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Bank Exposure and Sensitivity to the Real Estate Market

Evidence from Cyprus during 2006-2012

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Abstract

Banking firms have recently been shifting significantly larger portions of their loan portfolios into real estate. This has caused concern about the continuing economic health of Cyprus banks, since changes in real estate market potentially have a significant impact on bank values and profitability. This scenario is especially critical during real estate crises, when bank losses tend to increase dramatically, placing the entire financial system at risk of collapse, as it was the case in the recent international subprime crisis. Many of the problems in the Cyprus banking sector are home-grown and relate to overexpansion in the property market as consequence of banks' poor risk management practices. Furthermore, the financial sector in Cyprus seems to be vulnerable because of its size relative to that of the domestic economy. The handling of problems in the sector has been complicated by the sensitivity of collateral valuations to property prices, and banks have used certain gaps in the supervisory framework to delay the recognition of loan losses, thus leading to significant underprovisioning. The results point out that the three major banks in Cyprus (The Bank of Cyprus, Laiki Bank and Hellenic Bank) have high exposure to the local real estate market. Having estimated how big the shortfall between property values and their collateral is, this study show that a further decline in property values will begin to result in bank's credit risk and loan restructuring. Conclusion is drawn that there is a positive relation between bank stock returns and real estate market after controlling for general market conditions and interest rates.

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Declaration

I declare that the work contained in this dissertation is my own original work and that no part has been plagiarised from any source whatever. Where work and ideas have been taken or adapted from other authors, this has been properly cited and referenced.

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Chapter 1

1.1 Introduction

Banks holding large loan portfolios have high exposure, directly or indirectly, to the real estate sector. Lausberg (2004) and Lou Well (2005), suggest the existence of a high concentration of activities and assets of the real estate sector by banks in the U.S., Germany and some Asian countries.

Bank's exposure to the real estate market can be developed either by financing in the real estate industry or by investing in properties. Bank lending has been closely correlated with property prices. From a theoretical perspective, there exists potentially a two-way causality between bank lending and property prices. On the one hand, property prices may influence both demand and the availability of bank credit via various wealth effects. This is mainly related to the role of asymmetric information in credit markets which gives rise to moral hazard or adverse selection problems (see e.g. Bernanke and Gertler, 1989, Kiyotaki and Moore, 1997 and Bernanke, Gertler and Gilchrist, 1998). As a result, the borrowing capacity and credit demand of households and firms are affected by changes in prices of properties, which are often used as collateral for bank lending. Furthermore, property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans. The latter may rise as falling property prices affect the solvency and, potentially, the willingness to repay of households and corporate borrowers. On the other hand, credit conditions may also affect asset valuations, as increases in credit availability may expand the demand for a (temporarily) fixed supply of properties.

Property (also known as real estate) is one of the main investments assets. Thus, investors in property, particularly financial institutions (banks), have to take into account the characteristics of the various assets classes and the linkages among them. Data to analyse the property investment market are much more limited than in the share and bond markets. Therefore, the main focus is on the consideration of property in a portfolio perspective rather than at individual building level.

The default risk of a property investment is depends on the quality of tenant in the same way the default of risk of a bond depends on the issuer. It has traditionally been argued that the

property has a more secure income than shares as rent has to be paid, even if the company occupying the building is making a loss, while there is no such obligation to pay a dividend to holders of shares. Further, if the occupier goes bankrupt, it is possible to find another tenant, whereas if a company goes bankrupt, the shareholders lose part or all of their money.

Property, like shares, has no maturity and is traded on a secondary market. According to Hoesli M. and Macgregor (2000), capital value of property may rise and fall in both nominal and real terms depending on actual cash flows, on future expectations of growth and inflation, and on the discount rate.

Under the standards asset pricing model, the price of real estate depends on the discounted present value of its expected rents. Supply in the real estate market is relatively inelastic given the long construction lags and the fixed supply of land. Consequently, rents are typically seen as largely demand driven, depending on variables such as real GDP, and anticipated real interest rates, which captures the cost of borrowing. Other relevant variables include real estate taxes and mortgage interest rate deductibility, the regulatory framework for the real estate market such as zoning and building code restrictions, tenancy and lease laws, etc. In the meantime, it is generally accepted that, as prices move further and further away from their fundamental value, more and more investors would eventually move to sell their properties. As this process gathers momentum, prices may drop dramatically.

Additionally, price in property market is not determined by the interaction of many sellers and many buyers for a homogeneous investment in a central market, such as share in a company or a gift of a particular issue, to produce market clearing price. Price, therefore, is the product of negotiation between the seller and one or more buyers for unique properties in local markets.

The performance of real estate reflects property market performance. On the other hand, the performance of stock market in the economy reflects underlying corporate performance. Based on Liow K.H publication (2004), for financial institutions, property is both a factor of production and an asset. In good times, corporate growth in profitability (with higher share prices) leads to corporate expansion which further leads to rising rental level given increased demand and short-run supply inelasticity. Rising rents lead to higher capital values in the property markets and hence raise net asset values anticipated in the stock prices. In a recession, the reverse process happens. However, in the longer term, rising rents and capital values of real estate might increase the cost of capital of the companies. Coupled with other

possible speculative development activities and bank lending on real estate, one likely scenario is that higher returns to real estate are associated with low (negative) returns to the corporate sector and vice versa. Hence, real estate and stock markets can be related both in long-term and short-run in different manners.

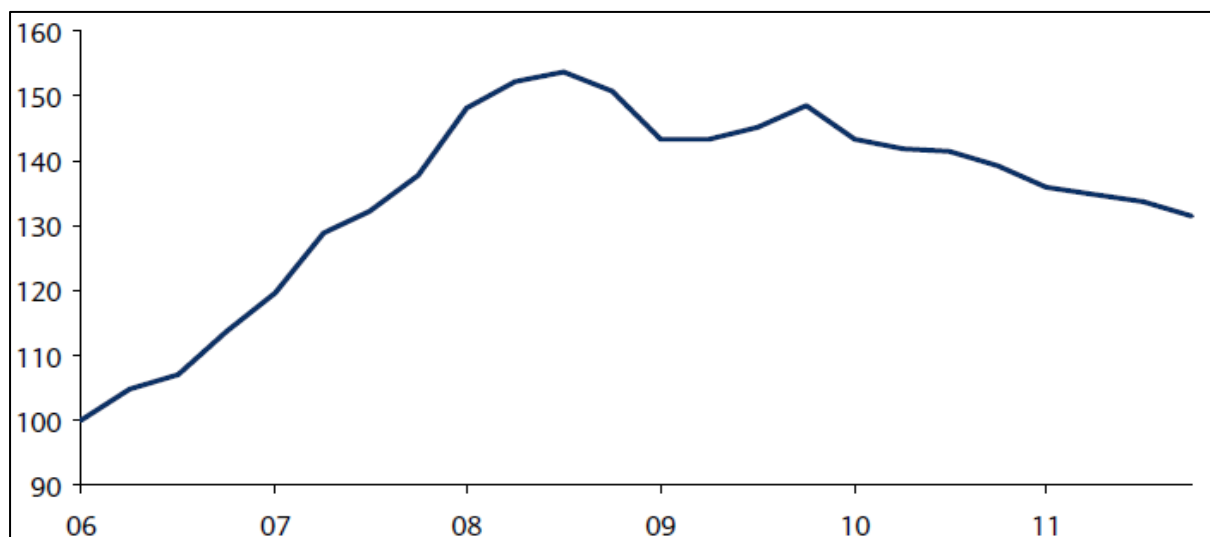
1.2 Evidence from Cyprus during 2006-2012

The experiences of Cyprus during 2006-2012 offer a useful case study of the nexus between bank exposure, property prices and economic activity for a number of reasons.

First, easy credit access in Cyprus Banks resulted in rapid credit growth and then to a real estate bubble. According to data released by the Central Bank of Cyprus (2012), residential property prices surged 53.7% between Q1 06 and Q3 08. At end-2011, Cyprus house prices were 14.5% down on their Q3 2008 peak (-20.5% in real terms). This year the housing market is expected to suffer yet more, due to the ongoing recession.

Figure 1

Residential Property Price index



Period 2006-2012

Source: Central Bank of Cyprus 2012

According to Department of Lands and Surveys (2012), sales continue to decline in all districts, despite government efforts to provide more consumer protection for homebuyers. Domestic sales reduced 13% from April 2011 to April 2012.

Nowadays, high interest rates on housing loans and strict lending criteria make access to credit even more difficult. More specifically, according to Residential Property Price Index published by Central Bank of Cyprus (2012), the interest rate on housing loans increased to 5,4% in the first quarter of 2012, compared to 5% in the first quarter of 2011. In addition, in February 2012, the average lending rate for loans up to 1 year increased to 6.76%.

