sensitivity to current earnings should be seen as evidence for the agency costs of external financing: investment projects that are expected to be profitable under internal financing are deemed to be unprofitable under external financing when the agency costs of external financing are added to the mere opportunity costs of funds. The inefficiency in the allocation of funds to the firms that results when investment opportunities are less than perfectly correlated with earnings is merely an element in the overall agency cost of external financing.

3. Place of Crédit Mobilier in the French banking system

Most modern banks were created during nineteenth-century

[17] Hoshi *et al.*, "Corporate structure, liquidity, and investment", *op. cit.*; Hoshi *et al.*, 'Bank monitoring and investment', *op. cit.*

[18] M.C. Jensen and W.C. Meckling, '*The Theory of the Firm*', *Journal of Financial Economics*, (1976), pp. 305-360.

[19] S. Myers and N. Majluf, 'Corporate financing and investment decisions when firms have information that investors do not have', *Journal of Financial Economics*, (1984), pp. 187-221.

industrialisation. They vary between extreme specialisation (as in Britain, with its merchant banks, colonial banks, clearing banks, issuing banks, jobbers, stockbrokers and saving banks, each engaged in distinct financial activities) and the almost complete absence of specialisation (as in Germany where all these activities were indifferently handled by large banks).

Although the branch networks of the larger banks became important at the turn of the century, there were two main factors that restricted their growth. Firstly, there had been a trend in various Continental European countries, like France, for local and regional banks to create groups that could compete effectively with the larger national banks in their own regions. Secondly, political factors in various countries sought to encourage competition between regional and national banks. In those countries with federal governments, like Germany and Switzerland, regional institutions were to play a more important role.

Alexander Gerschenkron pointed to an economic relationship to explain the development of banks.[20] He believed that a bank-firm-state relationship reflected capital availability at the time of industrialisation. Most economic historians rely on Gerschenkron's theory to account for disparities in political institutions in capitalist countries. In particular, British industrialisation was self-financed, with manufacturers ploughing back profits into their own factory; French industrialisation (1850-70) was financed by investment bankers, who raised long-term funds and lent them to factories; German industrialisation was financed by universal bankers, acting as intermediaries between depositors and factories.

Banks cannot be understood without recalling the development of financial markets. Two specific markets may be distinguished: private bankers, who used their own resources, augmented by those of their clients, to issue government bonds, and savings banks that collected money from a great number of individuals and invested it in safe government bonds.

Although banks had existed for centuries, their role began to grow with the process of industrialisation in the second half of the nineteenth century.

[20] Gerschenkron, *op. cit.*

In France, banks did not truly exist until the *Monarchie de juillet* (July Monarchy – a constitutional monarchy). At that time banking activity was characterised by two essential functions:

- the management of large fortunes,
- the use of these funds for granting loans to the state and to companies closely connected with it (cf. railway companies).

The first change took place during the Second Empire with the Péreire brothers' founding Crédit Mobilier in 1852. This type of bank was to provide services to industry. However, the failure of Crédit Mobilier and the bankruptcy of institutions operating on the same model (cf. Union Parisienne) led to a progressive specialisation in banking.

The inter-penetration of finance and industry was intensified during the nineteenth century by the counter-movement of industrialists-turned-bankers. André Koechlin, a scion of the well-known Alsatian family, head of Dollfus Mieg and Cie., and founder of the machine shops that produced the first French locomotives, became one of the most daring and successful promoters and investment bankers of the Second Empire, both in France and abroad. Emile and Isaac Péreire progressed from railways to Crédit Mobilier, and one of their principal associates, Baron Seillère, from a Vosges textile family, also helped to finance several large metallurgical establishments, including Le Creusot and Wendel in France and Krupp in Germany. For a relatively small part of its total operations, Crédit Mobiler functioned as an ordinary banking enterprise - that is, it accepted deposits, discounted commercial bills and made loans and advances on security. In the spring of 1853, soon after Crédit Mobilier began to function, the Péreire brothers and Fould requested an agreement for a Caisse Générale des Sociétés de Crédit Mutuel, to operate as a network of mutual credit societies in various localities and in different sectors of industry. They wanted the Caisse Générale des Sociétés de Crédit Mutuel to perform the same or similar functions for petty industry and handicrafts that Crédit Mobilier did for large-scale industry. Thus four programmes implicit in their abortive Saint-Simon-type scheme of 1830 were to be completed: commercial credit (Comptoir d'Escompte), industrial credit (Crédit Mobilier), mortgage credit (Crédit Foncier) and mutual credit for small entrepreneurs. Crédit

Mobilier's principal function was to lend money to merchants and industrialists on 'two-signature papers' for a period up to two years. (The Bank of France discounted only three-signature papers with maturities of no longer than ninety days). In an effort to obtain sources for such loans, the bank proposed that it be allowed to issue what would have been, in effect, interest-bearing bank notes (bearer bonds, interest bonds). The provision for interest (at 3.65 per cent per year) would ensure the circulation of these bonds and, if they were accepted legally in payment of taxes, as the Péreire brothers proposed, they would acquire virtual legal tender status. To enhance confidence in this institution and in its attractiveness to potential investors and bondholders, the Péreire brothers also proposed that the government guaranteed it against losses of up to 25 million francs.

