NATIONALIZATION, COMPENSATION AND WEALTH TRANSFERS : FRANCE 1981-1982

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1. INTRODUCTION

This paper studies a compulsory transfer of shares at a decreed price, specifically the French February 11, 1982 Nationalization Law. It assesses the magnitude of the wealth transferred from economic agents who didn't hold shares of nationalized companies to those who in tempore non suspecto did hold these shares. It uses stock market data and an event study procedure to estimate this transfer.[1] It builds and solves a model to overcome the initial condition problem.

The transfer is the difference between the market value of the compensation for a nationalized firm's share and the firm's share price in the absence of nationalization. We use matched portfolios to estimate such prices for 12 nationalized firms traded on the Paris Bourse. We find that shareholders of this sample received a premium, most safely estimated at 20 percent above these prices. This finding raises an interesting question: What unique resources did these target firms offer to French taxpayers that they didn't offer to their private shareholders to have the government, as bidder, legislate a windfall gain akin to a premium for control? Furthermore, we find that premiums vary substantially among firms. This is evidence that the law may be trespassing on the French constitutional right of equal treatment among the shareholders of nationalized firms.

The paper is divided into six sections. Section 2 formulates the contribution and method. The data, sample, and significance tests are described in Section 3. Section 4 discusses the nationalization program and documents the differential returns of the events preceding the Nationalization Law. Findings on premiums and wealth transfers are presented in Section 5. Section 6 summarizes and concludes this study.

2. CONTRIBUTION AND METHOD

How does the government-decreed compensation compare with a benchmark compensation which would make a target company shareholder indifferent to nationalization? We call this benchmark the indifference price. Upon payment, this indifference price would leave, ceteris paribus, an investor who *in tempore non suspecto* invested in nationalized firms' shares as wealthy as he would have been if he had invested, *ex ante*, in perfect substitute shares. Our concept of indifference price implies the following points.

At the indifference price, the investor should find nationalization a perfect substitute for keeping the shares with all their rights. This price corresponds to what the shares' market price would have been in the absence of any news on the firms' nationalization. However, nationalization without any prior investor knowledge about it is an unfeasible prospect with an unobservable price.

Nevertheless, there exist perfect substitute securities for these shares with observable prices. In an efficient market where shares are priced according to arbitrage pricing theory or the capital asset pricing model the set of substitutes consists of prospects with the same systematic market risk as target company shares.[2] This is so either if nationalization risk is diversifiable or if all prospects in the set have a zero probability of nationalization throughout. We will control for the latter as a sufficient condition.

To help identify the perfect substitute prospects we use a matched portfolio method. Realized matched portfolio returns are the basis for our estimates of indifference prices. These estimates are conditional on the outcome of alternative investment opportunities and on their substitutability in investor portfolios. Our method may introduce a bias (of unknown

direction) if nationalization affects stock prices of non-nationalized firms through participations and/or changes in industry competition.[3] We kept the bias negligible by matching each security with a highly diversified matched portfolio.

Non-nationalized substitute share prices are observed in the state of the world that actually occurred. Thus, we estimate indifference prices conditional on the election of President Mitterrand and a socialist-communist majority in the National Assembly. At these prices, our investor will be indifferent toward nationalization under the elected regime, but not necessarily toward the regime. This procedure does not provide full control. For example, nationalization may reduce property right security. Controlling for this would involve unconditional estimates which we do not make. We want only to examine actual wealth transfers under the Mitterrand regime, not hypothetical ones between regimes.

The difference between the compensation and the indifference price can be interpreted as a premium for government control or a rent from nationalization. If positive, it measures the per-share capital gain that accrues to shareholders of nationalized companies.[4] If negative, it measures the per share amount of shareholders' property confiscation. This premium provides a conditional standard to assess how the compensation discriminates between classes of investors based upon their portfolio composition prior to news on nationalization.

To measure the premium, the approach that comes immediately to mind is to compare the price before and after the nationalization announcement. This supposes that the announcement was completely unanticipated and that there were no coincident market movements. It also assumes that the announcement was a singular event. Finally, this requires that compensation should be paid immediately. Since none of these conditions are satisfied, we use a more

elaborate procedure.

2.1 Premium and wealth transfer

We start with the market value of any firm j at period t: $V_{j,t}$.[5] Its value just before the French presidential election, when $t = E - 1$ must be the present worth of its expected value immediately after the election at $t = E$:

$$V_{j,E-1}[1 + E(R_{j,E})] = \pi_W \cdot V^W_{j,E} + (1 - \pi_W)V^L_{j,E} + D_{j,E} \text{ for } j = 1,\ldots, J \quad (1)$$

where $E(R_{j,E})$ is the risk adjusted ex ante equilibrium holding period return of stock j; π_W is the probability that Mitterrand would win; $V^W_{j,E}$ is the value of the firm conditional on winning; $V^L_{j,E}$ is the value conditional on losing and $D_{j,E}$ are the firm's dividends.[6]

Let $\Pi_{N,j}$ be the probability that firm j be nationalized conditional on the election of Mitterrand. Consider a firm for which $\Pi_{N,j} > 0$. Clearly, the pre-election value of that firm reflects, through $V^W_{j,E}$, this probability and the expected compensation for nationalization. Thus $V_{j,E-1}$ cannot be the initial indifference price $V^*_{j,E-1}$. We adjust $V_{j,E-1}$ for the nationalization prospect by a coefficient C_j such that:

$$V^*_{j,E-1} = C_j \cdot V_{j,E-1}. \quad (2a)$$

Let $R_{n,E}$ be the realized return of nationalized firm n during the election period E and $R^*_{n,E}$ be what this return would have been under the Mitterrand regime had the firm not been nationalized. Appendix 1 demonstrates that C_n equals:

$$C_n = \frac{1 + E(R_{n,E}) - \pi_W(1 + R_{n,E})}{1 + E(R_{n,E}) - \pi_W(1 + R^*_{n,E})} \text{ for } n = 1, \ldots, N \quad (2b)$$

Equation (2b) has some interesting and intuitive properties. For $\pi_W = 0$, $C_n = 1$: if there is no chance that Mitterrand would win the election,

his nationalization program does not affect the pre-election value of target firms. For $R_{n,E} = R^*_{n,E}$, $C_n = 1$: regardless of the odds in favor of Mitterrand winning, if the market expects a compensation price equal to the value which the expropriated security would have had if the nationalization program had not occurred, then again nationalization leaves the pre-election value unaffected. Furthermore, C_n increases as $R_{n,E}$ becomes small relative to $R^*_{n,E}$. This is as it should be: the poorer, ceteris paribus, the relative compensation the market expects, i.e. the smaller $V^W_{n,E}$, the smaller $V_{n,E-1}$ and the more this value must be corrected upwards to obtain $V^*_{n,E-1}$. Similarly, C_n increases with π_W if $R^*_{n,E}$ exceeds $R_{n,E}$ and vice versa: if the market expects poor compensation, then, the higher the market's prior probability of Mitterrand's election, the smaller $V_{n,E-1}$ and the more this value must be corrected upwards to obtain $V^*_{n,E-1}$.

Note from Appendix 1 that for (2b) to hold their must exist at $t = E - 1$ two subsets of firms. One should make up our control portfolio I such that:

$$I \subseteq J,\ I = \{ i \mid \Pi_{N,i} = 0 \text{ for all } i \in I \}.$$

The other should make up our nationalized firm portfolio N such that:

$$N \subseteq J,\ N = \{ n \mid \Pi_{N,n} = 1 \text{ for all } n \in N \}.$$

Section 2.2 details the matched portfolio approach to estimate $R^*_{n,t}$ for $t = E, \ldots, T$ where T is the period at the end of which we estimate the wealth transfer. Section 3 explains how we selected the elements of the subsets I and N. Section 5 shows the sensitivity of C_n and our premium estimates to changes in π_W.

The $R^*_{n,t}$ and $V^*_{n,E-1}$ estimates produce successive company indifference values from $t = E$ to $t = T$ according to the compounding formula:

$$V^*_{n,t} = V^*_{n,t-1}(1 + R^*_{n,t}) - D_{n,t}. \tag{3}$$

The corresponding indifference prices $p^*_{n,t}$ are equal to $V^*_{n,t}$ divided by

the quantity of shares outstanding $q_{n,t}$.

The basis of the compensation to be paid to shareholders was legally defined but its exact amount not yet set or paid when actual nationalization caused the delisting of nationalized firm shares.[7] To provide for continuity in the liquidity of shareholders' rights, the stock exchange listed the right of each nationalized share to the compensation DTI (Droit a Titres Indemnitaires).[8] Its price at t, $dti_{n,t}$, is that day's market value of the legal compensation price, or legislated share price. The date of its first observation after listing defines T. The difference between this first observation and our indifference price at T measures the government takeover premium pr_n :

$$pr_n = dti_{n,T} - p^*_{n,T} , \tag{4a}$$

The corresponding company wealth transfer W_n received from nationalization is:

$$W_n = pr_n \cdot q_{n,T} \quad \text{for} \quad n = 1, \ldots, N. \tag{4b}$$

Consider now some portfolio effects. Each W_n estimate is based on the underlying estimates for $R^*_{n,t}$. These are subject to errors. Provided these errors are less than perfectly positively correlated across firms, the estimate of the value-weighted indifference return to the portfolio of nationalized firms $R^*_{N,t}$

$$R^*_{N,t} \equiv \left(\sum_{n=1}^{N} V^*_{n,t-1} \cdot R^*_{n,t} \right) \left(\sum_{n=1}^{N} V^*_{n,t-1} \right)^{-1} , \tag{5}$$

has a smaller standard error than the typical company one.[9] The portfolio indifference value $V^*_{N,T}$ is obtained similarly to equation (3) by compounding at $R^*_{N,t}$ the portfolio initial indifference value $V^*_{N,E-1}$. Portfolio wealth transfer W then equals:

$$W = DTI_{N,T} - V^*_{N,T} = \sum_{n=1}^{N} W_n \tag{6}$$

with $DTI_{N,T} = \sum_{n=1}^{N} (dti_{n,T} \cdot q_{n,T})$. Note that W incorporates nationalized firm size differences.

With $R_{N,t}$ representing the realized portfolio return equivalent to (5), equation (7) then defines the risk and market adjusted portfolio differential return DR_t ,

$$DR_t \equiv R_{N,t} - R^*_{N,t} \ . \tag{7}$$

DR_t measures the portfolio abnormal holding period returns due to nationalization.

In addition to reducing the amount of estimation error, portfolio results highlight the more systematic return consequences of the nationalization program. The proposed terms of nationalization changed several times between t = E and t = T. Some changes were systematic. At one point, for instance, it was announced that shareholder compensation would account for the loss of purchasing power during 1981. But other changes were more idiosyncratic. For instance, when it was announced that the assessment of share value as a basis for compensation would change from book to market value, this was good news for some firms, but bad for others.

2.2 Indifference returns

Equation (3) shows how indifference values are based on the returns which target company shareholders would have experienced from t = E, ..., T in the absence of news on their nationalization. These indifference returns are not observed. We used Black and Scholes (1973) matched portfolio returns, $R^M_{n,t}$, to produce estimates of them.[10]

To generate them, we describe returns at t in terms of the market model equation

$$\tilde{R}_{jt} = \alpha_j + \beta_j \tilde{R}_{mt} + \tilde{\varepsilon}_{jt} \tag{8}$$

with the usual assumptions of bivariate normality, stationarity and white

noise residuals. We estimate this for all J securities during a period ending at $t = C < E$. Then, we rank in ascending beta order the securities of the control subset I; split this group along the median beta security and form the equally-weighted low and high beta portfolio corresponding to each subgroup.

Resulting portfolio betas $\hat{\beta}_L$ and $\hat{\beta}_H$ provide for each nationalized security beta $\hat{\beta}_n$, a factor γ_n as the solution of:

$$\hat{\beta}_n = \gamma_n \hat{\beta}_H + (1 - \gamma_n)\, \hat{\beta}_L \quad \text{for} \quad n = 1, \ldots, N . \tag{9}$$

We then weight the low and high beta portfolio return series, $R_{L,t}$ and $R_{H,t}$, with each of these γ_n factors to construct N matched portfolio return series $R^M_{n,t}$, each one matching a different nationalized security return series:

$$R^M_{n,t} = \gamma_n R_{H,t} + (1 - \gamma_n) R_{L,t} \quad \begin{matrix} \text{for } n = 1, \ldots, N \\ \text{and } t = \ldots, T . \end{matrix} \tag{10}$$

In the absence of arbitrage opportunities for diversified investors, $R^M_{n,t}$ is an unbiased estimator of $R^*_{n,t}$ for $t \leqslant C$. [11] We will test this property for the subsequent period $t = C + 1, \ldots, E - 1$. $R^M_{n,t}$ would maintain this property for $t > E$, if the matched portfolios' beta and the matching securities' beta would have been equally affected had there been no nationalization. This condition is weaker than beta stationarity over the pre- and post-election regime.

3. DATA, SAMPLE AND SIGNIFICANCE TESTS

The French Stockbrokers Association (C.A.C.) records and distributes on magnetic tape Friday closing spot prices for all shares traded on the Paris forward exchange and for a limited number of shares traded only on the Paris spot exchange.[12] Our analysis is based on the union of the data sets recorded on the May 1982 and January 1984 editions of this tape, in total, 246 stock price series, of which 196 are usable.[13] The equally weighted portfolio of

these 196 shares defines the market portfolio of J firms.

An error free case for selecting the subsamples I and N cannot be made. We tried to minimize errors and avoid selection bias by examining published lists of nationalization targets.[14] The names on these lists vary according to electoral context (1973 presidential, 1978 legislative, 1981 presidential), political party (communist, socialist, radical left), specificity (firm names versus industrial sectors) and authority (party official acts versus working papers).

We included in N all the nationalized firms in J which were officially targeted by both the Communist and Socialist party during each of the three electoral periods. They are the 12 firms described in Table 1, representing together 9.4 percent of the total market value for French companies and 66.4 percent of the aggregate market value of all listed nationalized firms.

