

# Current developments and prospects of the Greek property market \*

*C. Akantziliotou, V. Vlachostergiou and T. Mitrakos*

**Real Estate Market Analysis Section  
Bank of Greece**

8 October 2013

Venue of the Conference:

MEGARON, Nikos Skalkotas Hall, Athens



# Outline

- **Characteristics and recent developments of the Greek real estate market**
  - **Values and transactions**
  - **Private building activity, employment, investment and other short term indicators**
- **Financing of the real estate market and financial stress**
- **Determinants of the residential property value in Greek cities**
- **Recent reforms, risks and pending issues**
- **Conclusions - prospects for stabilization and recovery**





## **Characteristics and recent developments in the real estate market in Greece**

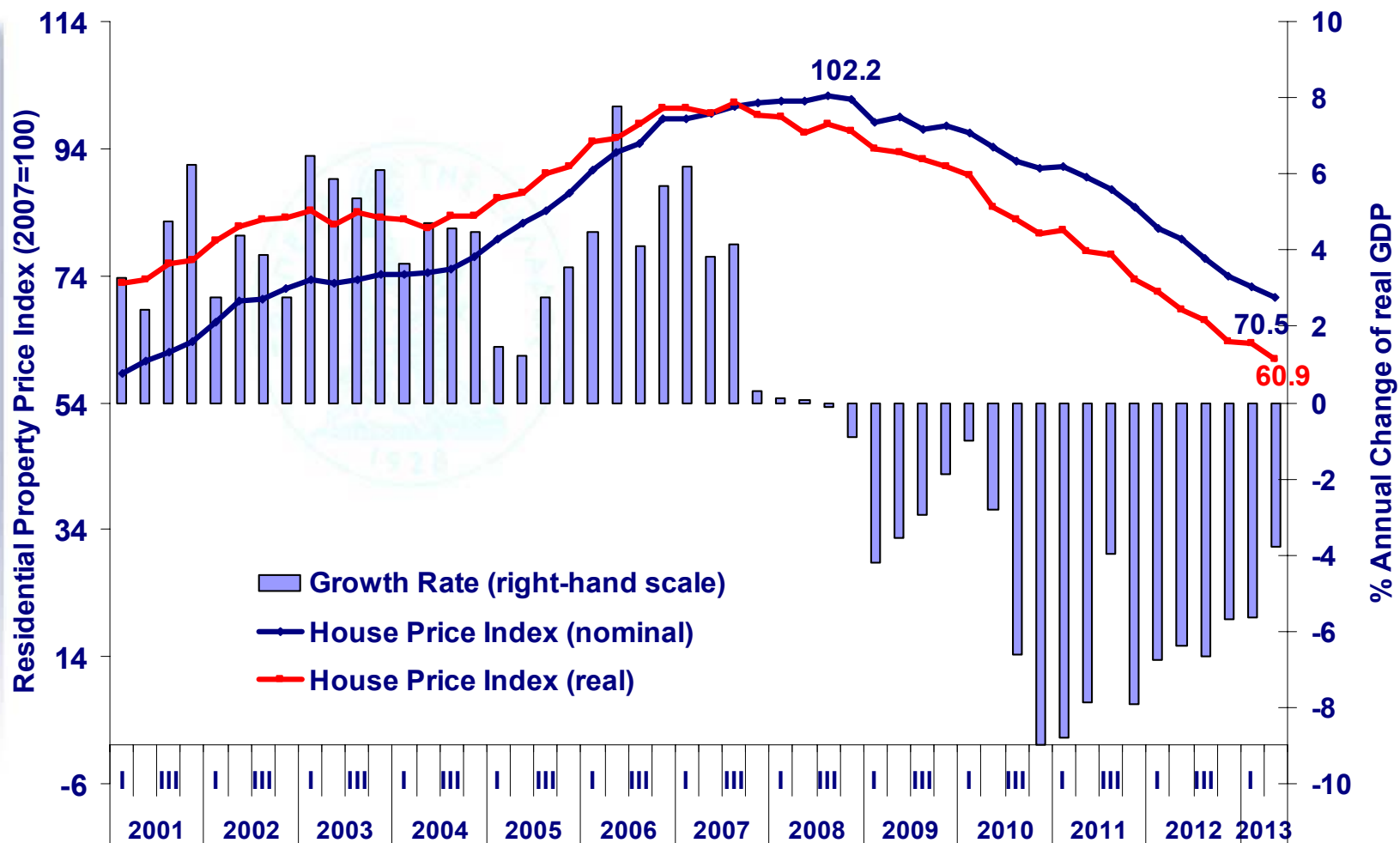


## Specific features of the Greek housing market

- ❑ High rate of home ownership (80%)
- ❑ Low mobility and trading volume over the stock
- ❑ High transaction costs
- ❑ Significant impact of fiscal measures in the housing market
- ❑ The construction industry in Greece is fragmented (particularly in the residential market)
- ❑ Difficulties in monitoring the real transaction prices
- ❑ Non-homogeneous product (residential and commercial property)



# Residential Property Prices and Growth Rate



✓ Cumulated adjustment of -37.9% in real terms and -31.1% in nominal terms since the current financial crisis (2008 Q3 - 2013 Q2)

Source: BoG, data collected from credit institutions



# Indices of apartments prices by age and geographical area

(Annual average percentage changes)