Hence, in the Péreire brothers' own words, "The new establishment should be considered as a lending and borrowing office (*bureau de prêt et d'empruni*) where industry will borrow from all capitalists on the most favourable terms by means of the richest bankers acting as guarantors, because the holders of the bonds, who are the true stockholders of the association, will find an easier and safer investment for their capital without the hazards of individual loans"[21].

However, the *Conseil d'Etat*, reasserting its prerogatives in such matters, quietly shelved the project[22]. Shortly afterwards, the *Corps législatif* passed a law to permit departments and communes to convert and consolidate their floating debts. Crédit Mobilier requested permission to exchange its own bonds for the debts of these local government units, to have them stamped by an official of the government, made payable through the receiver-generals of taxes, and accepted for purchase by the *Caisse des Depots et de Consignations* (the official government loan office). Such measures would, in effect, advance Mobilier's bonds to the status of fiduciary money. This never happened in practice.

Crédit Mobilier played a great role in French industrialisation. In every

[21] I. Pereire, *Banque de France* p. 145. The quotation is taken from a memoir addressed to a group of bankers whose support the Péreires hoped to obtain.
[22] I. Pereire, *Banque de France*, p.157.

company financed by this bank, a member of Crédit Mobilier's Board of Directors was represented in the Shareholders' Assembly. The report of April 1860 is very explicit on this subject:

> 'Our company has always considered as a principle of its high commercial morality never to open a subscription, nor recommend a firm, without first of all having a large proportion of interest in it and its administrators, having become associated with it'.[23]

The par value of capital in the company was 24 million francs divided into 240,000 shares. Among these shares more than half of them belonged to the Péreire brothers or their major associates (Ch. Seguin, A. d'Eichtal). When granting credit to the companies with which it was involved, Crédit Mobilier used to give advances to enable them to undertake their investment. Hence, association with Crédit Mobilier was a good way for companies to obtain money.

Between 1852 and 1875, the number of financial intermediaries providing short-term credit varied.[24] Probably there were around 400 institutions on average. It is difficult to gauge the extent of their activity, as only a limited number published their balance sheets. Only the report by the General Assembly, together with the balance sheets of the companies affiliated with those investors, can provide information about the amount of credit allocated to financing production. Nevertheless, operating only with its own capital and deposits, Crédit Mobilier performed prodigious feats of industrial promotion and financial manipulation. In its first major operation, Crédit Mobilier placed 40 million francs in Crédit Foncier's bonds: it maintained close ties with Crédit Foncier in the early years by means of overlapping directors.

In its first full year of operation, by making loans (either short- or long-term) and underwriting bond issues, Crédit Mobilier financed the Midi

[23] Original text: «Notre société a toujours considéré comme un principe de haute moralité commerciale de ne jamais ouvrir une souscription, de ne jamais recommander une entreprise sans s'y intéresser elle-même dans une forte proportion, et ses administrateurs se sont fait un devoir de s'y associer.»

[24] By short term we mean credit covering only a few months (3 to 6 months).

railway, the newly-chartered Grand Central, and the French Eastern, Mulhouse and Strasbourg-Basle railways. Crédit Mobilier also secured the merger of three short railways in the Loire coal basin with the Grand Central; it reorganised the Loire coal industry, and promoted the Darmstadter Bank. In 1855 it played a leading role in the industrial organisation of the French Western (essentially regarding the railways), and promoted or financed the Pyrenees, Dauphine, and Ardennes railways, together with several shorter lines. With generous government subsidies, Crédit Mobilier created the Compagnie Générale Transatlantique (French Line), the Compagnie Générale des Omnibus (Paris), and the Société de l'Hotel et des Immeubles de la Rue de Rivoli (subsequently Compagnie Immobilière).

After 1865, the "Banque de Savoie" affair provoked hostility within financial circles and the Banque de France. Famous investors, such as the Rothschilds, wanted to force Crédit Mobilier out of the banking sector. Their position in the financial market led the Péreires to invest in risky sectors, such as Compagnie Immobilière. This eventually provoked the bank's failure. Before 1864 Crédit Mobilier was a victim of strong speculative movements: the profits the bank made led investors to believe in its stability. To illustrate this point, we shall consider the value of the shares of some companies involved with Crédit Mobilier in 1856. For example, in less than one year the share prices of the Compagnie du Gaz fell by some 250 francs.

The fall of Crédit Mobilier was in essence caused by the attempt to salvage the Société Immobilière. This company's eagerness to contribute on a large scale to the building programme which enlarged Paris led its managers (cf. the Péreire brothers) to undertake huge investments with poor potential.