INSERT TABLE 1 ABOUT HERE

There are five commercial banks (Banque Rothschild, Banque Worms, Credit Commercial de France, Credit du Nord, Crédit Industriel et Commercial) representing in market value 14.5 percent of N, two financial conglomerates (Compagnie Financière de Paris et des Pays Bas and Compagnie Financière de Suez) representing 29.7 percent and five industrial firms (Compagnie de Saint-Gobain Pont à Mousson, Compagnie Générale d'Electricité, Pechiney Ugine Kuhlmann, Rhône-Poulenc S.A., Thomson-Brandt) accounting for 55.8 percent.

We selected subsample I on a residual basis. We eliminated from J the subset N and the subset K of firms whose probability of nationalization lay between zero and one:

$$K \subseteq J,\ K = \{ k | 0 < \Pi_{N,k} < 1 \quad \text{for all} \quad k \in K \}.$$

We included in K all firms in J which are not in N and which were nationalization targets according to both the Socialist and Communist 1981 electoral platforms. No firm which the Socialists targeted was absent from the list of firms targeted by the Communists. Proposition 21 of Candidate Mitterrand's platform defined his nationalization targets as following: The government sector will be extended by nationalizing the nine industrial groups specified in the Joint program and the Socialist program, the steel industry, the armaments and space activities financed with government funds. The nationalization of credit and insurance will be completed (Parti Socialiste, 1981, p. 5). Appendix 2 discusses how we identified the 58 firms of K. The control set I contains the 126 remaining firms.

To summarize, for the 12 firms in N, we accept the null hypothesis that the probability of their nationalization was one. A type II error here causes overestimation in wealth transfer. For the 58 firms in K we accept the null hypothesis that the probability of their nationalization was larger than zero. This we reject for the 126 firms in I. A type II error in K has no effect on the size of the wealth transfer estimate. A type I error for a firm in I causes underestimation in wealth transfer.

The sample period is centered around the May 10, 1981 election of Mitterrand and has 141 weekly return observations from July 7, 1979 ($t = -96$) through March 19, 1982 ($t = 44$). The beginning point is arbitrary, the end point corresponds to the last Friday observation before delisting of the DTI's. There are three subsample periods.

The estimation or construction period from $t = -96$ through September 26, 1980 ($t = C = -33$) has 64 observations. We used these to estimate the market model and to construct the matched portfolio return series (equations (8) and

(9)). Experiments with variations in the number of observations or in the date of the endpoints did not alter our results.

The test period starts on October 3, 1980 ($t = -32$) and ends on March 19, 1982 ($t = 44$). We used its first 32 observations through May 8, 1981 ($t = -1$), to examine the out of sample properties of the matched portfolio returns (equation (10)).

The actual event or nationalization period starts with the election week of May 15, 1981 ($t = E = 0$). It continues until 41 weeks later through February 19, 1982 ($t = T = 40$), the first date after promulgation of the Nationalization Law on February 11, 1982 when DTI transaction prices were recorded on the C.A.C. tape. We used the four post event observations through March 19, 1982 ($t = 44$) to clarify some points on method.

Some preliminary results are found in Figures 1 to 3. Figure 1 plots the weekly return of the portfolio of nationalized firms and of the matched portfolio, Figure 2 the differential return between them and Figure 3 the cumulative differential return over the test period. These graphs are highly suggestive. Before drawing any conclusions from them, consider Table 2 column 3 which tabulates the differential return from $t = -32$ through $t = 44$ and Table 3 which reports some summary measures and statistics.

INSERT FIGURE 1, FIGURE 2 AND FIGURE 3 IN THIS ORDER AND ON ONE PAGE

INSERT TABLE 2 ON THE OPPOSITE PAGE (SEE PAGES 12 AND 13)

INSERT FIGURE 1 HERE

INSERT FIGURE 2 HERE

INSERT FIGURE 3 HERE

INSERT TABLE 2 HERE

Insofar as the DR_t's are independent drawings from the normally distributed $\widetilde{DR}$ variate, we can test whether they are statistically different from zero at t using the t - statistics:

$$t(\widetilde{DR})_t = \frac{DR_t}{S(\widetilde{DR})} \tag{11}$$

in which $S(\widetilde{DR})$ is the estimation period standard deviation, equal to 1.15 percent per week as Table 3, line 1, column 5 reports. Note from lines 1 and 2, that we cannot at the usual five percent-level reject either the null hypothesis that during the estimation and test periods the DR_t's are independent drawings or the null hypothesis that the standard deviations of these two periods are the same. From Table 2, there are four out of 32 significant DR_t occurrences during the test period.

Equation (12) defines cumulative differential returns from t to t + Z - 1, CDR_t^{t+Z-1} :

$$CDR_t^{t+Z-1} \equiv \sum_t^{t+Z-1} DR_t \quad \text{for} \quad Z = 1, \ldots \tag{12}$$

The values of CDR_t^{t+Z-1} for t = -32 and Z = 1, ..., 77 are shown in Table 2; those for the estimation and test periods in Table 3, lines 1 and 2. We can test if they are significantly different from zero by the t - statistics:

$$t(\widetilde{CDR})_t^{t+Z-1} = \frac{CDR_t^{t+Z-1}}{\sqrt{Z} \cdot S(\widetilde{DR})} \tag{13}$$

From this statistic as reported in Table 3, column 9, one cannot at the 5 percent level reject the hypothesis that the mean and cumulative differential returns in the estimation and test periods are equal to zero.

We conclude that the reported test statistics on the estimation and test periods provide the empirical support we need to use matched portfolio returns as indifference returns.

INSERT TABLE 3 ABOUT HERE

Consider now in Table 3, line 3, the test statistics of the event period. One cannot reject at the 5 percent level the hypothesis that its DR_t are drawn independently. Its 41 week cumulative differential return of 35.89 percent is statistically significant. One must reject the hypothesis that its differential return standard deviation is not significantly larger than in the construction period.

To summarize, the test statistics confirm what figures 2 and 3 suggest, namely that the event period has highly volatile differential returns and a significantly positive cumulative return differential.

Note from Table 2 that the event period has 15 out of 34 or, if one counts the weeks during which trading was suspended, 22 out of 41 differential returns significantly different from zero. We will not attempt to analyze each one of them, but concentrate on some episodes suggested by the data. We define an episode as a statistically significant sequence of weeks with uninterrupted significant differential returns. Table 2 suggests five of them, summarized in Table 3 lines 4 through 8. First, the period from May 9 through May 22, 1981 ($t = 0$, $Z = 2$) with CDR_0^1 - 12.9 percent. Second from July 18 through July 31, 1981 ($t = 10$, $Z = 2$) with CDR_{10}^{11} - 12.5 percent. Third, the seven-week period from August 15 through October 2 ($t = 14$, $Z = 7$) with CDR_{14}^{20} 35.7 percent. Fourth from November 7, through November 27 ($t = 26$, $Z = 3$) with CDR_{26}^{28} 6.3 percent and fifth and last the five week period from January 16 through February 19, 1982 ($t = 36$, $Z = 5$) with CDR_{36}^{40} 17.2 percent. Section four tries to account for these episodes in terms of the genesis of the Nationalization Law.

4. DIFFERENTIAL RETURN OF THE NATIONALIZATION PROGRAM

It is difficult to trace the differential returns of the nationalization program because their causes are multiple and unobserved. As a chronological guide Appendix 3 summarizes the first announcement in 'Le Monde' of legislative events directly related to the nationalizations and tabulates next to them the coincident percent change in the nationalized portfolio market value and the percent differential return, where statistically significant. The following discussion highlights only major points. The reader can refer to Appendix 3 and to footnotes for details and to Figures 1 through 3 for visual aid.

4.1 Election and aftermath.

The principle of nationalization was part of Mitterrand's platform when he was elected on May 10, 1981 (t = 0) with 51.8 percent of the vote.[15] This principle was often proclaimed, yet on election day there remained substantial confusion about its implementation. Uncertainty prevailed on the field of application; calendar; legal mode and legislative process; acquisition technique; share valuation; compensation amount; means and timing of settlement.

The platform referred to "extending the government sector" by nationalizing nine industrial groups, the steel industry, armaments, space activities, credit and insurance but gave no indication as to what economic decisions would be made on the specific property rights of particular shareholders.

The French constitution could require that French and foreign shareholders of target firms be treated equally.[16] This requirement would provide all shareholders considerable leverage to negotiate compensation terms with the French government as most targeted firms held many seizable assets outside France and as French and foreign courts alike did not recognize

extraterritorial effects of nationalization. These assets could thus provide shareholders valuable exchange to obtain "fair and prompt" compensation, as prescribed by both French constitutional and international law. But what does "fair" and "prompt" compensation mean?

Expeditious legislation could make it difficult for target shareholders to safeguard their property rights. The French government has formidable legal means to assure discrete, swift action. A framework empowering law could be voted without floor debate, and could authorize the government to implement nationalization by decree.[17]

Government sector extension could be arranged in several ways, from public tender offers to buy a desired level of government control at one extreme to unilateral and 100 percent legal expropriation at the other.[18] There would be inherent difficulties in the latter case, relating to share valuation and the selection of a reference period.[19] An acceptable means of settlement and payment date would have to be negotiated.[20]

The election outcome increased to one the probability that our portfolio would be nationalized, yet the value to be assigned to the aforementioned interrelated factors remained uncertain. Henceforth, they became the sources of our nationalized portfolio wealth, each with a wide range of possible values. During the first five post-electoral trading sessions, our portfolio market value fell from 23.7 billion F on May 8 to 18.7 billion F on May 15, a loss of 20.9 percent. DR_0 is -9.8 percent and significant. This finding reveals that investors expected poor compensation.[21]

The day after his inauguration on May 21, Mitterrand dissolved the National Assembly and called for June 14 and 21 elections, in a move to obtain a lawmaking majority in his favor.[22] During the May 9 through May 22 two week episode, the portfolio lost 25.6 percent in value. CDR_0^2 is -12.9 percent,

significant.

The legislative elections, the appointment of a socialist-communist government and the start of the nationalization legislative process with the first official designation of the firms in our sample as targets took place between May 23 and July 17, 1981 (t = 2, Z = 8).[23] Interestingly enough, this period had no significant impact on the value of our nationalized portfolio: CDR_2^9 = - 1.6 percent, insignificant. This finding provides some empirical support for the criteria we used in selecting this portfolio. Similarly, confirmation of property right security increased the value of some firms in the K portfolio which were now clearly excluded from nationalization.[24]

4.2 Bill preparation.

The statistically significant differential return during this episode (CDR_{10}^{11} - 12.5 percent) is somewhat puzzling. No 'Le Monde' announcement during this two-week period seems to reveal information about any of the four factors (share valuation, compensation amount, means and timing of settlement) which remained unsettled after the July 8 program announcement. We suggest the following explanation for a significant DR_{10}. Since the election, the market valued our portfolio of securities which were to be nationalized as compensation claims instead of common stock. This might have reduced its return sensitivity to the market. If so, at a time of considerable market movement significant differential returns could be produced which are unrelated to changes in market expectations about portfolio wealth factors. We suspect that this partially occurred during t = 10, when weekly market returns were 10.5 percent and portfolio return 3.1 percent.

During t = 11, Le Monde reported rumors that the government would base share valuation on average daily market value from 1978 through 1980.[25] This rule would value our portfolio at 21.8 billion F on January 1, 1982, in

contrast with its market value of 15.4 billion F on July 31, 1981.[26]

4.3 Bill announcement and opposition.

The week after the August 15 holiday weekend, trading activity in nationalized portfolio shares increased amidst newspaper stories about the dealings in the interdepartmental working party on nationalization. Le Monde reported that substantial buy orders were placed on August 21 in anticipation of favorable compensation and quotation suspension. Also, on that day, several target shares earned a 6 to 12 percent return. DR_{14} equaled 4.5 percent, significant.[27]

On August 27, the press reported and the Prime Minister's office authenticated the working draft of a nationalization bill. This draft based share valuation on average daily market value, but left the reference period undefined. Compensation was to be paid within three months of the law's enactment. As means of settlement, shareholders could opt for one of two forms of long term amortized and negotiable government guaranteed bonds: a mixed fixed-variable coupon income bond or a variable coupon bond with its coupon set semi-annually at the secondary market yield on medium term government bonds of the preceding period. That week ($t = 15$), portfolio value increased 8.4 percent from 16.6 billion F on August 21 to 18.0 billion F on August 28, realizing a significant DR_{15} of 8.1 percent. Quotations for the shares of target companies were suspended on September 9.

On September 23, the Cabinet approved the bill nationalizing 43 firms, effective on the day the law was to be published.[28] Contrary to the principles the Prime Minister had announced in his July 8 National Assembly program speech, nationalization extended equally to foreign and French shareholders and compensation payment was due as indicated previously, but the mixed fixed-variable coupon bond had been dropped as a settlement option.

Contrary to the previously leaked version, the Cabinet bill based share valuation partially on accounting numbers. Share value would equal the weighted sum of (1) the firm's average daily market value from January 1, 1978 to December 31, 1980, $\bar{V}_n$; (2) its equity unconsolidated book value on December 31, 1980, $E_{n,-19}$; and, (3) 10 times its 1978 through 1980 average annual unconsolidated Net Profit After Taxes $\bar{C}_n$. The sum would be divided by the number of shares outstanding on December 31, 1980, $q_{n,-19}$. Briefly, the bill assessed share value on December 31, 1980 and set the compensation per share P_n^{d1} equal to:

$$P_n^{d1} = [.50\bar{V}_n + .25E_{n,-19} + .25\bar{C}_n] \cdot q_{n,-19}^{-1} \qquad (14)$$

This formula would offer 13.1 percent more in compensation than the value of $\bar{V}_N$. It would value our portfolio at 24.7 billion F in contrast with 21.5 billion F, our portfolio market value on October 2, 1981.[29]

The cabinet proposal focused the debate on share valuation and shareholder compensation. The 1789 Declaration of the Rights of Man and the Citizen embodied in the French 1958 Constitution, requires "equal treatment under the law" (Art. 6) and "fair and prompt compensation" (Art. 17). The opinion of the chairman of the Commission des Opérations de Bourse (C.O.B.) expressed at the September 30 National Assembly Special Committee hearing summarized the main arguments why the compensation package violated these legal requirements.[30] The length of the reference period discriminated between declining and performing firms, the latter being more penalized the longer the period (Commission des Opérations de Bourse, 1982, p. 248). Historic averages required adjustments for inflation which the bill omitted (ibid., p. 248). The bill did not adjust, but should have, the averages for changes in outstanding shares (ibid., p. 248). Ignoring consolidated accounts introduced compensation differences from accounting practices and legal

organization unrelated to economic worth (ibid., 268-269). Lastly, the bill excluded 1981 dividends (ibid., 249-250).