In parallel with the increase in interest rates, the lending criteria for housing loans, as published in the CBC Bank Lending Survey (2012), were tightened during the first quarter of 2012.

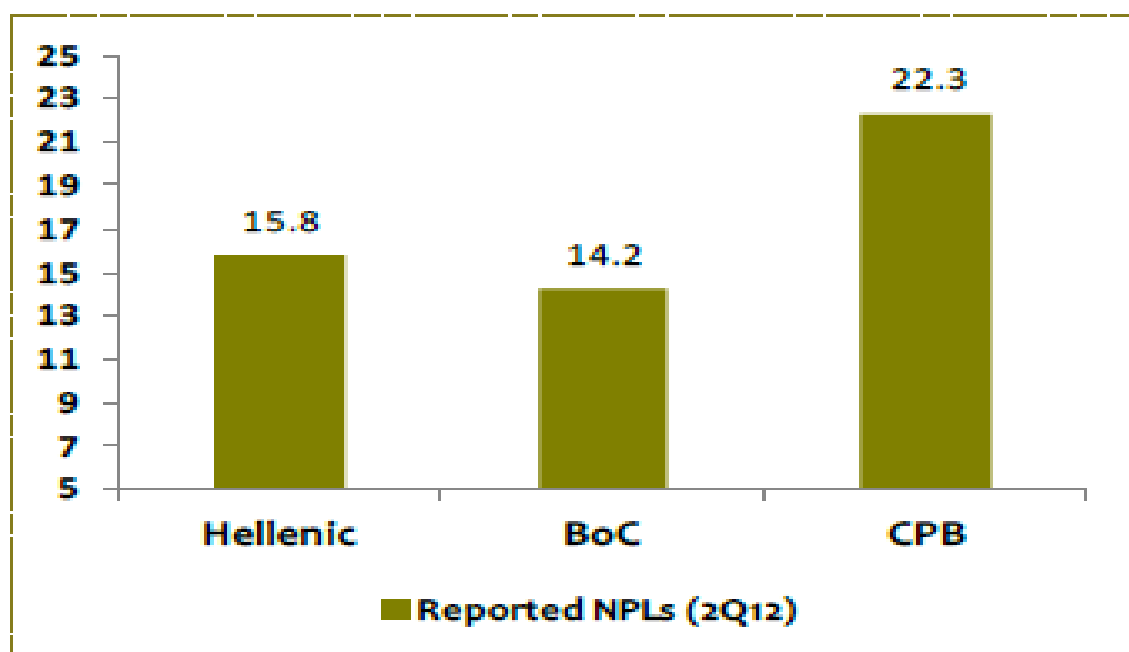
Second, historically, Cyprus's banking sector has considered being oversized relative to the economy. Further, Cyprus Banking System is recently posed risks on the back of its low capitalisation, asset quality and profitability. The landscape is dominated by the three largest banks (The Bank of Cyprus, Laiki Bank and Hellenic Bank) with a total market share (as a percentage of total assets) of approximately 60% (according to Central Bank of Cyprus, Annual Report 2011).

Third, the banking sector recently experienced severe capital shortfalls as a consequence of banks' exposure to the real estate sector. Based on a publication about Cyprus: *PSI can be avoided with future ESM intervention prepared by the Corporate and Investment Banking division of Barclays Bank PLC* (2012), 47% of all loans to non-Monetary Financial Institutions in Cyprus are directed to the real estate sector (c.EUR22.9bn).

Of this, 22.1% are to the construction sector (c.EUR5bn), 22% to real estate activities, and 55% to mortgages (EUR12.7bn). The risk profiles of these categories are completely different. Commercial real estate is by far the riskiest segment in banks' portfolios. The Non Performing Loans (NPL) ratio for this sector reached 28% in September 2010 from 2.0% in September 2008 and is likely to have increased further more recently due to the intensifying economic recession.

While there are no available data for the NPL ratio in the residential real estate loans, it is believed that should be considerably lower, yet above other euro area economies. In fact, the overall NPL ratio at the three largest banks in Cyprus is well above 10%.

Figure 2

NPLs in the residential real estate loans – Major Cypriot Banks

Source: Bank's Financial Presentations. (Q2-2012)

The question that arises is how a loan becomes non-performing. The answer "it depends" would apply to Cyprus - non performing loans under the Cyprus Central Bank's definition are all loans for which the borrower is not paying their loan interest for more than 90 days and which are not sufficiently covered by collateral. Thus, if someone has a 100,000 loan on his property and he is not paying it, but the property is worth/valued at 150,000 then the property is termed as being "performing". The result of course is that non -performing loans are under reported - they currently stand at circa 12-14%, even if the actual number of loans going more than 90 days without interest being paid could be more than 25%.

From the European Commission and International Monetary Fund (IMF) perspective, a non-performing loan is a loan that has not been serviced in 90 days but is fully secure. This would immediately raise the amount needed for the banks' recapitalisation. There are also the loans backed by shares and property, whose current values are lower than when the agreement was made. Former President George Vasiliou (2012) says if provisions are made for all of these, several more billions would be needed and "you are simply making sure that Cyprus would never recover."

Fourth, financial indicators suggest that banks' balance sheets and profitability were affected by the downturn in economic activity and the collapse in property prices. These include an increase in the mortgage delinquency rate and in classified loans, and declines in bank profitability. The three major banks in Cyprus have been particularly hard hit. The international experience suggests that falling property prices often played a central role in triggering banking crises (IMF, 2000). In particular, it is frequently argued that financial deregulation and growing competition induced banks to become increasingly engaged in mortgage financing. As a result, the banking sector played an "accelerator" role in the run-up of property prices, but was also exposed to the disruptive impact of the subsequent price decline.

The results suggest that banks holding large loan portfolios have high exposure, directly or indirectly, to the real estate sector. This raises the question of how banks management responded to the large exposure in the real estate sector during the last years.

A dramatic drop in real estate prices tends to result in greater awareness by banks of the perceived risks of real estate loans. For these reasons, it is very likely that a significant decrease in bank's equity will occur. Added to this, supervisors and regulators react to this scenario of reduced bank equity with additional requirements of solvability and more stringent rules for the risk evaluation and provisioning for bad loans of real estate assets. According to the Wall Street Journal (2012), European banks are expected to increase the volume of commercial real-estate assets they bring to market as they prepare for new European Union capital requirements. Banks are under pressure to reduce their property portfolios further under increased regulation. The so-called Basel III rules, which take effect next year, require banks to hold more capital against loans secured on commercial property. These measures result in a further reduction in the bank credit magnifying the downfall movement in real estate prices. This seems to be the mechanism of transmission between real estate market conditions and bank profitability.

Investing in properties can make the bank's asset portfolios riskier. There is a number of risk characteristics that differentiate real estate investments from alternatives such as common stock and corporate bonds. Banks, by investing in properties, could be exposed to many investment risk characteristics. According to Brueggeman W.B and Fisher J.D. (2011), one of the major property investment risks is the liquidity risk. This risk occurs when a continuous market with many buyers and sellers and frequent transactions is not available. The more

difficult an investment is to liquidate, the greater the risk that a price concession may have to be given to a buyer because the seller have to dispose of the investment quickly. Furthermore, real estate is subject to numerous regulations such as tax laws, rent control, zoning, and other restrictions imposed by government. Legislative risk results from the fact that changes in regulations can adversely affect the profitability of the investment. Managements risk is also an important element. Most real estate investments require management to keep the buildings maintained to preserve the value of the investment.

1.3 Research aim and objectives

The aim of this research is to show that when property price decreases, it brings about a reduction in bank equity, as a consequence of the reduction in the value of the real estate asset portfolios held by banks, and by the corresponding reduction of collaterals.

The objectives of this research are as follows:

1. To explore the degree of linear-correlation between bank stock returns and real estate market returns.
2. To measure the bank asset exposure to the real estate market
3. To find how big is the shortfall between property values and their collateral

The remainder of the article is organized as follows. In section 2 we present a review of the previous literature and main empirical findings. The methodology and sample are discussed in section 3. The empirical results are presented and discussed in section 4. The conclusions appear in section 5.

Chapter 2

2.1 Literature Review

The most studies looking at the importance of bank stock returns in relation to real estate values are almost completely look at the US market.

The majority of studies use a two factor risk model, which indicates that bank stocks are not influenced only from real estate market but in general from general market conditions. In instance, Flannery and James (1984) and Viale et al. (2009) found that there is a negative relation between the change in interest rates and bank returns.

In contrast, Allen, Madura and Wiant (1995) indicate that there is a positive relationship between monthly bank returns and the real estate index, the sensitivity of bank values to the real estate market has increased over time and the bank-specific sensitivity is positively related to the bank's balance sheet exposure to real estate. However, the same authors argue that the value of banks react significantly to real estate market conditions when: (1) banks have a significant exposure to the real estate sector; and (2) the exposure is significantly influenced by changes in the conditions of the real estate sector.