Since 1864-65 Crédit Mobilier had had to face serious difficulties attributed to the Banque de France's increasing the interest rate. The bank then decided to double its capital to support loans for the Compagnie Immobilière. But in June 1866 its situation worsened, and the fall of share prices seemed to be the consequences of the depreciation of its portfolio. The Péreire brothers then multiplied their efforts to obtain cash. It had been said that a loan could be granted by the city of Paris to Crédit Mobilier, but the deal never materialised. By the end of 1866, the Péreire brothers were contemplating the possibility of a merger between

Mobilier, Mobiliario Espanol and Immobilière, with a loan from the Caisse des Consignations (a government agency), but they did not succeed in bringing it about. In addition to these difficulties, the Péreires faced a stockholders' dispute concerning the increase of the bank's capital. Crédit Mobilier's true situation could no longer be concealed. In March 1867, for the first time in its existence, the prices of its shares fell below par.

The Péreires were forced to resign from both Credit Mobilier and Immobilière. Between 1867 and 1870, little information was available. Crédit Mobilier went bankrupt, Napoleon III, who supported the Péreires, fell, and France had to face a war with Germany. In 1871, Baron Haussmann made a deal with the bank for the repayment of its debt. This involved formally dissolving the old company, and immediately forming a new one. The new bank, called Société de Crédit Mobilier Français, was to take over the assets of the old Crédit Mobilier[25]. After the fall of the Péreires in 1871, Baron Haussmann, an old member of the Board of Directors, became President of the new Crédit Mobilier. However, the bank had lost its central role in the financing of French industry. The first aim of the new bank was to solve the difficulties of Compagnie Immobilière. The capital of the company was divided in two parts between Paris and Marseille. Part of this credit came from Crédit Foncier, which had contributed to the financing of Compagnie Immobilière: 55 million francs came from Paris' credit and 32 millions from Marseille. Floating assets were liquidated. Crédit Mobilier reduced its holdings of the Compagnie Immobilière debt to 51 million francs by selling part of its bonds, and issued new assets for a total of 76 million francs. Half of these assets were bonds with fixed revenue (5 percent), and half were bonds with variable revenue to the amount of 5 percent of the capital. On 16 August the liquidity problems with Compagnie Immobilière were solved by the partial liquidation of its debt. Crédit Mobilier became a firm with a par value of only 40 millions francs.

[25] Statutes of the 'Societe de Crédit Mobilier ', 8 November 1871, Extrait de déliberation de l' Assemblée Générale', 11 November 1871. The new bank was capitalised at 80 million francs with 160,000 shares of 500 francs each; stockholders of the old bank obtained 96,000 (2 new for 5 old) and could subscribe at par for 48,000 additional; the founders of the new bank (including only two holdovers from bad days, Charles Mallet and Frederic Grieninger) took the remainder.

4. Agency theory: application to the case of Crédit Mobilier

In examining the supervisory role Crédit Mobilier had exerted over the firms with which it was involved, two main points will be considered:

- the possibility of a financial crisis due to Crédit Mobilier's fall
- the idea of a banking panic.

More specifically, if this supervisory role had really been effective and necessary, as Crédit Mobilier went bankrupt, a financial crisis would have ensued for the affiliated companies. Yet, with the sole exception of Compagnie Immobilière, nothing spectacular happened. To support the argument, an empirical test was run between 1866 and 1868. The sample includes 25 companies, half of them being affiliated to the Credit Mobilier. The regression equation is:

$$\ln [p_t / p_{t-1}] = c + ß\,(CM)$$

where pt represents the asset prices of companies

CM = 1 if firms were affiliated to Credit Mobilier,

CM = 0 otherwise.

The regresssions have been run for 1866, 1867, 1868 and the following ratios have been calculated:

$\ln p68 / p67$

$\ln p68 / p66$

In order to avoid any bias, a distinction has been made as to whether Compagnie Immobilière was part of the nexus or not. Coefficients are reported in the tables below:

TABLE 1. Sample without "Compagnie Immobilière"

	Coefficient	Standard Error	t-Value	Durbin Watson
ln p1867/68	0.018	0.047	0.3	2.032
ln p1868/66	0.01	0.037	0.35	1.61

TABLE 2. Sample with "Compagnie Immobilière"

	Coefficient	Standard Error	t-Value	Durbin Watson
ln p1867/68	- 0.023	0.049	0.47	1.71
ln p1868/66	0.064	0.053	1.2	1.70

These tables enable us to make several observations. The ß coefficients for both regressions are close to zero and positive. The only negative sign appears when Compagnie Immobilière is included in the sample. Moreover the t-value is not significant. To strengthen the argument, the case will be compared with the example of the Ohio Life Insurance and Trust Company in the United States. Conclusions will then be drawn concerning the qualification of financial crisis in Crédit Mobilier's case.

If Crédit Mobilier were a great bank, its bankruptcy would cause financial difficulties not only for the enterprises with which it was involved but also for the other banks on the market. According to Kindleberger[26] and Miskin[27] a financial crisis involves either sharp declines in asset prices, or failures of large financial and non-financial firms. To support this argument, Miskin, in his article entitled 'Asymmetric Information and Financial crises', takes the example of the Ohio Life and Trust Company, a major bank with substantial investment in western land and railroads, as well as in commodity futures, which went bankrupt on 24 August 1857.[28] The most interesting part of this analysis is that the timing of events in the panics of 1857 seem to fit an asymmetric information interpretation of the financial crisis as in our preceding study of the relationship between bank, manager and shareholders. Rather than beginning with the bank panic of October 1857, disturbance in the financial markets seemed to begin several months earlier, with the rise in interest rates, the stock market decline, major failures of financial firms and the widening of the interest-rate spread.