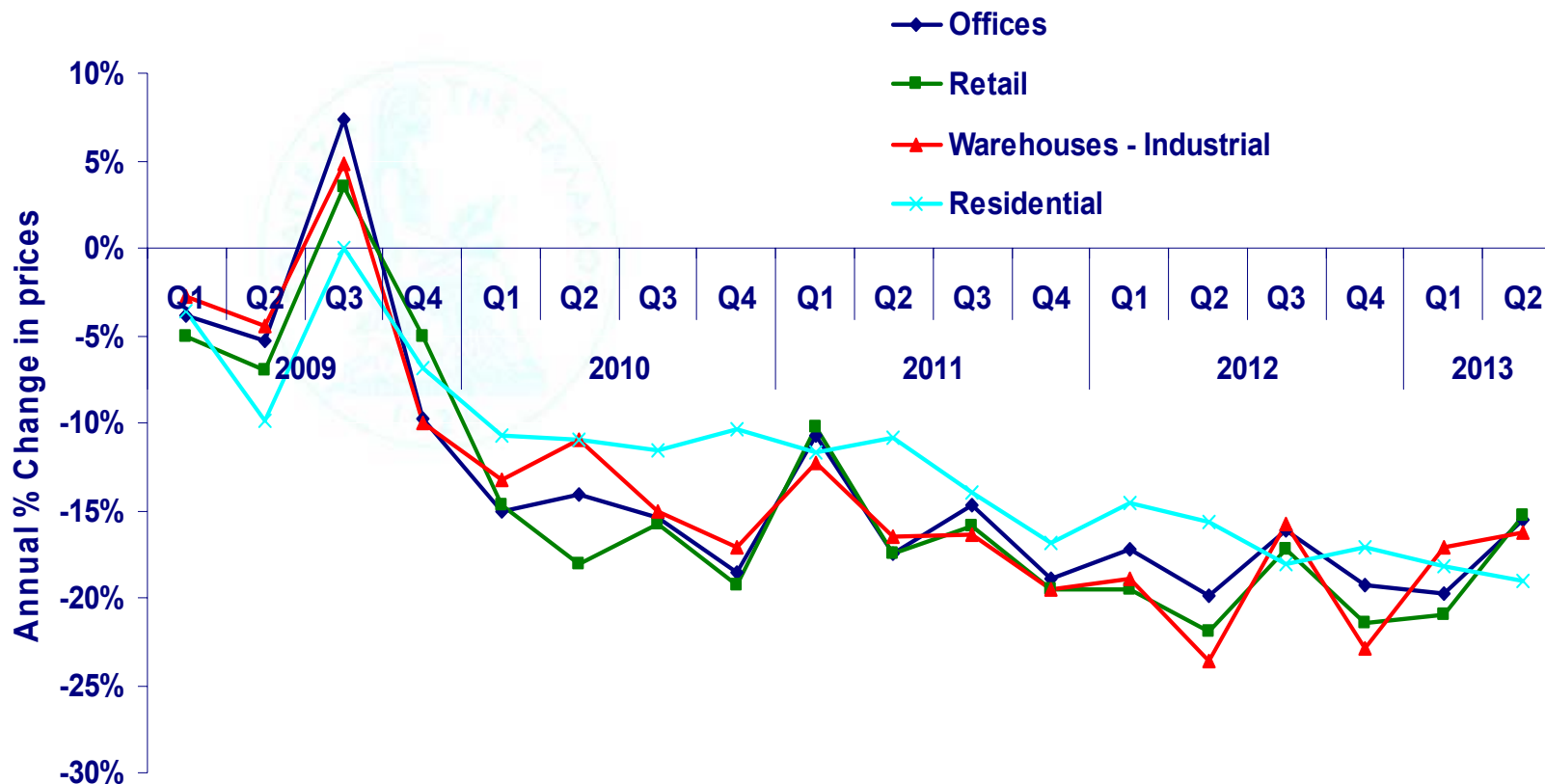
Indices of apartments prices by age and geographical area	Annual average percentage changes							
	2008	2009	2010	2011	2012	2013-Q1	2013-Q2	2008 Q3 up to 2013 Q2
<b>All apartments (Greece)</b>	1.7	-3.7	-4.7	-5.5	-11.7	-11.3	-11.6	-31.1
a1. New (up to 5 years old)	2.3	-2.0	-4.2	-5.0	-12.1	-10.3	-11.3	-30.0
a2. Old (5 years old and above)	1.3	-4.8	-5.0	-5.8	-11.4	-12.0	-11.8	-31.8
b1. Athens	0.9	-4.6	-3.2	-6.4	-11.8	-12.6	-12.7	-31.9
b2. Thessaloniki	1.5	-6.0	-7.4	-6.8	-13.6	-7.2	-10.5	-34.7
b3. Other cities	1.8	-2.7	-5.3	-4.1	-10.7	-11.4	-11.5	-29.3
b4. Other areas	3.3	-1.9	-5.8	-4.1	-11.7	-10.2	-10.0	-29.6
c1. Urban areas	1.5	-4.3	-4.4	-5.5	-11.7	-11.2	-11.7	-31.4
c2. Other urban areas (excl. Athens) <sup>1</sup>	2.6	-2.9	-6.7	-7.5	-12.2	-12.9	...	-32.1

- ✓ Gradual decline in price resilience during the current crisis
- ✓ Stronger decline in the two major urban centers, Athens and Thessaloniki
- ✓ An even greater price reductions based on real estate agents



# Real Estate Agencies Survey: 2009 – 2013 Q2 results

## Annual percentage changes of residential and commercial property prices



**2008-2012: Decline in residential property prices on average (y-o-y) by 38.7% and in commercial properties by approx. 45% (Offices:-43.4%, Retail:-46.0% and Warehouses – Industrial:-44.4%).**