Studies looking the behaviour of bank share prices have tended to focus only on market risk and interest rates (see for example, Viale *et al.* 2009). However, the Asian financial crisis and more recently the subprime mortgage crisis highlighted the importance of the real estate risk.

According to Bryant C.W. (2012), in USA, the drastic increase in the number of defaults and foreclosures on subprime mortgages beginning in 2006 led to a subprime mortgage crisis. By 2008, the overall losses from subprime mortgages reached about \$250 billion. And, due to the complex repackaging of subprime mortgages into investments, this crisis in the housing market contributed to a financial meltdown in 2008 that contributed to a national economic disaster.

Herring and Wachter (1999) and Lu and So (2005) state that, before these crises, there was a tendency for over-investment in the real estate sector due to the high returns associated with this type of investment, potentially driving the occurrence of speculative bubbles in real estate prices in the vast majority of these markets. Furthermore, the increase in real estate

prices tends also to bring about an increase in the value of collaterals, resulting in a perceived lower risk by the lender. For these reasons, the increase in real estate prices tends to produce increasing bank credit granting, which in turn, leads to new further rises in real estate prices.

The coincidence of cycles in bank credit and property prices have been widely documented in policy oriented literature (IMF, 2000 and BIS, 2001). However, little formal empirical research has focussed on the interaction between the two. Most studies rely on a single equation set-up, focussing on bank lending or property prices. Goodhart (1995) finds that property prices significantly affect credit growth in the UK but not in the US. Borio and Lowe (2002) show that the deviation of aggregate asset prices from their long-run trend, combined with a similarly defined credit gap, is a useful indicator of the likelihood of financial distress in industrialised countries. Collyns and Senhadji (2002) find that credit growth has a significant contemporaneous effect on residential property prices in a number of Asian economies.

2.2 Studies show a greater sensitivity in Small Banks

The level of sensitivity in the real estate market depends on the bank's value. Mei and Lee (1994) and Mei and Saunders (1995) found that in the US, a greater sensitivity to the real estate sector is prevalent in small banks. On the other hand, large banks are perceived as safer because, ultimately, they would be bailed out by governments (see O'Hara and Shaw, 1990). This may be due to the fact that small banks have less risk-analysis tools and less ability to diversify risk. Thus, with other things being equal, for different levels of real estate holdings, larger banks should have a lower sensitivity to the conditions in the real estate market.

2.3 Correlation between property and shares

For Switzerland, Hoesli and Hamelink (1997) compute correlation coefficients between Geneva apartment buildings, Zurich apartment buildings and Swiss stocks for the period 1981-91. These results suggest that the returns on apartment buildings are correlated with the returns on shares, a result which is consistent with that reported for commercial property. Thus, the correlation coefficient between property and shares is usually positive.

Chapter 3

3.1 Methodology

The literature reviewed above shows the existence of a close relationship between bank stock returns and the real estate industry. However, no direct analysis was conducted in order to test the sensitivity of banks with respect to the real estate conditions in Cyprus.

To carry out the degree of linear-correlation between bank stock returns and real estate market returns, a linear regression analysis was used.

Furthermore, it is used a quantitative analysis to measure bank asset exposure to the real estate market as well as to find the degree of shortfall between property values and their collateral.

Having in mind the Bank's exposure to the real estate sector, the hypothesis is that when property values show a downward direction (after controlling for general market conditions), it will begin to result in a number of borrowers going into negative equity since banks used the actual value of the properties as collateral to grant the various housing loans. Thus, given that the value of collateral has an impact on the value of loans and mortgages, the potential loss to bank stock returns as a result of default (credit) risk is inversely related to the value of the collateral.

The approach is to demonstrate the validity of this hypothesis, which will confirm the reasonable link between bank stock returns and real estate returns.

The data used are as follows:

- Cyprus Stock Exchange Banks Historical index, for the period 1/1/2006 to 1/7/2012.
- Cyprus Central Bank's (CCB) Residential Property Price index, for the period 2006 Q1 to 2012 Q2

According to Central Bank of Cyprus (2012) the residential property price indices for Cyprus are constructed by the Central Bank of Cyprus's Real Estate Unit (REU), which is part of the Economic Research Department, in collaboration with the member banks of the Association

of Cyprus Banks. The indices are based on property valuation data collected since 2006 by the contracted banks, which receive the relevant information from independent property surveyors in connection with mortgage transactions, such as housing loans, mortgage refinancing and mortgage collateral. The data, which are representative of the Cyprus property market, cover all the areas under the effective control of the Republic of Cyprus (Nicosia, Limassol, Larnaca, Paphos and Famagusta) and refer to residential properties (houses and apartments). The base period for all the indices is the first quarter of 2010 (i.e. 2010Q1=100).

3.2 Purpose of regression analysis

The use of linear regression analysis in this study is to develop a mathematical model to explain the variance in the dependent variable based on values of independent variables. Suppose that banking industry returns, R_a , is ‘driven by’ real estate returns, R_b . As a result, R_a is the dependent variable and R_b the independent variable.

Then, the hypothesized relationship between R_a and R_b may be written,

$$R_a = \beta_0 + \beta_1 \times R_b + e$$

Where,

β_0 parameter = a constant amount;

β_1 parameter = the effect in bank stock returns as a result of an increase in property prices, hypothesized to be positive (coefficient of the variable R_b); and

e = the “noise” term reflecting other factors that influence banking industry returns.

The data set contains observations for R_a and R_b . The noise component e is comprised of factors that are unobservable, or at least unobserved. The parameters β_0 and β_1 are also unobservable. The task of regression analysis is to produce an *estimate* of these two parameters, based upon the information contained in the data set.

To understand how the parameter estimates are generated, note that if the noise term e is ignored, the equation above for the relationship between R_a and R_b is the equation for a line, a line with an “intercept” of β_0 on the vertical axis and a “slope” of β_1 .

3.3 Quantitative analysis

Quantitative method is a research method used to collect data objectively employing structured procedures. In accordance with Naoum S. (1999), quantitative research methods are appropriate in the following situation:

- When you want to find facts about a concept, a question or an attribute.
- When you want to collect factual evidence and study the relationship between these facts, in order to test hypotheses.

(Naoum S. 2006)

Example of quantitative analysis includes ratio analysis. In this study, a loan to value (that banks used as collateral) ratio analysis is used to investigate the degree of shortfall between property values and their collateral.

Based on the data from the Cyprus Central Bank’s (CCB) Residential Property Price index, for the period 2008 Q1 – 2012 Q2, loans granted over the recent years had varying requirements in relation to property values. In particular, the maximum allowable Loan-to-Value (LTV) ratio was 80% for primary residence and 70% for a second home.

The actual value of the properties that banks used as collateral to grant the various housing loans is unknown, but the Cyprus Central Bank provides a breakdown of the amount of housing loans outstanding per quarter. Whilst it is not certain as to the ratio between property value and loan amount, it would be reasonable to assume that most loans would be at the limit of the allowable ratio, i.e. the loan would be 80% of the value of the property. Thus, in order to calculate the hypothetical Market Value of the collateral, it is assumed that these loans are 80% of the properties’ values.

Having calculated the value of the collateral, property values have been adjusted according to the movement of house prices over the period (the ratio between loan and value may have been 80% at the time of granting the loan, but as property values have decreased, this ratio must have increased). In order to be consistent, it is used the CCB’s residential price index to

make these adjustments. Then it is recalculated the ratio between loan amount and property value in order to see how this has changed.

Additionally, to measure bank asset exposure to the real estate market, the following proxies are used: Real Estate Holdings/Equity; Real Estate Holdings/Assets; Real Estate Loans/Equity and Real Estate Loans/Assets, based on Allen *et al.* (1995). Bank's real estate holdings are obtained in the annual reports of each bank.

The procedure adopted was the following: a list of financial statements has been obtained of the most recent annual reports (2010-2011) of the three largest banks (The Bank of Cyprus, Laiki Bank and Hellenic Bank) and then foresaid proxies/ratios have been calculated.

Based on the procedure followed by Allen *et al.* (1995), the value of total asset exposure to real estate for each bank is the sum of mortgage loans ("*Real Estate Loans*") and the direct investments in real estate assets. It is worth noting that, based on Bank of Cyprus annual report (2011), the real estate assets (mortgage loans) are revalued annually by the banks using market prices by independent, professionally qualified valuers with adequate and relevant experience on the nature and the location of the property.

Chapter 4

4.1 Empirical Results

4.2 Sensitivities of Bank Returns to Real Estate

Table 1 shows the Residential Property Price Index, as given by Cyprus Central Bank, for the period 2006 Q1 to 2012 Q2.

