



SERMAYE PİYASASI KURULU

ARAŞTIRMA DAİRESİ

Finansal Olmayan İMKB Şirketlerinin Büyüme ve Karlılık Dinamikleri

Serkan İMİŞİKER
Doç. Dr. Ümit ÖZLALE

Mayıs 2010

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Araştırma Dairesi

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ARAŞTIRMA RAPORU
Olarak Hazırlanmıştır.

Mayıs 2010

KABUL ve ONAY SAYFASI

Serkan İMİŐİKER ve Doç Dr. Ümit ÖZLALE'nin ARAŐTIRMA RAPORU olarak hazırladıđı "Finansal Olmayan İMKB Őirketlerinin Büyüme ve Karlılık Dinamikleri" başlıklı bu çalışma, Daire Başkanlığınca deđerlendirilerek kabul edilmiŐtir.

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FİNANSAL OLMAYAN İMKB ŞİRKETLERİNİN BÜYÜME VE KARLILIK DİNAMİKLERİ

Serkan İMİŞİKER
Doç. Dr. Ümit ÖZLALE
Araştırma Raporu, 2010

ÖZET

Bu çalışmada dinamik panel metotları kullanılarak İMKB’de kote olmuş finansal olmayan (banka, sigorta şirketleri vb.ler hariç) şirketlerin 1990-2002 yılları arasındaki büyüme ve karlılık dinamikleri incelenerek Orantılı Etki Yasası (OEY) ve karlılıktaki süreklilik (KS) hipotezleri test edilmiştir. Araştırmada yıl başına ortalama olarak 200’ün üzerinde şirket bulunmaktadır.

Dinamik panel modelinin sonuçları incelendiğinde genel itibariyle küçük firmaların daha fazla büyüme gösterdiği görülmüş ve dolayısıyla OEY hipotezi reddedilmiştir. Bu sonuç, incelenen sektörlerin birçoğu açısından geçerli görülmektedir.

Sonuçlara göre veriler şirketlerin büyümesinde süreklilik görülmediğine işaret etmektedir. Ayrıca şirketlerin bir önceki yıldaki karlılık oranlarının büyümeleri üzerinde pozitif bir etkisinin olduğu görülmekte, bu da şirketlerin karlarını bir yıl sonrası için büyümeye yönlendirebildiklerine işaret etmektedir. Bu etki özellikle taş, toprak ve çimento sektörü ile ana metal sanayi sektöründe belirgin bir şekilde izlenmektedir.

Öte yandan, likidite oranının (dönen varlıklar/kısa vadeli borçlar) genel olarak tüm şirketler için ve sektörlerin de birçoğunda büyüme üzerinde önemli pozitif bir etkiye sahip bulunduğu görülmektedir. Bu sonuç, paranın üretim fonksiyonu içerisindeki yerine ilişkin bir kısım literatürle ve yine İMKB şirketlerine ilişkin Başçı, Mahmud ve Yücel’in (2007) çalışmasındaki sonuçlarla uyumlu görünmektedir. Dolayısıyla, likidite düzeyi yüksek olan şirketlerin üretimden kaynaklanan bazı işlem maliyetlerini azaltarak daha verimli çalıştığı ve dolayısıyla daha hızlı büyüdüğü ileri sürülebilir.

Ayrıca, beklenildiği üzere şirketlerin büyüme düzeylerinin milli gelirle ve ekonomideki toplam kredi hacmiyle yakından bir ilişkisinin olduğu görülmektedir. Ancak sonuçlar yakından incelendiğinde özellikle taş, toprak ve çimento sektörü ile metal eşya (beyaz eşya vs.) sektörlerinin milli gelirden daha ziyade ekonomideki kredi hacmine karşı duyarlı oldukları ve kredi hacminin artması durumunda büyümelerinin de ciddi miktarda artış gösterdiği görülmektedir. Bunun yanı sıra, krizlerin de doğal olarak şirketlerin büyümesini hem oldukları yıl hem de bir yıl sonrasında olumsuz etkilediği görülmektedir. Krizlerden büyüme konusunda en çok etkilenen sektörlerin başında metal eşya (beyaz eşya vs.) sektörü gelmektedir.

