Accounting Analysis of Banking Companies
Listed in IBEX35 in Period of Financial Crisis

Miguel Angel Pérez Benedito[1]

[1] Faculty of Economics. Valencia University, Valencia, Spain.

Correspondence: Miguel Angel Pérez Benedito, Avda dels Tarongers s/n, 46022, Valencia, Spain

Abstract

This manuscript presents a new methodology to measure the behavior of banking companies. It is based on equilibrium a criterion which is always on a balance sheet, and the main issue is the economic and financial significance of this equilibrium. The accounting analysis based on the Edgeworth's box analyzes an observation by means of two indicators, which measures the economic and financial significance of each annual observation at same time. This characteristic allows the measure of the decision making on two different criteria, according to evolution of macroeconomic variables. Moreover, undetermined values have financial and economic significances because the behavior of companies has a limit on this methodology. This manuscript presents the accounting methodology of the Edgeworth's box in the first chapter. Then, the behavior of banking companies is analyzed as qualitative and quantitative criteria to carry out the result of research in the second chapter. Conclusions are referred to the analytic capacity of this methodology and research results.

Keywords: new methodology, accounting analysis, manager behavior, undetermined values.

1. Introduction

The financial crisis has been solved by applying criteria of monetary policies and several strategies have been applied in order to know the situation and evolution of the financial market. So, studies on interest rates (Aghion, Bacchetta, & Banerjee, 2000. Chistiano, Gust & Roldos, 2004), additional information on financial agents (Adiran & Shin, 2009), financial variables that measure the financial activity of domestic economies (Schularick & Taylor, 2009) and responsibility of government (Taylor, 2009) indicate that there is not a singular solution or a categorical answer for overcoming financial perturbations on recent past.

The position of the financial market has been offering trust to investors through additional information that public and private agents must report on their activity. The new framework of International Public Accounting Standards (IFAC, 2014), IFRS Practice Statement on Management Commentary (IASB, 2010) and General Principles Regarding Disclosure of Management ś Discussion and Analysis of Financial Condition and Results of Operations (IOSCO, 2003) aim to offer additional information of management activity of all listed companies. This additional information reports on the prospective position of companies, qualitative information and additional indicators of their activity. These changes in the reports of companies want to improve the perception of risk of management of companies for investors and general public. In other words, new standards aim to avoid transferring moral hazard of financial institutions to customers (Bonollo, Crimaldi, Flori, Pammolli & Ricaboni, 2015. Allen, Carletti, Goldstein. & Leonello, 2015).

The methodology on the Edgeworth's box shows the equilibrium of any given company. This methodology is based on the criterion that a balance sheet presents an equilibrium, and its analysis allows the knowledge of the economic and financial situation of a company on a year on an observation of the Edgeworth's box, but all this at the same time (Pérez, 2014, 2015). According to the accounting method of double entry, an economic transaction is related to a financial transaction and it allows the change of the value of a good into a financial good. A balance sheet presents the result of these transformations, and it will have assets and liabilities with economic and financial significance respectively. By transferring this equilibrium to an Edgeworth's box it is possible to explain the behavior of companies according to their economic and financial significance. Moreover, observations of the Edgeworth's box will have a limit and their undetermined values have always economic and financial significance, this is the same as reaching a limit on a balance sheet.

The accounting methodology of the Edgeworth's box explains the situation of companies by four accounting variables at the same time, and analysts can measure risk positions according to the location of companies in the Edgeworth's box. It synthesizes the economic and financial positions of companies for public on a single observation, and by two different indicators, which measure economic and financial positions of companies. The relation between company and economic environment where companies make their activity can be better explained, because the subjective character of indicators is smoothed. In summary, this methodology is in accordance with tendency of international institutions to explain the behavior of economic agents by several kinds of information, but it offers synthesized information and their undetermined values will have an economic and financial significance.

2. Method: The Accounting Methodology of the Edgeworth's Box (AMEB).

According to AMEB, a company is an economic agent with two kinds of transactions. These are economic and financial, and also positive and negative. A negative economic transaction is an acquisition of production factors from an economic market and, at the same time, a negative financial transaction arises as counterparty. Therefore, when a company sells or alienates their products on an economic market, a positive economic transaction is made, and at same time, a positive financial transaction arises as counterparty. These relations between economic and financial transactions are entries in an accounting system according to the method of double entry and the criterion of accrual accounting to measure the activity of a company on two kinds of markets. Considering financial transactions as counterparties of economic transactions, the activity of companies can be explained as relations of companies with economic or financial markets and the results of two kinds of relations are related.

Expression 1 represents the result of the company's transactions.

$$(ET+) - (ET-) = (FT+) - (FT-) \qquad (1)$$

The result of singular differences of expression 1 is on expression 2.

$$OR - \Delta RA = ML - \Delta FP \qquad (2)$$

The difference between economic transactions are the operative result (OR) and variations of assets (ΔRA). The OR does not include effects of accounting politics of companies, and ΔRA are values of not sold economic assets on the economic market. The difference of financial transactions is the monetary liability (ML) and the value of variations of financial positions of companies (ΔFP). The monetary liability is the monetary savings and financial products that banking clients deposit on a Bank and ΔFP are financial instruments, which have not been settled in the financial market. Therefore, ΔFP is the difference between credits and liabilities of banking companies according to their activities on the financial market and they can come from economic and financial activity, as credits of customers and suppliers or financial assets and debts. Table 1 shows the variables of AMEB obtained from ORBIS database of BANKIA.