The asymmetric information analysis provides an explanation of how the financial crisis could have led to a severe economic downturn. The rise in the interest rate and the stock market decline, along with the failure of the Ohio Life and Trust Company which increased uncertainty, would

[26] C.P. Kindleberger, 'Banking and industry between the two wars: an international comparison', *Journal of European History*, 1984, 39(2) pp. 7-26.
[27] F. Miskin, 'Asymmetric information and financial crises: a historical perspective' in G. Hubbard (ed.), *Financial Markets and Financial Crises*, (University of Chicago Press: National Bureau of Economic Research).
[28] F. Miskin, *op. cit.*

magnify the adverse selection and agency problems in the credit markets. Indeed, the stock market crash might have been linked to the general rise of interest rates which would have lowered the present discounted value of future income streams. In this case, the panic of 1857 can be viewed as a financial crisis. The net result of the increase in the adverse selection and agency problems is that investment activity and aggregate economic activity would decline, causing low expectations of further economic contracting and business.

This example is also interesting because the period during which it happened is not so far away from that of Crédit Mobilier's bankruptcy. If we compare this situation to those of affiliated firms, we notice that there is no evidence that the economic situation described above can apply to the French case. Although the price-dividend ratio for affiliated companies decreased during 1870-1880 (just after the bankruptcy of Crédit Mobilier), it is impossible to say if the failure of the bank had anything to do with this movement. The French-Prussian War, the Commune of Paris and the Revolution of 1870 caused much economic agitation over this period. However, the general crisis of 1866 that occurred in England, Italy and Spain was not a major event in France, and thus did not influence Crédit Mobilier's bankruptcy. Some authors (cf. Friedman and Schwartz[29]) have established a close connection between financial crises (especially the bank failures) and changes in real output. This was not the case in 1867. In this respect, it can be stated that Crédit Mobilier's bankruptcy did not create a financial crisis.

Another strong argument concerns the relationship between banks, managers and shareholders when financing a production project. According to Stiglitz, raising capital through banks results in more effective control over capital than raising it through an equity market[30]. Because both adverse selection and moral hazard are inevitable, at least in realistic

[29] M. Friedman and A. Schwartz, *Monetary History of the United States 1867-1960*, (Princeton University Press: Princeton 1963).

[30] These are not the only alleged control mechanisms in a capitalist economy. For instance, there are evolutionary arguments which suggest that firms who manage their resources efficiently will survive, while those that do not, will not. For some criticisms of this argument, see, for instance J.E. Stiglitz, 'Credit markets and the control of capital', *Journal of Money, Credit and Banking*, 17, 1985, pp. 133-152.

loan markets, credit will often be rationed – implying that firms will face borrowing constraints which really do limit their investment opportunities from time to time. Moreover, the tightness of these borrowing constraints for any particular firm will clearly depend on the amount of collateral that the owner-manager is able and willing to offer, and not just on the present discounted value of what he can afford to repay without surrendering collateral in the worst possible future his firm can face.

In this article, Stiglitz points out the interdependence of the different partners in the firm[31]: the shareholders and the bondholders benefit from the control of the banks. In fact, the intention of banks to grant credit to a firm is an effective positive signal. Firms which try to find funds on the capital markets because they cannot obtain them from 'their' bank may be regarded adversely. According to this scenario, when Crédit Mobilier went bankrupt, the share prices of the affiliated companies should have fallen: this would have proved that Crédit Mobilier added some value to the shares for affiliated companies. But nothing happened to the share prices of these companies in the year of the bankruptcy. It could be argued that the investors anticipated the bank's failure and had already diversified their investments and discounted the effect it would have on affiliated firms. Bouvier remarks in his book: *La Naissance d'une Banque: le Crédit Lyonnais* that a great number of firms which were financed by Crédit Mobilier until its bankruptcy requested funds from Crédit Lyonnais afterwards[32]. In particular, Compagnie Transatlantique, one of Crédit Mobilier's largest companies, requested funds as soon as 1865. Another explanation for the stability of the share prices is the intervention of the Banque de France, which prevented this crisis, encouraging other banks to invest in the companies affiliated with Crédit Mobilier, except for Compagnie Immobilière. This reinforces the idea that the failure of Crédit Mobilier did not really induce a financial crisis.

The third argument concerns the role of banks in the crisis. Was Crédit Mobilier's bankruptcy in 1867 an isolated case, or was it a reflection of the fragility of capitalism over the period?

[31] In this article *op. cit.* Stiglitz suggests that the firm should be considered as a problem of multiple agents-multiple principals.
[32] J. Bouvier, *Naissance d'une banque: le Crédit Lyonnais,* (Flammarion: Paris 1968).