Wednesday, September 30, was also the day when quotation resumed after 15 trading sessions of suspension. By the end of that week (t = 20) and this episode portfolio market value had increased by 6.0 billion F or 37.4 percent from 16.0 billion F on August 14 to 22.0 billion F on October 2, yielding 35.7 percent in differential seven week return, significant. By then, the portfolio had earned a significant positive cumulative differential post election return of 8.3 percent.

During the five weeks until the next episode the nationalization program kept the news headlines but our portfolio differential return was significant only during the week ending on October 16, 1981. The tumultuous National Assembly debate which started on October 13, although extensive and detailed, had virtually a predetermined outcome. The Assembly passed the bill in first reading on October 26.

The same day, representatives of 16 foreign shareholding financial institutions publicized their rejection of the proposed compensation.[31] As argued previously, the position of those shareholders was of particular importance. They required prompt and effective payment -- upon transfer of title rather than "within three months" -- in convertible cash or a near perfect substitute to it rather than in government guaranteed bonds. They asked for independent expert valuation based on consolidated accounts (instead of value fixing by law) and for payment of dividends earned in 1981. Based on 1980 dividends, this claim would be worth 1.7 billion F.

4.4 International pressure and Senate constitutional opposition.

At the start of the fourth episode, the position of foreign shareholders received further attention. The Swiss foreign minister declared to have discussed

the nationalizations with Mitterrand, reports Le Monde on November 7. Two days later, two U.S. legal experts analyze in the same newspaper why the bill violates U.S.-French treaty provisions and what property-right safeguards U.S. shareholders can bring to bear upon their case. (Scott and Nedjor, 1981).

Most of this episode coincided with the Senate examination of the bill, started on November 3 in special Committee. On November 16, this Committee proposed outright rejection on the ground of unconstitutionality. The main argument of its November 19 report was that the target companies neither produced national public goods nor constituted natural monopolies. The committee also argued that compensation was unfair because it was based on unconsolidated accounts, and was not prompt, because payment was not due at the time of ownership transfer. The Senate followed its Committee recommendation and rejected the bill on November 23. For the total three week episode ($t = 26$, $Z = 3$), portfolio value increased 1.5 billion F by November 27 and CDR_{26}^{28} was 6.3 percent, significant.

Two fully anticipated formal events took place during the following seven weeks until the fifth episode. The National Assembly, predictably, passed the bill in a final vote on December 18, 1981. The opposition filed its long-anticipated unconstitutionality suit with the Constitutional Council the next day.

From election week to January 15, 1982, the day before the Council announced its verdict, CDR_{0}^{35} had reached 18.7 percent, significant. By then the market value of the nationalized portfolio had attained 24.2 billion F, yielding 2.2 percent capital gains on its preelection value of 23.7 billion F, whereas the matched portfolio lost 10.5 percent.

4.5 Constitutional verdict and nationalization law.

In its verdict, the Constitutional Council nullified seven articles of the bill, including the provisions on compensation. These, the verdict

observed, made no allowance for dividends earned in 1981, inflation adjustment of historic company value estimates and consolidation accounting. Consequently, the compensation was deemed unfair and "the method of calculation of [the shares'] exchange value leads to inequalities of treatment".[32] Following the announcement, target company share quotations were suspended.

Within four days, the cabinet approved a revised valuation formula in an attempt to satisfy the Constitutional Council's requests. To avoid protracted negotiations about proper consolidated book values that would treat all firms equally, the government abandoned accounting numbers and based share valuation solely on market price. To prevent further accusations of unequal treatment due to the reference period length, it shortened this period to six months, October 1980 to March 1981. To be "fair", it selected the average of the monthly highs per share, $\bar{P}_n$. To comply with the dividend request, it added dividends paid for 1980, $D_{n,\ 1980}$, divided by the number of shares outstanding on December 31, 1981, $q_{n,33}$. Furthermore, the cabinet increased this sum by 14 percent to compensate for the 1981 French Consumer Price Index rate of change. In summary, the revised bill assessed share value on December 31, 1981, rather than on December 31, 1980, setting the compensation per share, P_n^{d2}, equal to

$$P_n^{d2} = (\bar{P}_n + D_{n,1980} \cdot q_{n,33}^{-1})\ 1.14 \qquad (15)$$

This formula offered portfolio compensation - assessed on January 1, 1982 - of 30.5 billion F, 5.4 billion F or 21.4 percent more than the voided previous bill.

Soon after the cabinet's approval, the revised bill passed the National Assembly and became law on February 11. Its publication on February 13, 1982 made the French government owner of our portfolio. Trading in DTI's started

on February 18. The next day our portfolio market value was 30.5 billion F, 26.0 percent higher than the day before the constitutional verdict and yielding a five week (t = 36, Z = 5) DR of 17.2 percent, significant.[33]

To conclude this section, note from Table 2 and Table 3, line 9, that during the four 'post mortem' return weeks before the DTI were delisted, the portfolio yielded two significant differential returns (t = 42 and 43). During these two weeks, the matched portfolio dropped 6.3 percent in value whereas the DTI portfolio virtually maintained its value. These return differentials may thus reflect differences between a bond portfolio and a stock portfolio response to changing market rates of interest and other economic factors rather than changing expectations about compensation. This 'post mortem' finding illustrates the more general point previously alluded to during the narrative of the second episode. The point is that there were essentially two genuine sources of return differentials associated with the nationalization program. The first is the changing expectations about the compensation package. The second is the sheltering of the nationalized portfolio against market wide movements because of its transformation from a stock portfolio into a variable coupon bond portfolio. The attractive feature of fixing the matched portfolio beta during the estimation period is that this allows the second effect, which is genuine to the nationalization plan, to show up in the return differentials during the event period. A possible drawback is that one may erroneously associate the presence (absence) of causality with simple coincidence between announcements and return differential significance (insignificance).

5. WEALTH TRANSFERS AND TAKEOVER PREMIUMS

As defined in equation (6), W, the wealth transferred from economic agents who did not hold the nationalized portfolio to those who <u>in tempore non</u>

suspecto did hold that portfolio, is the difference on February 19, 1982, between the compensation paid for nationalization, $DTI_{N,T}$ (33.6 billion F), and the value of that portfolio under Mitterrand had it not been nationalized, $V^*_{N,T}$.[34]

W declines as $V^*_{N,T}$ increases. Our estimate of $V^*_{N,T}$ is the terminal value of the initial indifference value, $V^*_{N,E-1}$, compounded at the successive indifference returns, $R^*_{N,t}$. The larger $V^*_{N,E-1}$, the larger $V^*_{N,T}$ is. $V^*_{N,E-1}$ is the product of the observed portfolio value before the election, $V_{N,E-1}$ with the adjustment coefficient, C_N.[35] Given the realization $R_{N,E}$ and our estimates of $E(R_{N,E})$ and $R^*_{N,E}$, C_n is a positive convex function of the marginal investors' subjective probability that Mitterrand would win π_W.[36] The larger π_W, the larger C_N is to correct $V_{N,E-1}$ for the nationalization project and the smaller W is. To summarize, W is a negative concave function of π_W.

INSERT TABLE 4 ABOUT HERE

Table 4 illustrates these points. For π_W equal to zero, C_N is one, $V^*_{N,E-1}$ of 23.7 billion F coincides with $V_{N,E-1}$ and the premium from nationalization is equal to 31.6 percent.[37] As π_W increases from zero to one (column 1), C_N increases from one to 1.89 (column 2) and $V^*_{N,E-1}$ increases from the observed value to 44.7 billion F (column 3). Correspondingly, $V^*_{N,T}$ increases from 25.5 to 49.8 billion F (column 4) and W declines from 8.1 to - 16.2 billion F (column 5) or from 31.6 to -32.6 percent of portfolio indifference values (column 6). In summary, the wealth transfer and takeover premium estimates are highly sensitive to π_W.

What is the true value of π_W? We possess no classical point estimate nor any direct evidence on it. But we offer some indirect evidence and consideration about its boundary values and our best guess estimate.

Is π_W close to zero, as Marti (1981) suggests?[38] As π_W approximates zero, the expected return conditional on Mitterrand losing approximates the expected return and the surprise if Mitterrand actually wins increases. Return statistics from observations before and during the election-week do not contradict these implications.[39] Poll results on voter predictions of the election outcome put at 0.5 percent the maximum probability of being wrong when rejecting H_0 that voters predict Mitterrand to win.[40] Some cues thus support the Marti suggestion.

But, with homogenous expectations about $V^W_{N,E}$, $V^L_{N,E}$, $D_{N,E}$ and $V^W_{N,E} < V^L_{N,E}$, π_W is the highest probability needed to clear the market. If that is close to zero, it follows that all investors who were willingly holding stocks at their clearing price were almost sure that Mitterrand would lose. And poll results on voter intentions put at 13.3 percent the maximum probability of being wrong when rejecting H_0 that Mitterrand will lose.[41] We find it implausible that this significant information was discarded by all stock market holders.[42]

Is π_W at least equal to .867 as the surveys of voter intentions suggest? We have two problems believing this. One, if π_W were that large, why did the Mitterrand victory surprise the market?[43] Two, it implies that the expected return conditional on Mitterrand losing was at least 74.4 percent.[44] This return expectation on a stock portfolio of 126 non-nationalizable firms exceeds the upperbound of rational expectations of any marginal investor, we believe.

In summary, valid reasons argue in favor and against extreme estimates for π_W. But both extremes cannot hold simultaneously. Our results use the

.50 mid-range estimate for π_W. This implies an 11.7 percent expected return conditional on Mitterrand losing and a 20.2 percent premium.[45] This premium estimate is not affected by its extreme values, an attractive feature to summarize the skewed distribution of the premium. In retaining 20.2 percent as our best guess estimate, we minimize the expected absolute errors in our findings.

From our findings and considerations, and referring to Table 4, we draw four conclusions. First, that France paid a premium of at most 31.6 percent. Two, that our best guess estimate of the premium is 20.2 percent. Three, that there is at most a 18 percent probability that nationalized shareholders would have fared better under Mitterrand if they had not been nationalized. Four, that the lowerbound of the premium is - 32.6 percent.

To discuss the Constitutional Council's verdict, Table 5 contrasts the portfolio's compensation, the indifference value and the wealth transfer of the December 18, 1981 bill with those of the February 11, 1982 Nationalization Law. The formula revision from equation (14) to (15) increases portfolio compensation by 6.1 billion F, from 27.4 to 33.6 billion F, or 22.4 percent. Compared with the portfolio's indifference market value of 27.9 billion F, the market value of the compensation shows a premium of 5.6 billion F, up from -0.5 billion F under the bill that was declared unconstitutional. Under the final law, the government legislated a 20.2 percent takeover premium over our portfolio estimated indifference market value in the absence of its nationalization.[46]

INSERT TABLE 5 ABOUT HERE

Domestic shareholders had little further recourse to safeguard their property rights once the French Constitutional Council had declared that the law conformed to the constitution. However, foreign shareholders could have opposed the non-extraterritorial effect of the French law to claim property rights on nationalized firm assets located outside France and negotiate better compensation. We are not aware of any judiciary action undertaken after February 13, 1982 by foreign shareholders to improve their compensation. To that extent, they accepted the compensation price.

The C.O.B., on its part, wrote on March 30, 1982 that "the compensation completely fulfills shareholders' financial investment expectations" (C.O.B., 1982, p. 10). One franc invested in the nationalized portfolio on May 8, 1981 grew with dividends reinvested to about 1.42 francs on February 19, 1982. If it had been invested in the non-nationalized matched portfolio, it would have grown to only 1.08 francs. This suggests that becoming nationalized under a Mitterrand regime was probably an attractive disinvestment.

The French taxpayer bore the cost of the premium. This raises the question of what unique opportunities or resources did the nationalized firms offer to French taxpayers which they did not offer to their private shareholders for the government to legislate such a takeover premium? Unless the government manages to produce a 20.2 percent immediate value increase in the nationalized firms the premium corresponds to a one-for-one transfer of wealth from French taxpayers to expropriated nationalized firm shareholders.[47]

To examine the individual firm premiums and wealth transfers which underlie the portfolio results, consider Table 6 which reports three subsets of data at $t = T =$ February 19, 1982 and $\pi_W = .50$.

INSERT TABLE 6 ABOUT HERE

First, column (2), tabulates each firm's indifference share price as per equation (3). Second, columns (3) through (6) tabulate each firm's legislated share price premium per share defined in equation (4a) and as a percent of company wealth transfer defined in equation (4b) corresponding to the rejected December 18, 1981 bill. Three, similar data for the February 11, 1982 law are given in columns (7) through (10).

We found that under the December 18, 1981 bill, the arithmetic average premium was 2.6 percent with a standard deviation of 23.6 and a range of 88.2 percent. The valuation formula penalized firms with many subsidiaries or growing firms such as Crédit Commercial de France (-20.1 percent), Compagnie Générale d'Electricité (-26.0 percent) or Paribas (-20.1 percent). It rewarded poor performance as in the case of Rhône-Poulenc S.A. (62.2 percent). Rhône-Poulenc's shareholders captured -234 percent of the negative portfolio transfer, even though their investment represented on December 31, 1980 less than nine percent of portfolio value.