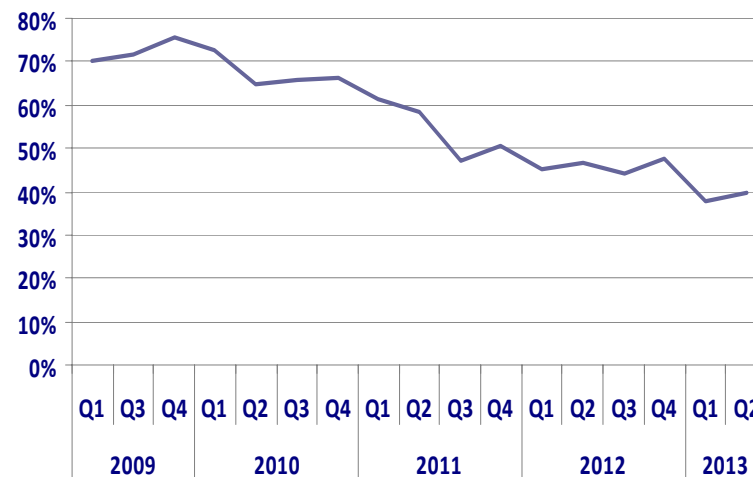


# Real Estate Agencies Survey: 2009 – 2013 Q2 results

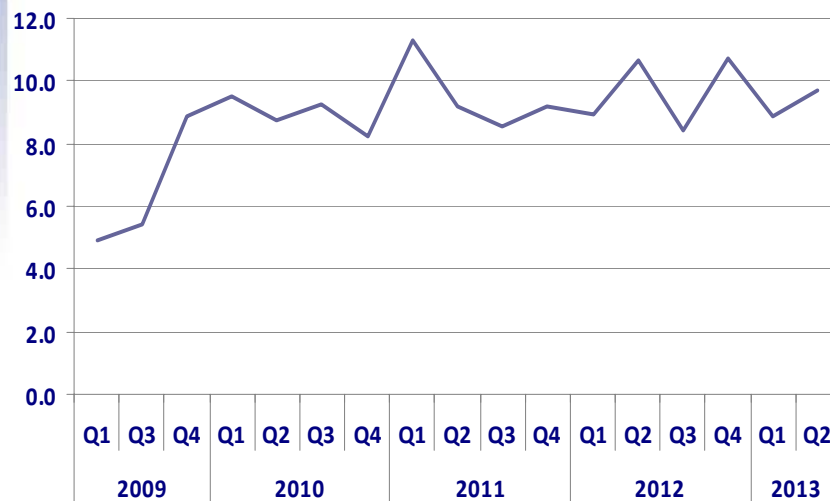
Share of transactions using bank loans



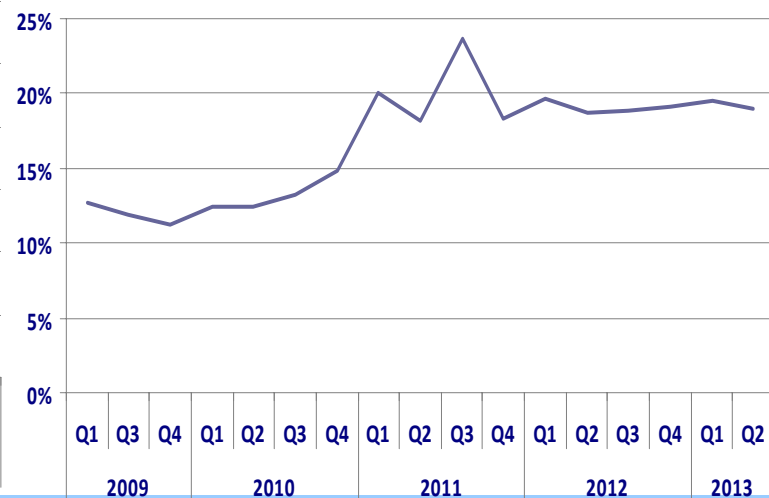
Share of cost covered by the bank loan  
(only in the cases of transactions using bank loans)



Average waiting time for apartment sale (in months)