Karlılık üzerine oluşturulan dinamik panel modelinin sonuçları incelendiğinde ise KS hipotezini destekler nitelikte, şirketlerin karlarının süreklilik arz etmediği görülmektedir. Dolayısıyla şirketler genelinde rekabetin ve sektöre giriş çıkışların serbestliği nedeniyle karlılığın devamlılık göstermediği ve herhangi bir şirketin bir yıl kar elde etmesinin bir yıl sonra da kar elde edeceği anlamına gelmediği izlenmektedir. Ayrıca sermayenin aktiflere oranı yüksek olan şirketlerin bu dönemde daha çok karlılık gösterdiği ve bunun incelenen tüm sektörler açısından geçerli olduğu görülmektedir. Sermayeye finanse edilme oranı daha yüksek olan şirketlerin daha fazla karlı olması, incelenen dönemde finansman maliyetlerinin yüksek olmasıyla da ilintilendirilebilir. Öte yandan büyüme de olduğu gibi karlılık konusunda da krizlerin şirketlerin karlılığını olumsuz bir şekilde etkilemekte olduğu izlenmektedir. Karlılığı krizlerden en ciddi etkilenen sektörlerin başında ise taş, toprak ve çimento sektörü gelmektedir.

Anahtar kelimeler: İşlem Bazlı Manipülasyon, Piyasa Manipülasyonu, Ceza Düzenlemeleri

**GROWTH AND PROFITABILITY DYNAMICS
OF
NON-FINANCIAL FIRMS LISTED ON THE ISE**

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Research Report, 2010

SUMMARY

Aim of this paper is to analyze growth and profit dynamics of non-financial companies quoted in Istanbul Stock Exchange by using dynamic panel set up in order to test well known hypothesis of Law of Proportionate Effect (LPE) and persistence of profit (POP). Results show that while LPE hypothesis are rejected, POP's are not rejected for the sample. Paper also presents very insightful results about the growth and profit dynamics of ISE firms, both in general and also sector-specific terms, which are affected by some financial and macroeconomic variables.

Keywords: Growth, profitability, ISE firms.

İÇİNDEKİLER

ÖZET	iv
SUMMARY	vi
1. INTRODUCTION	1
2. METHODOLOGY.....	2
3. DATA.....	5
4. RESULTS	6
5. CONCLUSION	10
6. REFERENCES.....	11

1. INTRODUCTION

Main purpose of this paper is to analyze growth and profit dynamics of real sector firms quoted in Istanbul Stock Exchange by using dynamic panel regressions.

There are two major phenomenons in the academic literature about the growth and profitability of firms in micro perspective. First is known as the Law of Proportionate Effect (LPE) which was initially investigated by Gibrat (1931). According to the LPE hypothesis, growth of a firm follows a stochastic process and accordingly the logarithmic size of the firm is determined by the sum of historical random shocks:

$$\log x_t = \log x_0 + e_1 + e_2 + \dots + e_t \quad (1)$$

where x_t is the size of the firm at time period t and e_t is the random growth shock at time t .

Whenever the LPE hypothesis holds for a firm, we expect that the growth of a firm in any period to be unrelated to its size. Hart (2000)'s paper is a great review of both theoretical and empirical literature of LPE. Most of the empirical research after 1970s, by Evans (1987a, 1987b), Dunne and Hughes (1994) and Hart and Oulton (1996a, 1996b, 1998a, 1998b), suggest that size of a firm effects the growth and small firms grow faster than the large firms for U.K. and U.S.A. firms.

Second phenomenon is the persistence of profit (POP) hypothesis, which was originated by Mueller (1977, 1986), that infers free entry and exit to the market makes profits of the firms to converge and does not allow an persistence of abnormal level of profits. Mueller (1977, 1986) shows convergence in firms' profits, empirical works of Geroski and Jacquemin (1988), Goddard and Wilson (1999) and McGahan and Porter (1999) demonstrates differences between the long-run equilibrium profits and speed of convergences.