With the exception of Banque Rothschild, premiums were made positive by the February 11, 1982 law which based compensation on market value, estimated market value on a short and recent reference period, and made new provisions for dividends and purchasing power. The average premium increased to 19.2 percent while the standard deviation and range decreased to 11.7 percent and 44.3 percent, respectively. There is no significant Spearman rank correlation between the percent premiums of both compensation plan [$r^r = .39$, $t(\tilde{r}^r) = 1.35$].

As a result of the change, the combined shareholders of Banque Rothschild and Rhône-Poulenc S.A. lost .431 billion F or 19 percent of their firm's December 31, 1980 value. The shareholders of the three firms that were highly penalized under the first plan gained 3.519 billion F, 57 percent of the compensation increase, or 44 percent of the combined value of their firms on

December 31, 1980. The group of commercial banks and holding companies shareholders increased its share in the transfer from 292.5 percent when the portfolio transfer was negative to 44.8 percent of its positive amount. As a group, they benefited most from the constitutional verdict and the valuation revision. This group is also the one with the largest proportion of nonresident shareownership.

But industrial firm shareholders benefited most from nationalization. They held 54.0 percent of the portfolio indifference value and earned 58.4 percent of the company wealth transfer.

In the final analysis, did all shareholders receive equal treatment? The answer is to a certain degree a matter of interpreting the concept of equality, which goes beyond the scope of this paper. However, while the law applied equally to Banque Rothschild and Rhône-Poulenc S.A. shareholders, the difference in the premiums is 47.0 percent in favor of the latter: Banque Rothschild shareholders wealth invested in the bank was confiscated for 2.7 percent whereas Rhône-Poulenc shareholders received a 44.3 percent premium from nationalization. This difference in outcome did not result from competitive bidding, but from raising an absolute barrier against competition for control. It did not consider the value of the target's future prospects under new control. Thus, the 11.7 percent standard deviation of the percent premiums over our sample of 12 firms is somewhat disconnected from economic worth. To that extent, this premium dispersion is evidence that the law trespassed on the French constitutional right of equal treatment among expropriated shareholders, if this means to receive equal value to worth.

6. SUMMARY AND CONCLUSIONS

This paper documents the differential returns associated with the recent French nationalization program. Estimates of nationalized firm share prices

in the absence of their nationalization are formulated. The takover premiums which the government legislated are measured and the program's wealth transfers assessed.

The study uses a matched sample technique to forecast indifference returns, that is the returns which nationalized firms would have realized under Mitterrand had they not been nationalized. A value weighted portfolio of 12 nationalized firms is constructed. Its indifference returns and values are estimated over the nationalization period. Indifference returns are subtracted from the observed returns to measure differential returns.

The data suggest five episodes of highly significant differential returns. Mitterrand's victory and its immediate aftermath generated a -12.9 percent differential two week return and 25.6 percent loss in the 23.7 billion F pre-election portfolio value. If nationalization took place, the market expected poor compensation surrounded with high uncertainty. During the two-week period when the government's interdepartmental working party started its work on the nationalization bill, the portfolio lost a further 2.8 percent and produced -12.5 percent differential return. When decisions about specific shareholder property rights were made in August 1981 during the drafting of the bill, portfolio wealth factors were set at higher values than expected, and uncertainty surrounding them was gradually removed. The seven-week differential return of this perod was 35.7 percent and portfolio value increased 6.0 billion F or 37.4 percent.

During the final stages of the first legislative round, the Senate and foreign shareholders focused the debate on the French constitutional and international law requirements that compensation should be fair, prompt, adequate and effective. Portfolio value further increased 8.0 percent producing 6.3 percent three-week differential return. Soon after being legalized, the first nationalization bill was declared unconstitutional

because it violated expropriated shareholders rights to fair compensation and equal treatment. In response to this verdict, the government increased the taxpayers' offering price for the portfolio by 5.4 billion F or 21.4 percent. This yielded 17.2 percent in differential returns during the final five-week period.

The market valued at 33.6 billion F the rights to compensation which the law conferred to expropriated portfolio shareholders. This implied a portfolio premium of 20.2 percent over 27.9 billion F, our best guess estimate of the compensation value at which a portfolio owner would have been indifferent towards nationalization under a Mitterrand regime. Unless the government shareholder achieved an increase in portfolio value - over what it would have been under private shareownership - equal to this 'takeover' premium, this premium corresponded to a one-for-one wealth transfer from French taxpayers to expropriated shareholders.

The exact premium paid will remain unknown. From our findings, we conclude that France paid a premium of less than 31.6 and more than - 32.6 percent; our best guess estimate puts it at 20.2 percent. There is only a 18 percent chance that nationalized shareholders would have done better under Mitterrand were their firms not nationalized.

Industrial firm shareholders benefited most from the nationalization. Commercial bank and holding company shareholders profited most from the Constitutional Council verdict and the increase in the government legislated offering price. The premiums which the government paid in excess of our indifference value estimates show a cross sectional dispersion which is worth considering and which does not reflect relative economic worth. This raises interesting questions about the nationalization law respect for the constitutional right of equal treatment among expropriated shareholders.

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Appendix 1

In addition to equation (1) and (2a) of the text, note the observed return on security j:

$$V_{j,E-1} \cdot (1 + R_{j,E}) = V^{W}_{j,E} + D_{j,E} \tag{A1}$$

The value of each firm if Mitterrand wins is:

$$V^{W}_{j,E} = \Pi_{N,j} \cdot V^{N}_{j,E} + (1 - \Pi_{N,j}) \cdot V^{*}_{j,E} \tag{A2}$$

in which $\Pi_{N,j}$ is the conditional probability of firm's j nationalization, $V^{N}_{j,E}$ its value if nationalized and $V^{*}_{j,E}$ its value if not nationalized. A nationalized firm indifference value $V^{*}_{n,t}$ is what this value would have been under a conditional nationalization probability equal to zero. To express this definition formally, set $\Pi_{N,j} = 0$ in (A2), substitute (A2) in (1) and let $E(R^{*}_{n,E})$ be the ex ante equilibrium holding period return to this firm under a zero nationalization probability:

$$V^{*}_{n,E-1} \cdot [1 + E(R^{*}_{n,E})] = \pi_W \cdot V^{*}_{n,E} + (1 - \pi_W)\, V^{L}_{n,E} + D_{n,E} \tag{A3}$$

A nationalized firm indifference return $R^{*}_{n,t}$ is what its realized return would have been under Mitterrand had the firm not been nationalized:

$$V^{*}_{n,t-1} \cdot (1 + R^{*}_{n,t}) = V^{*}_{n,t} + D_{n,t} \tag{A4}$$

for $t = E, \ldots, T$

Equations (A3) and (A4) describe formally the indifference value and return concepts introduced in our paper. If we restrict our nationalized firm sample to cases for which $\Pi_{N,j} = 1$, we can then solve equations (1), (2a), and (A1) through (A4) for C_n.[48] To do so, set $\Pi_{N,j} = 1$ in (A2) and substitute (A2) in (A1) and (1):

$$V_{n,E-1} \cdot (1 + R_{n,E}) = V^{N}_{n,E} + D_{n,E} \tag{A5}$$

$$V_{n,E-1} \cdot [1 + E(R_{n,E})] = \pi_W \cdot V^{N}_{n,E} + (1 - \pi_W)\, V^{L}_{n,E} + D_{n,E} \tag{A6}$$

Consider now the resulting four equations (A3), (A4), (A5) and (A6). Substitute (A6) in (A3) through its second and third term on the RHS, and successively substitute this transformed (A3) into (A4) through $V^*_{n,E}$ which, after simplifying, produces:

$$V^*_{n,E-1}\{(1+R^*_{n,E})-[1+E(R^*_{n,E})]\cdot\pi_W^{-1}\} = V^N_{n,E}+D_{n,E}-V_{n,E-1}\cdot[1+E(R_{n,E})]\cdot\pi_W^{-1} \qquad \text{(A7)}$$

Examine the remaining two equations, (A5) and (A7). The substitution of (A5) into (A7) through its RHS produces an expression which solves directly for:

$$\frac{V^*_{n,E-1}}{V_{n,E-1}} = \frac{1 + E(R_{n,E}) - \pi_W(1 + R_{n,E})}{1 + E(R^*_{n,E}) - \pi_W(1 + R^*_{n,E})} \qquad \text{(A8)}$$

The LHS of (A8) equals C_n, see (2a). Consider the RHS. Let $E(R_{n,E}) = E(R^*_{n,E}) + \theta$. Think of θ as a required return component for nationalization risk. This risk would be priced only if systematic and could then be a beta increasing or decreasing factor: $\theta \gtrless 0$. Assuming that $\theta = 0$ is empirically innocuous.[49] We then obtain

$$C_n = \frac{1 + E(R_{n,E}) - \pi_W(1 + R_{n,E})}{1 + E(R_{n,E}) - \pi_W(1 + R^*_{n,E})} \qquad \text{(A9)}$$

Note that usually $\frac{\partial C_n}{\partial R_{n,E}} < 0$ and that $\frac{\partial C_n}{\partial \pi_W} \gtrless 0$ for $R^*_{n,E} \gtrless R_{n,E}$.

Appendix 2

Table A.2 lists the 58 firms in K. They are the firms in J belonging to the C.A.C. industrial sectors which correspond to the four sectors targeted for nationalization according to both the Socialist and Communist parties electoral platforms. Three of them: Av. Dassault, Machines Bull and Roussel-Uclaf were mentioned by name in proposition 21 of candidate Mitterrand's electoral platform. All firms in J and not in N which have a C.A.C. code number listed in Table A.2 are included in K. In other words we accept the null hypothesis that the ex-ante nationalization probability of each of these firms was larger than zero.

Table A.2

The 58 non-nationalized French firms among the 196 firms in our date base which belong to the industrial sectors targeted for nationalization according to the Socialist and Communist parties electoral platforms and proposition 21 of Candidate Mitterrand for the May 10, 1981 French presidential election.

Targeted Sector[a]	C.A.C. Industrial Sector name[b]	C.A.C. Sector code[b]	Firm Name
Steel Industry	Ore and Metal	12	Chiers-Chatillon IMETAL Met Norm Penarroya Pompey Sacilor Usinor
	Ferrous metal extraction	13	Carnaud Saulnes et Gorcy Vallourec
Space and armaments	Mechanical products manufacturing	31	Creusot Loire
	Electric and electronic products manufacturing	32	Alsthom C I T Alcatel CSF
	Aeronautics - Space	34	Crouzet Matra
Insurance	Insurance	81	None
Credit	Banking	82	Bail Equipment BCT BFIC Cetelem Comptoir Entrep. Crédit Foncier de France Crédit National Locafrance U C B Union Fse de Banques
	Real estate banking	83	Bail Investissement Codetel Finextel Immobail BTP Immobanque Interbail Loca Exp Locindus Pretabail Sicomi UCIP Bail UIS
	Holding companies	84	CGIP Compagnie Bancaire Eurafrance Financ CFDE GLE OCC Jeumont Industrie Kali Ste Thérese La Henin Marine Wendel Midi Cie Navigation Mixte Nord-Est OFP OPFI Paribas Pechelbronn Penhoet Revillon Schneider Av. Dassault[c] Machines Bull[c] Roussel Uclaf[c]

a : industrial sector as referred to in the Socialist and Communist electoral platforms.

b : C.A.C. (Compagnie des Agents de Change) industrial sector name and code which correspond to the targeted sector.

c : the company is specifically referred to by name in proposition 21 of candidate Mitterrand.

Appendix 3

Chronology of events leading to the February 11, 1982 French nationalization law with the corresponding weekly changes in the market value of the portfolio of 12 nationalized firms and the weekly differential returns between this portfolio and a matched portfolio of non-nationalized firms when the differential return is significant at the 5% level. Uninterrupted statistically significant sequences of weekly differential returns define 5 event periods, each delimited by its beginning and ending dates with corresponding changes in market value and differential returns. The table uses C.O.B. for Commission des Opérations en Bourse and DTI for Droit à Titres Idemnitaires (right to compensation).

Date			Event	Event Week[a]	Change in portfolio market value	Differential return[b]	
Year	Month	Day		t	percent	percent	t-statistic
(1)			(2)	(3)	(4)	(5)	(6)
			Test period: October 3, 1981 - May 8, 1982			.5%	.08[c]
1981	4	26	First presidential election ballot favorable to Mitterrand winning the election.	-2		-2.3	-2.12
			Period 1: May 9-22, Election and aftermath		-25.6%	-12.9	-7.93
	5	10	Mitterrand wins the election.	0	-20.9	- 9.8	-8.55
		22	Mitterrand dissolves National Assembly and calls for National Assembly elections.	1	- 6.0	- 3.1	-2.68
		23	Mitterrand appoints socialist minority cabinet.				
	6	3	Appointment of J. Piette commission on public sector extension.	4	1.6	3.0	2.59
		14	First legislative election ballot shows likely left National Assembly majority and communist weakness.				
		21	Socialist Party wins National Assembly absolute majority and Communist Party declines.				
		23	Mitterrand appoints socialist-communist cabinet.				
	7	1	Mitterrand announces work to start in October National Assembly session.	7	- 4.9	- 2.2	1.91
		7	Elysée announcement: "Not more, not less". Piette commission discharged.				
		8	Prime Minister sketches nationalization program in National Assembly.				
		15	Prime Minister announces that compensation will be spread over time and that shareholders will receive interest instead of dividends.				