Table 1. Variations of accounting variables of BANKIA.

Y E A R S >>>>>>>>>>>>>>>	2013	2012	2011
VARIATION OF FINANCIAL POSITION (ΔFP)	**158147,74**	**156959,38**	**187281,42**
FINANCIAL ASSETS	310379,82	337857,43	363453,54
Total Earning Assets	310379,82	337857,43	363453,54
FINANCIAL LIABILITIES	152232,09	180898,05	176172,12
Other interest bearing liabilities	120442,45	175686,81	153386,15
Other (non-interest bearing)	13460,291	9415,8978	4959,0012
Loan Loss Reserves	0	839,00643	606,58033
Other Reserves	2352,7445	2946,6159	1055,4342
Equity	15976,597	-7990,2861	16164,952
VARIATION OF REAL ASSETS (ΔRA)	**36425,202**	**34622,902**	**28399,164**
Fixed Assets	1827,8591	2161,1771	3539,4635
Non-Earning Assets	34597,343	32461,725	24859,701
MONETARY LIABILITY (ML)	**194572,94**	**191582,28**	**215680,58**
Deposits & short term funding	194572,94	191582,28	215680,58
OPERATIVE RESULT (OR)	**2406,6673**	**-1333,7814**	**177,52308**
Loan Loss Provisions	1704,7055	23988,934	4029,2046
Net Income	701,96188	-25322,716	-3851,6816

The next step to measure the behavior of BANKIA is the adjustment before the result of accounting variables according to information obtained from ORBIS database. So the OR is deduced from ΔFP, and values of accounting variables applied are on Table 2.

Table 2. Accounting variables of AMEB to BANKIA

BANKIA	31/12/2013	31/12/2012	31/12/2011
FINANCIAL POSITION (ΔPF)	1188,3561	-30322,036	-7068,5904
REAL ASSETS (ΔAR)	1802,3001	6223,7375	608,38799
	2990,6562	-24098,299	-6460,2024
MONETARY LIABILITY (ML)	583,98882	-22764,517	-6637,7255
OPERATIVE RESULT (OR)	2406,6673	-1333,7814	177,52308
	2990,6562	-24098,299	-6460,2024

The next step is the transformation on positive values of all values of accounting variables. So that, the highest negative value of table 2 is multiplied by minus two (-2), and later the result (60,644.07224) is added to all values of accounting variables. It represents a change of origin of coordinates, and the y-axis is transformed to obtain all values positive. Table 3 shows the new values of accounting variables of AMEB.

Table 3. First transformation of accounting variables of AMEB.

FINANCIAL POSITION (ΔPF)	61832,428	30322,036	53575,482
REAL ASSETS (ΔRA)	62446,372	66867,81	61252,46
	124278,8	97189,846	114827,94
MONETARY LIABILITY (ML)	61228,061	37879,555	54006,347
OPERATIVE RESULT (OR)	63050,74	59310,291	60821,595
	124278,8	97189,846	114827,94

The next transformation measures the financial position of a company using the same criteria in each year to represent its relative position in an Edgeworth's box.

Table 4. Relative position of BANKIA in an Edgeworth's box.

YEARS	31/12/2013	31/12/2012	31/12/2011
FINANCIAL POSITION (ΔFP)	49,75%	31,20%	46,66%
REAL ASSETS (ΔAR)	50,25%	68,80%	53,34%
	100,00%	100,00%	100,00%
MONETARY LIABILITY (ML)	49,27%	38,97%	47,03%
OPERATIVE RESULT (OR)	50,73%	61,03%	52,97%
	100,00%	100,00%	100,00%

The situation of accounting variables on table 3 in an Edgeworth's box is shown in figure 1. The variable of variation of real assets (ΔRA) is represented on the primary y-axes, and monetary liability (ML) is represented on the primary x-axes. Moreover, the variable of operative result (OR) is represented on the secondary x-axes, and the variable financial position on the secondary y-axes. The assets variables are represented on the y-axes, and the liability variables are represented the on x-axis, and each kind of two variables always sums 100%.
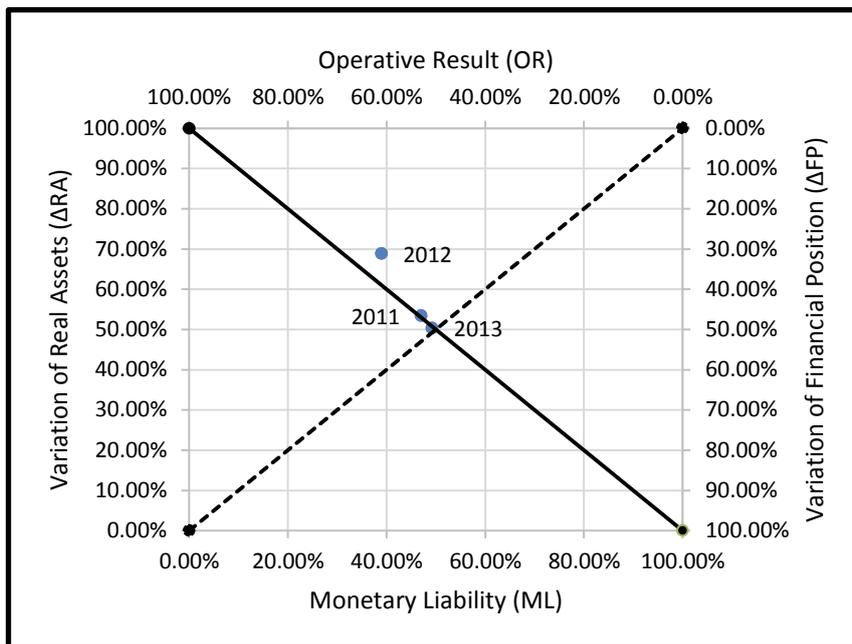
Figure 1. Edgeworth's' box of BANKIA