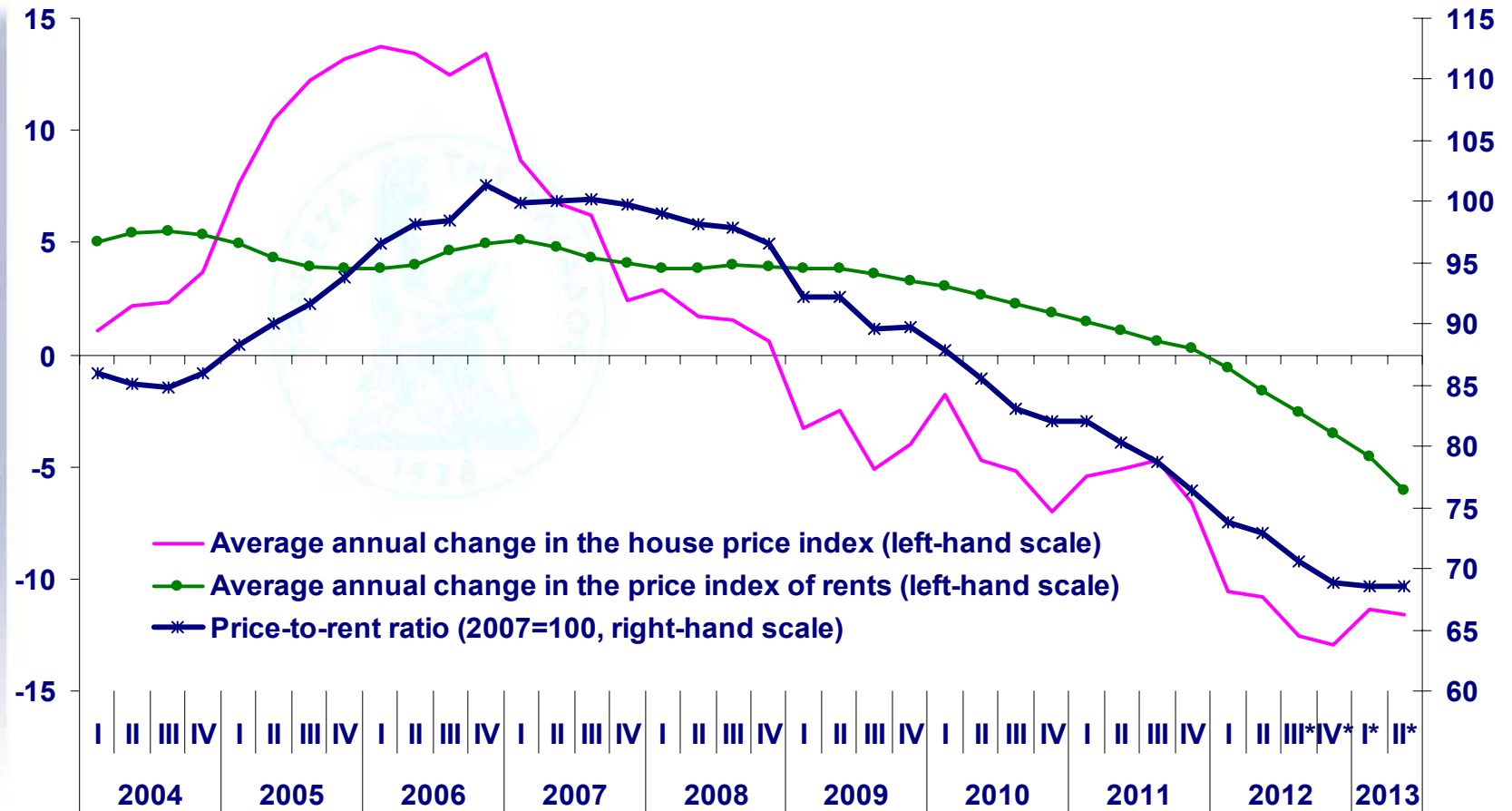


Discount rate of final price compared to initial asking price





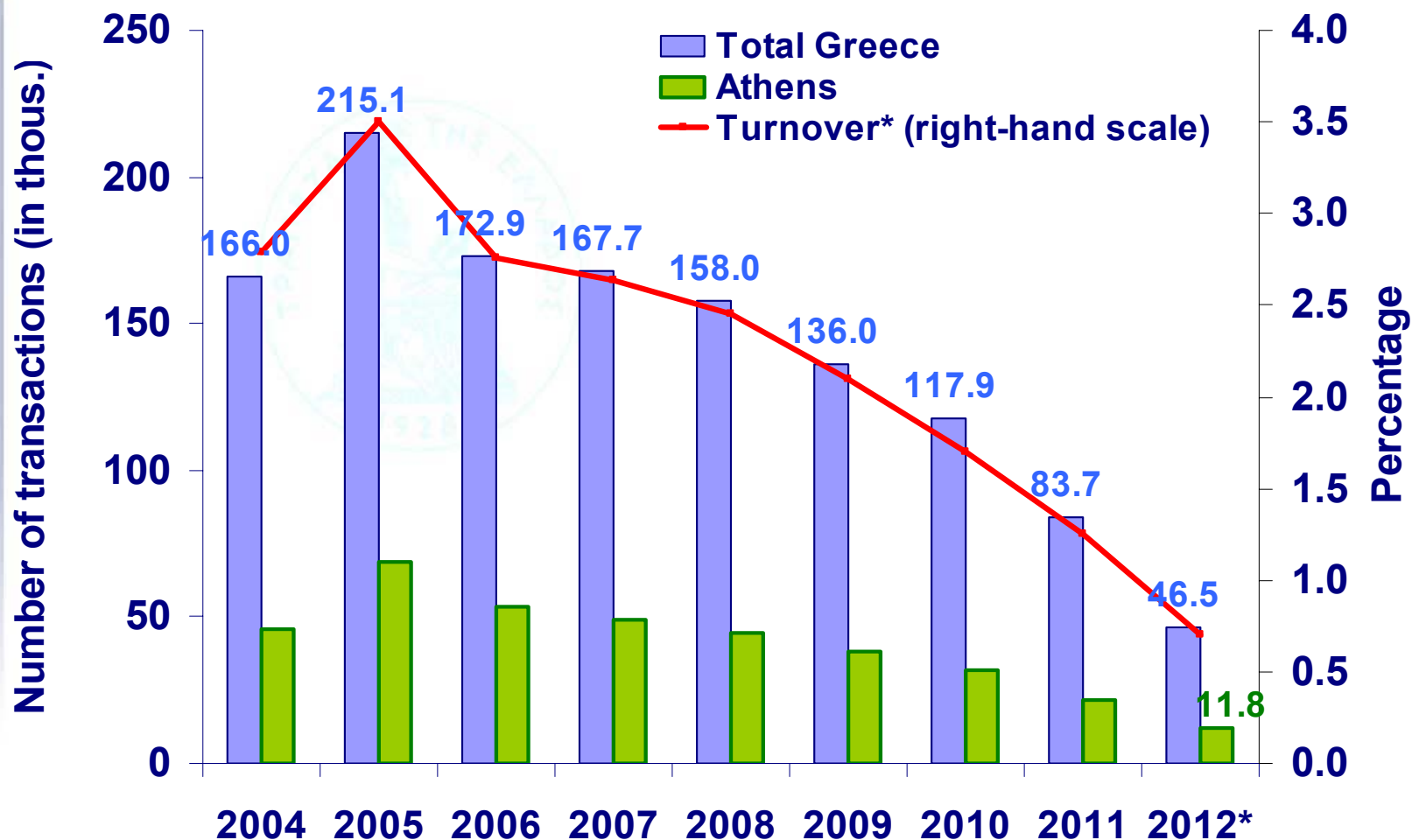
# House price-to-rent ratio



- ✓ In some extent a correction of overvaluation has already taken place
- ✓ House price-to-rent ratio: -32.3% lower from its peak (2006-Q4)



# Number of transactions in the real estate market (in thous.)



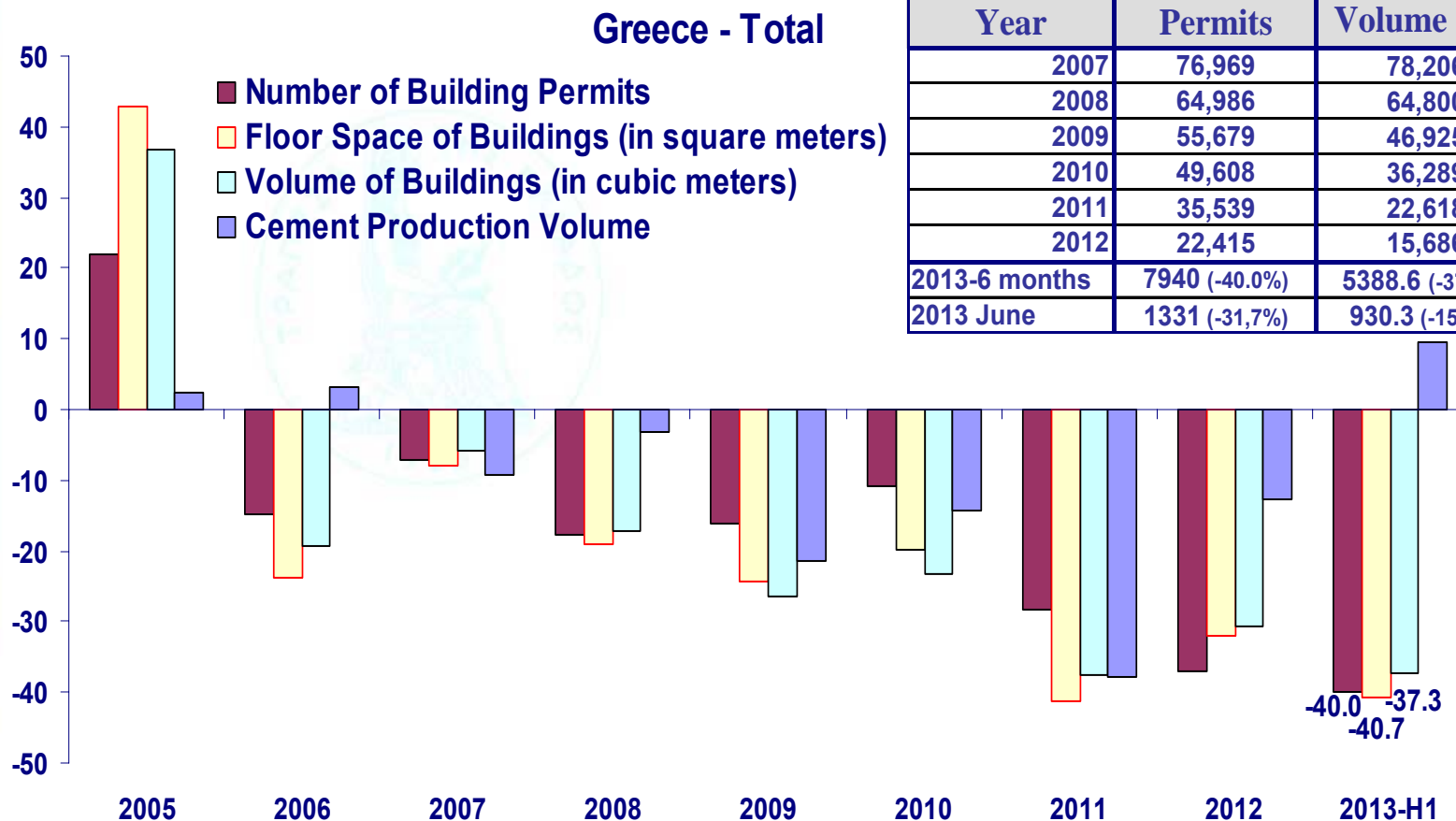
\*Turnover: Ratio of transactions to stock of housing units (%)