		Period 2: July 18-31, Bill Preparation		- 2.8%	-12.5%	-7.68
	21	Prime Minister designates 14 government representatives to target firms.	10	3.1	- 7.0	-6.11
	27	C.O.B. President presents Prime Minister basic rules for fair, equal and full compensation.	11	- 5.7	- 5.4	-4.73
8	5	Cabinet announces parliament debate on nationalization bill during the fall.				
	13	Jacques Delors announces 1978 Monory law renewal for 1982.				
		Period 3: August 15-October 2, Bill announcement and opposition		37.4	35.7	11.72
	20	Prime Minister discloses cabinet to adopt bill on September 16.				
	21	Mitterrand: "What must be done, shall be done".	14	3.9	4.5	3.88
	25	16.75 percent coupon set on first government bond issue.				
	27	Prime Minister admits authenticity of leaked working draft of bill.	15	8.4	8.1	7.01
9	2	Cabinet will adopt bill project on September 16, asks "Conseil d'Etat" for advice and then adopt bill on September 23. Elysée announces: "In accordance with the Constitution, compensation shall be fair".	16	3.1	2.4	2.04
	9	Cabinet approves bill to be submitted to "Conseil d'Etat". 32 target firms quotation suspended.				
	17	EEC Commission member denounces French project.				
	18	"Conseil d'Etat" advises in favor of multi-criteria formula.				
	23	Cabinet approves bill to be submitted to National Assembly.				
	24	Cabinet publishes bill and announces legislative calendar.				
	25	National Assembly Special Committee examination starts. C.O.B. releases evaluation data.				
	29	National Assembly Special Committee rejects opposition anti-constitutionality plea.				
	30	Quotation resumes. National Assembly Special Committee releases C.O.B. hearing.	20	18.3[d]	20.8[d]	9.16[d]
10	4	French Franc devalues.				
	6	National Assembly Special Committee adopts bill.				
	8	Prime Minister signs Dassault-Breguet control protocol.				
	9	EEC Commission President declares bill conform with EEC law.				
		Pargessa Holding S.A. launches Public Tender Offer on Paribas Suisse.				

	10	12	Prime Minister signs MATRA control protocol.			
		13	National Assembly floor debate starts. Opponents' unconstitutionality plea rejected. 600 amendments registered.			
		14	C.O.B. open letter on compensation. Prime Minister declares urgency procedure.			
		15	Prime Minister announces cabinet authorization to have bill passed without debate. Article by article debate and voting starts.	22	3.2%	5.2%	4.50
		26	National Assembly passes bill in first reading. Foreign shareholders compensation rejection announcement.			
	11	3	Senate Special Committee bill examination starts.			
		4	Elysée upholds Constitutional Council chairman. Hoescht announces refusal to surrender 57.9 percent Roussel-UCLAF participation.			
			Period 4: November 7-27, Senate Constitutional groundwork		7.0	6.3	3.16
		9	Le Monde publishes H.S. Scott article claiming U.S.-French treaty violation.	26	1.6	3.3	2.88
		16	Senate Commission decides to request constitutionality rejection from Senate.			
		19	Special Senate Committee presents its report.			
		20	Senate floor debate starts.	27	4.5	5.0	4.30
		23	Senate passes anti-constitutionality motion rejecting bill in first reading.			
		25	Senate-National Assembly commission fails to reach compromise.	28	0.8	- 2.0	-1.77
	12	1	Prime Minister office announces that no 1981 dividends shall be paid.			
		3	National Assembly passes bill in second reading. C.O.B. President deplores omission of 1981 dividends.			
		17	Senate rejects bill in second reading.			
		18	National Assembly passes bill in third reading and final vote.			
		19	Unconstitutionality suit filed with Constitutional Council.			
			Period 5: January 16-February 19, Constitutional verdict and nationalization law		38.5	17.2	6.68
1982	1	16	Constitutional Council declares 7 articles unconstitutional. Nationalized shares quotations suspended.			

20	Cabinet adopts revised bill.				
2 5	National Assembly third reading and final vote of revised bill. Unconstitutionality suit filed with Constitutional Council.				
11	Constitutional Council rejects suit. Mitterrand signs bill into law.				
13	Journal Officiel publishes law and French government becomes nationalized companies' shareholder.				
18	Quotation of shares resumes as DTI.	40	38.5[e]	17.2[e]	6.68[e]
3 20	Journal Officiel publishes per share indemnification amount.				
23	Last quotation of DTI's before delisting.				

a : week relative to the May 10, 1981 French presidential election.

b : the differential return during the event week, DR_t, is the difference between the weekly return of the nationalized portfolio, $R_{N,t}$ and that of matched portfolio $R^M_{N,t}$. $R_{N,t}$ is the value weighted return of the 12 firms in Table 1. $R^M_{N,t}$ is the value weighted return of the 12 firms' matched portfolios. Each firm's matched portfolio is made of 126 firms whose estimated ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm. The values shown were computed with a .5 probability, on May 8, 1981, of Mitterrand winning the May 10, 1981 French presidential election. The t-statistic of DR_t is computed using the standard deviation, S(DR) calculated over the estimation period (t = -96 through t = -33). S(DR) = .01151. The period differential return, CDR_t^{t+Z}, is the cumulative weekly differential return from the beginning week t, to the ending week of the period, t+Z, where Z is the length of the period in weeks. Its t-statistic is $CDR_t^{t+Z} \cdot Z^{-1/2} \cdot S(DR)^{-1}$.

c : not significant at the 5% level.

d : for the four weeks from September through October 2, 1981.

e : for the four weeks from January 15 through February 19, 1982.

Appendix 4

Voters survey results prior to the May 10, 1981
French Presidential election[a]

Survey Date (1981)	April 27/28	May 2/4	May 6	May 7/8
Sample Size	1892	1497	1058	2308
Question asked to the surveyed voters:				
Who do you think will win the election ?				
Giscard d'Estaing[b]	50.0	38.0	41.0	40.0
Mitterrand	22.0	28.0	33.0	26.0
Don't know	28.0	34.0	26.0	34.0
	100.0	100.0	100.0	100.0
Who do you intend to vote for ?				
Giscard d'Estaing	40.7	39.5	41.3	41.3
Mitterrand	43.3	44.5	44.7	44.7
Don't know	16.0	16.0	14.0	14.0
	100.0	100.0	100.0	100.0

a : Source: IFOP, 1981 for the April 27/28 results and oral communication from IFOP (Institut Français d'Opinion Publique) for the later results. The French law prohibits public announcements of poll results during the week before the election. The last publicly announced results are those of the April 27/28 survey.

b : Giscard d'Estaing was the runner up for the second round of the French presidential election on May 10, 1981.

FOOTNOTES

[1]For a survey of this literature, see Brown and Warner (1980) and Schwert (1981).

[2]We didn't test our results' robustness with respect to multi-factor models. For the purpose of the paper, the marginal value of disaggregation is limited.

[3]The nationalizations increased the proportton of bank deposits at nationalized banks from 59 to 87 percent. The proportion of manufacturing sales realized by nationalized firms also increased from 18 to 32 percent. Sectors where government ownership did not exist and where newly nationalized firms represent 25 percent or more of industry sales in 1980 are household equipment (25%), electric material (26%), glass (35%), data processing equipment (36%), and artificial fibers (75%). (Source: Delion and Durupty, p. 191).

[4]There is no tax on any capital gain accruing to nationalized firm shareholders at the time of payment with bonds. As we will see later, nationalized firms' shareholders were compensated with negotiable government bonds.

[5]Like any other reference to a time variable in the text t refers either to an end-of-period date when used to identify stock prices or market values as in $V_{j,t}$ or to the period which ends at date t when used to identify returns like $E(R_{j,E})$ in equation (1).

[6]We assume that the election outcome affected only investors' beliefs about the permanent value of these shares and not about the next period's dividends. This simplifies $(V^W_{n,E} + D^W_{n,E}) \cdot \pi_W + (1 - \pi_W)(V^L_{n,E} + D^L_{n,E})$ to the RHS of (1).

[7]The February 11, 1982 nationalization law fixed the rule which determined the compensation per share. But its actual legal amount was published in the Journal Officiel on March 20, 1982. All the information that determined the amount was publicly known when the law was voted.

[8]We were told that this procedure of listing and allowing trade in DTI's was a compromise measure between the French government and foreign shareholders to serve as a substitute to prompt compensation payment in cash.

[9]See, for example, Fama (1976), pp. 343-348 on the measurement error problems in empirical work on security returns, and the grouping technique to reduce their impact.

[10]For other examples using this technique, see Warner (1977), Watts (1978), and Vermaelen (1981).

[11]Under the market model, $E(\tilde{R}^M_{n,t}) = \hat{\alpha}^M_n + \hat{\beta}^M_n E(\tilde{R}_{m,t})$ and $E(\tilde{R}^*_{n,t}) = \hat{\alpha}_n + \beta_n E(\tilde{R}_{m,t})$. For $\tilde{\mu}_{n,t} \equiv \tilde{R}^*_{n,t} - R^M_{n,t}$, then $E(\tilde{\mu}_{n,t}) = (\hat{\alpha}_n - \hat{\alpha}^M_n) + (\hat{\beta}_n - \hat{\beta}^M_n) E(\tilde{R}_{m,t})$. By construction, $\hat{\beta}^M_n = \hat{\beta}_n$. For $E(\tilde{\hat{\mu}}_{n,t}) = 0$, $\hat{\alpha}^M_n = \hat{\alpha}_n$ must hold as well.

[12]On the forward market, the one with the highest turnover and aggregate value in France, share price and quantity transacted were fixed on negotiation day but delivery and payment took place seven business days before the end of the month when the deal was made.

[13]We had to eliminate 19 series because their recording on the tapes started after the beginning of our sample period, 5 because the firms were liquidated during this period, 26 because data were missing on the source tape during three or more successive Fridays. The sample period data of the 196 usable series which showed sequences of two or more adjacent weeks with zero return, missing returns, or weekly returns exceeding the .5, -.5 boundaries and all the series prices from August 28 through October 2, 1981 were verified against the primary data source 'Cote Officielle, cours officiels et authentiques' and corrected on the tape as necessary. The names of the 50 eliminated firms, none of which were nationalized, and the corrected data are available on request from the authors.

[14]We examined the lists published in Parti communiste francais et parti socialiste (1972), Parti socialiste francais (1978), Secretariat national du secteur public du parti socialiste francais (1980), Parti communiste francais (1980), Parti socialiste francais (1981).

[15]France has a two-ballot electoral system. The first ballot on April 26 and its immediate aftermath rank Mitterrand favorable. Ballot-week DR_{-2} (-2.3 percent) is significant.

[16]Belgium, Canada, Luxemburg, Switzerland and the United Kingdom negotiated bilateral state conventions with France, stipulating preferential treatment to compensate their national shareholders expropriated by the April 8, 1946 law which nationalized gas and electricity industries (869 firms). (Source: Gide Loyerette Nouel, Titre I Chapter 5.)

[17]For example, the August 11, 1936 law empowered the government to expropriate by decree the armaments industry. Executive order was used to nationalize some coal mines on December 13, 1944 and SNECMA on May 29, 1945 (source: ibid).

[18]The August 31, 1937 law nationalizing French railways ratified a negotiated agreement. The February 28, 1948 law arranged for a government voting majority in two merchant marine transportation firms under terms to be negotiated. All other pre- and post-WW II French nationalizations were arranged through expropriation. In addition to previously mentioned cases, they involved Banque de France and four commercial banks (December 2, 1945), 87 coal mining firms (May 17, 1946) and 34 insurance companies (October 6, 1946) (source: ibid).

[19]The reference period used in 1945-1946 was September 1, 1944 through February 28, 1945 for the insurance, gas and electricity nationalizations, and September 1, 1944 through August 31, 1945 for the banks. In all cases, this specified period followed the government announcement of its intention to nationalize (source: ibid).

[20]The pre- and post-WW II expropriated shareholders were paid with negotiable securities of up to 50 years. Some had a fixed 3 percent coupon, others were variable coupon indexed to the company's sales. Some had a fixed reimbursable amount, others an indexed one. In some cases, settlement had to wait four years from the nationalization date because of the time that was taken to assess share value. Mitterrand, at one point, had declared himself in favor of substituting fixed-variable income bonds for shares, but other Socialist policy makers favored to simply eliminate share voting rights (source: ibid).

[21]On May 11, stock market selling orders amounted to about 2 billion F, five times the daily average, and almost all transactions were suspended after two consecutive quotation attempts limited successive price decreases to 7 and 3 percent. Several times during the next few trading sessions after the elections, stock market supervisory authorities suspended trading in particular shares on the basis of a maximum price change per trading session rule. Also, Le Monde reported several instances of price support interventions by government controlled institutional investors. Both actions spread share price adjustments to equilibrum over more trading sessions than it otherwise would have taken.

[22]France has a bicameral system. Universal suffrage elects the National Assembly, whereas the Senate represents local governments. When in conflict over legislation, the National Assembly prevails over the Senate.

[23]The Prime Minister announced the nationalization program on July 8, 1981. It included unilateral legal expropriation of all shares held by French residents (i.e. nationalization), rather than the purchase of control under mutually agreed upon terms. A unique and general nationalization bill was to be presented to the National Assembly in early fall, encompassing all cases. Nationalization of all French commercial banks above a still undisclosed threshold size was specified along with two conglomerates and five industrial group parent companies, excluding their subsidiaries and other firms. A compensation was to be determined by law, legally unchallengeable and financially fair. Foreign shareholders would not be expropriated, thus limiting the use of international law to safeguard property rights.

[24]Examples of July 9 price jumps are: Cie du Midi 39.3 percent (insurance sector), Manurhin 10.5 percent (Metallic construction), Roussel-UCLAF 8.5 percent (Pharmaceutical). Firms with highly concentrated shareownership that were included during the presidential election campaign were all excluded from actual nationalization. They are C.G.C.T. (99% ITT), Avions Marcel Dassault-Brguet Aviation (75.3% private), Roussel-UCLAF (57.9% Hoechst), C.I.I.-Honeywell Bull (47% Honeywell), Matra (34.5% private) (Source: Delion and Durupty).

[25]See "Le Monde": July 28, pp. 1 and 20; August 1, p. 21; August 2-3, p. 12; August 4, p. 21.

[26]Both figures exclude Banque Rothschild because this bank was not listed until July 24, 1979. Banque Rothschild was worth .24 billion F on July 31, 1981 and .368 billion F on October 2, 1981.

[27]A parliamentary inquiry to investigate if insider trading had started that day found no evidence about this (Le Monde, November 15-16, p. 6).