Two indicators are made to evaluate the positions of BANKIA in an Edgeworth's box. The indicator L is represented on continued line and the indicator G is represented with dashed line in Figure 1. The valuation of L and G indicators is measured according to expressions 3 and 4 detailed below.

The expression 3 is the indicator L. This indicator is obtained by differences between relations of variables ΔFP and OR with relation of ΔRA and ML. The first relation $\Delta FP/OR$ measures how many times the OR is covered by the credit that a bank concedes to customers. The second relation $\Delta RA/ML$ measures the guaranties of liquid deposit with real assets of a banking company. The significance of L indicator is as follows:

a) A positive value of L indicator is given when markets do not have perturbations; banks will trust the financial situation of the economy and will give credit to the market.

b) A negative value of L indicator is given when banks guarantee their financial position with economic assets and do not concede credit to customers.

$$L = \Delta FP/OR - \Delta RA/ML \qquad (3)$$

Expression 4 is the indicator G. This indicator is obtained by differences between economic ratio and financial ratio. The relation $\Delta RA/OR$ measures how many times the operative result (OR) is covered by the increasing of assets (ΔRA). The second relation $\Delta FPA/ML$ measures how many times the deposits of customers (ML) are included on credit conceded by banks to customers (ΔF). The significance of G indicator is as follows.

a) A positive value of G indicator is given when bank depositors have a high level of trust, and so, the banking company has a level of guarantees because its investments are on real assets.

b) A negative value of G indicator is given when a bank does not have the trust of customers and the economic guarantees are approached or lower than the operative result.

$$G = \Delta RA/OR - \Delta FP/ML \qquad (4)$$

According to these criteria of measures, activities of bank companies can be measured in The Edgeworth's box, as it is presented on Table 5.

Table 5. Positions on The Edgeworth's box

	G+	G-
L+	ZONE A	ZONE D
L-	ZONE B	ZONE C

The different positions that a bank can take according to its behavior are on table 5. The best position is appointed as letter A, because it is indicating that the bank grants credit to the financial market and has liquidity according to the level of monetary savings of its customers. On position C the bank has an opposite position to zone A. The bank does not grant credit to the market because the level of banking deposits of customer is lower than in zone A, and the bank does not have liquidity. There are economic and financial perturbations in zone C. The others zones are intermediate positions and represent changes of behavior, changing from best to worst positions and vice versa. Table 6 has the values of BANKIA, and the results show difficulties on its behavior.

Table 6. Results of BANKIA on The Edgeworth's box.

BANKIA	31/12/2013	31/12/2012	31/12/2011
IND. L	-0,0392206	-1,2540303	-0,2533087
IND. G	-0,0194562	0,3269379	0,0150621

The results of tables 5 and 6 can be compared. The financial situation improves on year 2013 because the financial positions (ΔFP) and monetary liability (ML) increase according to the results of Table 4. The operative result (OR) is higher than the variation of economic assets (ΔAR), and the economic guarantee decreases, because BANKIA grants credit to the market by a high position of monetary liability. This is a risk position, but its position in 2013 is better than in the other two years, because it is closer to zone A in the Edgeworth's box.

Table 7. The extreme points of The Edgeworth's box.

VARIABLES	1(0,0)	2(0,1)	3(0,0)	4(1,0)	CENTER
FINANCIAL POSITION (ΔFP)	1	0	0	1	0,5
REAL ASSETS (ΔAR)	0	1	1	0	0,5
MONETARY LIABILITY (ML)	0	0	1	1	0,5
OPERATIVE RESULT (OR)	1	1	0	0	0,5
Indicator L = ΔFP/OR-ΔRA/ML	1/1-0/0	0/1-1/0	0/0-1/1	1/0-0/1	0
Indicator G = ΔRA/OR-ΔFP/ML	0/1-1/0	1/1-0/0	1/0-0/1	0/0-1/1	0

Table 7 presents the extreme points of The Edgeworth's box. The observation 1 (0, 0) is the origin of coordinates in the primary axis and the observation 3 (0, 0) is the origin of coordinates in the secondary axis. The observation 2 (0, 1) is the limit of primary y-axes when ΔAR takes value 1, and the primary x-axes takes value 0. The observation 4(1, 0) is referred to the secondary axes, thus ΔFP takes value 1 and RO takes value 0. The CENTER column of Table 7 is in the center of the Edgeworth's box, when L and G takes values 0, and it explains the rotation of the value to obtain the Figure 2. Moreover, the results obtained as undetermined and infinite values have economic and financial significance. Therefore, the AMEB is a methodology with a different explanatory capacity of economic success.

