

Treasury Management and Banking Negotiations: Empirical Evidence

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Abstract

This article seeks analyse the factors that guide the actions of the treasurer in selecting sources of financing, in handling situations that result in treasury deficits and in selecting investment instruments if surplus liquidity is generated. On the other hand, the factors that influence the choice of the financial institution with which the treasury department works preferentially are also analysed.

Our results show that in selecting these sources of financing, corporations basically take two elements into account: the cost of financing and the advice provided by their bank, and among the innate qualities of financial assets, security and liquidity are prioritised over profitability in the choice of investment instruments for treasury surpluses, with the most widely used instruments being bank deposits and government debt. Finally, our results confirms the trend for qualitative variables to become determinant in the choice of banks. For corporations, standard of service and speed are by far the most highly valued factors in their relations with banks.

Keywords: Corporate finance, firm size, bank relationship, cluster analysis, discriminant analysis.

1. Introduction

Treasury management is one of the tasks involved in the current culture of cash management. As such it means assuming a number of responsibilities concerned with the control of monetary flows of organisations and liquidity positions that will lead to improvements in the results of the treasury department and in those of the remaining departments. The tasks entrusted to this department must centre on obtaining profit by maximising short-term profitability obtained through surpluses in liquidity and through cost cuts in the management of treasury deficits, all of which will help to achieve the general objective of maximising the value of the organisation. But effective cash management involves the use of tools and techniques, and also covers developing and maintaining successful bank relationships. The role of the bank is to provide services that include payment lines, overdraft and credit facilities, information flows and investments, etc. From the point of view of the corporation, the bank's pricing structure is very important, but bank customers point to other important factors besides price, i.e. qualitative variables (Tse et al., 1998b, p.284).

Treasury management thus becomes a highly important part of corporate strategy, as it means implementing the philosophy of cash management at the treasury department. A direct link is established between treasury management and the concepts of liquidity and profitability. The treasury department ceases to be considered merely as a cost centre and becomes a profit centre, as for other departments, which implies an active, autonomous, independent concept of corporate liquidity management.

A treasurer has various functions, depending largely on the size of the corporation and his position within its structure, so there should always be a clear definition and distribution of tasks. In his empirical study on Spanish corporations (2002, p. 23), Fernández Pascual finds that it is generally large, internationally oriented corporations that have treasury departments, while only 24% of small and medium-sized enterprises – which account for most of the enterprise sector – have such a department. The remaining 76% allocate treasury department functions to other departments, such as accounting (36%), administration (34%) and finance (25%). However, various studies within the specialist literature on the topic, e.g. Emmanuel et al (1990) and Dent (1996), evidence the need to foster treasury departments within corporate organisation systems and to centralise the tasks involved in treasury management, regardless of company size.

However, there are some responsibilities that are allocated to this department in practically all cases. The research studies conducted under the auspices of the Treasury Management Association (Phillips, 1997, p. 69-70) stress liquidity management in particular among the functions of treasury management. This is identified with actual tasks such as determining treasury positions and the management of net cash requirements and surpluses.

Treasurers are generally specialists with expertise in the monetary and credit market who are skilled in managing relations with financial institutions. They are in charge of administering the corporate treasury dynamically, effectively, consistently and prudently. From our point of view, taking the conclusions of the study by Iturralde, Maseda & San José (2004) as our basis, treasury management involves the following tasks: Liquidity monitoring and cash management, Management of short-term needs and surpluses, Financial risk management and Management of relations with financial institutions.

Corporations have to negotiate a very large number of variables with financial institutions, so it is advisable to draw up an overall package of services and features that reflects the percentage of the corporation's activities that is to be managed by the bank and converted to net assets, and to establish terms of agreement (Marco, 2001). The maturity dates of sources of financing, the value dates of the various financial instruments, interest rates, exchange rates, charges, etc. are just some of the quantitative variables that must be set in bargaining agreements so that they can be monitored via

regular analysis of the agreements entered into. This enables corporations to considerably improve the management of their disposable assets.

But these are not the only variables that must be considered: qualitative variables are also highly significant in corporate banking policies, and therefore in choosing the right bank. Standards, of service, the speed of response of the bank, personal service, the extent of its branch network, the frequency of clerical errors, the standard of its advice and its capability for problem solving are some of the main variables of this type.

