European Journal of Accounting Auditing and Finance Research
Vol.3, No.1,pp.46-55, January 2015
Published by European Centre for Research Training and Development UK (www.eajournals.org)

CAPITAL INVESTMENT DECISIONS IN SMALL AND MEDIUM SIZED ENTERPRISES IN TURKEY

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ABSTRACT: *As accepted by economists, Small and Medium Sized Companies (SMEs) are very important for Turkish economy from various points of view. Professional management is becoming very popular in Turkish SMEs and family owned and managed companies began to realize the advantages of institutionalization and professionalization for sustainable growth and achievement. In line with this trend, this study researches how investment decisions are being made in SMEs in Turkey and to get insight as to the level of professionalism and utilization of financial tools and techniques for this purpose. With the objective of exploring how capital investment decisions are made in SMEs in Turkey, a survey was conducted among 65 SMEs located in Istanbul from production, construction and service industries. The main conclusion is that despite awareness on theoretically superior generally accepted evaluation measures, they are not used by the vast majority of the decision makers in the analysis of capital investments in SMEs in Turkey. By analyzing and outlining the As-is situation, this study aims to contribute to increase the awareness level; thus, motivate decision makers to interrogate and challenge the current situation in order to set up appropriate policies and action plans at both macro and micro levels.*

KEYWORDS: Capital budgeting, Investment decisions, SMEs, NPV, Payback

INTRODUCTION

Small and Medium Enterprises (SMEs) play a key role in the economic development of Turkey as one of the main driving force. There are around 2.5 million SMEs in Turkey making up the 56% of the total added value, 41% of total gross investments and 78% of the labor force (TÜİK, 2012). There is limited number of research studies referring to the capital investment decisions in Turkish SMEs. Some of these studies can be named as that of Ozgen and Dogan (1997), Kula and Erkan (2000), Atik and Sezer (2001), Yücel (2001), Arslan (2003) and Cetin and Bıtırak (2009). All of the previous researches regarding capital investment decisions are conducted for SMEs that are established and operating in Anatolia (in relatively lesser developed regions of Turkey). As Istanbul is the biggest and the most industrialized city in Turkey with the highest number of universities and companies with close ties to Europe and Western way of business conduct, a research that does not consider Istanbul may not be representative enough to make overall conclusions regarding the situation in Turkey. Almost half of the SMEs in Turkey are based in Istanbul. This is the motivating factor for this paper.

The remainder of the paper is organized as follows. In the second section, definitions of key words on the subject matter are provided. Then, capital budgeting theory is studied. Following literature review, findings of the survey study are explored. Finally, conclusive findings are summarized.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

LITERATURE / THEORETICAL UNDERPINNING

There is no international standard definition of firm size; however, many institutions and academicians categorize SMEs as companies with 0-249 employees. The definitions differ from country to country as the size and economic structures are different. Also SMEs are supported by different purposes in each country and the definitions are generally linked to who will benefit from SME support schemes (Palas and Oguzkurt, 1997). Danielson and Scott (2006) used the benchmark of 250 to define SME. Besides number of employees, sales turnover, assets and capital are other well-known criteria that are used to define SMEs. Stanley (1997) defined SME as an organization with fewer than 1000 employees and revenue with less than $5 million. According to the law mandate 'Government Incentives to support SME investments' dated 05.03.1999 published in the Turkish Official Gazette, SMEs are defined as organizations up to a maximum of 250 employee. In later years, Turkish institutions officially adopted a scheme that is very similar to the European Union's definition of SME gradually. In line with this, the criteria to be nominated as a SME are shown in Table 1 as follows:

Table 1: SME Definition

Definition (Criteria) SCALE	*Number of Employee*	*Annual Net Sales*	*Balance Sheet*
Micro	*1 - 9*	*≤1 million TL <0,45 million $*	*≤1 million TL <0,45 million $*
Small	*10 - 49*	*≤8 million TL <3,64 million $*	*≤8 million TL <3,64 million $*
Medium / Large	*50 - 250*	*≤40 million TL <18,2 million $*	*≤40 million TL <18,2 million $*

Source: Small and Medium Enterprise Development Organization (KOSGEB)