3. Results of Activity on Companies Listed in Ibex35

The result of evaluation of banking companies listed is in Figure 2. This figure is a rotation of Edgeworth's box of Figure 1 for all banking companies, and BANKIA has a triangle on the cartesian coordinates. Table 7 shows observations of Zones of Edgeworth's box in Figure 2.
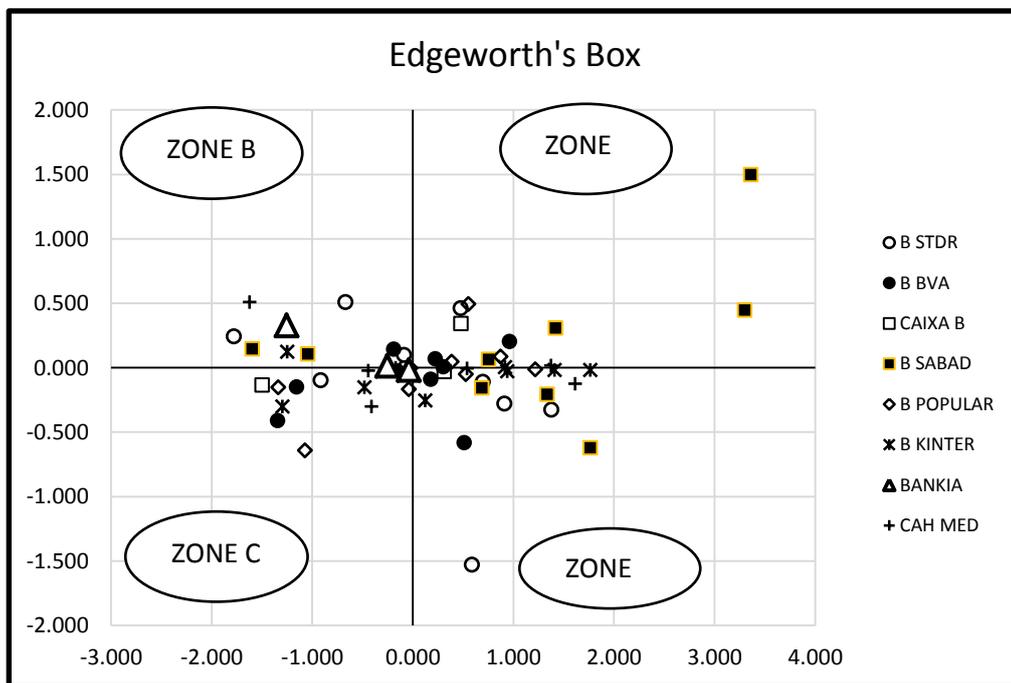
Figure 2. Zones of The Edgeworth's box.

Table 1. Observations on zones of Edgeworth's box.

	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	
A	2	4	1	2	1	1	2	4	0	5	22
B	0	1	3	0	2	0	0	0	2	0	8
C	3	0	2	2	0	2	0	0	2	0	11
D	0	2	1	2	2	2	5	2	1	2	19
	5	7	7	6	5	5	7	6	5	7	60

Ji2 = 0,023099606.

The analysis of the financial crisis can be analyzed on Table 7. Comparing the same number of companies on years 2004 and 2007 there are changes of behaviors. On 2007, the risk of management is higher than on 2004 according to the number of banks located on zone D. In the period of financial crisis, from 2007 to 2010, banking companies are located on zone no A. Moreover, two companies are located on zone C in 2008 and 2010 years, indicating the high level of financial risk in this period. On 2011, banking companies leave the zones of risk, and on 2012, there are not any companies left in zone C. Later on next year, the financial crisis arises again and banking companies change to zone C except for Banco Sabadell (B SABAD) and Banco Popular (B POPULAR), as it can be seen on Appendix 1. Other study researches get the same situation applying other methodologies (Suh, 2015, Caporale, Rault, Sova & Sova, 2015) and explain the influential factors in the financial crisis during period of study (Adams, 2012). The result of Ji2 p-value of Table 7 is 0.0231 and it justifies the relation between the position of the Edgeworth's box and the annual financial situation according to opinions of other authors.