In this regard the study by Soenen (1989) was one of the first to make clear the importance of non monetary variables in choosing banks. This study groups factors for assessing bank selection criteria according to a quantitative variable (price), behind which variables such as charges, interest rates, etc. are concentrated, and according to variables that are significant to bank users but cannot be measured in price terms, such as standard of service (speed, efficiency, clerical errors, number of branches, opening hours, offices abroad, etc.), personal relations and special services, among others.

Subsequent studies have confirmed this tendency in identifying the criteria on which decisions on bank/corporation relations are based. Although price is the main determinant variable in the contracting of financial services, other aspects such as speed of response and standard of service are now becoming increasingly important.

In the study by Kennington, Hill & Rabowska (1996), price, the reputation of a bank and its standard of service are considered to be the three leading factors that influence the choice of banks. On the basis of data from the biannual Global Cash report for 1998. Santomá (1999, p. 31) concludes that price and standard of service are by far the most important factors in distributing business among the various banks. The most ambitious study on this topic is that of Mols, Bukh & Blenker (1997), whose sample covers 1129 firms in twenty European cities. Their results indicate that standard of service is the main variable considered in selecting a bank (31.7%), followed closely by price (29.8%) and personal treatment (23.2%). The remaining variables (commitment to the corporation (11.3%), classification of the bank (7.9%), number of branches (6.7%), offsetting of other services (5.5%), reputation in treasury management (3.8%) and technology (3.7%) are far less important to firms in their decisions on which banks to use.

In that context, this article seeks analyse the factors that guide the actions of the treasurer in selecting sources of financing, in handling situations that result in treasury deficits and in selecting investment instruments if surplus liquidity is generated. On the other hand, the factors that influence the choice of the financial institution with which the treasury department works preferentially are also analysed.

Our results show that in selecting these sources of financing, corporations basically take two elements into account: the cost of financing and the advice provided by their bank, and among the innate qualities of financial assets, security and liquidity are prioritised over profitability in the choice of investment instruments for treasury surpluses, with the most widely used instruments being bank deposits and government debt. Finally, our results confirms the trend for qualitative variables to become determinant in the choice of banks. For corporations, standard of service and speed are by far the most highly valued factors in their relations with banks.

The rest of the paper is organised as follows. First of all, objectives of the study are described. In Section 3 the sample and the questionnaire used are presented and the analysis procedure followed in carrying out the empirical study is explained. The main results of the investigation are explained in Section 4. Finally, Section 5 present the main conclusions.

2. Objectives of the Study

The basis for our study is the grouping of functions in the hands of a treasurer as indicated above, especially as regards the management of treasury needs and surpluses and negotiating with banks..

To look at this area in more depth, we have performed an empirical analysis based on corporations in the Basque Country (Spain). Our specific objectives were:

1. to identify the financing sources used by corporations to cover short-term treasury deficits;
2. to identify the investment instruments used to manage short-term treasury surpluses;
3. to identify the factors that determine the choice of financing method for treasury deficits;
4. to identify the factors that determine the choice of investment for treasury surpluses;
5. to analyse the relationship between the size of corporations and the way in which they manage their treasury surpluses, and the factors that influence their choice of banks;
6. to analyse the relationship between the training of corporate treasurers or decision-makers on treasury matters and the management of treasury needs and surpluses and the factors that influence their choice of banks;
7. to establish sufficiently homogenous groups of companies from the point of view of bank negotiations;
8. to detect the variables that influence the choice of the financial institution with which the treasury department works preferentially.

3. Research Method

3.1. The Sample

The database used comprises 4699 Spanish corporations with more than 15 employees. Our selection ignores the so-called "micro-corporations", i.e. those with less than 15 employees, because one of their identifying characteristics is precisely their lack of a major organisational structure, especially in financial matters.

1,500 of these 4,699 corporations were sent questionnaires – distributed proportionally according to the populations of the various provinces. A response rate of 14.5% was obtained, i.e. 217 questionnaires were returned. 14% of the corporations that returned the questionnaire are classed as small, 62% as medium and 24% as large.

We divide these firms into two groups on the basis of whether their treasury decision-maker has a university degree or not: the split was 69% with a degree and 31% without.

3.2. The Questionnaire

The core objective for which the questionnaire was drawn up was to analyse management of treasury needs and surpluses in Basque Country corporations with more than 15 employees. To that end, the questionnaire was divided into four blocks of questions: "Financing of treasury deficits", "Investment of treasury surpluses", "Negotiations with banks" and "General information".