In Turkey, about 95.5% of all SMEs are 'micro' with 1 to 9 employees, 4% 'small' with 10 to 49 and 0.5% 'medium/large' with employees less than 250 and more than 49 (KOSGEB).A capital expenditure is any expenditure that generates a cash flow benefit for more than one year; therefore, expenditures for physical assets with a useful life of more than one year and expenditures for capital improvements of physical assets which enhance or extend the useful life of the asset are capital expenditures (Jacobs F.D., 2008). As typical examples, purchase of new equipment, expansion of production facilities, acquiring new technologies, launching a research & development program can be given.

The investment decision is about deciding on sacrificing from today's consumption so that more can be consumed in the future (Copeland, Weston, Shastri, 2005). In order to decide whether an investment is worth undertaking and to choose intelligently between alternatives, decision maker needs to follow a procedure. This managerial procedure to evaluate, compare, and select investment projects is called capital budgeting. Therefore capital budgeting can be defined as 'the whole process of analyzing projects and deciding whether they should be included in the capital budget' (Brigham and Ehrdardt, 2011, p.1089).

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

As indicated by Peterson and Fabozzi, capital budgeting is the process of analyzing investment opportunities in long-term assets which are expected to produce benefits for more than one year (Peterson P.P., Fabozzi F.J., 2002). As agreed by the academicians, the desirable targets in capital budgeting can be listed as follows (Hasan A.M., Sherwani N.U.K., 2013):

1. All cash flows should be considered

2. The cash flows should be discounted at the opportunity cost of funds

3. The technique should select from a set of mutually exclusive projects the one that maximizes the shareholders' wealth

4. Managers should be able to consider one project independently from all others

Main capital budgeting techniques are the payback method, the accounting rate of return, net present value (NPV), and the internal rate of return (IRR). There are some other measures like modified internal rate of return (MIRR), profitability index (PI), NPV profile that all are derivatives of the NPV and IRR measures. There is also a new development in capital budgeting literature about using real options in the decision making. But empirical literature finds that a relatively small number of firms utilized real options (Block, 2007).

Payback period is simply the number of years it takes to recover the initial cash outlay on a project. In other words, payback period is the expected number of years required to recover a project's cost. Payback method ignores the time value of money and ignores the cash flows occurring after the payback period. The improved version of payback period method is the discounted payback period which takes into account the time value of money. But both methods still ignore any cash flows in years after the payback period and do not account for project size differences.

Accounting Rate of Return is the average after-tax profit divided by the initial cash outlay. It is very similar to return on assets (ROA) or return on investments (ROI) but also bears the same weaknesses: it uses accounting profits instead of cash flows and does not consider the time value of money.

Net Present Value (NPV) compares the value of an amount of currency today to the value of the same amount of currency in the future, taking inflation and returns into account by discounting all cash flows in business case at the weighted average cost of capital (WACC). In other words, NPV is the project's expected future cash flows discounted at the appropriate cost of capital. The guiding business rule is to accept all projects or investments where the NPV of cash flows is greater than zero.

The Internal Rate of Return (IRR) on a project is the rate which makes the present value of the cash outflows and inflows the same. In other words, IRR is a discount rate that makes the present value of estimated cash flows equal to the initial investment (so it is the rate that makes the computed NPV exactly zero). All projects or investments with an IRR that has been calculated to

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

be greater than the WACC is considered as financially sound and should be accepted. IRR is appealing to analysts because it is easy to understand while it caters for the time value of the money.Although IRR discount cash flows, it does not discount them at the opportunity cost of capital; instead, cash flows are discounted at that rate (reinvestment rate assumption). IRR rule assumes that investors can reinvest their money at the IRR for each project which may lead to multiple rates of return if the estimated cash flows changes sign more than once. Thus, it appears that NPV is superior to IRR on both theoretical and practical grounds.