The first notable element is that the bankruptcy of Crédit Mobilier had nothing to do with the general crisis of 1866 in England and Italy. As Kindleberger pointed out in his book, *Manias, Panics and Crashes*, the crisis occurred in France in 1864 and was solved by extending the maturity of bills. Moreover, the trends in share prices of ten affiliated companies included in our sample prove that no particular event could be noted for this year. Thus the Crédit Mobilier crisis seems to have been isolated.

Secondly, banks stand between firms and households. To a large extent, the liabilities (equities and debts) of firms are owned by financial intermediaries and the assets of households are largely liabilities of financial intermediaries. These intermediaries (here banks) are self-seeking or profit-seeking institutions. One group of these profit-seeking organisations plays an exceptionally delicate role in capitalist economies. This group consists of investment bankers who either as brokers – bringing together buyers and sellers – or dealers – taking financial liabilities into their own accounts – act as midwives to young companies, and finance their continuing operations. These operators have superior knowledge about those customers who require financing (they require funds) and those customers who have a need for outlets in which money can be placed. They turn this private knowledge of the conditions under which funds are desired and the conditions under which funds are available to their own advantage, while performing the social function of selecting the investments that the economy effects. In Crédit Mobilier's case, the problem was that the bank had focused strongly on short-term profit-seeking and neglected its selection role. Its desire to create a new style of credit banking prevented the Péreire brothers from studying carefully those projects in which they participated.

These financial intermediaries are of critical importance in determining the values attached to collections of capital assets held by firms. One consequence of the introduction of these layers of profit-seeking organisations, which determine the value of financial instruments, into the markets is that the value imputed to capital assets can and does vary independently of the cost of investment goods. Furthermore, the extent to which internal funds are available to finance investment depends upon the excess of anticipated cash flows over the amount needed to service

liabilities that were issued to finance such acquisitions in the past. This scenario describes perfectly the situation of the French Crédit Mobilier at its foundation. The power it had over the financial market influenced the value of assets and was the underlying reason for the speculation which began in 1864. Thus, capitalist techniques of valuing capital assets, the market determination of liability structures, and the possibility of sharp increases and decreases in the market price of capital assets and financial instruments lead to systematic increases and decreases in the price of assets relative to the price level of current output. Once current profits fall to the extent that cash flows to highly-indebted operations are insufficient to meet commitments on liabilities, then the pressure of the need to validate debts and to meet withdrawals by depository institutions leads to a proliferation of attempts to make positions by selling out positions. The result can be a sharp fall in asset values. These considerations cannot be applied to the case of Crédit Mobilier.

The literature concerning investment constraints also suggests that a related transmission mechanism may operate through the banking sector: a reduction in bank liquidity makes it difficult for firms to obtain capital. As Bernanke has shown, the big fall in bank liquidity may help to explain the depth and the persistence of the Great Depression.[33] Yet this does not apply to the case of Crédit Mobilier. The bank's fall did not provoke any financial crisis.

The second issue concerns the consequences of the bankruptcy for the banking sector: since Crédit Mobilier played a great part in the industrialisation of France (providing a large amount of liquidity) we can ask why its failure did not cause a banking panic. In regard to this, two definitions of banking panic are presented and applied to the case of Crédit Mobilier to see whether this crisis can be defined as a liquidity crisis. Empirical research concerning investment, common equity and cash flows will inform our argument.

The term "banking panic" is often used somewhat ambiguously and, in many cases, synonymously with events in which banks fail, such as recessions and stock-market crashes.

[33] B. Bernanke, 'Non-monetary effects of financial crisis in the propagation of the Great Depression', *American Economic Review*, LXXIII, (1983), pp. 257-76.

Historically, bank debt has consisted largely of liabilities which circulate as a medium of exchange, such as bank notes and demand deposits. The contract defining this debt allowed the debt-holder the right to redeem the debt (into hard currency) on demand at par.

We define a banking panic as follows. A banking panic occurs when bank debt-holders as a whole or many banks in the banking system suddenly demand that banks convert their debt claims into cash (at par) to such an extent that the banks suspend convertibility of their debt into cash.

One theory of banking panics is based on identifying the conditions under which bank depositors would rationally change their beliefs about the risk level of their bank. The core of the theory is that banking panics serve a positive function in monitoring bank performance in an environment where there is asymmetric information about bank performance. In an environment with asymmetric information, a panic can occur as follows. Bank depositors may receive information leading them to revise their assessment of the risk of banks, but they do not know which individual banks are most likely to be affected. Since depositors are unable to distinguish individual bank risks, they may withdraw a large volume of deposits from all banks in response to a signal. Banks then suspend convertibility and a period follows during which the banks themselves distinguish which banks among them are insolvent. Indeed, it is possible to view panics as a means for depositors to force banks to resolve asymmetries of information through collective action (i.e. monitoring and closure). The efficiency of this mechanism derives from a supposed comparative advantage that banks possess.