The first block -"Financing of treasury deficits"- seeks to identify the sources of financing used and also to analyse what factors lead them to choose those particular sources.

| Sources of financing used | | Factors leading to the choice of those sources | |
|----------------------------------|--|---|---|
| Fin 1 | Discounting of commercial paper | Confin 1 | Advice from bank |
| Fin 2 | Factoring | Confin 2 | Interest rate forecast acc. to financial analysts |
| Fin 3 | Credit lines | Confin 3 | Interest rate forecast acc. to fin. management |
| Fin 4 | Short-term bank loans | Confin 4 | Corporate exposure to interest rate risk |
| Fin 5 | Issue of promissory notes | Confin 5 | Low cost of source of financing |
| Fin 6 | Extension of supplier payment deadlines | Confin 6 | Not exposing corporation to further interest rate variations due to financing incorporated |
| Fin 7 | Reduction of customer credit deadlines | | |

The second block covers the investment instruments used by corporations to manage treasury surpluses and the factors that lead them to choose those instruments.

| Investment instruments used | | Factors leading to the choice of those instruments | |
|-----------------------------|---------------------------------|--|---|
| Inv 1 | Government debt | Coninv 1 | Advice from banks |
| Inv 2 | Investment funds | Coninv 2 | Interest rate forecast acc. to financial analysts |
| Inv 3 | Repurchase agreement operations | Coninv 3 | Interest rate forecast acc. to fin. management |
| Inv 4 | Euro deposits | Coninv 4 | Ease of recovery of investment |
| Inv 5 | Amortization of debt | Coninv 5 | Profitability of investment |
| Inv 6 | Equity securities | Coninv 6 | Security of investment |
| Inv 7 | Bank deposits | | |
| Inv 8 | Futures – options | | |
| Inv 9 | Corporate promissory notes | | |

To analyse how heads of treasury departments see the services provided by banks in this area and determine their main quality criteria in choosing banks, we use a number of quality factors selected on the basis of the proposals in the Global Cash report drawn up every two years by The Bank Relationship Consultancy. These factors are covered in the third block of questions “Negotiations with banks”.

| | |
|----------|--------------------|
| Factor 1 | Price |
| Factor 2 | Service & speed |
| Factor 3 | Personal treatment |
| Factor 4 | Number of branches |
| Factor 5 | Electronic banking |
| Factor 6 | Loyalty |

The fourth block –“General information”– covers the data required to identify corporations: annual turnover, total assets on the balance sheet, number of employees and level of training of the decision-maker on treasury matters, among others.

The questionnaire contains a total of 34 specific questions on the areas related to the study, which require equally specific answers. Most of the questions are presented with a Likert type scale that enables a quantitative score to be allocated to the qualitative opinion of the corporation, so that the required empirical comparisons can be made. A number of additional questions are also asked to determine the level of training of the treasurer and the size of the corporation.

The levels of agreement/ disagreement used in the questions are as follows.

3.3. Statistical Tests

The effect of corporation size and treasurer training on the management of treasury needs and surpluses and on negotiation between banks and firms was studied via a Kruskal-Wallis variation analysis. This analysis enables us to check whether corporations behave differently depending on their size and the level of qualifications of their treasurer.

The major variables in relations between banks and firms were sought using the following process:

4. Presentation & Analysis of Results

4.1. Preliminary Analysis of Results

First we performed a descriptive analysis of the mean scores obtained for each item in the questionnaire, starting with the management of treasury needs then going on to look at management of surplus net assets before concluding with a study of how relations between banks and corporations are seen.

4.1.1. Management of Treasury Needs

Our results show that the discounting of commercial paper and credit lines are the sources of financing most widely used by corporations in the Basque Country, with scores of 3.45 and 3.29 out of a maximum of 5 respectively. Short-term loans scored far less at just 1.94. This is probably because loans are less flexible than the other two financing sources.

There is a big gap between the use of extended deadlines to suppliers and shorter credit deadlines for customers, with the former being far more widely used. Large corporations have more bargaining power over their customers, but even so our figures show that this is not the most widely used method of obtaining net assets, probably because shorter deadlines for payment by customers may cause sales to drop.

The sources of short-term financing least widely used by the firms questioned were the issuing of promissory notes and factoring, which lagged far behind the other options. The size of corporations and their organisational structures are without doubt key factors for the use of financial instruments of these types.