Year	Quarter	Residential Property Price Index	Residence by type		Residence by type and district				
			Flats	Houses	Nicosia	Limassol	Larnaca	Paphos	Famagusta
2006	Q1	69.3	74.6	66.0	71.7	64.7	66.2	84.3	60.3
	Q2	72.8	75.3	71.2	73.1	67.3	70.4	86.2	67.6
	Q3	74.3	77.9	72.1	74.5	71.2	66.5	85.9	71.7
	Q4	79.2	83.3	76.3	79.5	72.8	81.7	86.1	73.8
2007	Q1	83.1	84.5	82.2	82.8	75.8	82.3	88.6	82.9
	Q2	89.4	89.1	89.6	90.1	82.2	87.9	90.8	89.2
	Q3	92.5	93.8	91.3	91.2	88.0	93.2	93.1	90.6
	Q4	95.9	97.5	94.7	91.0	91.1	99.3	98.5	98.7
2008	Q1	103.8	104.4	103.2	103.0	99.7	103.6	99.7	102.9
	Q2	106.4	104.6	107.9	104.3	103.5	104.9	99.9	100.6
	Q3	106.9	104.4	108.9	106.9	103.2	104.3	102.5	113.4
	Q4	105.0	105.8	104.3	104.4	106.6	100.0	102.4	108.9
2009	Q1	99.7	100.9	98.8	99.7	95.6	99.4	103.7	108.3
	Q2	99.4	96.8	101.2	100.8	93.7	99.3	104.1	106.0
	Q3	100.8	101.0	100.6	101.1	96.7	103.4	102.6	101.1
	Q4	102.7	102.1	103.0	100.2	101.5	103.0	101.6	102.3
2010	Q1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Q2	99.4	98.6	100.0	99.2	99.5	99.5	99.9	98.6
	Q3	99.0	97.3	100.4	99.9	98.0	98.4	99.8	98.2
	Q4	98.7	96.7	99.9	99.9	97.6	97.9	98.3	98.4
2011	Q1	96.9	94.0	99.1	99.6	95.6	96.1	94.7	92.5
	Q2	96.0	93.2	98.0	99.3	94.4	93.9	92.4	94.3
	Q3	94.8	92.2	96.5	98.6	93.7	92.4	89.6	91.8
	Q4	93.1	90.4	94.7	97.4	92.3	90.4	87.3	90.1
2012	Q1	92.1	89.9	93.7	96.5	91.8	89.4	84.7	87.9
	Q2	90.3	88.4	91.6	95.0	90.3	86.4	85.7	83.9

Market dynamics had pushed prices to a very high level. However, over the recent four years, due to the recession in the real estate market, demand and investments have been drastically reduced causing property values to show a downward trend.

Table 2 presents the summary of the Cyprus Stock Exchange banks index. In particular, the Banks index CSE daily and quarterly returns for the period 2006 Q1 to 2012 Q2, as well as the residential property quarterly returns.

Daily Returns	Year	Quarter	Banks stock	Residential Property
	2006	Q1	0.006130045	n/a
0.018749		Q2	0.002117133	0.048257221
0.001323		Q3	0.000830867	0.020376892
0.023369		Q4	0.004706119	0.064392335
0.009199	2007	Q1	0.001254902	0.048075752
-0.01554		Q2	0.001914197	0.073513409
0.022373		Q3	0.000662951	0.033285928
-0.00987		Q4	-0.000390479	0.03685891
0.005662	2008	Q1	-0.008855186	0.07839587
0.009982		Q2	-0.000520649	0.025033914
0.024175		Q3	-0.004740009	0.005217043
0.023111		Q4	-0.011077836	-0.0186414
0.003854	2009	Q1	-0.002833753	-0.05185175
0.012828		Q2	0.007636543	-0.00238401
0.004195		Q3	0.004186824	0.013387261
0.011483		Q4	-0.001974336	0.018718207
0.037354	2010	Q1	-0.001053964	-0.02637426
-0.00445		Q2	-0.005810029	-0.00603404
-0.01248		Q3	0.002524524	-0.00368136
0.043512		Q4	-0.002702141	-0.00358715
0.021629	2011	Q1	-0.001312315	-0.01813732
-0.01554		Q2	-0.003887666	-0.00905345
-0.03274		Q3	-0.008518865	-0.0130702
0.003516		Q4	-0.007368441	-0.01827536
0.002053	2012	Q1	-0.003054451	-0.01007982
0.007701		Q2	-0.01068434	-0.01978146

Using RATS Econometrics Software

Table 3 Linear regression analysis results

Regression Analysis Adj. R ²	
Total Period 2006-2012	
R² = 13% of the movement of bank stock returns was due to real estate market	
β_0 parameter	= -0.002503353
β_1 parameter	= 0.051532239
Standard Error	= 0.0046
Period 2006-2007	
R² = 43% of the movement of bank stock returns was due to real estate market	
β_0 parameter	= -0.001149985
β_1 parameter	= 0.057425981
Standard Error	= 0.0014
Period 2006-2008	
R² = 20% of the movement of bank stock returns was due to real estate market	
β_0 parameter	= -0.004080714
β_1 parameter	= 0.074234332
Standard Error	= 0.0046
Period 2009-2012	
R² = 12% of the movement of bank stock returns was due to real estate market	
β_0 parameter	= -0.001398541
β_1 parameter	= 0.1016801
Standard Error	= 0.0048

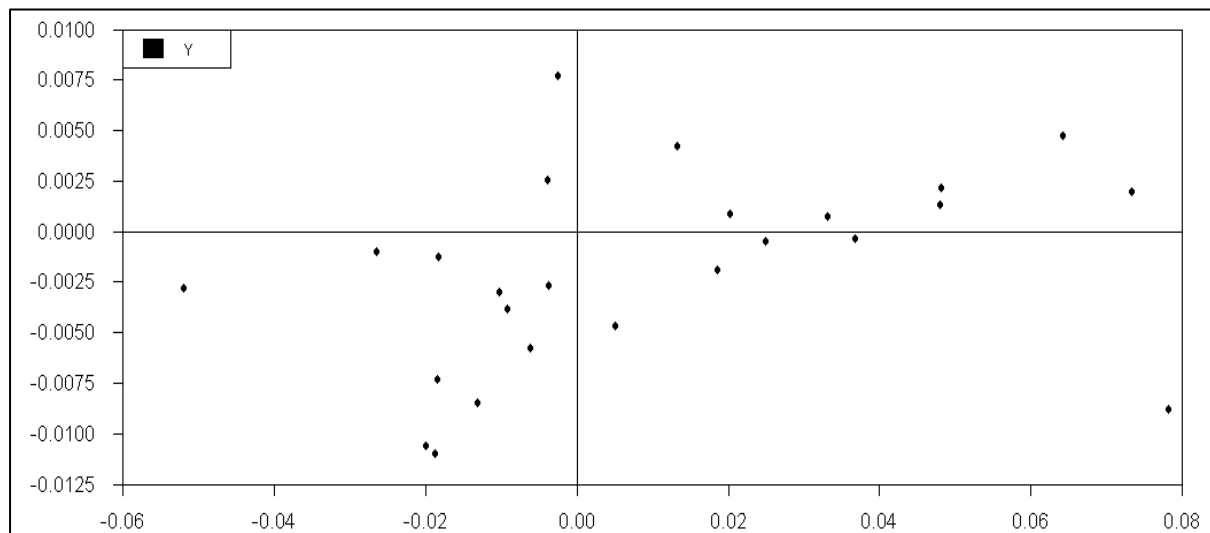
Tables 3 show the R² as defined by equation above. The estimated regressions for the different time periods aim to test the robustness of the results over different periods of time.

The standard error of the estimate represents the square root of the sum of the squared regression residuals divided by the degrees of freedom.

As mentioned above, easy credit access in Cyprus Banks resulted in rapid credit growth and to a real estate bubble. This is especially happened during the period 2006-2007 where most real estate loans were given to borrowers. The above Table 3 reports the results for R^2 from 2006 to 2012. An important concluding remark is that the degree of linear-correlation of variables was higher when real estate prices followed an upward trend during the period 2006-2008. Therefore, the higher exposure to real estate market leads to higher sensitivity in the equity of banks. On the other hand, during the period 2008-2012, the borrowing capacity and credit demand of households and firms are affected by changes in prices of properties, and for that reason the degree of linear-correlation of variables was lower.