Most nonfinancial executives prefer analyze investments in terms of percentage rates of return rather than in value of NPV. In line with this, a corrected IRR which caters for its weaknesses may be considered as a better indicator for capital budgeting decisions for some analysts. This alternative percentage rate of return measure is called "Modified IRR (MIRR)". A project's modified IRR is found in 3 steps as follows:

a. Find the present value of the project's outflows, all discounted back to the project start date at the cost of capital of the project.

b. Find the future value of the project's inflows (also called terminal value), all forwarded to the project's final year at the cost of capital of the project.

c. Find the discount rate (project’s MIRR) that forces the project's terminal value to be equal to the project's present value of costs when the terminal value is discounted over the life of the project.

As MIRR correctly assumes reinvestment at project’s cost of capital, it also avoids the problem of multiple IRRs. If a percentage rate of return measure must be used, as may be preferred by some analysts, then the modified IRR, which forces reinvestment at the cost of capital, is a better indicator of a project's return than the IRR. But MIRR does not consider the size or time span of the project because it is based on a percentage, just like IRR.

rofitability index (PI) is calculated by dividing the project’s present value of future cash flows by its initial cost. A profitability index greater than 1 is equivalent to a project having positive net present value (Brigham E.F., Ehrhardt M.C., 2011, p.1104). Like IRR and MIRR, PI does not consider the size or time span of the project because is based on a ratio.

In conclusion, NPV technique is the only technique that is consistent with shareholders’ wealth maximization. In order to maximize shareholders’ wealth, managers should take projects with positive NPV. The other decision criteria do not always lead to maximization of shareholders’ wealth. To analyze investments, only if there is a requirement to express the NPV results in percentage rates of return instead of in any currency amounts, then MIRR may be used in addition to NPV.Survey of the Fortune 1000 Chief Financial Officers shows that NPV is the most preferred tool over all capital budgeting tools, followed closely by IRR (Ryan P.A., Ryan G.P., 2002). Search on literature reveals that there are a few studies made directly dealing with capital budgeting decisions in SME’s in Turkey. These studies belong to Erkan and Kula (2000), Yücel (2001), Arslan (2003) and Cetin and Bıtırak (2009).

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Erkan and Kula (2000) surveyed 228 SMEs and noted that 68% of SMEs does not use NPV method in their capital investment evaluations. Yucel (2001) noted that the pay back method is used by the majority of SMEs. Arslan's study (2003) is built on the earlier study of Yucel's. Yücel studied 137 SMEs located in İzmir, Manisa and Denizli from various industries. Arslan used the same questionnaire developed by Yücel and applied it on 111 SME's located in Ankara again across different industries. The survey results indicated that 22% of the respondents do not use any technique and 38% uses pay back method (including discounted payback) in their capital investment evaluations. Only 12% uses NPV technique, 11% IRR and the remaining 17% uses a combination of mentioned techniques. Cetin and Bıtırak (2009) studied 40 SMEs located in Antalya from various industries. The survey results indicated that payback method is the dominating technique used in capital investment evaluations and no method is utilized in %22.5 of the SMEs.

METHODOLOGY

With the objective of exploring how capital investment decisions are made in SMEs in Turkey, a survey was conducted among 65 SMEs located in Istanbul from production, construction and service industries (3 main categories according to KOSGEB) selected on a random basis. As the previous researches were conducted for SMEs that are established and operating in Anatolia (İzmir, Manisa, Denizli and Ankara), this research study is conducted on SMEs that are established and operating in Istanbul, the biggest and most industrialized city of Turkey.

As indicated earlier and shown in Table 1, in Turkey, about 95.5% of all SMEs are 'micro' with 1 to 9 employees, 4% 'small' with 10 to 49 and 0.5% 'medium/large' with employees less than 250 and more than 49. Sample for this research is selected among 'medium/large' SMEs only since 'micro' and 'small' SMEs are not expected to apply modern professional tools and methods in their business management.

100 survey questionnaires were sent out to randomly selected SMEs as the initial target and 35 SMEs did not reply at all. Out of the 65 SMEs that did reply, 30 survey questionnaires are completed mostly through interviews with senior officials and managers over the phone or in meetings. The remaining 35 survey questionnaires are fully completed by the related managers of the surveyed companies and handed over. The survey audience is Finance Managers (the heads of the Finance & Accounting departments in the related organizations) and/or General Managers who happened to be shareholders 60 percent of the time. Contact person details to which questionnaires are asked to be completed are determined by telephone conversations with the company secretary or receptionist.