The foregoing analysis uses the notion of liquidity explicitly to define the banking panic. This parameter has been studied when analysing the relationship between investment and cash flow. In particular, we can wonder whether there was an increased sensitivity of investment to cash flow by Crédit Mobilier's affiliated companies in the period preceding and following the bankruptcy of the bank, related to the changes in the financing patterns that occurred at the same time.

Answering this last point will enable us to give a positive answer to the question as to whether the firms had anticipated the difficulties the bank was to face later. Is the following hypothesis, stated in Hoshi,

Kashyap and Scharfstein[34], true in the case of Crédit Mobilier: '*Bank relationships relax constrained liquidity?*' The answer will be ambiguous for different reasons invoked in the paper. If the manager of a firm has to choose between banks and shareholders to finance a project, the answer will be positive because the origin of the funds is different (the information cost, in particular, differs between bank and shareholders).

If the manager has to choose between different banks, the answer is a function of the debt policy and of the power of these banks to generate a good reputation for the firm. This second situation is illustrated by the Crédit Mobilier case. In particular, despite the facility to obtain liquidity from Crédit Mobilier, some firms may have preferred more control to more flexibility. They may have chosen another bank to demonstrate their honesty.

Up to this point, it has been established that the bankruptcy of Crédit Mobilier caused neither the failure of firms nor panic among depositors. The last question to be answered is what happened among the banks present on the financial market over the period ? In particular, how could Crédit Mobilier's bankruptcy be described : was it the result of hostile bankers' manipulation ?

The third point of our argument consists of a comparison between France and Germany regarding credit policy to firms with which banks were involved. More specifically, some great German banks (in particular the Darmstädter) were modelled on Crédit Mobilier. The research that Marco Becht and Carlos Ramirez (1993) have carried out on these banks demonstrates the efficiency of the control system (bankers sitting on the board of enterprises) in contrast to the French experience. It is interesting to compare their respective attitudes in order to explain the differences in managing a crisis.

The argument stated here is mostly based on an article by Roy A. Batchelor entitled 'The avoidance of catastrophe: two nineteenth century banking crises'. This paper provides us with a model of a bank run under conditions of uncertainty.

The central point is as follows. A bank will face a liquidity crisis if its reserves are insufficient to cover a deposit withdrawal ($\Delta D > R$). It will actually be insolvent if its capital and income from assets are insufficient

[34] T. Hoshi, A. Kashyap and D. Scharfstein, 'Corporate structure, liquidity and investment', *op. cit.*

to cover interest payments to depositors. Deposit withdrawals increase by ΔD and assets values change by ΔA . Hence, the bank is insolvent if:

$$A + R + \Delta A < D + \Delta D \quad \textbf{[1]}$$
$$\text{or} \quad (\Delta D - \Delta A) - (A + R - D) > 0$$
$$(\Delta D - \Delta A) - K > 0$$

Normalising for size by dividing by the level of deposits D, and writing ΔD/D as Δd, ΔA/D as Δa and K/D as k, this condition becomes:

$$\Delta d - \Delta a - k > 0 \quad \textbf{[2]}$$
$$\text{or} \quad z < 0$$

where we define z as the 'safety level' of the bank, z being expressed as:

$$z = k - \Delta d + \Delta a \quad \textbf{[3]}$$

In the economy as a whole there are no such banks.

We assume that the z values increase uniformly so that if z_i is the safety level of riskiest bank then the j-th bank will have $z_j = jz_i$;

Depositors can hold their (liquid) wealth in two forms: as cash with no risk or as deposits in these risky banks. An asymmetric information assumption is formulated regarding the risk parameter of banks (c.f. Leland and Pyle (1977)). The depositor can form some estimate of the z-value of each bank on the basis of the limited information which is available about the state of the balance sheet.

How are the z-values of other banks evaluated?

If the differences in z-values between neighbouring banks are normal random variables, with equal variance z_j is defined by:

$$z_i = \lambda_i \sum_{j=i}^{n} (1-\theta)^{|j-i|} (j/i) z_i$$

where λ_i is simply a factor scaling the weights $(1-\theta)^{|j-i|}$ to sum to unity and the estimated value of each bank i must be multiplied by (j/i) to form an estimate of z_i because of our assumption of uniform differences in risk.

The assumption of limited information about relative risk is sufficient to induce banking 'runs' in the sense that a given shock to asset values will induce a disproportionate number of bankruptcies. Depositors in all other banks will revise downwards their estimates of the safety of these banks, bank 2 being worst affected and bank n least affected. A rise in asset values and the entry of new banks would conversely spread optimism through the system.

This model is interesting for our study because it shows how a banking failure causes shocks to other banks. If we refer to the case of Crédit Mobilier, we are obliged to note that such a situation never arose. Neither the depositors (cf. last point of the discussion) nor the banks were affected by the bank's liquidity difficulties. Did Crédit Mobilier suffer from insolvency or was its collapse the results of hostile bankers?