Figure 3

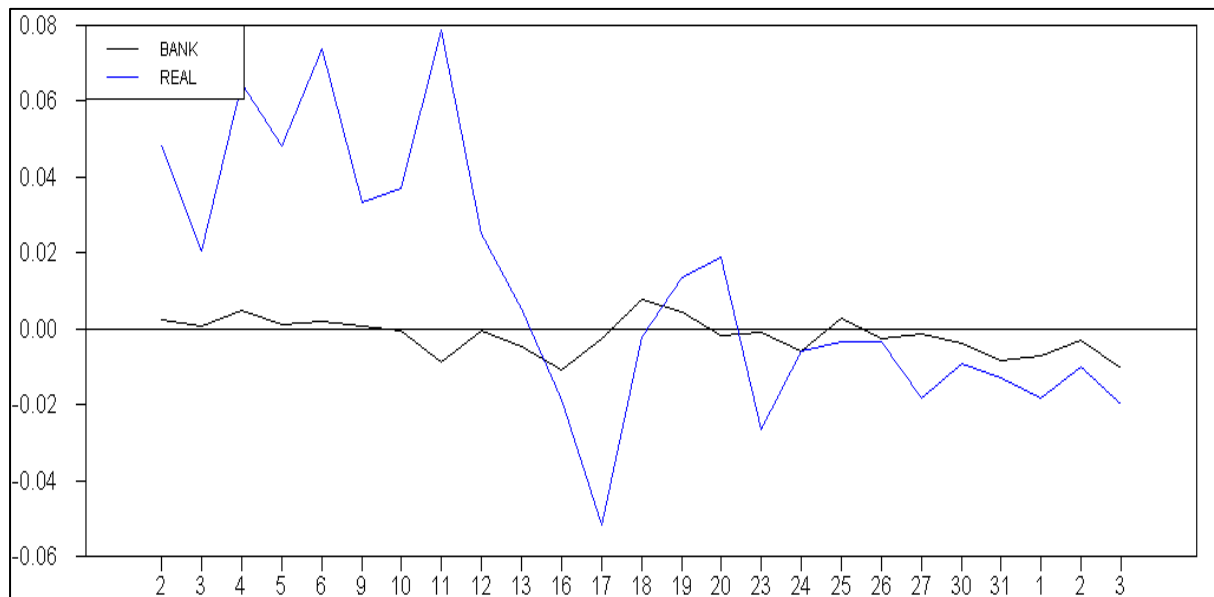
Two-dimensional diagram – Dependent variable



The above figure presents all the individuals of the dependent variable. The information presented in a two-dimensional diagram, conventionally termed a “scatter” diagram. Each point in the diagram represents an individual.

Figure 4

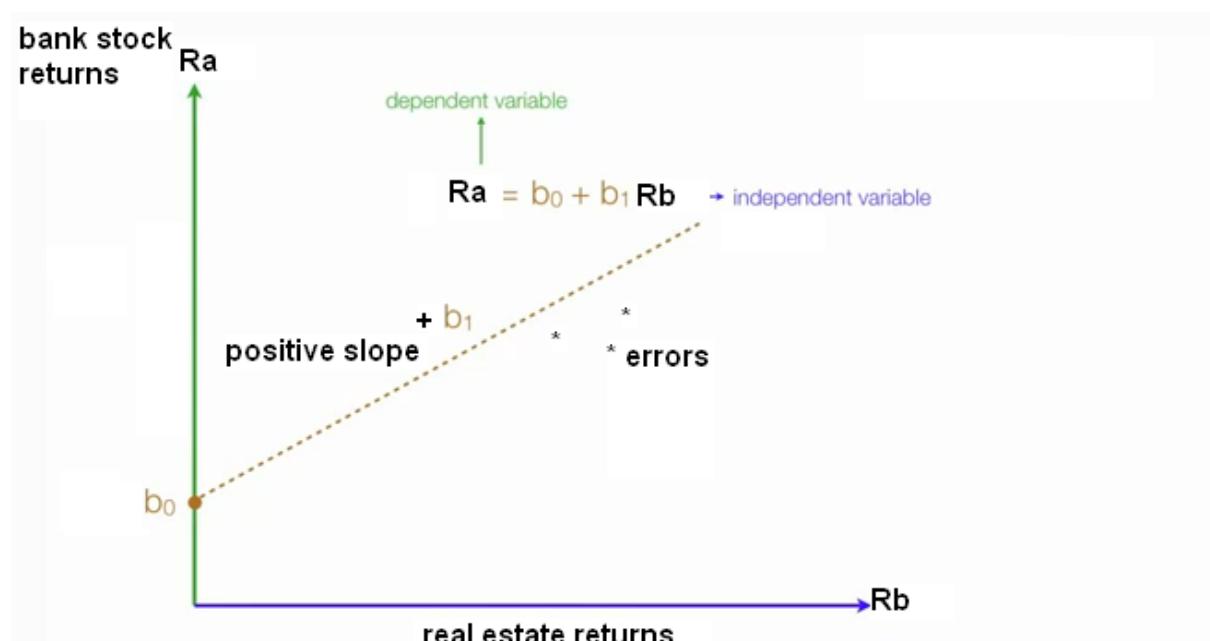
Degree of linear-correlation between bank stock returns and real estate market returns



The above graph (Rats) presents a positive relationship between Bank and Real estate returns. From Figure 4 it can be seen that the real estate market recession has been reflected to bank stock returns.

Figure 5

Independent and dependent variable move in the same direction



The above Figure 5 shows that independent and dependent variable move in the same direction. Therefore, as property market shows an upward direction, bank stock return should go up. The slope of the line is β_1 and β_0 is the intercept (the value of R_a when $R_b = 0$). The results show that for period 2006-2012, β_1 still always positive. The first point to note is that the higher percentage in terms of the positive correlation between bank stock returns and real estate returns was in 2006-2008 by approximately 7%.

In this case, bank's managements, could control, manipulate or change the independent variable in order to minimize the errors and the difference between the estimated and actual value. The point is to minimize the errors and make them as small as possible. In achieving this, bank's managements should minimize the exposure to the real estate market.

In summary, the results presented suggest that Cyprus banks had a great sensitivity to real estate market risk since real estate and stock market are positively correlated.

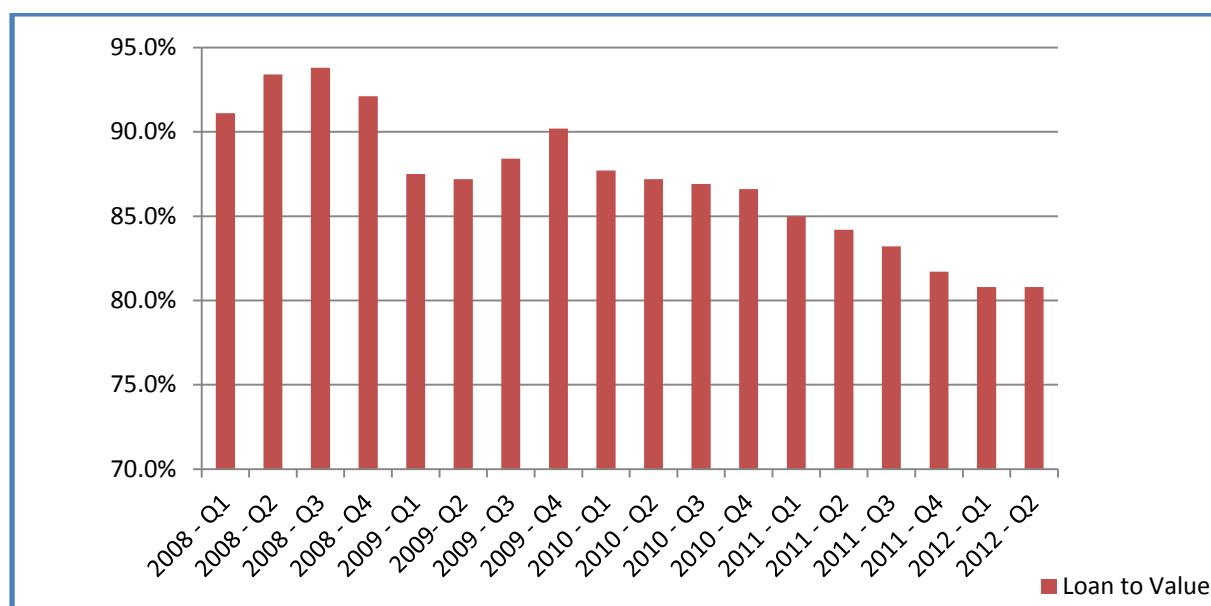
4.3 The degree of shortfall between property values and their collateral

Table 4

Price decreases based on Cyprus Central Bank Data (2012)

	Property Value (Based on CCB property price index)	Loan amount (80% of property value)	Variation from current property prices	Collateral to Value (CTV) (Based on current prices)
2008 - Q1	100.0	80.0	-12,2%	91,1%
2008 - Q2	102.5	82.0	-14,3%	93,4%
2008 - Q3	103.0	82.4	-14,7%	93,8%
2008 - Q4	101.2	80.9	-13,2%	92,1%
2009 - Q1	96.1	76.8	-8,5%	87,5%
2009 - Q2	95.8	76.6	-8,3%	87,2%
2009 - Q3	97.1	77.7	-9,5%	88,4%
2009 - Q4	98.9	79.2	-11,2%	90,2%
2010 - Q1	96.3	77.1	-8,8%	87,7%
2010 - Q2	95.8	76.6	-8,3%	87,2%
2010 - Q3	95.4	76.3	-7,9%	86,9%
2010 - Q4	95.1	76.1	-7,6%	86,6%
2011 - Q1	93.4	74.7	-5,9%	85,0%
2011 - Q2	92.5	74.0	-5,0%	84,2%
2011 - Q3	91.3	73.1	-3,8%	83,2%
2011 - Q4	89.7	71.8	-2,1%	81,7%
2012 - Q1	88.7	71.0	-1,0%	80,8%
2012 - Q2	87.8	70.3	0,0%	80,8%

Figure 6

Loan to Value Ratio 2008-2012

As shown in the above table, the Loan (that banks used as collateral) to Value Ratio for loans granted in 2008 is above 90% and almost all other loans are circa 85-90% of property values.