The questionnaire is developed in parallel to the earlier research and studies about this subject matter (Yucel, 2001; Arslan, 2003). Before being finalized, the questionnaire form is tested by a partner working in a Big-Four consultancy company who looks after SME business.The questionnaire includes a total number of 15 multiple choice and a number of open-ended questions to extract information that are related with who in the organization make the capital

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

expenditure / capital investment decisions, by utilizing which methods and techniques and by using which tools and software.

Data collected through questionnaires are analyzed in excel for statistical purposes.

RESULTS / FINDINGS

Results were analyzed across entity type, company's industry, number of years in operation and number of employee. Companies surveyed are all capital firms (see Table 2). Surveyed firms are from the three main industry categories of SMEs (see Table 3). 60% of the surveyed firms are in operation at minimum 4 years and maximum 7 years (see Table 4). 65% of the surveyed firms have minimum 11 and maximum 50 employees (see Table 5).

Type of the Firm	*Number*	*Percentage*
Proprietorship	*0*	*%0*
Limited Corporation	*39*	*%60*
Joint stock company	*26*	*%40*
Total	*65*	*%100*

Table 2: Type of firm surveyed

Industry of the Firm	*Number*	*Percentage*
Production	*18*	*%28*
Construction	*12*	*%18*
Service	*35*	*%54*
Total	*65*	*%100*

Table 3: Surveyed firm by industry

Number of Years in Operation	*Number*	*Percentage*
1-3	*12*	*%18*
4-7	*39*	*%60*
8+	*14*	*%22*
Total	*65*	*%100*

Table 4: Number of year surveyed firm is in operation

Number of Employee	*Number*	*Percentage*
1-10	*16*	*%25*
11-50	*42*	*%65*
51+	*7*	*%10*
Total	*65*	*%100*

Table 5: Number of employee working in surveyed firms

Respondents were asked several questions regarding the methods, techniques, tools and software they use to make capital investment decisions. Survey results are summarized in the following tables.

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Finding of the study shows that the decision makers in Turkish SMEs in relation with capital investments are the shareholders and not finance professionals (see Table 6 and Table 7) and they are educated well (see Table 8). This finding is in line with earlier studies by Emir, Sevim and Arslanturk (2012) and Kaya and Alpkan (2012).

Decision Maker on Daily Management Issues	*Number*	*Percentage*
Shareholders which are not General Managers	*0*	*%0*
Shareholders which are General Managers	*33*	*%51*
Other General Manager	*22*	*%34*
Managers	*10*	*%15*
Total	*65*	*%100*

Table 6: Decision makers on daily management issues in surveyed firms

Decision Maker on Capital Investment Decisions	*Number*	*Percentage*
Shareholders which are not General Managers	*11*	*%17*
Shareholders which are General Managers	*39*	*%60*
Other General Manager	*15*	*%23*
Managers	*0*	*%0*
Total	*65*	*%100*

Table 7: Decision makers on capital investment decisions in surveyed firms

Education Level of Decision Makers	*Number*	*Percentage*
High School	*11*	*%17*
University - undergraduate	*48*	*%74*
University – graduate	*6*	*%9*
Total	*65*	*%100*

Table 8: Education level of capital investment decision makers in surveyed firms

The results showed that out of all possible methods to be utilized in investment decisions, NPV and IRR methods (or a mix of both) are not dominantly used by the decision makers (see Table 9). This finding is in line with findings in earlier studies as indicated previously. The dominating method is the payback method with usage rate of 74 percent of all respondents. About 10 percent of the respondents indicated that no method is used at all. And these companies that do not utilize any method also do not utilize any software in their analysis but only pen and paper (see Table 10). All respondents who indicated using payback method used only excel spreadsheet in their calculations. A software specific for this purpose or as part of an integrated business software is not utilized at all.