[28]This includes five industrial companies, two holding companies and 36 commercial banks. These are all the banks with more than 1 billion F in demand deposits, except foreign majority controlled, real estate and mutual saving banks, credit unions and discount houses.

[29]See footnote 26.

[30]The chairman of the Commission des Opérations de Bourse (C.O.B.) has duties similar to those of his S.E.C. counterpart in the United States. He repeated the same opinion in an open letter of October 14 (t = 22) to the Finance Minister and during the senate special commission hearing of November 9 (t = 26). It was released in Assemblée Nationale (1981b) and Commission des Opérations de Bourse (1982), p. 246 e.a.

[31]See "Le Monde" October 28, pp. 1 and 8; October 29, p. 34; November 25, p. 9; November 29-30, p. 23. We did not research systematically the exact degree of foreign shareownership. As an indicator of its importance, we point out that seven of the 12 firms in our sample were listed on two or more foreign stock exchanges; Crédit du Nord (largest nationalized bank) and Crédit Commercial de France (second largest) of which 10 percent and 37 percent respectively was owned by foreigners; and that the nationalized firm with the highest stock market capitalization, Paribas, was at least 25 percent owned by foreigners. (Source: Gide Loyerette Nouel, 1981, Volume II and Annexes 6, 7 and 10).

[32]Journal Officiel de la République Francaise, January 17, 1982, pp. 302-303.

[33]The law stipulated that the government had to issue these bonds in exchange of expropriated shares within three months of the nationalization. Issuance started on April 13, 1982. According to the law, the bonds would earn interest from January 1, 1982 on. The first semi-annual coupon was 8.3128 percent due on July 1, 1982. On February 19, 1982, the bonds had earned 50 out of 181 coupon days, or 2.2964 percent. Accruing this coupon, our portfolio compensation on February 19, 1982 is 31.2 billion F., .7 billion F more than its market value. This value is then at 2.2 percent discount from nominal. It corresponds roughly to the accrued interest. A foreign institutional shareholder told us this was the price foreign institutional investors agreed to pay to the French government in exchange for the prompt listing of the DTI's and their price support by government owned institutional investors.

[34]Note the 3.1 billion F discrepancy between 33.6 billion F and 30.5 billion F reported in Section 4. The nationalization law forced conversions at the original conversion ratio of convertible bonds in shares having identical right to compensation as the other common stock. We excluded these additional shares from the discussion in the previous section to facilitate the narrative.

[35]See equations (2a) and (2b).

[36]To compute C_N (see equation 2b) we need to estimate $E(R_{N,E})$. Our estimate of .00398 equals $52^{-1} \cdot [E(R_{N,E}) = R_{F,E} + \beta_N E(R_{M,E} - R_{F,E})]$ or $52^{-1} \cdot [.2068 = .1601 + .86\ (.0543)]$. $E(R_{M,E} - R_{F,E})$ is set at its monthly average from April 1980 through April 1981 (S = .0044) (Source: Associés en Finance, Paris), β_N at our estimate over the period t = -96, ..., -33 (S = .00024) and $R_{F,E}$ on May 8, 1981 suggested to us by the Paris First National City Bank bond trading department. Resource constraints made our estimating procedure less systematic than desirable, but large errors in it have only a negligible impact on the results. For $\pi_W = 0.50$, $R_{N,E} = -.20791$, and $R^*_{N,E} = -.10947$, as $E(R_{N,E})$ varies from .00020 to .00773, C_N varies from 1.08869 to 1.08751.

[37]The premium corresponds to the portfolio cumulative differential return only when C_N is one. Otherwise, the differential return can only shed light on returns associated with the event during the event period, not on the difference in wealth with and without the event. To illustrate note the correspondence, except for the computational difference in summation and compounding, between the 31.6 percent premium and CDR_0^{41} of 35.9 percent.

[38]'All speculators "gambled Giscard winning" until the eve of the election', Marti, S., (1981), p. 46.

[39]The sample mean and standard deviation of the weekly returns on the matched portfolio estimated over the 96 weeks preceding the election were 0.32 percent and 1.55 percent, respectively. The expected election week return on this portfolio was 0.40 percent, see note 36. Its realized return during the election week was - 10.95 percent, or 7.27 standard deviations removed from the mean. See also note 21.

[40]Let γ be the true fraction of voters who predict that Giscard d'Estaing will win, g the observed fraction in a survey of size N and s the standard deviation of the sampling distribution of g, then $s = (\gamma^2/N)^{.5}$, $z = (g - \gamma)/s$ and $p = 1 - F(z)$. Let $H_0: \gamma \leq .50$ and $H_1: \gamma > .50$. IFOP voter survey results reported in Appendix 4 indicate that p, the maximum probability of making a Type I error when rejecting H_0, varies between ε and 0.005, depending on the survey date and the treatment of 'dont't know' answers.

[41]In 40, replace γ with μ: the true fraction of all votes for Mitterrand and g with m: the corresponding observed fraction. The p value varies between .011 and .133.

[42]Almost all stock market professionals were aware that private voter intention polls showed Mitterand as winner, according to "Le Monde" (May 14, p. 46).

[43]See notes 21 and 39.

[44]Consider equation (1). Given the observations $V_{j,E-1}$ $V^W_{j,E}$ and $D_{j,E}$ and the estimate of $E(R_{j,E})$, there is a unique value of $V^L_{j,E}$ associated with each estimate of π_W and vice versa. Equation (1) holds also for returns and for the matched portfolio. The matched portfolio return form of equation (1) solves easily for its expectation conditional on Mitterrand losing $R^{M,L}_{N,E}$ as a function of π_w, with matched portfolio expected return $E(R^M_{N,E})$ and realized return $R^{M,W}_{N,E}$ as parameters:

$$R^{M,L}_{N,E} = \frac{E(R^M_{N,E}) - \pi_w \cdot R^{M,W}_{N,E}}{(1 - \pi_w)} .$$

The values of the parameters are .00398 and -.10947, respectively. By construction, $E(R^M_{N,E})$ equals $E(R_{N,E})$, estimated in note 36. For π_W = .867 or more, $R^{M,L}_{N,E}$ equals .744 or more.

[45]See note 44. For $\pi_W = .5$, $R^{M,L}_{N,E}$ equals .117.

[46]The chief representative of the securities industry argued that company takeovers by the government are akin to takeover by firms. He then reported that the average premium in the case of public tender offers in France was 54.4 percent when computed relative to the three month price average preceding the offer (Source: M. Flornoy, "Le Monde" September 17, 1981, p. 44 and September 18, p. 32).

[47]Even if the government manages to increase the value of the firm, the premium may still represent a transfer to the shareholders. The issue is one of who possesses and is able to utilize the "unique" resource. If it is government ownership that is responsible for the value gain, then under "normal" property right assignments the premium would be captured by the acquiring firm, the taxpayers. If the unique resource was possessed by the firm but only the government could exploit it then the division of the premium poses the monopoly-monopsonist problem. We thank an anonymous referee for this point.

[48]See section 3 for details on the nationalized firm sample. All nationalized companies appeared on the list of the common socialist-communist program approved on July 12, 1972 and were a part of the socialist electoral platform on which Mitterrand based his candidacy on January 24, 1981. Yet, some on the list were spared and uncertainty remained until the final stages of the legislative process about the deposit floor or cutoff point below which banks would remain in private ownership. None of the banks in our sample belong to these marginal cases.

[49]Note that $\varepsilon(C_n,\Theta) = \dfrac{\Theta}{\Theta + [1+E(R^*_{n,E})] - \pi_W (1 + R_{n,E})}$, which is ~ 0 over the relevant range. Empirically, $E(R_{n,E}) = 0.00398$, $\pi_W = 0.5$, $R_{n,E} = -0.20791$, and $R^*_{n,E} = -0.10947$. In this case when Θ goes from -0.00358 to 0.00358, C_n goes from 1.081 to 1.095.

Table 1

Stock market data summary of 12 French firms nationalized on February 11, 1982.

Nationalized firm[a]	Shares outstanding on December 31, 1980[b]	Price per share on December 31, 1980[c] F	Total Market Value on December 31, 1980[c] Billions F Col(2)xCol(3)	Number of shares traded in 1980[c]	Franc value of shares traded in 1980[c] Billions F	Shares turn-over in 1980 Percent 100xCol(5)/Col(2)	Estimates of the regression of firm's return on market return[d] β_n	R_n^2
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Banque Rothschild	2,090,000	160.00	0.334	385,570	0.062	18.4%	0.83	0.25
Banque Worms	2,059,903	210.00	0.433	21,051	0.044	1.0	0.13	0.01
Compagnie de Saint-Gobain Pont à Mousson	34,650,000	136.00	4.712	4,353,205	0.572	12.6	0.86	0.23
Compagnie Financière de Paris et des Pays-Bas	16,408,877	244.90	4.019	3,058,607	0.729	18.6	0.65	0.22
Compagnie Financière de Suez	9,465,099	309.00	2.925	2,347,654	0.723	24.8	0.79	0.34
Compagnie Générale d'Electricité	6,879,629	369.00	2.539	1,274,380	0.463	18.5	0.74	0.39
Crédit Commercial de France	6,623,237	210.00	1.391	854,241	0.163	12.9	0.59	0.21
Crédit du Nord	4,799,996	83.00	0.398	382,347	0.026	8.0	0.53	0.10
Crédit Industriel et Commercial	4,527,667	175.00	0.792	292,500	0.043	6.5	0.69	0.13
Péchiney Ugine Kulhmann	25,491,157	89.40	2.279	6,144,756	0.633	24.1	1.28	0.36
Rhône-Poulenc S.A.	22,728,684	87.50	1.989	5,230,160	0.631	23.0	0.86	0.20
Thomson-Brandt	6,275,661	222.50	1.396	1,929,658	0.446	30.7	1.76	0.51
Sample Total			23.207	26,274,129	4.535	18.5	0.86[e]	0.86[e]
Stock Market Total (French Companies)			247.957		42.760			
Sample Percentage			9.4%		10.6%			

a : Source: all nationalized firms on the C.A.C. (Compagnie des Agents de Change) magnetic tape, i.e., whose shares were traded on the Paris forward market and Banque Worms which was traded on the spot market only.

b : Source: C.A.C., Fiches Société.

c : Source: C.A.C., Année Boursière 1980.

d : β_n and R_n^2 are estimates of $R_{nt} = \alpha_n + \beta_n R_{mt} + \varepsilon_{nt}$ for t = -96, ..., -33 over the 64 weekly return periods from July 7, 1979 through September 26, 1980. R_{mt} is the holding period return of the equally weighted portfolio of the 196 shares on the C.A.C. tape which have complete data from July 7, 1979 through March 19, 1982. $R_n^2 = \beta_m^2 \cdot Var(R_{nt})/Var(R_{mt})$

e : estimates for the value weighted return of the 12 firms.

Table 2

Differential returns between the portfolio of 12 nationalized firms and a matched portfolio of non-nationalized firms by week relative to the May 10, 1981 French presidential election

Return week t (1)	End of week date (2)	Differential return[a] DR_t (3)	t-statistic[b] $t(DR)_t$ (4)	Cumulative differential return[c] CDR_{-32}^{-33+Z} (5)
-32	1980 10 3	-.009	- .81	-.009
-31	10	-.014	-1.23	-.023
-30	17	.005	.44	-.018
-29	24	.009	.74	-.009
-28	31	-.009	- .79	-.018
-27	11 7	.018	1.57	.000
-26	14	.012	1.07	.012
-25	21	-.015	-1.29	-.003
-24	28	-.010	- .88	-.013
-23	12 5	-.000	.02	-.013
-22	12	.013	1.09	.000
-21	19	-.013	-1.12	-.013
-20	26	.001	.10	-.012
-19	1981 1 2	-.023	-2.01*	-.035
-18	9	.011	.95	-.024
-17	16	.003	.23	-.022
-16	23	-.008	- .65	-.029
-15	30	.005	.46	-.024
-14	2 6	.006	.52	-.018
-13	13	-.004	- .37	-.022
-12	20	.013	1.14	-.009
-11	27	-.010	- .88	-.019
-10	3 6	.024	2.09*	.005
- 9	13	.020	1.71*	.024
- 8	20	-.002	- .13	.023
- 7	27	.007	.63	.030
- 6	4 3	-.006	- .51	.024
- 5	10	.002	.19	.026
- 4	17	-.008	- .69	.018
- 3	24	.011	1.00	.030
- 2	30	-.023	-1.97*	.007
- 1[d]	5 8	-.002	- .21	.005
0	15	-.098	-8.55*	-.090
1	22	-.031	-2.68*	-.124
2	29	.015	1.27	-.110
3	6 5	.002	- .15	-.111
4	12	.030	2.59*	-.081
5	19	-.017	-1.44	-.099
6	26	.002	.18	-.096
7	1981 7 3	-.022	-1.91*	-.118
8	10	-.006	- .53	-.124
9	17	-.016	-1.37	-.140
10	24	-.070	-6.11*	-.210
11	31	-.054	-4.73*	-.265
12	8 7	.007	.63	-.258
13	14	-.011	.92	-.269
14	21	.045	3.88*	-.224
15	28	.081	7.01*	-.143
16	9 4	.024	2.04*	-.119
17[e]	11			
18[e]	18			
19[e]	25			
20	10 2	.208[f]	9.04*	.089
21	9	-.011	- .98	.077
22	16	.052	4.50*	.129
23	23	-.007	- .62	.121
24	30	-.002	- .13	.123
25	11 6	.016	1.42	.139
26	13	.033	2.88*	.172
27	20	.050	4.30*	.222
28	27	-.020	-1.77*	.202
29	12 4	-.016	-1.42	.185
30	11	-.010	- .83	.176
31	18	.007	.63	.183
32	25	-.004	- .33	.179
33	31	.007	.57	.186
34	1982 1 8	.005	.41	.190
35	15	.002	.16	.192
36[g]	22			
37[g]	29			
38[g]	2 5			
39[g]	12			
40	19	.172[h]	6.68*	.364
41	26	-.011	- .98	.352
42	3 5	.023	2.01*	.375
43	12	.051	4.43*	.426
44	19	.006	.55	.433

a : The differential return, DR_t, is the difference between the weekly return of the nationalized portfolio, $R_{N,t}$, and that of the matched portfolio, $R^M_{N,t}$. $R_{N,t}$ is the value weighted return of the 12 firms in Table 1. $R^M_{N,t}$ is the valued weighted return of the 12 firms' matched portfolios. Each firm's matched portfolio is made of 120 firms whose estimated ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm. The values shown were computed with a probability of Mitterrand winning the election equal to .5, on May 8, 1981.

b : t-statistic of DR_t using the standard deviation, S(DR), calculated over the estimation period (t=-96 through t=-33). S(DR) = .01151.

c : CDR_{-32}^{-33+Z} is the cumulative differential return from the beginning of the test period (Z=1) to any successive period and up to the last weekly observation of the market price of the right to compensation.

d : week 0 includes the May 10, 1981 French presidential election.

e : trading of nationalized firms' shares suspended from September 9 through 30, 1981.

f : differential four week return from September 4 through October 2, 1981.

g : trading suspended from January 15 through February 17, 1982.

h : differential five week return from January 15 through February 13, 1982.