# Private construction activity

(Annual average percentage changes)

Country total		
Year	Permits	Volume (m <sup>3</sup> )
2007	76,969	78,206
2008	64,986	64,800
2009	55,679	46,925
2010	49,608	36,289
2011	35,539	22,618
2012	22,415	15,686
2013-6 months	7940 (-40.0%)	5388.6 (-37.3%)
2013 June	1331 (-31,7%)	930.3 (-15,2%)

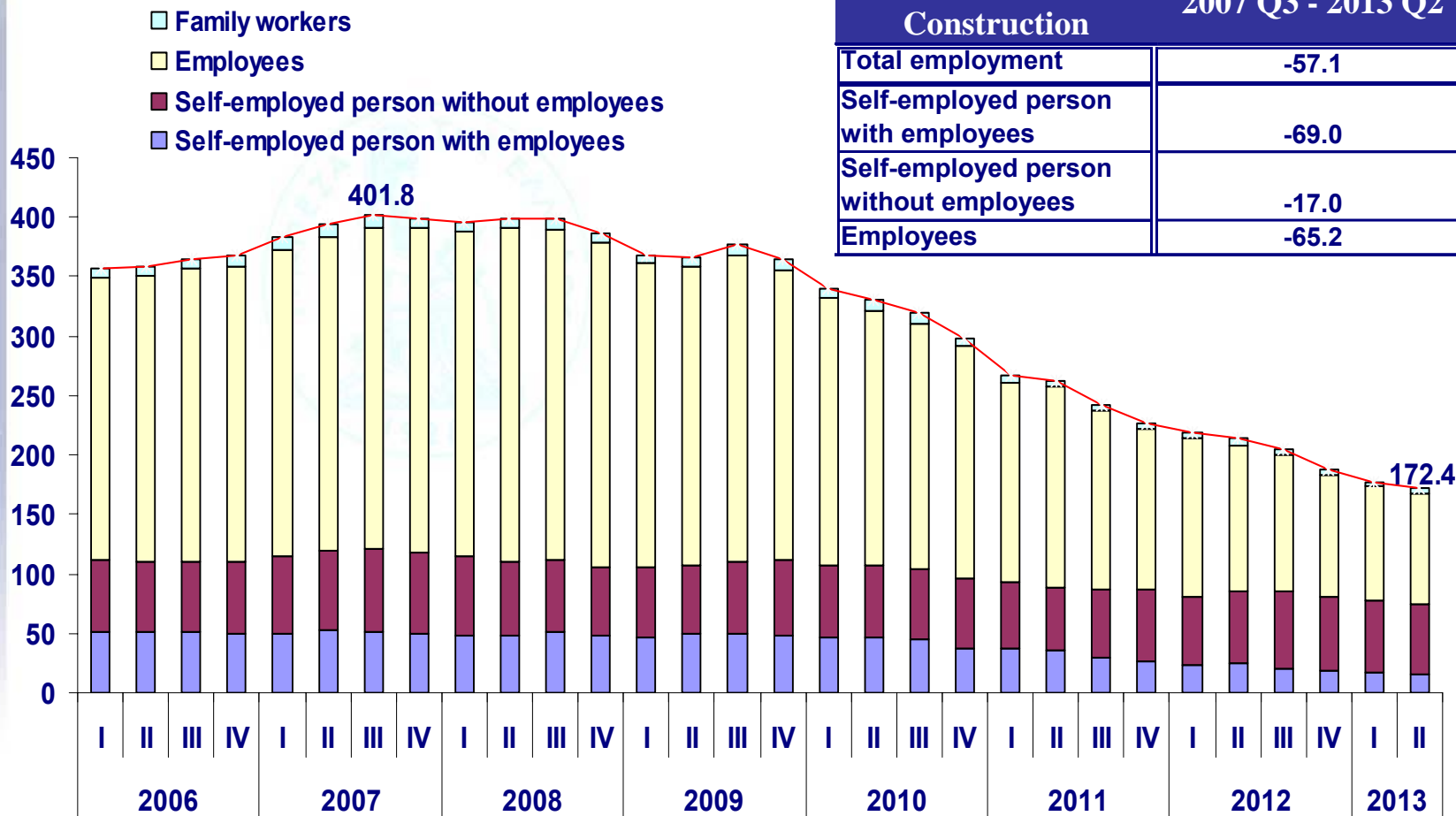


- ✓ Sharp decline in construction activity during the current crisis
- ✓ An even greater reduction in the Athens area