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Investment Evaluation Technique	*Number*	*Percentage*
Payback Period	*48*	*%74*
Discounted Payback	*4*	*%6*
NPV	*5*	*%8*
IRR	*1*	*%1*
MIRR	*0*	*0*
Others	*0*	*0*
No Technique	*7*	*%10*
Total	*65*	*%100*

Table 9: Investment evaluation techniques utilized in surveyed firms

Software utilized in Investment Evaluations	*Number*	*Percentage*
Special software	*0*	*%0*
Excel	*43*	*%67*
Pen - paper	*22*	*%33*
Total	*65*	*%100*

Table 10: Software utilized in investment evaluations in surveyed firms

Several additional findings emerged from the research:

- All of these results are independent of the number of employee working in the companies or the numbers of years the companies are in operation.

- All decision makers are highly educated and have at least a basic conceptual understanding of NPV and IRR methods as confirmed in interviews.

- Companies that do not utilize any method also do not employ a senior finance professional who can assist the decision makers in investment decisions.

- Respondents were also questioned about the decision making process. None of the respondents indicated that they have a formalized process in decision making for capital investments.

IMPLICATIONS TO RESEARCH AND PRACTICE

The survey study outlined in this paper serve an important purpose in understanding how capital investment decisions are being made in Turkish SMEs. The underlying result of the survey shows serious implications for the Turkish SMEs which are crucial for the growth of the Turkish economy as sound capital investment decision making is critical for survival and sustained growth and success of SMEs.

Capital investment decisions are one of the most important strategic decisions of an organization that affect its future financial condition. Suboptimal decisions may lead to inappropriate and

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

inefficient use of resources that may have high opportunity costs for the company. Therefore the use of correct evaluation method and tools become critical.

CONCLUSION

Based on the results of the survey of 65 SME top managers / shareholders regarding their evaluation methods of capital investments, the main conclusion is that despite awareness on generally accepted evaluation measures (NPV being theoretically the best measure), they are not used by the vast majority in the analysis of capital investments in SMEs in Turkey.

FUTURE RESEARCH

In this regard, this study shows that theoretically superior evaluation tools and measures are not utilized in investment decisions in Turkish SMEs.

The reasons for this situation need to be studied in further researches so that appropriate action items can be determined for all stakeholders for SMEs in Turkey as SMEs are significant for Turkish economy. Empirical studies in the world about capital budgeting in SMEs find that the size and availability of capital, investment opportunities, and lack of knowledge and expertise of decision makers may partially explain this difference in the capital budgeting process of SMEs and large companies (Uddin Md.M., Chowdhury A.Z.Md.R., 2009). A study on financial management applications of SMEs in Trabzon city by Emir, Sevim and Arslantürk (2012) shows that in a majority of SMEs, a professional financial manager is not employed. Both Kaya and Alpkan (2012) and Atik and Sezer (2001) mention in a study on problems for SMEs in Turkey that business owners do not have sufficient information in terms of financial management. Ar and Iskender (2005) lists lack of professional and technical know-how as one of the main problems of SMEs in Turkey. Yucel (2001) and Arslan (2003) conclude that pay back method is used because it is simple and SME decision makers lack financial knowledge to utilize alternative and superior methods. Uluyol (2013) studied financial management practices in SMEs and his survey results are in line with these findings.

REFERENCES

Ar A., İskender H. (2005). *Türkiye'de KOBİ'ler ve KOBİ'lerde Planlama, Uygulama ve Denetim*,Mevzuat Dergisi (ISSN 1306-0767), Sayı 87, Yıl 8

Arslan Ö. (2004). *Küçük ve Orta Ölçekli İşletmelerde Çalışma Sermayesi ve Bazı Finansal YönetimUygulamaları*, Cumhuriyet Üniversitesi İİBF Dergisi, Yıl 4, Sayı 1

Atik H., Sezer S. (2001), "*Avrupa Birliği'ne Entegrasyon Sürecinde Küçük ve Orta Boy İşletmelerinSorunları: Kayseri ve Nevşehir Örneği*", I. Orta Anadolu Kongresi: KOBİ'lerin Finansman ve Pazarlama Sorunları, Nevşehir: Erciyes Üniversitesi Nevşehir İktisadi ve İdari Bilimler Fakültesi,18-21 Ekim, pp.107-116.