Table I: Mean scores & frequencies of use of sources of financing

| | Fin1 | Fin2 | Fin3 | Fin4 | Fin5 | Fin6 | Fin7 |
|----------------------|-------|-------|-------|-------|-------|------|------|
| Mean | 3.45 | 1.47 | 3.29 | 1.94 | 1.29 | 246 | 171 |
| Not important | 23.81 | 79.02 | 25.00 | 53.92 | 88.61 | 4203 | 6031 |
| Of little importance | 8.10 | 8.29 | 6.25 | 19.12 | 2.48 | 1014 | 1753 |
| Of some importance | 7.62 | 3.90 | 15.38 | 12.75 | 347 | 1643 | 1598 |
| Quite important | 20.00 | 4.39 | 21.15 | 735 | 248 | 2222 | 309 |
| Extremely important | 40.48 | 4.39 | 32.21 | 6.86 | 297 | 918 | 309 |

Analysing the scores obtained by each answer, we can confirm the differences found in the use of these sources of financing, especially if we consider answers with scores of 4 and 5 (“Often and of considerable significance” and “Regularly and of great importance”) together. These results show a clear preference for discounting commercial paper and for credit lines, which can be considered major sources of financing since they both score over 50%. On the other hand the issuing of promissory notes and factoring score less than 9% in all cases.

Having determined the relative significance of each of the short-term financing sources habitually used by corporations, let us now look at the factors that lead them to select those sources.

In this regard, the data in Table II show that the foremost consideration is cost, with an average score of 2.89 out of 5, followed by advice from banks with a score of 2.43. In regard to estimated variations in interest rate, the corporations surveyed value the opinion of financial analysts more highly than that of their own management, though the difference is minimal. Finally, we note the low score obtained by fixed interest rate loans to avoid exposing firms to additional interest rate variations: 71.12% of those questioned did not consider this point as significant, even though some risk of interest rate increases exists.

Table II: Mean scores & frequencies of factors leading to the choice of financing sources

| | confin1 | confin2 | confin3 | confin4 | confin5 | confin6 |
|----------------------|---------|---------|---------|---------|---------|---------|
| Mean | 2.43 | 2.07 | 1.97 | 1.99 | 2.89 | 1.52 |
| Not important | 33.33 | 45.55 | 52.11 | 48.95 | 27.75 | 71.12 |
| Of little importance | 19.49 | 19.37 | 15.79 | 18.95 | 8.90 | 12.30 |
| Of some importance | 23.08 | 19.90 | 17.37 | 17.89 | 24.61 | 12.30 |
| Quite important | 19.49 | 12.57 | 12.11 | 12.11 | 24.08 | 2.14 |
| Extremely important | 4.62 | 2.62 | 2.63 | 2.11 | 14.66 | 2.14 |

4.1.2. Management of Treasury Surpluses

Another important task of corporate treasurers is to make the most of any transitory treasury surpluses generated at their corporations, i.e. one-off surpluses and not permanent funds, which tend to be treated differently because their origin in the corporation is different.

Maximising the profitability of one-off surpluses is certainly a prime concern for good treasury management, but the corporations questioned clearly failed to see things that way, since the most frequent answer to the question on the different investment instruments used was “Never or of no importance”. This shows how little importance is granted to maximising profit from treasury surpluses.

Table III shows a preference for investment funds, bank deposits and government debt over other investment instruments for treasury surpluses. The lowest scores are for derivatives and equity securities, which is logical when we consider that one of the basic principles for investments of this type is the assurance that the money invested will be recovered. Repurchase agreement operations, euro deposits and corporate promissory notes are also little used, though they score a little more highly than derivatives and equity securities. This failure of corporations to value products which offer such high liquidity rates and assurances may be ignorance of their existence, or insufficient information on them from banks. The role of banks is thus fundamental in optimising treasury management.

Table III: Mean scores & frequencies of use of investment instruments

| | Inv1 | Inv2 | Inv3 | Inv4 | Inv5 | Inv6 | Inv7 | Inv8 | Inv9 |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mean | 2.1 | 2.41 | 1.74 | 1.55 | 1.84 | 1.44 | 2.18 | 1.13 | 1.25 |
| Not important | 59.26 | 47.64 | 75.81 | 80.65 | 67.03 | 81.72 | 51.60 | 94.05 | 89.19 |
| Of little importance | 5.29 | 9.42 | 2.69 | 3.23 | 6.49 | 6.45 | 11.70 | 2.70 | 3.24 |
| Of some importance | 12.17 | 13.09 | 4.84 | 3.23 | 8.65 | 5.30 | 15.43 | 1.08 | 3.24 |
| Quite important | 12.70 | 13.61 | 5.37 | 5.91 | 11.35 | 4.38 | 10.11 | 0.54 | 1.62 |
| Extremely important | 10.58 | 16.23 | 11.30 | 6.99 | 6.49 | 2.15 | 11.17 | 1.62 | 2.70 |