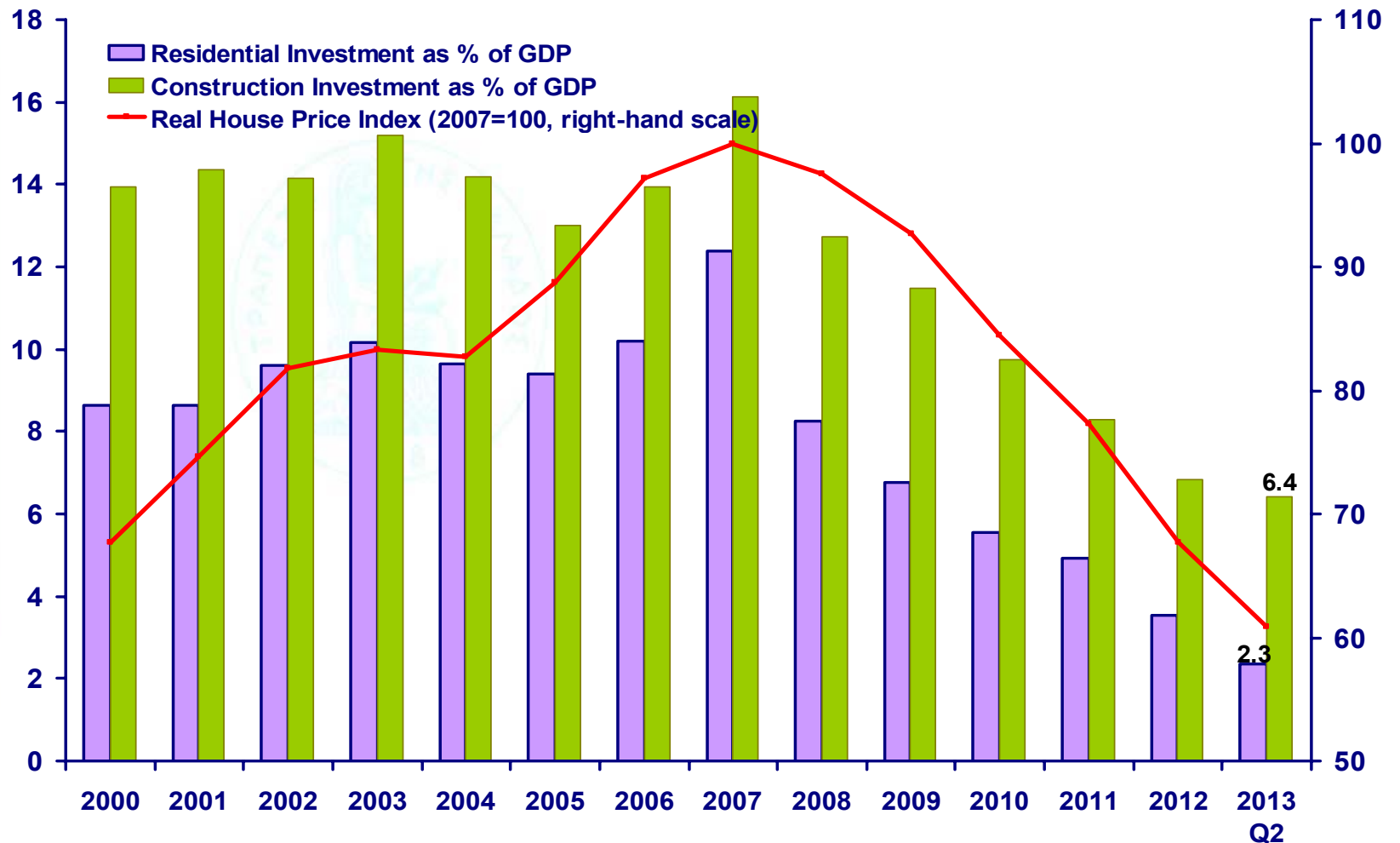
# Employment in construction

(thousand people)



✓ Total employment in construction decreases dramatically

# Total construction and residential investment (at constant prices) as % of GDP and real house prices

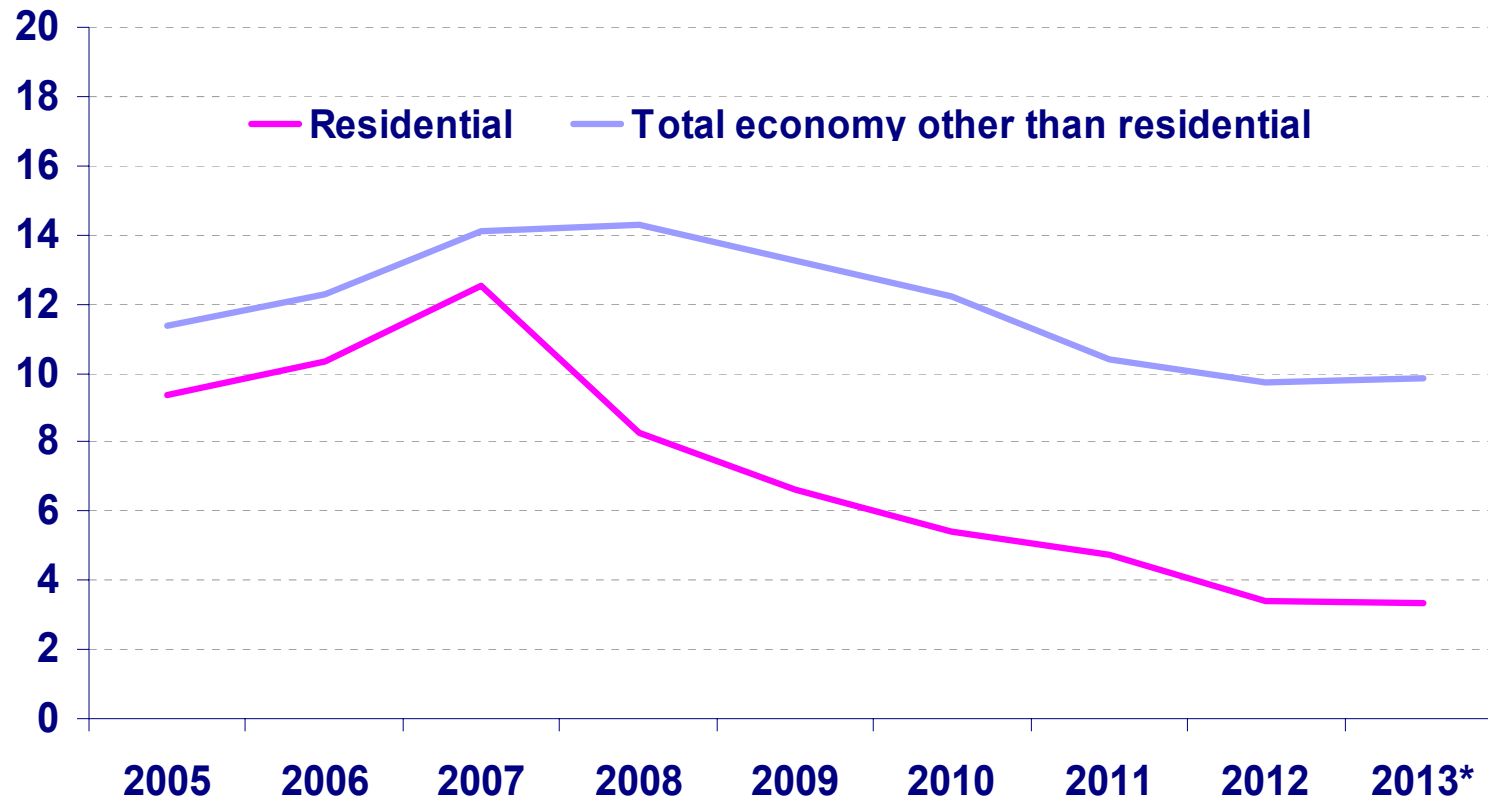


✓ Strong decline in residential investment (2007: 12.4% of GDP, 2013 Q2: 2.3%)