Traditional investors, such as the Rothschilds, had never appreciated these new competitors. The banking practices they tried to introduce concerning investment policy, the ability to take risks and the facility to grant loans to companies in order to finance production projects rapidly were not readily accepted by the economic community which, even if it did not contribute to Crédit Mobilier's fall , never did anything to rescue it. On the contrary, as capital was abundant in France over the period, enterprises had no difficulties in finding new investors willing to finance their projects. This is probably the reason why investors had a vested interest in Crédit Mobilier's failure: they intended afterwards to take advantage of the market's new investment opportunities.

The results of the Crédit Mobilier case are then different from those of the German Großbanken or the J.P. Morgan Company. Becht and Ramirez[35] conclude that 'mining and steel companies affiliated with one of Imperial Germany's 'Great Banks' were not liquidity constrained'. Their paper provides evidence which suggests that this limit can be very high. The power of Imperial Germany's *großbanken* seems to have helped the development of the mining industry by alleviating the impact of capital market imperfections.

The case of Crédit Mobilier, however, proves the fragility of the banks'

[35] M. Becht and C. Ramirez, 'Finance capitalism, Grossbanken and the German mining and steel industry 1906-1912', (Working Paper EUI 1993).

power; it shows that the supervisory role can be very limited and dispensable. Crédit Mobilier was vulnerable to speculative movements. It is possible that the hostility of famous financiers like the Rothschilds contributed to its continuously decreasing power in financial circles.

The role played by the shareholders (if any) when Crédit Mobilier went bankrupt now needs to be considered. In particular, the rationality or irrationality of their behaviour when the firm was facing financial difficulties needs to be assessed.

The behaviour of the shareholders seems to be passive in the case of Crédit Mobilier. The power of the shareholders is to be discussed and the question debated as to whether their behaviour when the bank went bankrupt was rational or irrational.

We can wonder why Crédit Mobilier's shareholders did not have any noticeable reaction when the bank began to face its first liquidity problems in 1864. Several arguments can be given to explain their attitude: the power of the Péreires was so great in the shareholder's Annual General Meeting that it prevented anyone from controlling their investment policy; most of the Crédit Mobilier shareholders were big bankers; the difficulties that began in 1864 were an indication of future troubles for the bank. The shareholders deliberately chose not to react in order to divide the spoils between them after the bankruptcy. This was, in fact, a way to control the Péreires, whose attitude towards risk was judged unfavourably.

During the period when share value increased, instead of diversifying their portfolio, the Péreires had distributed their capital gains to the shareholders: 68.2 million francs of dividends were thus wasted in the four years 1855, 1856, 1862 and 1863. In 1864, despite a new increase in the dividend, Crédit Mobilier faced difficulties but managed to hold firm by the deposits of current accounts. As long as they received dividends, the shareholders adopted a passive attitude towards the bank's policy. Did this high dividend policy correspond to a partial liquidation of the establishment or not?. Since shareholders received a high enough dividend for four years, perhaps they considered that, even if the worst were to happen, they did not waste any money. To refer to Henri Germain's definition, the shareholders were consciously 'sheep'. This argument is

reinforced by K. Paris[36] in his book, *Le Crédit Mobilier et ses actionnaires*, where he states in part:

> 'Les actionnaires pris à la magie du langage, des promesses et des revenus ne s'inquiètaient même plus des brusques soubresauts et des signes révélateurs qui atteignaient le cours des titres émis par la Société. Que leur importait une chute inattendue ? Quand le Crédit Mobilier tombait, c'était comme le ballon pour rebondir et s'élever plus haut! Et la frénésie de la spéculation se maintenaient aussi tumultueuse, aussi intense, aussi désordonnée.'[37]

This quotation points out the shareholders' enthusiasm towards a firm which gave them huge dividends and managed to withstand all speculation.

According to the traditional theory of the firm, this attitude was irrational. The firm must, generally speaking, be considered as a profit-maximising entity. In other words, profit maximisation is in the best interest of the firm's shareholders.

Shareholders can and do create incentive schemes for managers that force managers to do what is best for the shareholders. So we conclude that the managers maximise profits in order to give the shareholder the highest dividend possible and to maintain the firm's solvency.

The Crédit Mobilier's case study contradicts these two propositions. The Péreires did not act in the shareholders' interests, but in their own interests. Since they held the major part of the bank's capital, the power of the shareholders was very limited. Hence the control policy inside the bank was not effective. This constitutes a good example of the difficulties in supervising companies when financers are at the same time decision-makers in the production process.

[36] K. Paris, *Le Crédit Mobilier et ses actionnaires*, (Paris 1867).

[37] "The shareholders bewitched by the language of promises and revenues, were not worried about the sudden shocks and relevant signs which the asset prices issued by the firm registered. Why bother about an unexpected fall ? When Crédit Mobilier fell, it was like a balloon that rebounded and went up higher! And the frenzy of speculation remained as tumultuous, as intense and as disorganised as before".

6. Conclusion

The significance of mutual relations between banks and industrial enterprises in either furthering or hindering industrialisation, in the process of concentration, in business cycles and in economic growth generally have been the subject of speculation and debate since the turn of the century. Renewed interest among economic historians was aroused by Alexander Gerschenkron's essay on relative economic backwardness in historical perspective in the early 1960s. Recently, the rediscovery of Rudolf Hilferding's *Finanzkapital* has brought again to our attention the question of the interactions of banking and industrial development.