Investment decisions are directly and decisively influenced not only by the characteristics of financial assets themselves (security, liquidity, profitability) but also –and to a very great extent– by advice from banks (see Table IV). The significance of this variable in the management of surplus assets supports the idea of the second part of our study: to show the importance of relations between corporations and banks in treasury management.

Those questioned awarded the highest score for innate features of financial assets to security, which was considered significant by 66.66% (“Often and of considerable significance” and “Regularly and of great importance”). In second place we find liquidity with 57.89% and third comes profitability with 53.65%. So security and liquidity are valued more highly than profitability.

Table IV: Mean scores & frequencies of factors leading to the choice of investment

| | coninv1 | coninv2 | coninv3 | coninv4 | coninv5 | coninv6 |
|----------------------|---------|---------|---------|---------|---------|---------|
| Mean | 2.75 | 2.22 | 2.04 | 3.32 | 3.24 | 3.64 |
| Not important | 25.65 | 42.55 | 49.74 | 21.58 | 20.31 | 16.67 |
| Of little importance | 18.32 | 17.02 | 15.34 | 4.74 | 4.17 | 3.13 |
| Of some importance | 23.04 | 21.28 | 19.58 | 15.79 | 21.88 | 13.54 |
| Quite important | 20.94 | 14.36 | 12.17 | 35.79 | 38.02 | 33.33 |
| Extremely important | 12.04 | 4.79 | 3.17 | 22.11 | 15.63 | 33.33 |

4.1.3. Negotiation with Banks

Analysis of the variables that determine decisions on relations between banks and corporations show what criteria companies follow when choosing banks, and what influence their relations with banks have on their treasury management.

Table V: Mean scores for factors used in negotiations

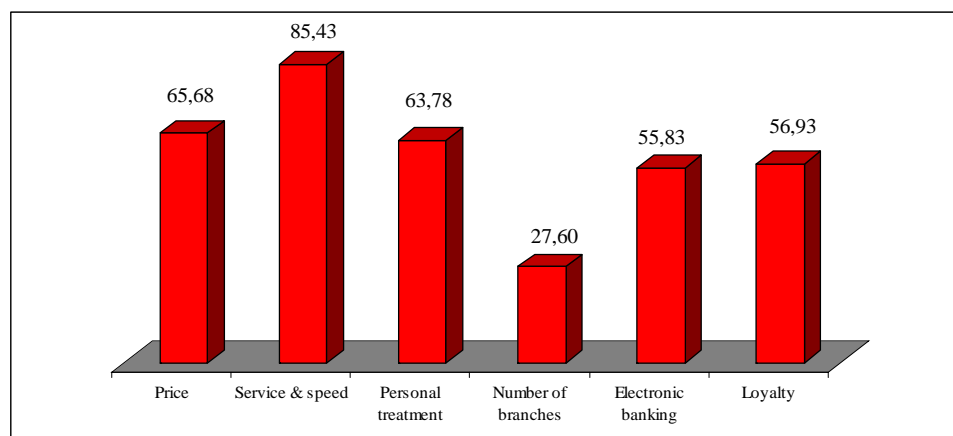
| Price | Service & speed | Personal treatment | Number of branches | Electronic banking | Loyalty |
|-------|-----------------|--------------------|--------------------|--------------------|---------|
| 3.69 | 4.22 | 3.66 | 2.65 | 3.42 | 3.41 |

By far the most highly valued factor for corporations in their relations with banks is the standard of service provided. This confirms the trend marked by previous studies that have shown a rise of qualitative factors such as speed and standard of service as determinants in the contracting of banking services. Price obtains practically the same score as personal treatment. These percentages are very similar to those reported in Mols, Bukh & Blenker (1997), which enables us to assert that corporations in the Basque Autonomous Community behave similarly to those in the European cities where the said authors conducted their study.

When level four (“Often and of considerable significance”) and level five (“Regularly and of great importance”) scores are added together for each of the six factors, the differences can be clearly seen (Graph I). The service offered by banks, the price of financial products and personal treatment can be considered as significant, as all three were considered by over 63% of those questioned to be fundamental to their choice.