As noted, a decline of more than 5% in property values will begin to result in a number of borrowers going into negative equity. This has significant implications both to them, as they will be paying off a loan that is bigger than the value of their residence, and to the bank, as its exposure to potential losses will increase. Furthermore, it reduces the bank's options if loan default does occur, as the potential income from the asset will not be enough to repay the outstanding loan. Thus, banks will be forced to offload the distressed property and increasing their need for capital.

It has been mentioned before that, property prices affect banks' capital position and thus lending capacity, both directly through valuations of their holdings of real estate assets and indirectly via changes in non-performing loans. In the meantime, because of changes in the methodology for calculating the non-performing loans and provisions for possible future losses, the problem in Cyprus banks could become more and more complicated. This would immediately raise the amount needed for the banks' recapitalisation.

4.4 Bank asset exposure to the real estate market

Table 5: Banks financial analysis 2010

<u>Year 2010</u>					
		Total Assets	Equity	Real Estate Loans	Real Estate Holdings
	Note	Billions	Billions	Billions	Billions
Bank of Cyprus		€ 42,636,568	€ 2,639,698	€ 3,866,022	€ 418,781
Laiki Bank		€ 42,580,486	€ 3,641,374	€ 4,586,561	€ 42,410
Hellenic Bank		€ 8,236,725	€ 534,264	€ 1,339,234	€ 115,218

Table 6: Banks financial analysis 2011

<u>Year 2011</u>					
		Total Assets	Equity	Real Estate Loans	Real Estate Holdings
	Note	Billions	Billions	Billions	Billions
Bank of Cyprus		€ 37,474,195	€ 2,342,705	€ 3,074,077	€ 473,188
Laiki Bank		€ 33,761,978	€ 600,558	€ 4,365,136	€ 46,698
Hellenic Bank		€ 8,278,976	€ 434,198	€ 1,442,417	€ 112,509

The growth in real estate loans was driven by the strong market demand for both commercial and residential properties, official data showed.

With respect to the total assets of listed banks, Bank of Cyprus and Laiki Bank have the highest bank assets, real estate loans and equity. On other hand, in regards to the real estate holding, Hellenic Bank and Bank of Cyprus have the higher exposure. The first point to note is that Laiki Bank equity experienced a dramatic decrease from 2010 to 2011 by 3.6 billion to 600 million respectively.

Figure 7

Banks real estate loans 2010

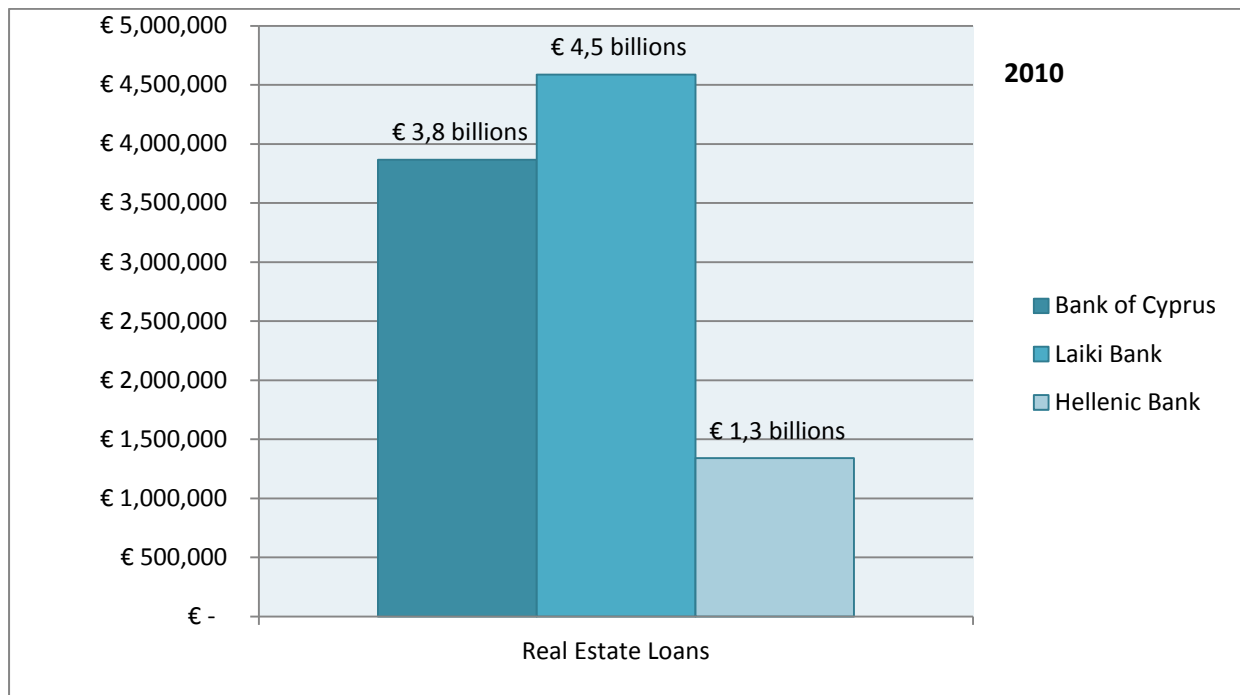


Figure 8

Banks real estate loans 2011

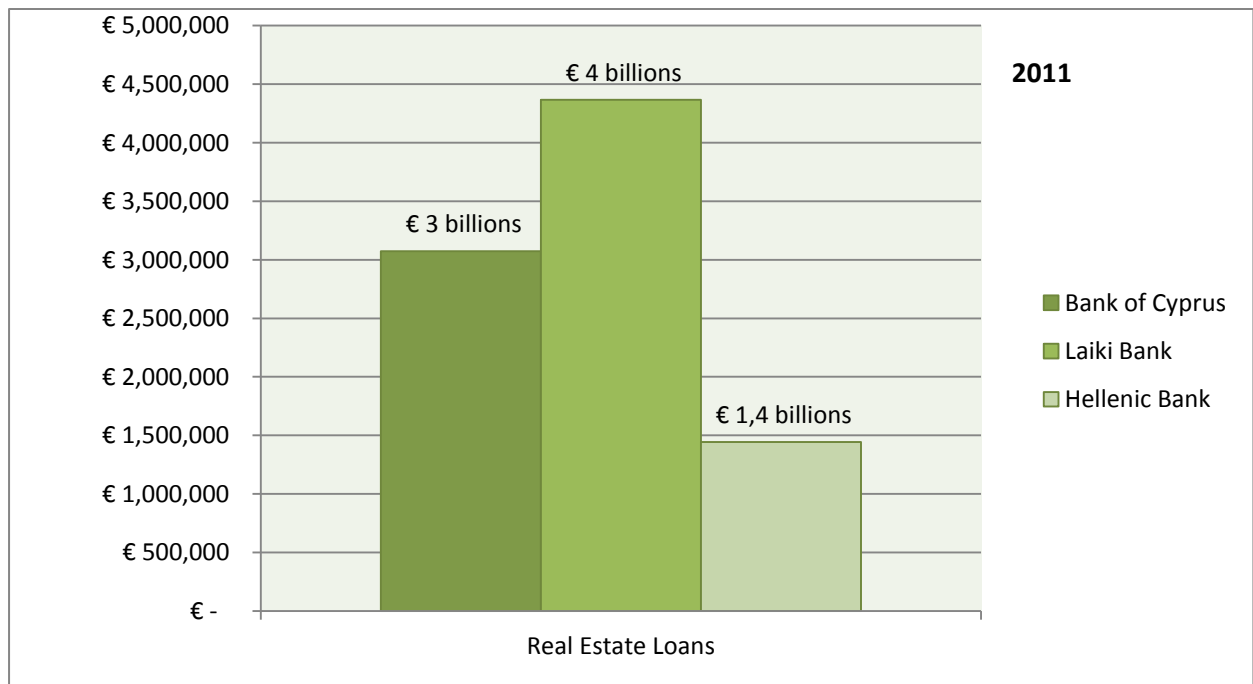


Table 7: Financial ratio analysis 2010

<u>Year 2010</u>				
FINANCIAL RATIO ANALYSIS				
	Real E. Holdings to Equity	Real E. Holdings to Assets	Real E. Loans to Equity	Real E. Loans to Assets
Bank of Cyprus	16%	1%	146%	9%
Laiki Bank	1%	0%	126%	11%
Hellenic Bank	22%	1%	251%	16%

Table 8: Financial ratio analysis 2011

<u>Year 2011</u>				
FINANCIAL RATIO ANALYSIS				
	Real E. Holdings to Equity	Real E. Holdings to Assets	Real E. Loans to Equity	Real E. Loans to Assets
Bank of Cyprus	20%	1%	131%	8%
Laiki Bank	8%	0%	727%	13%
Hellenic Bank	26%	1%	332%	17%

As shown in the above table, with respect to the Real E. Loans to Equity, all banks show a ratio above 100%. It is worth noting that Real E. Loans to Equity for Laiki Bank ranges at very high levels. In addition, having in mind Real Estate Loans and Real Estate Assets to total assets and equity overall, it is noted that the higher exposure to real estate is for the Hellenic Bank. Whilst there is no substantial difference between listed banks with respect to relative exposure to the real estate market, it is believed that real estate loans/assets, for each bank, can be consider to be oversized relative to their total assets.