Table 3

Summary statistics on the weekly differential returns between the portfolio of 12 nationalized firms and a matched portfolio of non-nationalized firms during selected periods around the May 10, 1981 French presidential election.

	Selected period		Differential Return[b]						Cumulative Differential Return	
	Begnning	Length in weeks	Mean	Standard deviation	First order autocorrelation coefficient	t-statistic of $\rho(DR)$	F-statistic of DR[c]	F-statistic critical value[d]	value[e]	t-statistic[f]
	t_o[a]	Z	M(DR)	S(DR)	ρ (DR)	$t[\rho(DR)]$			$CDR_{t_o}^{t_o+Z-1}$	$t\left(CDR_{t_o}^{t_o+Z-1}\right)$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	-96	64	-0.16%	1.15%	-0.10	-0.83			-10.35%	-1.12
2	-32	32	0.01%	1.20%	-0.16	-0.89	1.08	1.65	0.48%	0.07
3	0	41	0.88%	5.88%	0.12	0.59	26.14	1.59	35.89%	4.87
4	0	2	-6.45%						-12.90%	-7.93
5	10	2	-6.25%						-12.50%	-7.68
6	14	7	5.10%						35.70%	11.72
7	26	3	2.10%						6.30%	3.16
8	36	5	3.44%						17.20%	6.68
9	42	2	3.71%						7.41%	4.55

a : t_o is the first week of the selected period relative to the election week.

b : the differential return, DR_t, is the difference between the weekly return of the nationalized portfolio, $R_{N,t}$, and that of the matched portfolio, $R^M_{N,t}$. $R_{N,t}$ is the value weighted return of the 12 firms in table 1. $R^M_{N,t}$ is the value weighted return of the 12 firms' matched portfolios. Each firm's matched portfolio is made of 126 firms whose estimated ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm. The values shown were computed with a probability of Mitterrand winning the election equal to .5, on May 8, 1981.

c : the F-statistic tests the hypothesis that the standard deviation of DR during the period is different from that of the first selected period.

d : at the 5% level.

e : $CDR_{t_o}^{t_o+Z-1}$ is the cumulative differential return from the beginning through the end of the selected period.

f : $t\left(CDR_{t_o}^{t_o+Z-1}\right) = CDR_{t_o}^{t_o+Z-1} \cdot Z^{-1/2} \cdot S(DR)_1^{-1}$ where $S(DR)_1$ is the standard deviation of DR during the first selected period.

Table 4

Wealth transfer, estimated on February 19, 1982, to shareholders of 12 French firms nationalized on February 11, 1982 as a function of the probability, on May 8, 1981, of candidate Mitterrand winning the May 10, 1981 French presidential election.

Probability of Mitterrand winning	Portfolio adjustment coefficient[a]	Portfolio indifference value		Portfolio wealth transfer[d]	
on May 8,1981	on May 8,1981	on May 8,1981	on February 19,1982	on February 19,1982	
π_W	C_N	$V^*_{N,E-1}\|\pi_W$ [b]	$V^*_{N,T}\|\pi_W$ [c]	$W^2\|\pi_W = DTI^2_{N,T} - V^*_{N,T}\|\pi_W$	
		Billions F	Billions F	Billions F	as % of Col (4)
(1)	(2)	(3)	(4)	(5)	(6)
.00	1.000	23.688	25.499	8.061	31.6
.10	1.011	23.943	25.794	7.766	30.1
.20	1.024	24.253	26.153	7.407	28.3
.30	1.040	24.637	26.599	6.961	26.2
.40	1.061	25.128	27.167	6.392	23.5
.50	1.088	25.775	27.917	5.642	20.2
.60	1.126	26.669	28.952	4.607	15.9
.70	1.181	27.982	30.473	3.086	10.1
.80	1.271	30.104	32.930	.629	1.9
.90	1.440	34.118	37.576	-4.016	-10.7
1.00	1.886	44.669	49.779	-16.220	-32.6

a : the portfolio adjustment coefficient corrects the observed pre-election value of the value weighted portfolio of the 12 firms in table 1 for the nationalization prospect. $C_N = \dfrac{1 + E(R_{N,E}) - \pi_W(1 + R_{N,E})}{1 + E(R_{N,E}) - \pi_W(1 + R^*_{N,E})}$ where $E(R_{N,E})$ is the risk adjusted portfolio expected return, $R_{N,E}$ the portfolio observed return and $R^*_{N,E}$ the portfolio indifference return during the election week, E. $E(R_{N,E}) = .00398$ is the solution of $E(R_{N,E}) = R_{F,E} + \beta_N E(R_{M,E} - R_{F,E})$ where $R_{F,E} = .00308$ was suggested to us by First National City Bank in Paris and $E(R_{M,E} - R_{F,E}) = .00104$ is the monthly average of the market risk premium from April 1980 through April 1981 (Source: Associés en Finance). β_N is estimated from $R_{Nt} = \alpha_N + \beta_N R_{mt} + \varepsilon_{N,t}$ for $t = -96, \ldots, -33$ over the 64 weekly return periods from July 7, 1979 through September 6, 1980 with R_{mt} equal to the holding period return of the equally weighted portfolio of the 196 shares on the C.A.C. (Compagnie des Agents de Change) tape which have complete data from July 7, 1979 through March 19, 1982. $R_{N,E} = -.20791$. $R^*_{N,E} = -.10947$ is the return on a matched portfolio. This return is the value weighted return of the 12 firms' matched portfolios. Each firm's matched portfolio is made of 126 firms whose estimated ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm.

b : $V^*_{N,E-1}|\pi_W$ is the product of the market value of the portfolio and the adjustment coefficient C_N.

c : $V^*_{N,T}|\pi_W$ is $V^*_{N,E-1}|\pi_W$ compounded weekly through February 19, 1982 at the weekly return of the matched portfolio as defined in footnote a.

d : the portfolio wealth transfer is the market value of February 19, 1982 of the portfolio compensation $DTI^2_{N,T}$ minus its indifference value in column 4. $DTI^2_{N,T}$ is the sum over the 12 nationalized firms of the product of each firm's shares outstanding on February 19, 1982 and the market value of the per share right to compensation at the same date, $dti^2_{n,T}$.

Table 5

Indifference value, compensation value and wealth transfer to shareholders of the portfolio of 12 nationalized firms, estimated on February 19, 1982, according to the December 18, 1981 aborted nationalization bill and the February 11, 1982 nationalization law, respectively. Figures shown assume a .5 probability, on May 8, 1981, of candidate Mitterrand winning the May 10, 1981 French presidential election.

	December 18, 1981 bill[a]			February 11, 1982 law		
Portfolio indifference value[b]	Portfolio compensation value[c]	Portfolio wealth transfer		Portfolio compensation value[d]	Portfolio wealth transfer	
$V^*_{N,T}$	$DTI^1_{N,T}$	$W^1 \equiv DTI^1_{N,T} - V^*_{N,T}$		$DTI^2_{N,T}$	$W^2 \equiv DTI^2_{N,T} - V^*_{N,T}$	
Billions F	Billions F	Billions F	Percent of Col(1)	Billions F	Billions F	Percent of Col(1)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
27.917	27.424	-.493	-1.8%	33.559	5.642	20.2%

a : the December 18, 1981 nationalization bill was declared unconstitutional by the French Constitutional Council on January 16, 1982.

b : $V^*_{N,T}$ is the market value of the portfolio of the 12 nationalized firms in Table 1 on May 8, 1981 adjusted for a .5 probability at the same date that Mitterrand would win the May 10, 1981 French presidential election, and compounded weekly through February 19, 1982, at the weekly return on a matched portfolio. This return is the value weighted return of the 12 firms' matched portfolios. Each firm's matched portfolio is made of 126 firms whose estimated probability of nationalization on May 8, 1981 is zero and is weighted to have the same systematic risk as the matching nationalized firm.

c : $DTI^1_{N,T}$ is the sum over the 12 nationalized firms of the product of each firm's shares outstanding on February 19, 1982 by the value of the right to compensation $dti^1_{n,T}$ estimated as follows. The legislated compensation from the December 18, 1981 bill (C.O.B. 1982, Quatorzième rapport au Président de la République, p. 129-130), which was planned to take the form of government bonds bearing a 8.1328% semi-annual interest starting January 1, 1982, is adjusted for the interest accrued to the firm's shareholders until February 19, 1982. The resulting figure is then multiplied by the ratio of the market value of the per share right to compensation, $dti^2_{n,T}$, on February 19, 1982 to its legislated value from the February 11, 1982 nationalization law.

d : $DTI^2_{N,T}$ is the sum over the 12 nationalized firms of the product of each firm's shares outstanding on February 19, 1982 and the market value of the per share right to compensation at the same date, $dti^2_{n,T}$.

Table 6

Indifference and legislated price per share, premium per share and wealth transfer to the shareholders of 12 nationalized firms, estimated on February 19, 1982, according to the December 19, 1981 aborted nationalization bill and the February 11, 1982 nationalization law, respectively. Indifference price and premium per share values assume a .5 probability, on May 8, 1981, of candidate Mitterrand winning the May 10, 1981 French presidential election.

Nationalized firm	Indifference price per share[b]	December 18, 1981 bill[a]				February 11, 1982 law			
		Legislated price per share[c]	Premium per share		Firm Wealth transfer[d]	Legislated price per share[e]	Premium per share		Firm Wealth transfer[f]
n	$p^*_{n,T}$	$dti^1_{n,T}$	$pr^1_n = dti^1_{n,T} - p^*_{n,T}$		W^1_n	$dti^2_{n,T}$	$pr^2_n = dti^2_{n,T} - P^*_{n,T}$		W^2_n
	F	F	F	Percent of Col (2)	Billions F	F	F	Percent of Col (2)	Billions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Banque Rothschild	201.92	240.11	38.2	18.9%	.080	196.50	-5.4	- 2.7%	-0.011
Banque Worms	184.82	182.33	- 2.5	- 1.3	- .006	229.10	44.3	24.0	.111
Compagnie de Saint-Gobain Pont à Mousson	134.88	156.35	21.5	15.9	.744	174.80	39.9	29.6	1.383
Compagnie Financière de Paris et des Pays Bas	274.64	219.31	-55.3	-20.1	- .970	304.20	29.6	10.8	.518
Compagnie Financière de Suez	337.93	327.28	-10.6	- 3.2	- .122	423.00	85.1	25.2	.978
Compagnie Générale d'Electricité	451.66	334.17	-117.5	-26.0	- .933	492.30	40.6	9.0	.323
Crédit Commercial de France	204.96	163.71	-41.3	-20.1	- .354	253.80	48.8	23.8	.420
Crédit du Nord	82.26	101.00	18.7	22.8	.095	102.00	19.7	24.0	.101
Crédit Industriel et Commercial	188.14	159.45	-28.7	-15.3	- .164	203.00	14.9	7.9	.085
Pechiney Ugine Kuhlmann	102.87	104.35	1.5	1.4	.043	123.90	21.0	20.4	.617
Rhône-Poulenc S.A.	83.50	135.46	52.0	62.2	1.181	120.50	37.0	44.3	.841
Thomson-Brandt	268.32	256.18	-12.1	- 4.5	- .086	307.50	39.2	14.6	.276
Portfolio Value (billions F or percent)	27.917	27.424		- 1.8%	-0.493	33.559		20.2%	5.642

a : the December 18, 1981 nationalization bill was declared unconstitutional by the French Constitutional Council on January 16, 1982.

b : $p^*_{n,T}$ is the market value of firm n on May 8, 1981 adjusted for a .5 probability at the same date that Mitterrand would win the May 10, 1981 French presidential election, and compounded weekly through February 19, 1982 at the weekly return on a matched portfolio. This portfolio is made of 126 firms whose ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm.

c : $dti^1_{n,T}$ is estimated as follows. The legislated compensation from the December 18, 1981 bill (C.O.B. 1982, Quatorzième rapport au Président de la République, p. 129-130), which was planned to take the form of government bonds bearing a 8.1328% semi-annual interest starting January 1, 1982, is adjusted for the interest accrued to the firm's shareholders until February 19, 1982. The resulting figure is then multiplied by the ratio of the market value of the per share right to compensation, $dti^2_{n,T}$, on February 19, 1982 to its legi- value from the February 11, 1982 nationalization law.

d : W^1_n is the product of $dti^1_{n,T}$ in column (3) and the number of shares outstanding on February 19, 1982.

e : $dti^2_{n,T}$ is the market value of the per share right to compensation on February 19, 1982.

f : W^2_n is the product of $dti^2_{n,T}$ in column (7) and the number of shares outstanding on February 19, 1982.

Figure 1

Weekly returns, $R_{N,t}$, of the portfolio of 12 French nationalized firms and those of a matched portfolio of non-nationalized firms, $R^M_{N,t}$, from the beginning of the test period on October 3, 1980 to its end on March 19, 1982. $R_{N,t}$ is the value weighted return of the 12 firms in Table 1. $R^M_{N,t}$ is the value weighted return of the 12 firm's matched portfolios. Each firm's matched portfolio is made of 126 firms whose estimated ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm.