The score obtained by electronic banking services merits further comment: advances in technology in recent years have enabled corporations to maintain much more fluid relations with banks by providing fast, up-to-the-minute information on their banking situation. This has favoured considerable progress in treasury management.

In spite of the progress made in electronic banking, it is not seen as a major criterion in choosing banks and there is little evidence of consumer demand for internet banking services (Davidson, 1998). The critical question is whether the spread of electronic banking is determined more by customer acceptance than by seller offerings (Mols et al., 1999). However this may become a factor for differentiation in the future. It seems logical that this factor should carry ever greater weight in choosing banks, as truly substantial progress in internet banking has been made recently, and more will be made in the future, making this a highly competitive area for differentiating between banks.

Graph I: Significance of factors used in negotiations with banks

4.2. Influence of the Size of Corporations and the Training of Decision-Makers

Having identified the investment and financing instruments most widely used by corporations to manage cash, the factors that lead them to choose those instruments and the most significant points of their negotiations with banks, let us look lastly at the influence of the size of corporations and the level of training of their treasurers or decision makers in treasury matters.

Table VI: Kruskal-Wallis variance analysis. Influence of size of corporations

| Factor: sized enterprises (small, medium and large) | | | | | | | | | |
|--|----------------|-----------------|--------------------|--------------------|--------------------|----------------|-------------|-------------|-------------|
| Dependent variable | Fin1 | Fin2 | Fin3 | Fin4 | Fin5 | Fin6 | Fin7 | | |
| χ^2 estadístico | 3.571 | .505 | 11.462 | .795 | 3.590 | 1.595 | 2.579 | | |
| p-value | .168 | .777 | .003** | .672 | .166 | .451 | .275 | | |
| Dependent variable | confin1 | confin2 | confin3 | confin4 | confin5 | confin6 | | | |
| χ^2 estadístico | 6.683 | 2.681 | 4.246 | 1.416 | 3.102 | .460 | | | |
| p-value | .035* | .262 | .120 | .493 | .212 | .795 | | | |
| Dependent variable | Inv1 | Inv2 | Inv3 | Inv4 | Inv5 | Inv6 | Inv7 | Inv8 | Inv9 |
| χ^2 estadístico | 2.121 | 5.224 | 9.307 | 12.230 | .515 | 1.066 | .860 | 1.105 | 8.613 |
| p-value | .346 | .073 | .010** | .002** | .773 | .587 | .651 | .676 | .013* |
| Dependent variable | coninv1 | coninv2 | coninv3 | coninv4 | coninv5 | coninv6 | | | |
| χ^2 estadístico | 6.713 | 2.925 | 1.965 | 2.411 | .812 | 6.241 | | | |
| p-value | .035* | .232 | .374 | .300 | .666 | .044* | | | |
| Factor: sized enterprises (small, medium and large) | | | | | | | | | |
| Dependent variable | Price | Service & speed | Personal treatment | Number of branches | Electronic banking | Loyalty | | | |
| χ^2 estadístico | 3.170 | 2.655 | 1.362 | 6.451 | 5.150 | 3.671 | | | |
| p-value | .205 | .265 | .506 | .040* | .076 | .160 | | | |

** , * denotes a significant difference at the 1%, 5% level, respectively.

The results of this variance analysis enable us to reject the null hypothesis of equal means for most cases (those indicated in Table VI). In other words, the use of credit lines as a source of financing, investment in Repurchase agreement operations, euro deposits and corporate promissory notes, consideration of advice from banks, security of investments and number of branches are the elements for which there is a statistically significant link between corporate size and the management of treasury needs and surpluses and the banking negotiation.

Treasurer training levels only show up as influential in some cases, as can be seen in Table VII. The use of credit lines, corporate financial management expertise, the cost of financing and personal treatment of firms in their dealings with banks are all elements in which there is a significant difference in analysed factors depending on the training of the decision-maker.