Chapter 5

5.1 Conclusions

Given the weight of real estate assets on the balance sheets of banks, one of the objectives of this study is to assess if bank stock returns are systematically affected by the real estate market returns. The results show the existence of a positive and statistically significant relationship between bank stock returns and real estate market returns. The results further show that an average percentage of 20% of the movement of bank stock returns, for the period 2006-2012, was due to real estate market. The results indicate that banks (see Hellenic Bank) with greater relative asset balance sheet exposure to the real estate sector tend to be more sensitive to real estate market returns.

While the values of real estate loans and mortgages held by commercial banks are often exposed to interest-rate risk, they are also exposed to default risk. As considered in the literature, default risk is, at least in part, a function of changes in real estate value. As collateral values decrease, the probability of incurring a default is high.

This study has also concluded that when property values decline of more than 5% (it seems obvious) it will begin to result in a number of borrowers going into negative equity since banks used the actual value of the properties as collateral to grant the various housing loans. This has significant implications to banks and borrowers. On the one hand, borrowers should pay off a loan that is bigger than the market value of their property, and on the other hand, bank loans will go into default, as the potential income from the asset will not be enough to repay the outstanding loan.

The results point out that the three major banks in Cyprus have high exposure to real estate market relative to their equity/total assets. The highest exposure to Real Estate Loans to Total Assets is with Hellenic Bank. However, Laiki bank has the highest percentage of Non Performing Loans. To this end, banks' real estate exposure will continue to pressure their balance sheets, making it harder to lend and compressing their earnings. Lower profits obviously mean lower stock prices.

In summary, the above results suggest that regulators, bank managers and investors should consider the sensitivity of banks to the real estate market, just as they consider bank exposure to interest-rate risk. Bank managers may consider the creation of hedging techniques in order to secure real estate exposure in the same manner as they sometimes use derivative securities to protect their assets from interest-rate risk. Additionally, banks should include real estate market risk when they estimate the cost of capital while assessing the NPL of bank investments or in asset pricing models to evaluate bank performance. Similarly, when investors forecasting bank values it is highly recommended to use forecast real estate market values along with general stock market and interest-rate trends.

5.2. Limitations of the study

Major limitations of this research were availability of sources. As statistical tests normally require a larger sample size of data, a major limitation of this research was availability of data and the small number of considerable banks in Cyprus. Therefore, to find a trend and a meaningful relationship, the study should have involved more banks at different size and degree of asset exposure. In addition, since the Cyprus Central Bank provides only residential property indices, it is unavoidable that in this study, certain degree of subjectivity can be found. It would be better if it was done with commercial property values as well, since banks hold a large amount of commercial properties.

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Appendices

Financial Statements

Bank of Cyprus

Bank of Cyprus Group Interim Consolidated Balance Sheet as at 30 June 2012				
		30 June 2012	31 December 2011 (restated)	31 December 2010 (restated)
	Notes	€000	€000	€000
Assets				
Cash and balances with central banks		2,238,384	1,375,047	2,241,825
Placements with banks		2,260,579	2,627,831	5,264,628
Reverse repurchase agreements		-	215,936	120,166
Investments	10	2,727,295	2,629,124	4,307,558
Investments pledged as collateral	10	986,801	938,070	1,038,036
Derivative financial assets		126,610	193,734	76,278
Loans and advances to customers	11	26,460,177	27,366,917	27,725,451
Life Insurance business assets attributable to policyholders		500,885	504,579	561,695
Property and equipment		478,258	473,188	418,781
Intangible assets		475,110	472,510	479,058
Other assets	12	873,896	674,439	399,287
Investment in associates		2,764	2,820	3,805
Total assets		37,130,759	37,474,195	42,636,568
Liabilities				
Obligations to central banks and amounts due to banks		4,552,036	3,065,756	3,706,975
Repurchase agreements		784,134	785,993	913,109
Derivative financial liabilities		165,240	488,111	240,412
Customer deposits		28,193,204	29,654,498	32,952,567
Insurance liabilities		605,467	611,264	658,309
Debt securities in issue	13	34,157	49,791	83,957
Other liabilities	14	342,153	347,697	419,295
Subordinated loan stock	15	129,061	128,380	930,942
Total liabilities		34,805,452	35,131,490	39,905,566
Equity				
Share capital	16	1,795,141	899,528	894,948
Share premium		858,711	1,164,903	1,159,819
Convertible Enhanced Capital Securities	17	430,256	862,233	-
Revaluation and other reserves		(29,922)	2,585	(186,677)
(Accumulated losses)/retained earnings		(809,909)	(670,988)	771,608
Equity attributable to the owners of the Company		2,244,277	2,258,261	2,639,698
Non-controlling interests		81,030	84,444	91,304
Total equity		2,325,307	2,342,705	2,731,002
Total liabilities and equity		37,130,759	37,474,195	42,636,568

A. Artemis
E. Xenophontos
Y. Kypril
Chr. Hadjimitsis

Chairman
Vice Chairman
Group Chief Executive Officer
Senior Group General Manager

41. Risk management – Credit risk (continued)**Collateral and other credit enhancements (continued)***Other instruments financial*

Collateral held as security for financial assets other than loans and advances is determined by the nature of the instrument. Debt securities and other eligible bills are generally unsecured with the exception of asset-backed securities and similar instruments, which are secured by pools of financial assets. In addition, some debt securities are government guaranteed.

The Group has chosen the ISDA Master Agreement for documenting its derivatives activity. It provides the contractual framework within which dealing activity across a full range of over-the-counter (OTC) products is conducted and contractually binds both parties to apply close-out netting across all outstanding transactions covered by an agreement, if either party defaults. In some cases the parties execute a Credit Support Annex (CSA) in conjunction with the ISDA Master Agreement. Under a CSA, collateral is passed between the parties in order to mitigate the market contingent counterparty risk inherent in the open positions.

Settlement risk arises in any situation where a payment in cash or securities is made in the expectation of a corresponding receipt in cash or securities. Daily settlement limits are established for each counterparty. Settlement risk is mitigated when transactions are effected via established payment systems or on a delivery upon payment basis.

Concentrations of loans and advances

	2010 €000	2009 €000
By economic activity		
Trade	3,617,046	3,333,752
Manufacturing	1,755,320	1,545,488
Hotels and catering	2,297,776	2,121,002
Construction	2,747,557	2,462,311
Real estate	3,866,022	3,331,556
Private individuals	8,591,300	8,787,667
Professional and other services	4,065,604	3,075,706
Other sectors	1,044,316	1,848,656
	28,885,850	26,508,048
By geographical area		
Cyprus	13,882,064	12,753,230
Greece	10,154,385	9,780,263
Russia	1,887,215	1,400,405
United Kingdom	1,076,814	1,063,252
Australia	1,011,560	618,420
Romania	624,673	677,591
Ukraine	248,230	205,887
	28,885,850	26,508,048
By customer sector		
Corporate	11,915,470	10,766,105
Small and medium-sized enterprises (SMEs)	7,684,854	7,123,008
Retail		
- housing	5,573,178	4,000,550
- credit cards	399,742	346,715
- consumer and other	3,312,606	3,280,671
	28,885,850	26,508,048

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Hellenic bank
HELLENIC BANK PUBLIC COMPANY LIMITED
STATEMENT OF FINANCIAL POSITION
at 31 December 2011

	Note	2011 €'000	2010 €'000
Assets			
Cash and balances with Central Banks	15	218.803	143.533
Placements with other banks	16	1.611.322	1.218.486
Loans and advances to customers	17	4.985.031	4.888.580
Debt securities	18	1.154.755	1.716.345
Equity securities	20	13.252	24.713
Investments in subsidiary companies	21	91.241	91.241
Amounts due from subsidiary companies		5.731	7.808
Property, plant and equipment	22	91.839	93.985
Intangible assets	23	4.034	4.670
Tax receivable		3.955	--
Deferred tax asset	24	21.483	19.080
Other assets	25	73.876	42.392
Total assets		8.275.322	8.250.833
Liabilities			
Deposits by banks	26	74.302	158.761
Customer deposits and other customer accounts	27	7.103.985	6.853.656
Amounts due to subsidiary companies		48.336	66.507
Tax payable		7.669	10.253
Deferred tax liability	28	31.221	19.648
Other liabilities	29	244.439	243.701
		7.509.952	7.352.526
Loan capital	30	321.502	356.700
Equity			
Share capital	31	132.448	132.442
Reserves		311.420	409.165
Total equity		443.868	541.607
Total liabilities and equity		8.275.322	8.250.833
Contingent liabilities and commitments	33	1.191.960	1.430.422

The financial statements have been approved by the Board of Directors on 30 March 2012.