Block S. (2007). *Are Real Options Actually Used in the Real World?* The Engineering Economist. Vol.52,No.3, pp.255-267

Brigham E.F., Ehrhardt M.C. (2011). *Financial Management: Theory and Practice*. Mason, OH: South-Western Cengage Learning

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Copeland – Weston – Shastri (2005). *Financial Theory and Corporate Policy*, 4th Edition, PearsonEducation Inc., Chapter 2, pp. 17-43

Çetin A.C., Bıtırak İ.A. (2009). *Antalya İli Küçük ve Orta Ölçekli İşletmelerinde Finansal Yönetim*,
İşletme Sermayesi ve Yatırım Bütçelemesi Uygulamaları. Alanya İşletme Fakültesi Dergisi. No 1.pp.119-137

Danielson M.G., Scott J.A. (2007). *A Note on Agency Conflicts and the Small Firm Investment Decision*. Journal of Small Business Management. Vol. 45 (1). pp.157-175

Emir M., Sevim U., Arslantürk D. (2012). *KOBİ'lerde Finansal Yönetim Uygulamalarının FinansmanSorunları Üzerindeki Etkisi: Trabzon İli Örneği*. Gümüşhane Üniversitesi Sosyal BilimlerElektronik Dergisi. Sayı 6

Erkan M, V. Kula (2001). *KOBİ'ler için Yatırım Projelerinin Hazırlanmasında Finansal Etüdler*. AfyonKocatepe Üniversitesi İ.İ.B.F. Dergisi, Cilt II., Sayı 2

Hasan A.M., Sherwani N.U.K. (2013). *Impact of Cost-Benefit Analysis of Public and Private ProjectsInvestment Decisions*. Journal of Business Management, Commerce and Research,Vol.2 No.5

Jacobs F. D. (2008). *A Review of Capital Budgeting Practices*. IMF Working Paper. International Monetary Fund

Kaya S., Alpkan L. (2012). *Problems and Solution Proposals for SMEs in Turkey*. Emerging Markets Journal. Vol.2

Kula V., Erkan M. (2000). *Yatırım Proje Hazırlanmasında Gerçekleştirdikleri Finansal Etüdler Açısından KOBİ ve Büyük İşletmelerin Karşılaştırılması*. Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi. Cilt 2, Sayı 1

Özgen, H. D. Doğan (1997*). Küçük ve Orta Ölçekli İşletmelerin Uluslararası Pazarlara AçılmadaKarşılaştıkları Yönetim Sorunları ve Çözüm Önerileri*, KOSGEB, Ankara

Palas A., Oguzkurt B. (1997), *Small and Medium Sized Manufacturing Establishments in Turkey*, SIS Conference Paper, Istanbul 18-27 August

Peterson P.P., Fabozzi F.J. (2002). *Capital Budgeting: Theory and Practice*. Wiley and Sons, New York

Ryan P.A., Ryan G.P. (2002). *Capital Budgeting Practices of the Fortune 1000: How Have ThingsChanged?* Journal of Business and Management. Vol.8, No.4

Stanley B. (1997). *Capital Budgeting Techniques used by Small Business Firms in the 1990s*. The Engineering Economist, Vol.42 No.4. pp.289-302

TÜİK (2012). T.C. Türkiye İstatistik Kurumu Başkanlığı Haber Bülteni. Sayı 13146. Available online at:http://www.tuik.gov.tr/PreHaberBultenleri.do?id=13146

Uddin Md.M., Chowdhury A.Z.Md.R. (2009). *Do We Need to Think More about Small Business CapitalBudgeting*. International Journal of Business and Management. Vol.4, No.1

Uluyol O. (2013). *Küçük ve Orta Ölçekli İşletmelerde (KOBİ) Finansal Yönetim Uygulamaları*. Muhasebeve Finansman Dergisi. Ekim

ücel T. (2001). *Küçük ve Orta Ölçekli İşletmelerde Çalışma Sermayesi ve Finansal YönetimUygulamaları*. 1.Orta Anadolu Kongresi, Nevşehir www.kosgeb.gov.tr

ISSN 2053-4086(Print), ISSN 2053-4094(Online)