The meaning of L and G indicators obtained from banking companies listed is on Table 8, and their general behaviors are in figures 3 and 4. The general location of companies listed in the Edgeworth's box is in figure 3 and their rotations of cartesian coordinates are shown in Figure 9. It shows that banks do not have problems on years 2007, 2010, 2011 and 2012, because they are on zone A. This situation is different to the previous qualitative analysis.
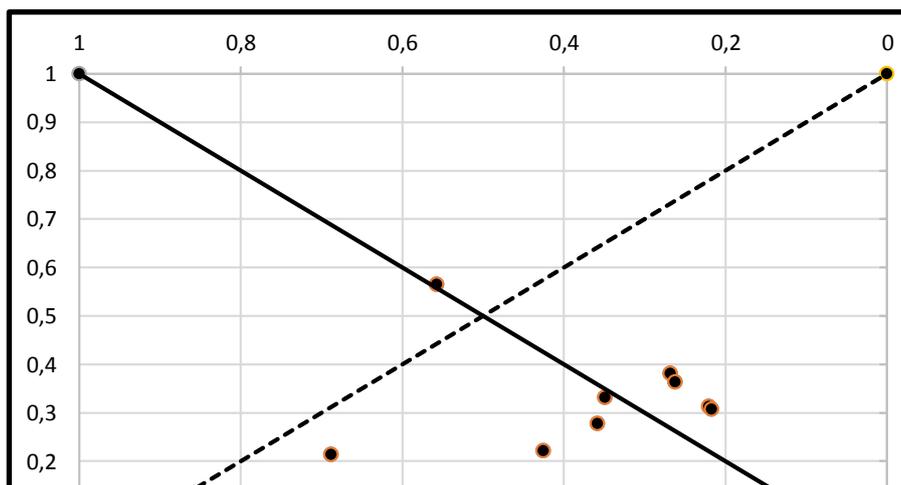
Figure 3. Mean indicators L and G of banking companies listed.
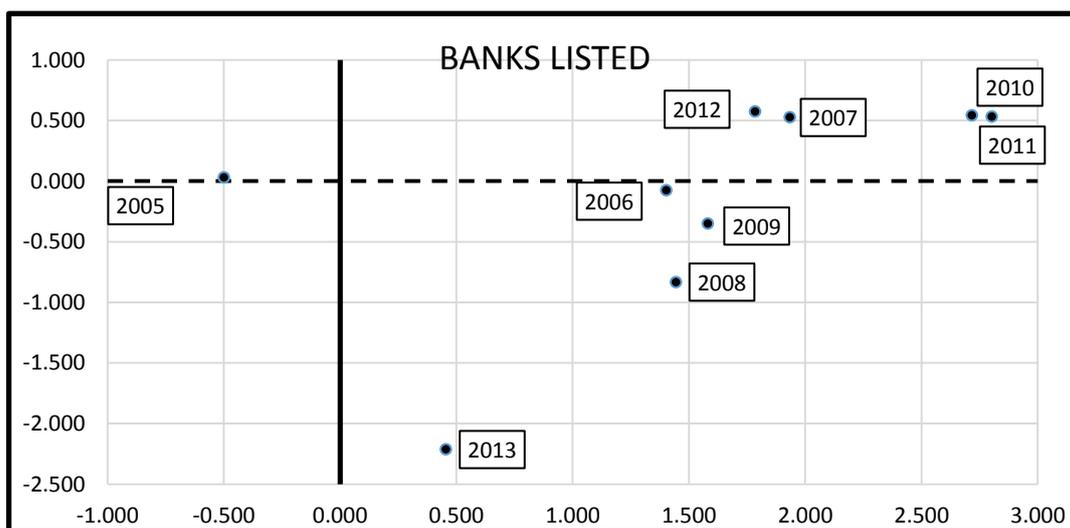
Figure 4. Rotations of L and G observations in Figure 3.

Table 8. Values of L and G indicators in figures 3 and 4.

	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
INDICATOR L = PF/RO - AR/PM										
PF/RO	1,142	2,307	3,120	3,196	2,015	1,830	2,428	1,913	0,780	10,163
AR/PM	0,685	0,521	0,402	0,392	0,433	0,385	0,493	0,510	1,278	0,178
IND. L	0,457	1,786	2,718	2,804	1,583	1,445	1,936	1,404	-0,498	9,985
INDICATOR G = AR/RO - PF/PM										
AR/RO	0,310	1,420	1,423	1,416	0,774	0,520	1,388	0,949	1,013	1,988
PF/PM	2,525	0,846	0,881	0,885	1,127	1,355	0,862	1,027	0,983	0,911
IND. G	-2,214	0,574	0,543	0,531	-0,353	-0,835	0,526	-0,078	0,030	1,077
<u>BANKS LISTED</u>	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
IND. L	0,457	1,786	2,718	2,804	1,583	1,445	1,936	1,404	-0,498	9,985
IND. G	-2,214	0,574	0,543	0,531	-0,353	-0,835	0,526	-0,078	0,030	1,077

Comparing results among quantitative and qualitative analysis, conclusions attained are different. The compensations among accounting variables give different results. So that, the general measures have different effects on banking companies, and justify that a quantitative and qualitative analysis must be validated to make

decision on monetary policies, because the factor of opportunism in the theory of economic transactions of Williamson arises and the translations of moral hazard to stakeholders too (Allen et al, 2015. Blandin, Boyd & Prescott, 2015).