# Residential investment

## GFCF at current prices as percentage of GDP



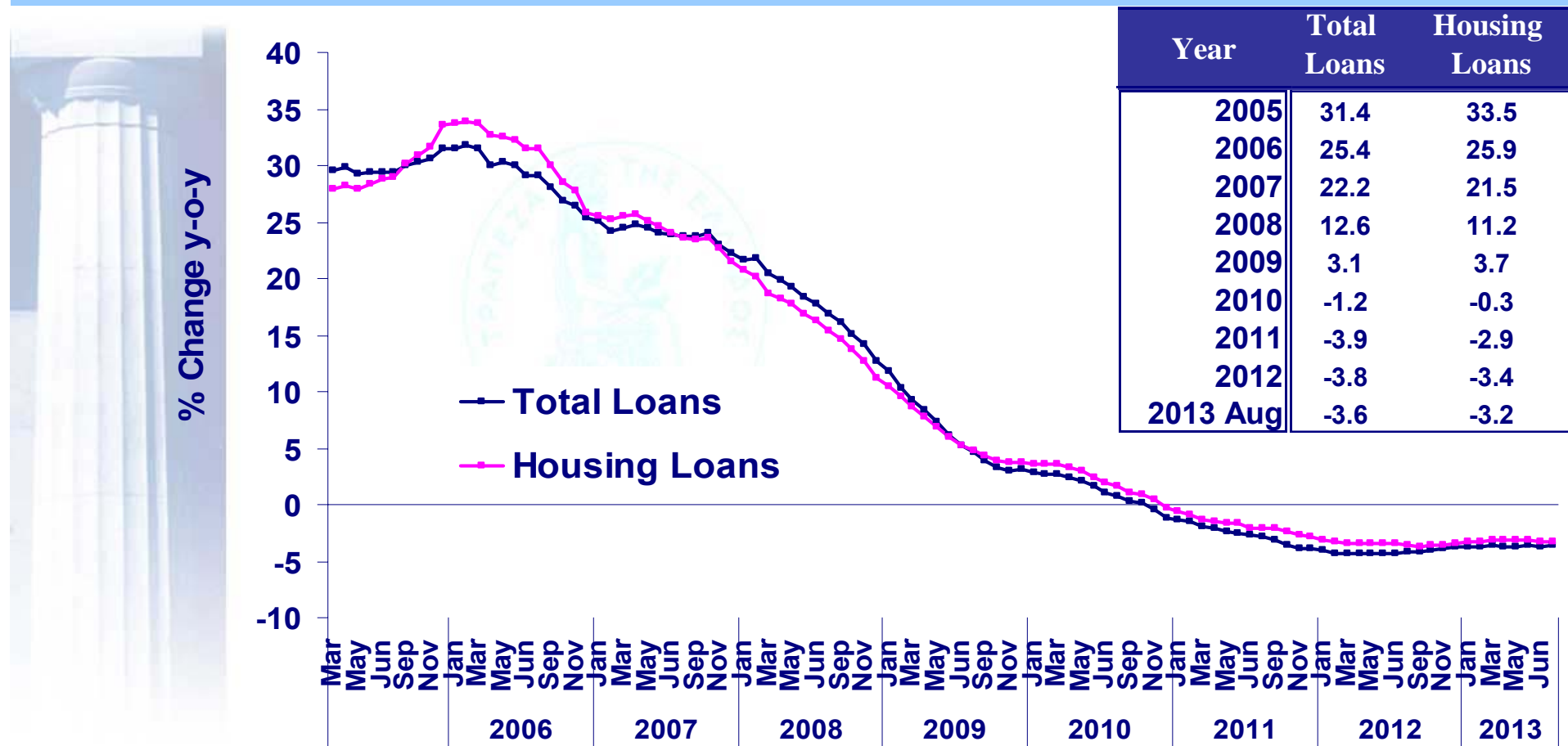
✓ Stronger decline in residential investment compared to investment in total economy (excl. residential)



# Financing of the real estate market and financial stress



# Domestic MFIs credit to households



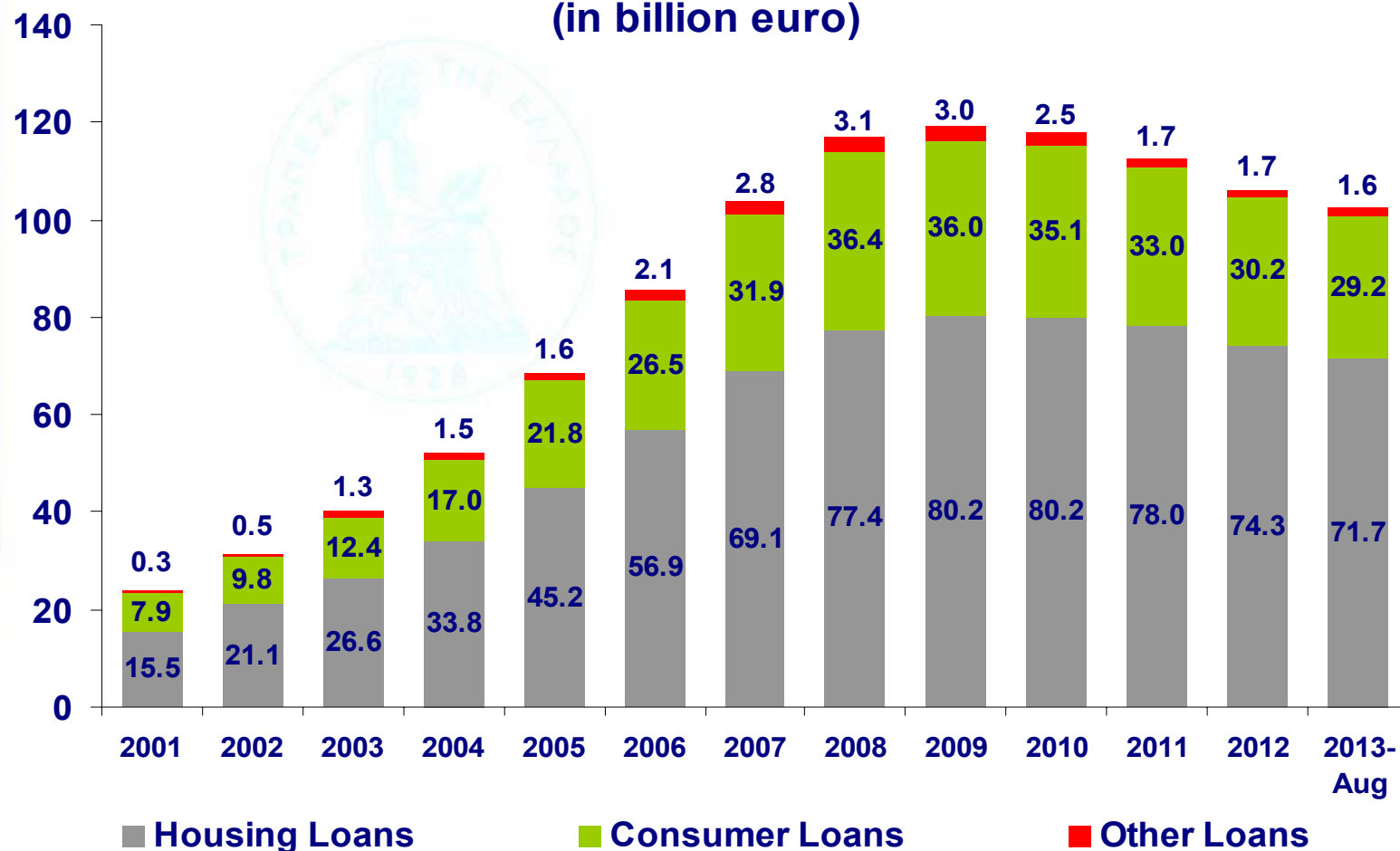
- ✓ Continuous deceleration of credit expansion to households
- ✓ Reluctant house buyers and cautious banks to extend new mortgages