The particular case of Crédit Mobilier and its bankruptcy raised two questions: firstly, the supervisory role of a bank over the companies with which it is involved, and secondly, the association between bank and firms.

To supervise firms the bank had three options: it could make the borrower's actions part of the agreement and allow repayment to depend on the outcome of the borrower's project, or else write a simple agreement ('payment of such and such an amount to be made on such and such a date') and then make the loan if it believed that the borrower was likely to repay, or else use a collateral.

In Crédit Mobilier's case, nothing like this was done. The only task the Péreires accomplished was to provide liquidity and to try and realise an immediate profit without really bothering about the solvency of their own establishment.

Who acts as a principal in this relationship? As far as Crédit Mobilier is concerned, the willingness to put a member of the bank on the board of directors in each company shows the banker's intention to put himself in a position of leadership. The impact of its failure shows that, at one point, the Péreires ceased to act as bankers and became only shareholders. They first aim was profit in the short term and not a long life for their bank.

How should we judge the Péreires ? Were they visionaries who appeared too early in a financial society which was not ready for such a change? Or were they merely speculators at a time when industrial society

required a huge amount of liquidity ? To answer this question, I shall quote Jules Michelet:

> 'Jai le regret que ce mot, ce beau mot de spéculateur, ait été tellement détourné de son sens. Celui qui le mérite, c'est celui qui, d'un point élevé, regarde au loin, prévoit, calcule les voies de l'avenir, et d'un esprit fécond crée les hommes et les choses'[38]

In my opinion, the Péreires' main mistake was to have focused on the short term, not to have anticipated risk, and to have neglected the financial power of their partners.

REFERENCES

Becht M., Ramirez C., 'Finance capitalism, Grossbanken and the German mining and steel industry 1906-1912', (Working Paper EUI 1993).

Bernanke B., 'Non-monetary effects of financial crisis in the propagation of the Great Depression', *American Economic Review*, LXXIII, (1983), pp. 257-76.

Bouvier J., *Naissance d'une banque: le Crédit Lyonnais,* (Flammarion: Paris 1968).

Broeckler T., 'Credit-worthiness tests and interbank competition', *Econometrica*, 58, (1990), pp. 393-414.

Diamond D., 'Financial intermediation and delegate monitoring', *Review of Economic Studies*, 51, (1984), pp. 393-414.

Friedman M. and Schwatrz A., *Monetary History of the United States 1867-1960,* (Princeton University Press: Princeton 1963).

Gale and Hellwig, 'Incentive Compatible Debt Contracts: the One Period Problem', *Review of Economic Studies* (1985), pp. 647-663.

Gereschenkron A., *Economic Backwardness in Historical Perspective*, (Harvard University Press: Cambridge 1962).

Grossman S.J., Hart O.D., 'An analysis of principal agent problem', *Econometrica*, 51, January, (1983), pp. 7-46.

Hoshi T., Kashyap and Scharfstein, *'The Role of Banks in Reducing the Costs of*

[38] Jules Michelet ,*Histoire du XIXê siècle.*

Financial Distress in Japan, (Massachussetts Institute of Technology: Cambridge Mass. 1989).

————— , 'Bank monitoring and investment: evidence from the changing structure of Japanese corporate banking relationships' in R. Glenn Hubbard (eds.) *Asymmetric Information, Corporate Finance, and Investment*, (University of Chicago Press: National Bureau of Economic Research 1990).

————— , 'Corporate structure, liquidity and investment: evidence from Japanese industrial groups', *Quarterly Journal of Economics*, February, (1991), pp. 33-60.

KINDLEBERGER C.P., 'Banking and industry between the two wars: an international comparison', *Journal of European History*, 1984, 39(2) pp. 7-26.

JENSEN M.C., MECKLING W.C., 'The Theory of the Firm: Managerial Behaviour, Agency Cost and Ownership Structure', *Journal of Financial Economics*, (1976), pp. 305-360.

MAYER C., 'New issues in corporate finance', *European Economic Review*, 32, (1988), pp. 1167-1188.

MICHELET J.,*Histoire du XIXè siècle,* (M. Levy-Frères: Paris 1875).

MISKIN F., 'Asymmetric information and financial crises: a historical perspective' in G. Hubbard (ed.), *Financial Markets and Financial Crises*, University of Chicago Press: National Bureau of Economic Research.

MYERS S., MAJLHUF N., 'Corporate financing and investment decisions when firms have information that investors do not have', *Journal of Financial Economics*, (1984), pp. 187-221.

PARIS K., *Le Crédit Mobilier et ses actionnaires*, (Paris 1867).

STIGLITZ J.E ., 'Credit markets and the control of capital', *Journal of Money, Credit and Banking*, 17, 1985, pp. 133-152.

TILLY R., 'German banking 1850-1914: development assistance for the strong', *Journal of European Economic History*, 15 (1) Spring, (1986), pp. 113-152.