To prove the validity of explanatory capacity of L and G indicators, Graphic 1 represents the evolution of the two indicators compared to the indebtedness of households and nonprofit institutions in relation with GDP, this statistical series (SI_1_3.46) is downloaded from Banco Central de España (Spanish Central Bank) and represented on secondary y-axes by a dashed line. This series has same behavior as the L indicator and the statistic of t-student proves that two variables have dependency with a high coefficient of correlations according to results of Appendix 2.
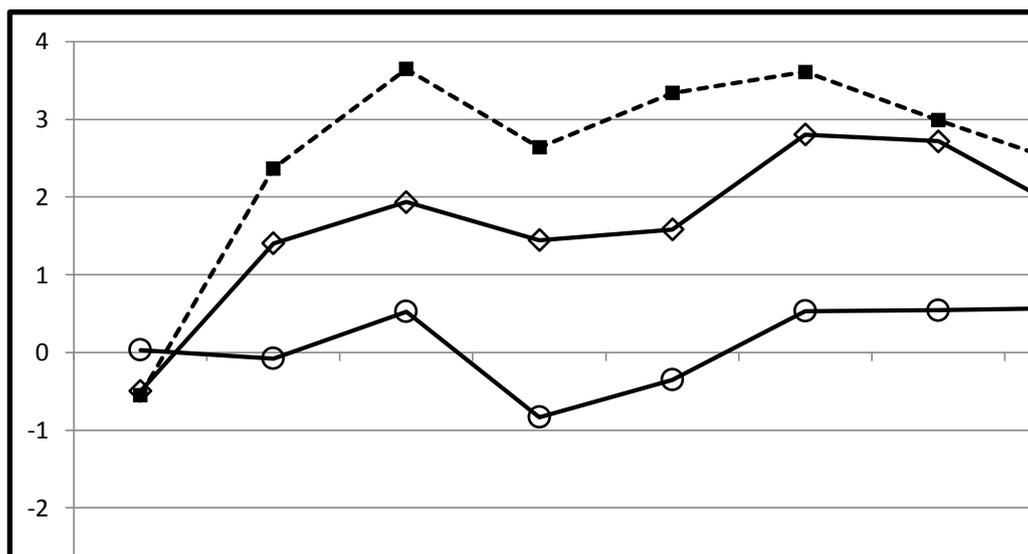
Graphic 1. Evolution of indebtedness of households (SI_1_3.46)
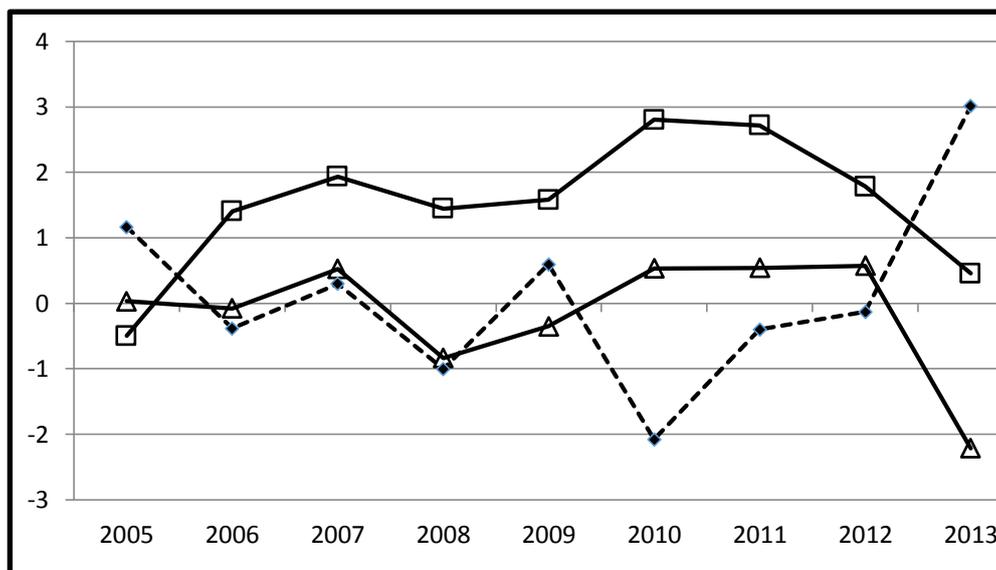
GRAPHIC 2. Evolution of inter annual variation rate of investment funds in bonds of non-financial corporations (SI_1_3.28)

The evolution of investment on bond funds made by non-banking companies has a different behavior on 2010. In graphic 2, the evolutions of L and G indicators do not have relation with inter annual variation rate of investment funds in bonds of non-financial corporations, according to results of Table 7. Table 7 presents the situation of banks in the Edgeworth's box on a qualitative criterion and it shows that in 2010, 2011 and 2013, banking companies are on C zone. In Graphic 2 the behavior of SI_1_3.28 series is different to variations of L and G

indicators. This issue shows the same conclusions between two kinds of measures. Therefore, different tendencies between investment on bonds and L and G indicators in Graphic 2 on previous years indicate the situation of financial crisis. The situation of 2012 implies that banks need improve their activity and leave the zone C, but on 2013 three banking companies are in zone C, this is the highest negative position on all periods, and the situation is critical. So that, L and G indicators and investment on bond funds as well as the results of Table 7 to 2013 year have the same results.