Table VII: Kruskal-Wallis variance analysis. Training levels of decision-makers

| Factor: Training levels of decision-makers (university degree or not) | | | | | | | | | |
|--|----------------|-----------------|--------------------|--------------------|--------------------|----------------|-------------|-------------|-------------|
| Dependent variable | Fin1 | Fin2 | Fin3 | Fin4 | Fin5 | Fin6 | Fin7 | | |
| χ^2 estadístico | 1.883 | .092 | 5.210 | .017 | .958 | 1.104 | 1.246 | | |
| p-value | .170 | .762 | .022* | .896 | .328 | .293 | .264 | | |
| Dependent variable | confin1 | confin2 | confin3 | confin4 | confin5 | confin6 | | | |
| χ^2 estadístico | .420 | 2.626 | 7.091 | 1.818 | 9.555 | .443 | | | |
| p-value | .517 | .105 | .008** | .178 | .002** | .506 | | | |
| Dependent variable | Inv1 | Inv2 | Inv3 | Inv4 | Inv5 | Inv6 | Inv7 | Inv8 | Inv9 |
| χ^2 estadístico | 2.020 | .508 | 2.489 | .792 | 1.994 | .003 | .011 | 1.901 | .074 |
| p-value | .155 | .476 | .115 | .373 | .158 | .957 | .916 | .168 | .785 |
| Dependent variable | coninv1 | coninv2 | coninv3 | coninv4 | coninv5 | coninv6 | | | |
| χ^2 estadístico | .652 | 3.161 | 4.834 | 2.400 | 1.026 | 1.711 | | | |
| p-value | .419 | .075 | .028* | .121 | .311 | .191 | | | |
| Factor: Training levels of decision-makers (university degree or not) | | | | | | | | | |
| Dependent variable | Price | Service & speed | Personal treatment | Number of branches | Electronic banking | Loyalty | | | |
| χ^2 estadístico | 1.707 | .098 | 9.945 | .370 | .129 | .953 | | | |
| p-value | .191 | .754 | .002** | .543 | .719 | .329 | | | |

** , * denotes a significant difference at the 1%, 5% level, respectively

This results reinforce the idea that the tasks of treasury departments are integrated into the culture of cash management, and that the use of new net asset management techniques is not directly linked to the size of a corporation or to the standard of training of its treasurer, but rather depends on the initiative of the financial managers themselves.

4.3. Significant Variables in Negotiations between Banks and Corporations

4.3.1. Classification of Corporations

This section sorts corporations into homogenous groups according to the standard of their treasury management. Using statistical methods, this grouping can be carried out via cluster analysis. We apply such analysis to individual corporations in our sample using the agglomerative hierarchy method and the square of the Euclidean distance.

The results of cluster analysis and the relevant descriptive statistical analyses indicate that there are two main groups of corporations: Group I, containing 108 corporations, and Group II, containing 84.

The table below shows the average score for each function in each of the two groups resulting from cluster analysis.

Table VIII: Characteristics of groups

| | Group I | Group II | Differentiation |
|--------------------|----------------|-----------------|------------------------|
| Price | 3.93 | 3.37 | 0.56 |
| Service & speed | 4.52 | 3.86 | 0.66 |
| Personal treatment | 4.06 | 3.10 | 0.96 |
| Number of branches | 3.18 | 1.98 | 1.20 |
| Electronic banking | 4.06 | 2.54 | 1.52 |
| Loyalty | 3.94 | 2.73 | 1.21 |

The mean scores for Group I are higher, which means that these corporations grant greater significance to negotiations with banks.

An analysis of the groups in absolute terms shows that standard of service and speed of banks, personal treatment and electronic banking are the factors that obtain the highest scores among Group I corporations.

Price as a “quantitative” variable, bringing together factors such as interest rates, charges and exchange rates among others, which overall was the second biggest factor in choosing banks, maintains a high position in the ranking resulting from analysis by groups, but one lower than the “qualitative” variables. This confirms the tendencies pointed out in the previous section. The same goes for the score obtained by all the services that come together in the “Electronic Banking” variable.

In Group II all aspects linked to treasury management are less significant, indicating a lower level of involvement of treasurers in the new trends in cash management. In this group the standard of service and speed of banks remains the most highly valued factor, with price taking second place. The biggest difference between the groups is in electronic banking, which obtains a very low score among Group II corporations.

4.3.2. Discriminant Analysis: Main Functions

Having grouped our corporations, we now apply the second stage of this two-stage process: linking the groups with the factors that influence relations between banks and corporations. This enables us to check whether the groups obtained are consistent, and establish what variables contribute most to sorting corporations into groups. It is therefore advisable to validate the classification obtained via cluster analysis via explanatory techniques such as discriminant analysis, using validation samples.