This paper follows the unification efforts of Goddard, Molyneux and Wilson (2004) to the interactions between firm growth and profitability and uses the dynamic panel data approach to estimate both growth and profit equations of non-financial firms interactively.

Control variables of the model were chosen similar with other studies on the field. GDP growth rate was chosen to control the macroeconomic changes in the economy. Capital-asset ratio of a firm proxies the characteristic of a firm on external or internal financing. Younger and rapidly growing firms can choose high leverage and a low capital-asst ratio, on the other hand, older firms can choose the opposite.

Liquidity ratio indicates the ratio of liquid assets of a firm to its total assets. Economic literature on the role of money in the production function infers the fact that more liquid firms can produce more efficiently than the less liquid firms. Basci, Mahmud and Yucel (2007) showed that, this fact is also consistent for the ISE firms for the sample of 1998-1999. So we can expect that more liquid firms, which are more efficient, can grow faster than others.

Furthermore, a dummy variable was inserted to control the disastrous effects of the economic crisis of 1994, 2000 and 2001.

2. METHODOLOGY

Dynamic growth and profit equations are as follows:

$$g_{i,t} = \alpha_{1,0,i} + \alpha_{1,1}S_{i,t-1} + \alpha_{1,2}g_{i,t-1} + \alpha_{1,3}\pi_{i,t-1} + \beta'_{1}X_{i,t} + u_{1,i,t} \quad (2)$$

and

$$\pi_{i,t} = \alpha_{2,0,i} + \alpha_{2,1}\pi_{i,t-1} + \alpha_{2,2}g_{i,t-1} + \beta' x_{i,t} + u_{2,i,t}$$

(3)

where

$s_{i,t}$: logarithmic size (total net sales) of firm i in year t ,

$g_{i,t}$: $s_{i,t} - s_{i,t-1}$ = logarithmic growth of firm i in year t ,

$\pi_{i,t}$: profit (return on equity) of firm i in year t ,

$x_{i,t}$: control variables.

Equation (2) is modeling the growth dynamics of non-financial firms by regressing their current size to lag value of the size, growth and profitability besides other control variables of capital-asset ratio, liquidity ratio of the firms, output gap of the Turkish economy, total domestic credit volume of the Turkish banks for the private sector and crisis dummy. LPE hypothesis project that the size of the firm does not have a significant effect on the growth of the firm. So, the LPE hypothesis vision that the $\alpha_{1,1}$ is not significantly different from zero.

Equation (2) is modeling the profit dynamics of non-financial firms by regressing their current profitability to the lag value of the profitability and growth of the firms besides other control variables of capital-asset ratio, liquidity ratio of the firms, output gap of the Turkish economy and crisis dummy. POP hypothesis project that the profitability of each firm does not persist over time because of the competition in each sector. So, the POP hypothesis vision that the $\alpha_{2,1}$ is not significantly different from zero.

List of Control Variables:

Capass_{i,t} : Capital-Asset ratio of firm i in year t.

Liq_{i,t} : Liquidity ratio (ratio of liquid assets to total assets) of firm i in year t.

Gap_t : Annual output gap of the Turkish economy for year t.

Tcredit_t: Logarithmic size of the total domestic credit volume of the Turkish banks for the private sector.

Crisis_t: Dummy variable of ones for severe economic crisis years of 1994 and 2001.

Crisis_{t-1}: Lag of the crisis dummy variable.

We applied the Breitung and Meyer's (1994) suggestion of subtracting the initial period's size value of each firm from the sizes of each firm for each year in order to cope with the unit root problem.¹ Then, equation (2) becomes:

$$g_{i,t} = \alpha_{1,1}(S_{i,t-1}-S_{i,0}) + \alpha_{1,1}S_{i,t-1} + \alpha_{1,2}g_{i,t-1} + \alpha_{1,3}\pi_{i,t-1} + \beta'_{1}x_{i,t} + \zeta_{1,i,t} \quad (4)$$

where

$$\zeta_{1,i,t} = u_{1,i,t} + \alpha_{1,0,i} + \alpha_{1,1}S_{i,0} \quad ^2$$

Arellano and Bond's (1991) GMM method was used to get estimates of the dynamic panel equations of growth and profit.