The same conclusion can be attained comparing the evolution of public debt to the gross expenses of the Government of Spain in Figure 3. The relation of these series obtained from World Bank decreases from 2008 up to 2013. In 2008, companies are on zone B of the Edgeworth's box, and taxation covers the rest of the government expenses. That is to say, the government takes liquidity from the market, and level L indicator decreases as well as level of G indicator, which has a negative value. On 2009, the behavior of banking companies begins to be different from the evolution of the relation between government expenses and public debt. The excess of debt over public expenses cannot be justified, and the increase of credit, measured by L indicator, and the guarantees, measured by G indicator, present problems inside the economic behavior of Spain (Suh, 2015). In 2011, there is a new general election to the Government of Spain. In 2012 and 2013, L and G indicators decrease and the financial crisis is present. To overcome the financial crisis, a change in taxation policy is made, and taxes become an instrument of financial policy, but not an instrument of taxation policy.
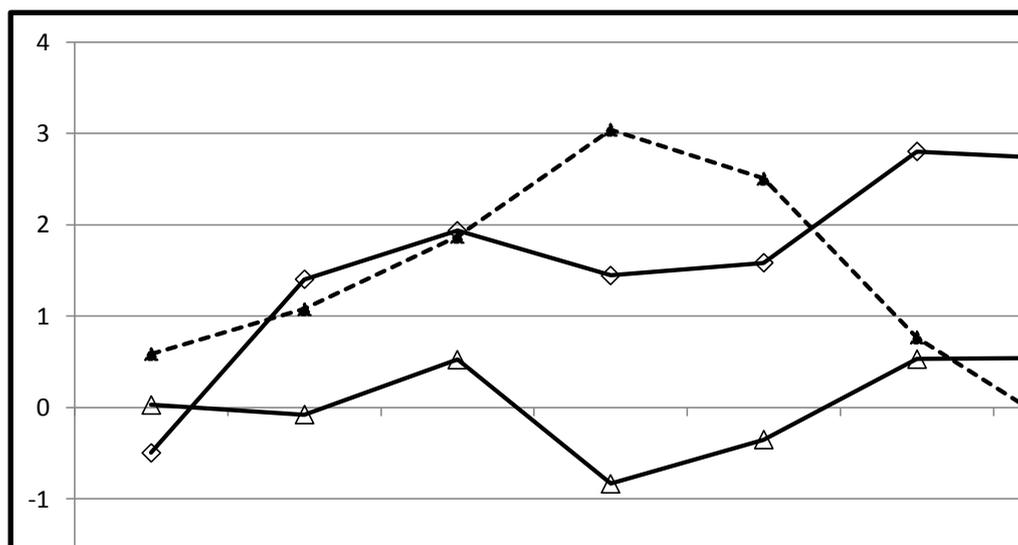
Graphic 3. Evolution of government expenses and public debt. World Bank series: Total general government expenditure (%GDP); General government gross debt (EDP concept), consolidated annual data (% of GDP)

4. Discussion

The financial crisis has put on evidence limitations on decision making based on models with internal validity. Therefore, the research has been focused at improving the quality of the explanatory variables in order to fit the internal validity of the estimation models. However, in this methodology, the removal of outliers in the Edgeworth's box means the elimination of the observations of a bank that has managed the financial crisis best and has expanded its influence through the absorption of other banks. According to this general tendency of research, the AMEB transforms accounting variables to know the behavior of economic agents and all observations in an Edgeworth's box have economic and financial significance and it allows making qualitative and quantitative analysis.

The qualitative and quantitative results attained by AMEB can find contradictions, but it is saying that there are economic disruptions on the market and the opportunism of theory of transactions costs of Williamson is present for economic agents. On the contrary, when a researcher attains a same kind of results, the opportunism has passed in markets or has been downgraded. Within these contradictions, qualitative results can guide its choice and incorporate explanatory variables in the estimation model. However, the purpose of our study aims to use the methodology for an explanatory capacity of economic events, measuring them through accounting information from banks, which act as financial agents in the economy of a country. In other words, financial statements are behavior of financial agents, which being disaffected of accounting policies can explain both the individual

behavior of firms and the overall economy through its aggregations.

According to results obtained from Graphic 3, the excess of public debt compared to general expenses of the Spanish economy had effect on taxation policies, because public debt was applied to financial operations of government. These situation contrasts to the right positions of banks in 2010, 2011 and 2012. In this period, banks get credit from European monetary authority and, at same time, they purchased public debt. The earning of differences of interests supposed the continuity of the banking activity, but government increased taxation, following the criteria of TROIKA, (European Central Bank (ECB), International Monetary Fund (IMF) and European Commission (EC). These adjustments transformed taxes in instruments of monetary policies. So, the moral hazard is transferred to taxpayers.

In summary, one observation in the Edgeworth's box measures the activity of a company on four variables at the same time. These synthetic measures allow us to obtain qualitative and quantitative criteria on results of banking activity, which help to confirm the opinion of researchers. Moreover, all observations have economic and financial significance, including the undetermined values, because every observation will always have a limit in the Edgeworth's box

5. Conclusion

The accounting analysis of banking companies by the Edgeworth's box synthesizes their annual behaviors on an observation. Each observation is referred to four accounting variables, and its location in an Edgeworth's box measures the banking activity on two criteria, qualitative and quantitative. The generated zones in The Edgeworth's box allow the application of qualitative analysis, and the quantitative analysis measures the economic and financial significance of each observation in the Edgeworth's box. Comparing two kinds of results fully justifies the analysis of the banking activity. Moreover, the undetermined values that may be generated always have economic and financial significances, because accounting variables on each axes of the Edgeworth's box are positive and have a limit. This new methodology is an alternative to measure activities of banks, and is not limited by applying statistic criteria as size of samples or kind of observation of variables. Each observation has an economic and financial significance, which can be analyzed along a period, whether there is information or not in any of the years, applying either qualitative or quantitative criteria alternatively. Therefore, the Accounting science allows measuring and assessing economic and financial behaviors of companies, which can be analyzed by economic tools such as AMEB.