The following table shows the discriminant loads or structural correlations for the variables included in the discriminant function. As can be seen, the Electronic Banking variable has the greatest

discriminant load, i.e. it is this variable that most characterises firms in Group I as distinct from those in Group II. The Number of Branches, Loyalty to Bank and Standard and Speed of Bank Services variables have discriminant loads but they are lower than that of Electronic Banking.

Table IX: Discriminant function. Structural matrix

| | Discriminant charge |
|--------------------|----------------------------|
| Electronic banking | .675 |
| Number of branches | .497 |
| Loyalty | .410 |
| Service & speed | .329 |

The last indicator of the effectiveness of the discriminate function is the proportion of individual corporations correctly sorted. The figures obtained in this regard are 86.7% for the analysis sample and 78.4% for the validation sample. But to check the goodness of these results, they should be compared with the proportion of individual corporations that might be sorted correctly on a random basis, without the aid of the discriminant function. A priori, the random sorting figure for the analysis sample would be 50.88% of cases $((98/173)^2 + (75/173)^2)$, and for the validation sample it would be 50.1% $((10/19)^2 + (9/19)^2)$. Given the number of cases actually sorted correctly a posteriori as indicated above, the improvement obtained via this analysis is significant.

5. Conclusions

This study has focused on the analysis of cash management, providing evidence using Spanish companies with more than 15 employees. There are several important features of our analysis which extend the literature on cash management routines.

The short-term sources most widely used to fund shortfalls in liquidity are the discounting of commercial paper and credit lines. The high flexibility of management of these methods and the relative ease with which they can be obtained influence this choice. However we consider that there are also other factors that lead corporations to prefer these methods, such as maintaining corporate financing separate from the image of a corporation in the eyes of its suppliers and customers.

In selecting these sources of financing, corporations basically take two elements into account: the cost of financing and the advice provided by their bank. In large corporations, however, advice from banks may be a reference point, but the choice of financing sources is backed up by in-house analyses. This reinforces the importance of having a consolidated financial department within the structure of a corporation.

Another of the functions entrusted to treasurers is to make the most of temporary treasury surpluses generated by corporations. However the firms surveyed do not value this function in the same way: the replies obtained indicate that they allocate little importance to maximising the profitability of surpluses. The idea of treasury departments as profit centres has as yet hardly begun to develop among these corporations.

Among the innate qualities of financial assets, security and liquidity are prioritised over profitability in the choice of investment instruments for treasury surpluses, with the most widely used instruments being bank deposits and government debt. Repo's, euro deposits and corporate promissory notes are used very little, even though they offer high levels of liquidity and security. This may be due to unawareness of their existence and to a lack of information on them from banks.

If treasurers are to seek financing to carry on corporate business at the lowest cost and obtain the maximum possible profit from liquidity surpluses then negotiations with banks must be a key aspect of treasury management, due to the importance of maintaining stable relations with banks.

For corporations, standard of service and speed are by far the most highly valued factors in their relations with banks. This confirms the trend for qualitative variables to become determinant in the choice of banks.

The relationship between the determinant factors in the choice of investment/ financing instruments and banks on the one hand and size of corporations and the training levels of treasurers on the other proves to be significant only in some cases. This reinforces the idea that the tasks of treasury departments are integrated into the culture of cash management, and that the use of new net asset management techniques is not directly linked to the size of a corporation or to the standard of training of its treasurer, but rather depends on the initiative of the financial management themselves.

To form corporations into homogenous groups according to their use of similar treasury management routines, we performed a cluster analysis that placed them in two blocks.

Electronic banking is the variable that best distinguishes corporations that allocate more importance to treasury management. These corporations seek to incorporate new integrated management models into their systems. The emerging trend throughout corporate cash management is towards more use of technology, making cash management more effective and efficient. It is logical that this factor should carry increasing weight as a basis for choosing banks, because Internet banking has recently achieved major advances, and seems set to continue doing so in the future. This will certainly be a highly competitive point for distinguishing between banks.

On the other hand it is surprising how little significance is attributed to new technologies by the firms in the second group, i.e. those that do not believe in the philosophy of cash management. We can only assume that their attitude will change in the not too distant future.

For the purpose of estimating the research models for hypotheses testing first, a sample of companies listed in Tehran Stock Exchange for the time period of 2001-2003 is used. Second, a sample of state companies is used. We estimate the research models with pooled data for three years, and overall 647 years-firm. Then, similarly the models are estimated for sample companies in different industrial groups. Finally, we estimate the research models using cross-sectional data for each year (2001 to 2003). We estimate the research models for the sample of state companies in the same way.

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