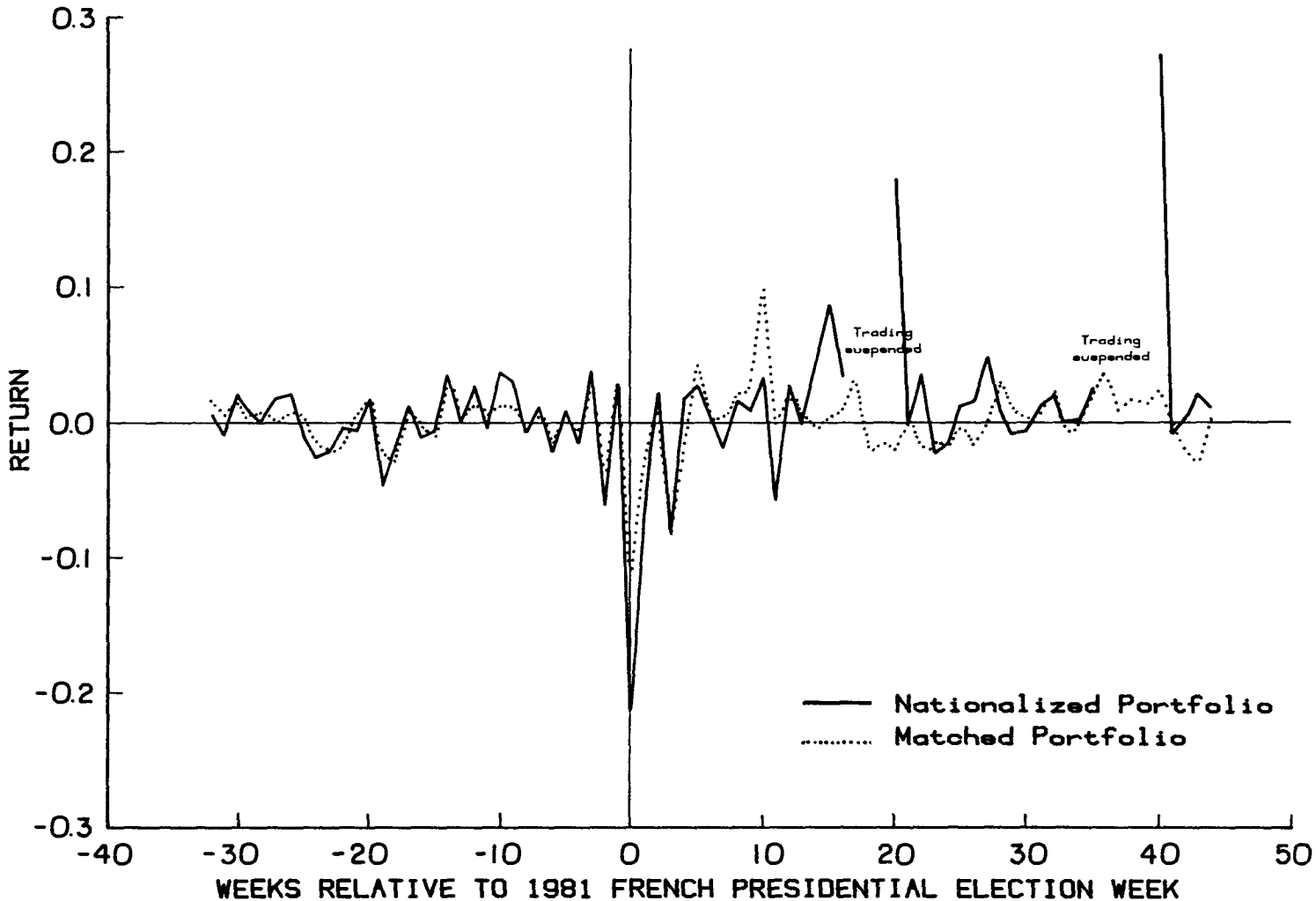

0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
RETURN
Trading suspended
Trading suspended
Nationalized Portfolio
Matched Portfolio
-40
-30
-20
-10
0
10
20
30
40
50
WEEKS RELATIVE TO 1981 FRENCH PRESIDENTIAL ELECTION WEEK

Figure 2.

Difference between the weekly returns, $R_{N,t}$, of the portfolio of 12 nationalized French firms and those of a matched portfolio of non-nationalized firms, $R^M_{N,t}$, from the beginning of the test period on October 3, 1980 to its end on March 19, 1982. $R_{N,t}$ is the value weighted return of the 12 firms in Table 1. $R^M_{N,t}$ is the value weighted return of the 12 firm's matched portfolios. Each firm's matched portfolio is made of 126 firms whose estimated ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm.

Differential returns at t = 20 and t = 40 are differential returns over the periods in which trading was suspended. Numbers on the graph identify the weeks during which the differential return is significant at the 5% level.

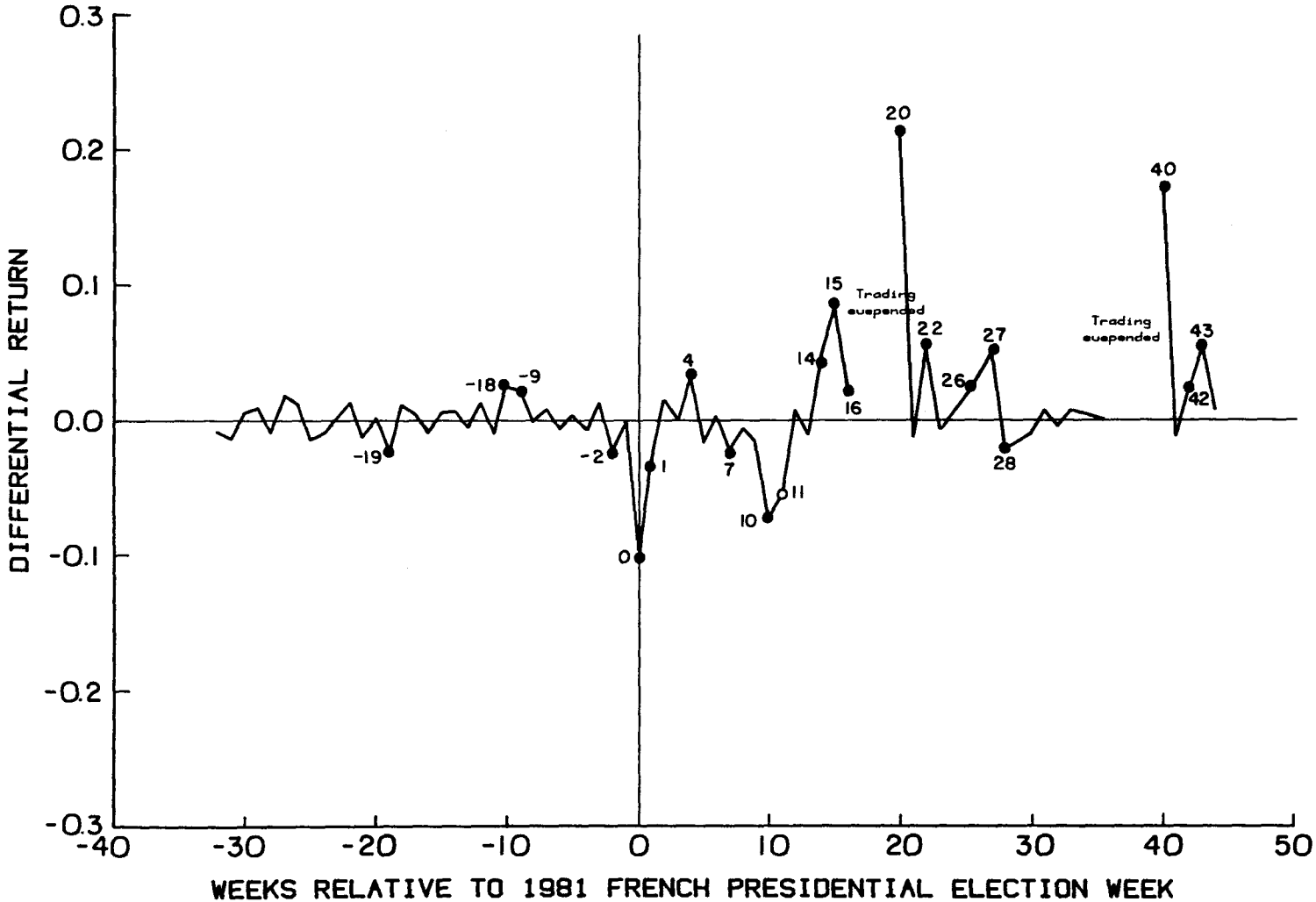
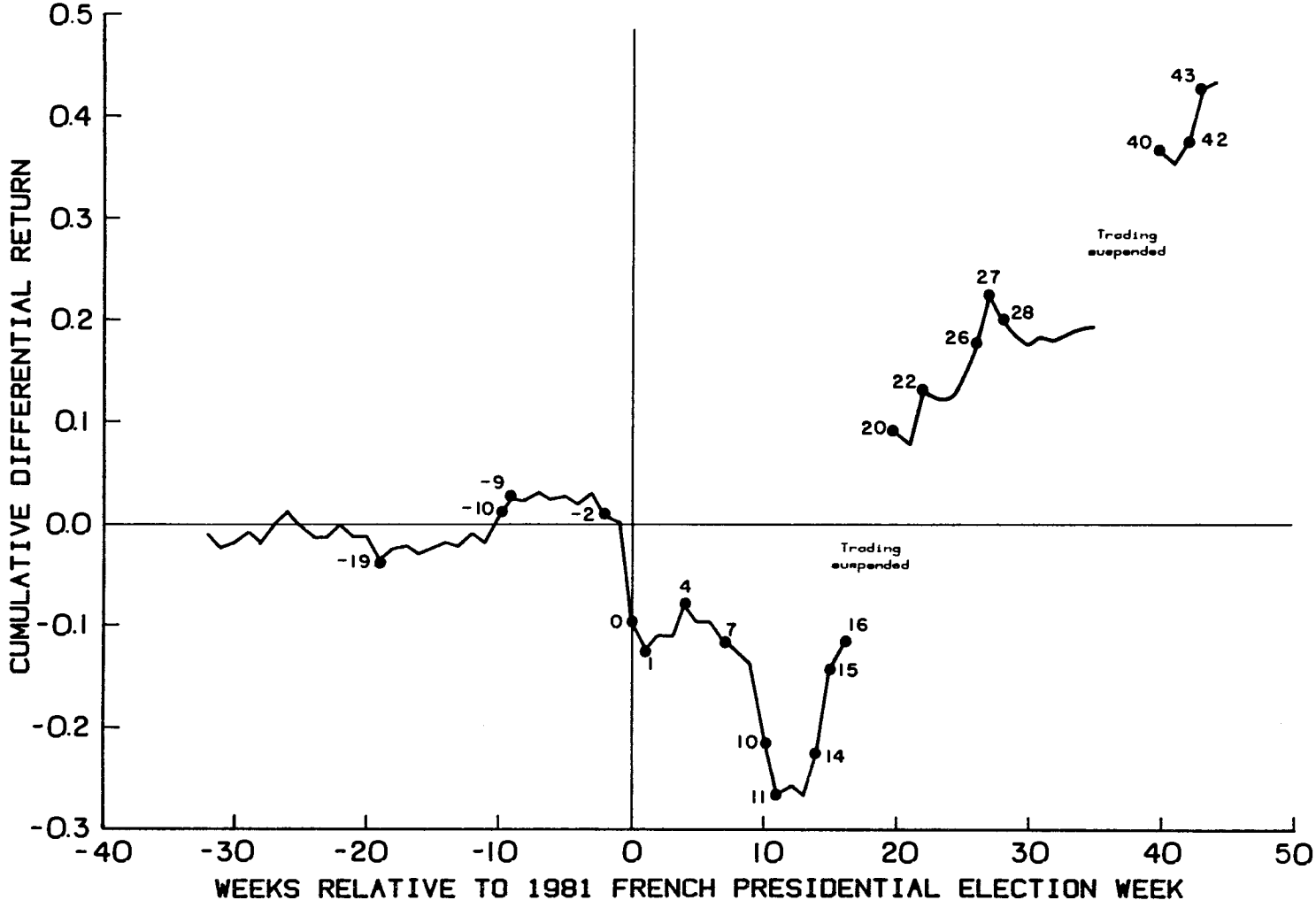

DIFFERENTIAL RETURN
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-40
-30
-20
-10
0
10
20
30
40
50
WEEKS RELATIVE TO 1981 FRENCH PRESIDENTIAL ELECTION WEEK
Trading suspended
Trading suspended
-19
-18
-9
-2
0
1
4
7
10
11
14
15
16
20
22
26
27
28
40
42
43

Figure 3

Cumulative sum of the difference between the weekly returns, $R_{N,t}$, of the portfolio of 12 nationalized French firms and those of its matched portfolio of non-nationalized firms, $R^M_{N,t}$, from the beginning of the test period on October 3, 1980 to its end on March 19, 1982. $R_{N,t}$ is the value weighted return of the 12 firms in Table 1. $R^M_{N,t}$ is the value weighted return of the 12 firms' matched portfolios. Each firm's matched portfolio is made of 126 firms whose estimated ex ante probability of nationalization is zero and is weighted to have the same systematic risk as the matching nationalized firm.

Numbers on the graph identify the week during which the weekly differential return, $R_{N,t} - R^M_{N,t}$, is significant at the 5% level.


CUMULATIVE DIFFERENTIAL RETURN
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
-0.2
-0.3
-40
-30
-20
-10
0
10
20
30
40
50
WEEKS RELATIVE TO 1981 FRENCH PRESIDENTIAL ELECTION WEEK
Trading suspended
Trading suspended
-19
-10
-9
-2
0
1
4
7
10
11
14
15
16
20
22
26
27
28
40
42
43

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