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Appendix A

Banking companies of IBEX35

SANTANDER	2013	2012	2011	2010	2009	2008	2007	2006	2005
IND. L	0,588	-1,778	-0,916	-0,670	1,376	0,910	0,476	0,695	-0,089
IND. G	-1,530	0,243	-0,099	0,509	-0,325	-0,279	0,462	-0,110	0,100
B BVA	2013	2012	2011	2010	2009	2008	2007	2006	2005
IND. L	-1,3439	0,2232	-0,1915	-1,1555	0,1789	0,5112	0,9609	0,3016	-0,1559
IND. G	-0,4100	0,0680	0,1440	-0,1492	-0,0893	-0,5814	0,2034	0,0060	-0,0270
CAIXA B	2013	2012	2011	2010	0	0	0	0	0
IND. L	0,3129	0,4798	-1,4989	2,9080	0	0	0	0	0
IND. G	-0,0295	0,3414	-0,1341	0,2080	0	0	0	0	0
B SBDELL	2013	2012	2011	2010	2009	2008	2007	2006	2005
IND. L	3,299	3,362	-1,044	1,335	0,687	0,755	1,766	1,420	-1,597
IND. G	0,445	1,498	0,105	-0,206	-0,158	0,063	-0,622	0,307	0,147
POPULAR	2013	2012	2011	2010	2009	2008	2007	2006	2005
IND. L	0,3871	0,5517	-1,3377	-1,0721	0,8705	-0,0238	1,2172	0,5274	-0,0384
IND. G	0,0456	0,4927	-0,1530	-0,6428	0,0854	-0,0043	-0,0131	-0,0512	-0,1662
BANKINTER	2013	2012	2011	2010	2009	2008	2007	2006	2005
IND. L	-0,4817	1,7658	0,9386	-1,2965	-1,2503	0,1229	1,4082	0,9172	-0,1711
IND. G	-0,1537	-0,0173	-0,0274	-0,3017	0,1245	-0,2542	-0,0179	0,0034	0,0001
B RENTA 4	2013	2012	2011	0	0	0	0	0	0
IND. L	-1,5050	0,2661	0,4959	0	0	0	0	0	0
IND. G	-0,0242	-0,0047	0,0702	0	0	0	0	0	0
BANKIA	2013	2012	2011	2010	0	0	0	0	0
IND. L	-0,0392	-1,2540	-0,2533	3,6780	0	0	0	0	0
IND. G	-0,0195	0,3269	0,0151	0,4732	0	0	0	0	0

CAH MED	2010	2009	2008	2007	2006	2005
IND. L	0,538	-1,624	-0,442	1,613	1,375	-0,412
IND. G	-0,007	0,508	-0,024	-0,125	0,016	-0,302

Appendix B

Prove of t-Student between monetary variables and indicators of AMEB

Statistics	*IND. L*	*SI_1_3.46*	*IND. L*	*SI_1_3.28*	IND. G	SI_1_3.46
Mean	1,5149	85,6889	1,5149	-4,3556	-0,1419	85,6889
Variance	1,0689	13,8236	1,0689	267,9053	0,8418	13,8236
Observations	9	9	9	9	9	9
Pearson	0,9061		-0,7135		0,4902	
Hypothesis Diferences means	0		0		0	
Degrees of Freedom	8		8		8	
Statistic t	-89,6918		1,0287		-76,5285	
P(T<=t) one-tailed	0,0000		0,1669		0,0000	
Critical Value t (one tail)	1,8595		1,8595		1,8595	
P(T<=t) two-tailed	0,0000		0,3337		0,0000	
Critical value t (two tails)	2,3060		2,3060		2,3060	

Statistics	*IND. G*	*SI_1_3.28*	IND. L	IND. G
Mean	-0,1419	-4,3556	1,5149	-0,1419
Variance	0,8418	267,9053	1,0689	0,8418
Observations	9	9	9	9
Pearson	-0,6720		0,5324	
Hypothesis Diferences means	0		0	
Degrees of Freedom	8		8	
Statistic t	0,7437		5,2376	
P(T<=t) one-tailed	0,2392		0,0004	
Critical Value t (one tail)	1,8595		1,8595	
P(T<=t) two-tailed	0,4783		0,0008	
Critical value t (two tails)	2,3060		2,3060	

Series of Spanish Bank:

SI_1_3.46 = Quarterly Financial Accounts. Household debt and Nonprofit institutions. Percentage of GDP// *Cuentas financieras trimestrales. Endeudamiento de los hogares e ISFL. Porcentaje sobre el PIB (Spanish)*

SI_1_3.28 = National financial figures. Financial assets of non-financial corporations and households and NPI. Investment funds bond in euros. Rate interannual variation//*Magnitudes financieras nacionales. Activos financieros de Sociedades no financieras y hogares e ISFL. Fondos de inversión de renta fija en euros. Tasa de variación interanual (Spanish)*