¹ Whenever the Tcredit_t used as a control variable in the growth regressions, also its initial value is subtracted from each observation of Tcredit_t.

² Whenever initial value of the Tcredit_t is used in the growth regressions, error term contains the β' Tcredit₀.

3. DATA

Financial data of non-financial firms quoted on ISE were taken from the database of Finnet which is one of the data vendors of ISE. Number of observed firms ranged between 124 and 234 for each year. Database is free of survivorship bias, so, data contains all firms which survive either entire or part of the sample period. Yearly data of the firms for the period of 1990-2002 was chosen as the sample period. All nominal values are adjusted by the deflator in order to analyze growth characteristics.

Table1: Number of Non-Financial Firms (1990-2002)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Food	13	18	18	23	25	27	29	33	33	34	29	29	26
Textile	14	19	22	29	35	37	37	39	40	39	40	40	38
Paper	8	11	12	12	13	14	14	17	16	17	17	17	17
Chemical	18	19	21	22	24	24	24	26	26	26	26	26	25
Stone	24	25	26	27	27	28	29	30	30	30	30	30	30
Raw Metal	6	10	10	10	11	12	12	12	12	12	12	13	13
Metal G.	20	24	25	26	29	29	29	30	31	28	29	29	29
Energy	4	4	4	4	4	4	5	8	8	8	8	8	7
Tech	0	0	0	0	0	0	0	3	4	4	4	4	4
Tourism	5	5	5	5	5	5	5	7	7	8	8	8	8
Retail	2	2	2	4	5	5	5	5	5	5	5	5	5
Other	10	12	15	17	18	17	19	21	22	23	22	22	21
Total	124	149	160	179	196	202	208	231	234	234	230	231	223

Observation period of 1990-2002 conveys full of volatile growth and high inflation thereafter the full liberalization of the Turkish economy in 1989. So, this study investigates the growth and profit behavior of the firms in a highly instable environment.

4. RESULTS

Dynamic panel GMM results for growth and profit equations are given below in table 2 and 3. Since dummy for the economic crisis is highly correlated with the output gap and total credit level, we used them in the model separately and give the relevant results in separate columns.

Estimations for all non-financial firms are not in favor of Law of Proportionate Effect (LPE), since small firms seems to grow faster than the larger ones consistently. This fact is true for all individual sectors but the corresponding coefficient for the raw metal sector is much lower than the other sectors, indicating a weaker effect of size in terms of growth performance. This is quite natural since the growth in raw metal sector normally needs much more capital and labor already in the hands of the relevant firm.

Dynamic growth panel data results also suggest that there is no overall persistency in growth for non-financial firms. Only the firms in textile and raw metal sectors seem to have persistency in growth and interestingly, the firms in the cement and glass sector have instability in growth.

Furthermore, last year's profitability ratio has a significant effect on the current growth performance of a firm. This suggests that, in general, firms use their profits in order grow faster next year. In sectoral terms, this result is acceptable mostly for the cement and glass and raw metal sectors.

In addition, liquidity ratio has a significant positive effect on growth of firms. This result is consistent with the money in the production function literature and the findings of Basci, Mahmud and Yucel (2007) about the role of money in the production function for ISE non-financial companies which infers that firms with more liquid assets produces more efficiently. This finding is valid for most of the individual sectors but the coefficients of textile

and metal goods sectors are higher than the others which shows liquidity has a greater importance for the growth of these sectors.

Also the growth pattern of firms normally pro-cyclical and moves consistently with output gap of the Turkish economy. Most of the sectors have been grown more whenever the output gap is higher except food, cement and metal goods sectors. But for these exceptions, total credit volume of the banking system to the private sector explains quite a bit of the growth. Total credits for the private sector seems to be indispensable especially for the growth of cement and metal goods sectors.

On the other hand, economic crisis generally reduce the growth of the firms at the year of the crisis and also with a one-year lag, but the firms in the chemical sector recover some of its contraction in the following year of the crisis. On the other hand, food, paper and raw metal sectors' growth decrease only at the year of the crisis.