17. LOANS AND ADVANCES TO CUSTOMERS

	The Group		The Bank	
	2011 €'000	2010 €'000	2011 €'000	2010 €'000
Manufacturing	380.164	301.791	379.573	301.791
Trade	949.222	840.433	949.222	840.433
Tourism	332.918	327.918	332.918	327.918
Construction	1.442.417	1.339.234	1.442.417	1.339.234
Personal and professional	1.849.950	1.857.051	1.847.824	1.855.128
Other sectors	677.055	756.388	675.849	756.388
	5.631.726	5.422.815	5.627.803	5.420.892
Provisions for impairment	(644.899)	(534.235)	(642.772)	(532.312)
	4.986.827	4.888.580	4.985.031	4.888.580

Laiki Bank

CONSOLIDATED BALANCE SHEET

31 DECEMBER 2011

	Note	2011 € '000	2010 € '000
Assets			
Cash and balances with Central Banks	16	1,034,086	713,579
Due from other banks	17	689,569	4,696,112
Financial assets at fair value through profit or loss	19	234,505	229,336
Advances to customers	20	24,778,623	26,417,333
Debt securities lending	22	1,769,185	3,960,788
Available-for-sale financial assets	23	1,791,205	2,278,411
Held-to-maturity financial assets	24	889,455	1,480,046
Other assets	25	693,234	535,782
Income tax assets	26	59,061	34,056
Deferred tax assets	37	580,246	127,185
Investments in associates	27	115,741	113,600
Intangible assets	28	797,780	1,634,734
Investment property	29	38,056	68,322
Property and equipment	30	291,232	291,202
Total assets		33,761,978	42,580,486
Liabilities			
Due to other banks	31	10,301,370	10,649,850
Customer deposits	32	20,160,804	25,508,361
Senior debt	33	376,107	477,637
Loan capital	34	1,333,727	1,267,931
Other liabilities	35	557,136	592,516
Income tax liabilities	36	14,673	23,203
Deferred tax liabilities	37	120,621	134,634
Retirement benefit obligations	8	296,982	284,980
Total liabilities		33,161,420	38,939,112
Share capital and reserves attributable to the owners of the Bank			
Share capital	38	1,369,444	834,799
Share premium	38	2,334,583	2,252,897
Reserves	39	(3,209,867)	447,815
		494,160	3,535,511
Non-controlling interests		106,398	105,863
Total equity		600,558	3,641,374
Total equity and liabilities		33,761,978	42,580,486

CREDIT RISK (continued)

Concentration of risks of financial assets with credit exposure (continued)

(b) Industry sectors

The table below analyses the Group's main credit exposures at carrying amount, as categorised by the industry sectors in which counterparties operate.

	Manu- facturing € '000	Tourism € '000	Trade € '000	Property and construction € '000	Personal, professional and home loans € '000	Financial institutions € '000	Other sectors € '000	Total € '000
On-balance sheet assets:								
Balances with Central Banks (Note 15)	-	-	-	-	-	509.059	3.600	512.659
Due from other banks (Note 16)	-	-	-	-	-	4.678.967	17.145	4.696.112
Financial assets at fair value through profit or loss:								
Debt securities (Note 18)	-	352	-	-	-	7.244	30.008	37.604
Derivative financial instruments with positive fair value (Note 18)	-	-	-	-	-	76.432	18.187	94.619
Advances to customers:								
Advances to individuals	29.216	64.586	143.104	116.477	7.613.919	412	84.904	8.052.618
Advances to corporate entities:								
Large corporate customers	379.161	371.787	1.079.248	1.759.357	881.304	168.051	5.276.417	9.915.325
Small and medium size enterprises	721.971	832.811	1.955.026	2.709.862	1.115.524	64.187	1.050.009	8.449.390
Debt securities lending (Note 21)	-	-	-	-	-	2.133.001	1.827.787	3.960.788
Available-for-sale financial assets – debt securities (Note 22)	28.981	1.306	1.111	865	607	617.560	1.322.456	1.972.886
Held-to-maturity financial assets (Note 23)	-	152	826	-	377.614	795.510	305.944	1.480.046
Other assets	-	-	-	-	-	39.506	89.550	129.056
Total on-balance sheet	1.159.329	1.270.994	3.179.315	4.586.561	9.988.968	9.089.929	10.026.007	39.301.103
Off-balance sheet items:								
Acceptances (Note 43)	37.863	2.638	82.497	20.483	78.144	129.063	36.400	387.088
Guarantees (Note 43)	39.860	43.085	107.017	366.328	138.752	27.700	590.340	1.313.082
Amount of unutilised credit facilities (Note 43)	9.983	2.243	27.739	49.481	62.461	180	53.494	205.581
Total off-balance sheet	87.706	47.966	217.253	436.292	279.357	156.943	680.234	1.905.751
31 December 2010	1.247.035	1.318.960	3.396.568	5.022.853	10.268.325	9.246.872	10.706.241	41.206.854
31 December 2009	1.223.155	1.096.916	3.315.681	4.774.244	10.179.636	9.389.620	10.613.049	40.592.301

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

45. FINANCIAL RISK MANAGEMENT (continued)

CREDIT RISK (continued)

Concentration of risks of financial assets with credit risk (continued)

(b) Industry sectors

The table below analyses the Group's main credit exposures at carrying amount, as categorised by the industry sectors in which counterparties operate.

	Manu- facturing € '000	Tourism € '000	Trade € '000	Property and construction € '000	Personal, professional and home loans € '000	Financial institutions € '000	Shipping € '000	Other sectors € '000	Total € '000
On-balance sheet assets:									
Balances with Central Banks (Note 16)	-	-	-	-	-	812,809	-	154	812,963
Due from other banks (Note 17)	-	-	-	-	-	689,553	-	16	689,569
Financial assets at fair value through profit or loss:									
Debt securities (Note 19)	-	256	-	-	-	9,045	-	8,217	17,518
Derivative financial instruments with positive fair value (Note 19)	-	-	87	-	-	90,233	-	38,862	129,182
Advances to customers:									
Advances to individuals	30,869	46,577	139,417	88,590	6,949,370	-	-	73,349	7,328,172
Advances to corporate entities:									
Large corporate customers	326,021	262,943	1,151,549	1,672,038	1,037,838	345,700	1,919,092	2,719,966	9,435,147
Small and medium size enterprises	706,488	960,745	1,791,886	2,603,192	968,558	31,305	-	953,130	8,015,304
Debt securities lending (Note 22)	-	-	-	-	-	1,197,308	-	57,187	1,769,185
Available-for-sale financial assets - debt securities (Note 23)	27,208	1,198	1,988	949	106	463,443	-	1,047,328	1,542,220
Held-to-maturity financial assets (Note 24)	-	-	-	-	328,640	362,181	-	198,634	889,455
Other assets	435	-	493	367	3	232,775	-	127,187	361,260
Total on-balance sheet	1,091,021	1,271,719	3,085,420	4,365,136	9,284,515	4,234,352	1,919,092	5,738,720	30,989,975
Off-balance sheet items:									
Acceptances (Note 44)	15,605	-	38,631	4,213	35,888	7,681	-	42,810	144,828
Guarantees (Note 44)	88,418	51,253	175,254	525,190	77,780	86,368	-	234,642	1,238,905
Amount of unutilised credit facilities (Note 44)	12,863	1,557	31,444	69,510	10,439	151	-	15,078	141,042
Total off-balance sheet	116,886	52,810	245,329	598,913	124,107	94,200	-	292,530	1,524,775
31 December 2011	1,207,907	1,324,529	3,330,749	4,964,049	9,408,622	4,328,552	1,919,092	6,031,250	32,514,750
31 December 2010	1,247,035	1,318,960	3,396,568	5,022,853	10,268,325	9,246,872	1,810,040	8,896,201	41,206,854