Results also showed evidence for persistence of profit (POP) hypothesis since the lag returns on equity does not have a significant role on current returns. Profits seem to be persistent only at the textile sector, on the other hand they are significantly unstable.

Also, the capital-to-asset ratio has some consistent role on profitability of a firm. This result can be due to the fact of high financial costs of the firms with low capita-to-asset ratio for this period since the interest rates were very high and volatile in line with the economic instability. This result is consistent over all sectors that have been analyzed.

While liquidity ratio does not have a significant role on profitability in general, it does have for some sectors. Economic crisis also reduce the firms' profitability besides growth. It seems that the cement sector is the most harmed one across the analyzed sectors. Profits of the cement sector decrease in very large amount compared with the other sectors and also continue to decrease at the following year to the crisis.

Table 2: Estimate Results of the Dynamic Growth Equation

	All	Food	Textile	Paper	Chemical	Stone	Metal	Metal G.								
Growth (t-1)	.0077 (.0155)	.0045 (.0162)	.0616 (.0493)	.0341 (.0515)	.1049(**) (.0531)	.1289(**) (.0561)	.0295 (.0304)	.0538 (.0333)	.0089 (.0534)	.0798 (.0592)	-.1786(***) (.0402)	-.1935(***) (.0474)	.2283(***) (.0481)	.2350(***) (.0515)	.0043 (.0524)	-.0067 (.0571)
Size (t-1)	-1.011(***) (.0243)	-1.022(***) (.0244)	-1.017(***) (.0649)	-.9384(***) (.0621)	-.9145(***) (.0632)	-.9672(***) (.0656)	-.8721(***) (.0810)	-.8394(***) (.0816)	-1.051(***) (.0715)	-1.027(***) (.0723)	-.8216(***) (.0543)	-.7313(***) (.0477)	-.2384(**) (.1146)	-.3052(***) (.1164)	-.8917(***) (.0648)	-.8306(***) (.0651)
Profit (t-1)	.0167(***) (.0060)	.0193(***) (.0062)	-.0138 (.0381)	.0286 (.0401)	-.0792(*) (.0419)	-.0688 (.0443)	-.0056 (.0118)	.0023 (.0124)	.0153 (.0258)	.0349 (.0270)	.0658(***) (.0224)	.0483(**) (.0236)	.2388(***) (.0432)	.2626(***) (.0438)	-.0202 (.0372)	-.0077 (.0377)
Capital-Asset Ratio	.0685 (.0729)	.1429(**) (.0729)	-.0397 (.1377)	-.1494 (.1399)	.4121(***) (.1467)	.4707(***) (.1467)	-.2511 (.2310)	-.0245 (.2258)	-.3868(***) (.1084)	-.3344(***) (.1117)	.4732(***) (.1128)	.4315(***) (.1206)	.2045 (.2272)	.3052 (.2242)	-.8382(***) (.2149)	-.7114(***) (.2141)
Liquidity ratio	.7857(***) (.0824)	.8680(***) (.0841)	.6156(***) (.1942)	.6320(***) (.2027)	1.025(***) (.1930)	.9730(***) (.2030)	.1271 (.1920)	.3551(*) (.1950)	.4560(***) (.1180)	.5452(***) (.1250)	.1461 (.1084)	.1037 (.1141)	.3298 (.2815)	.4193 (.2927)	1.158(***) (.2738)	1.112(***) (.2700)
Output Gap	.0297(***) (.0035)	- (.0035)	-.0010 (.0067)	- (.0067)	.0259(***) (.0065)	- (.0065)	.0554(***) (.0113)	- (.0113)	.0242(***) (.0052)	- (.0052)	.0016 (.0050)	- (.0050)	.0349(***) (.0120)	- (.0120)	.0177 (.0108)	- (.0108)
Total Credit Volume	.1288(***) (.0324)	- (.0324)	.2740(***) (.0673)	- (.0673)	.1153(*) (.0638)	- (.0638)	-.0133 (.0966)	- (.0966)	.0737 (.0464)	- (.0464)	.3217(***) (.0427)	- (.0427)	-.0231 (.1019)	- (.1019)	.6066(***) (.0937)	- (.0937)
Crisis Dummy	- (.0169)	-.1740(***) (.0169)	- (.0169)	-.0779(**) (.0360)	- (.0360)	-.1497(***) (.0353)	- (.0353)	-.2523(***) (.0517)	- (.0517)	-.1413(***) (.0275)	- (.0275)	-.1592(***) (.0233)	- (.0233)	-.1302(**) (.0627)	- (.0627)	-.4226(***) (.0509)
Crisis (t-1) Dummy	- (.0176)	-.0356(**) (.0176)	- (.0176)	-.0367 (.0376)	- (.0376)	-.0657(*) (.0360)	- (.0360)	.0689 (.0550)	- (.0550)	.0688(**) (.0293)	- (.0293)	-.0978(***) (.0250)	- (.0250)	.0596 (.0592)	- (.0592)	-.1883(***) (.0560)
# of Observations	1694	219	267	118	203	267	101	242								

(***), (**) and (*) indicates that the coefficient is significantly different from zero at 1%, 5% and 10% levels, respectively. Numbers in the parentheses are the standard errors of the above coefficients.

Table 3: Estimate Results of the Dynamic Profit Equation

	All	Food	Textile	Paper	Chemical	Stone	Metal	Metal G.								
Constant	-2.161(***) (.6029)	-2.528(***) (.5592)	-1.192(***) (.3199)	-1.468(***) (.3026)	-.9951 (.8898)	-1.371 (.8780)	-2.169(***) (.5419)	-2.464(***) (.4621)	-1.091(***) (.2789)	-1.279(***) (.2630)	-3.466(*) (1.923)	-5.579(***) (1.864)	-3.099(***) (.6096)	-3.088(***) (.5589)	-1.357(***) (.4571)	-1.606(***) (.3734)
Profit (t-1)	-.0332 (.0566)	-.0386 (.0565)	-.1810 (.1190)	-.1739 (.1237)	1.922(***) (.2811)	1.923(***) (.2855)	-.0717(***) (.0346)	-.0668(*) (.0342)	.0129 (.1019)	.0197 (.1014)	.4905 (.5178)	.6224 (.5148)	-.1492 (.0972)	-.1557 (.0976)	(.0533) (.1712)	-.0993 (.1468)
Growth (t-1)	.1691 (.1621)	(-.0294) (.1665)	.1845 (.1505)	.1459 (.1463)	-.9293(***) (.3482)	-.8245(**) (.3485)	.0406 (.0996)	.0716 (.1029)	.1233 (.1547)	.1865 (.1675)	-.2281 (.9386)	-1.413 (1.037)	.3320(**) (.1512)	.3583(**) (.1557)	.1689 (.1033)	.0937 (.1058)
Capital-Asset Ratio	4.028(***) (.6953)	4.559(***) (.6835)	2.242(***) (.3626)	2.324(***) (.3551)	2.421(***) (.8997)	2.695(***) (.9085)	2.773(***) (.6376)	2.927(***) (.6188)	2.383(***) (.3359)	2.500(***) (.3356)	7.351(***) (2.595)	9.123(***) (2.610)	3.165(***) (.5589)	3.126(***) (.5541)	1.873(***) (.4642)	1.966(***) (.4207)
Liquidity ratio	.7677 (.7855)	.9869 (.7818)	.8258(*) (.4798)	.9873(**) (.4728)	.1998 (1.251)	.2144 (1.242)	1.602(***) (.5810)	1.758(***) (.5581)	.3186 (.3759)	.3838 (.3772)	-.2158 (2.365)	1.165 (2.410)	2.770(***) (.7899)	2.752(***) (.7806)	1.047(*) (.5568)	1.386(***) (.4957)
Output Gap	.0519(*) (.0266)	-	.0509(***) (.0154)	-	.0915(**) (.0358)	-	.0419 (.0287)	-	.0271(**) (.0138)	-	.1828(**) (.0790)	-	-.0019 (.0277)	-	.0141 (.0186)	-
Crisis Dummy	-	-.4587(***) (.1545)	-	-.3519(***) (.0915)	-	-.7116(***) (.2118)	-	-.3331(**) (.1560)	-	-.1786(**) (.0804)	-	-1.007(**) (.4694)	-	.0215 (.1613)	-	-1.063 (.0956)
Crisis (t-1) Dummy	-	-.8180(***) .1598	-	-.1247 (.0957)	-	-.1868 (.2151)	-	.0084 (.1619)	-	.0293 (.0863)	-	-1.369(***) (.5064)	-	.1168 (.1623)	-	-.2564(**) (.1075)
# of Observations	1694	219	267	118	203	267	101	242								

(***), (**), and (*) indicates that the coefficient is significantly different from zero at 1%, 5% and 10% levels, respectively. Numbers in the parentheses are the standard errors of the above coefficients.

5. CONCLUSION

In this paper growth and profit dynamics of non-financial companies quoted in Istanbul Stock Exchange have been analyzed by using dynamic panel set up in order to test well known hypothesis of Law of Proportionate Effect (LPE) and persistence of profit (POP).

Dynamic panel GMM results for growth and profit equations suggest that Law of Proportionate Effect (LPE) is not applicable for ISE companies since small firms seemed to grow faster than the larger ones consistently. This result is quite common between all major sectors.

Dynamic growth panel data results also suggest that there is no overall persistency in growth for non-financial firms. Furthermore, last year's profitability ratio has a significant effect on the current growth performance of a firm, indicating that, in general, firms use their profits in order grow faster next year. In addition, liquidity ratio has a significant positive effect on growth of firms which is consistent with the money in the production function literature and the findings of Basci, Mahmud and Yucel (2007) about the role of money in the production function for ISE non-financial companies. Economic crisis generally alter the growth of the firms with a one-year lag.

Dynamic profit panel data results also showed evidence for persistence of profit (POP) hypothesis since the lag returns on equity does not have a significant role on current returns. Also, the capital-to-asset ratio has some consistent role on profitability of a firm. This result can be due to the fact of high financial costs of the firms with low capita-to-asset ratio for this period since the interest rates were very high and volatile in line with the economic instability. Economic crisis again alter the firms' profitability.

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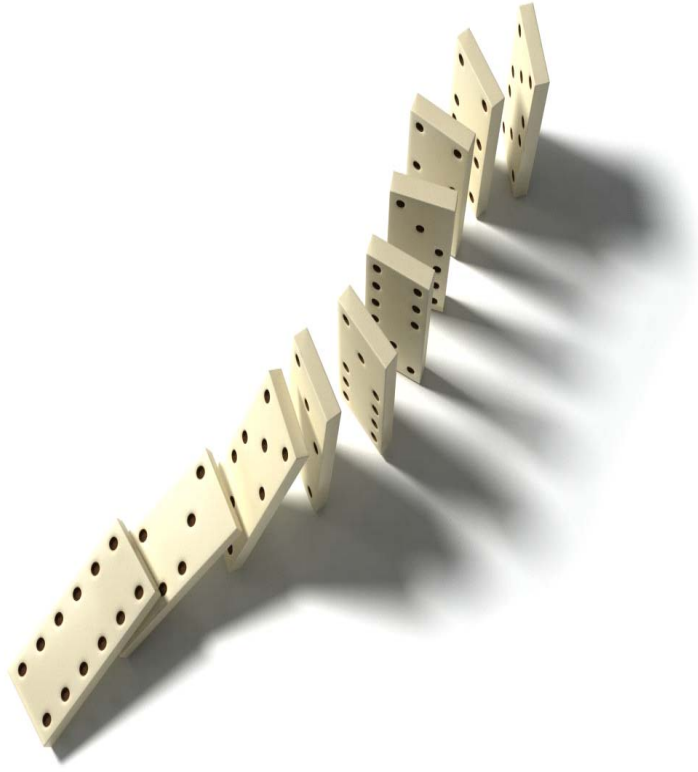
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