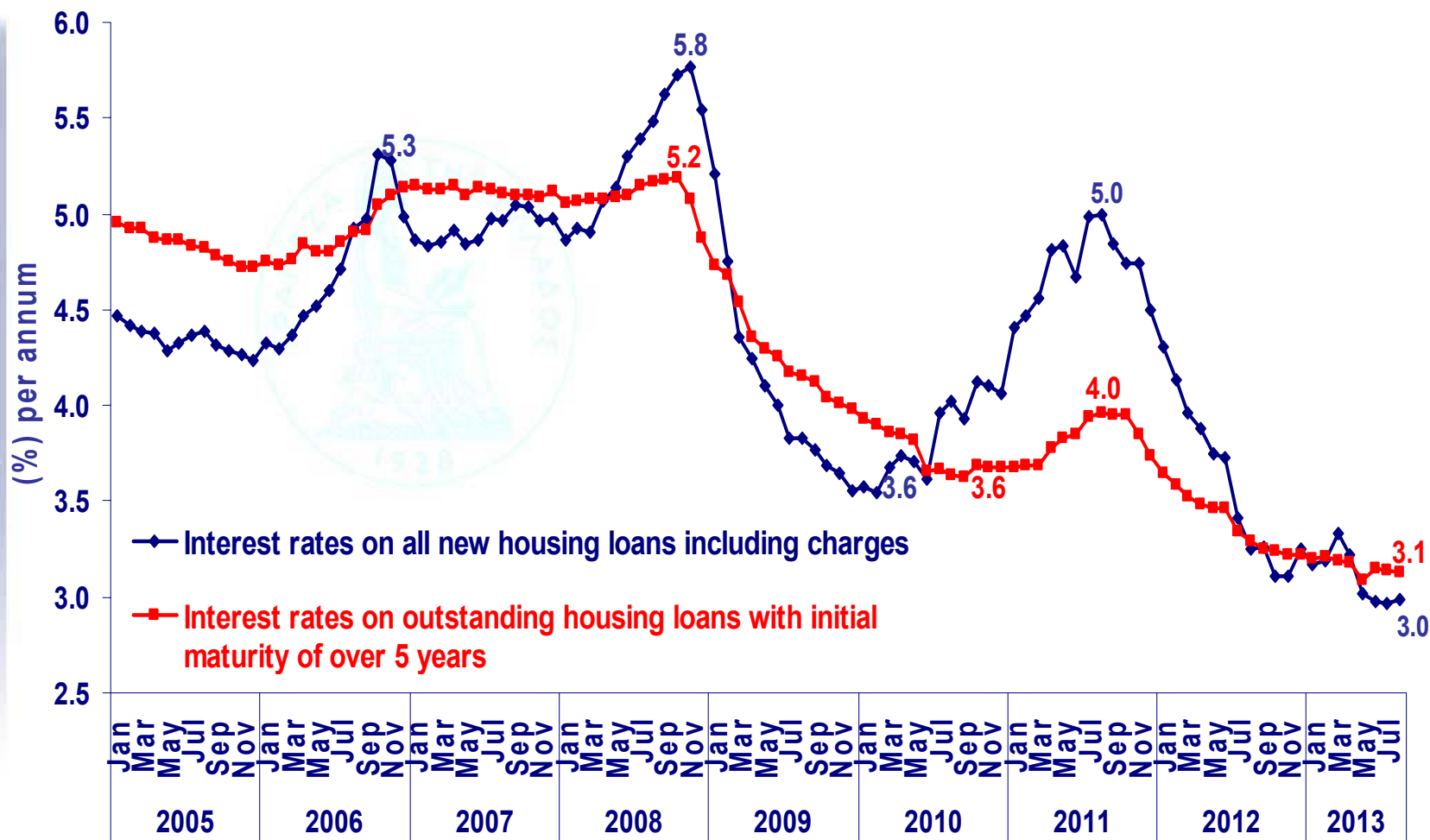


# Credit to Individuals and PNPI: Over Time

## Credit to Individuals and Private non-Profit Institutions (in billion euro)



# Housing loans interest rates



✓ Continuous decline in mortgage rates since mid-2011 (debt restructuring).





# **Determinants of residential property values in Greek cities**



	Variable name	Variable description
Dependent variable	<b>In_value</b>	Ln of property value ( <b>Dependent variable</b> )
Property technical characteristics	<b>TM TOTAL SPACE AREA</b>	Total space area in square meters excluding outliers
	<b>TM_SQ</b>	Property area square
	<b>AGE</b>	Age at the time of valuation
	<b>AGE_SQ</b>	Age square at the time of valuation
	<b>FLOOR</b>	Floor level. Values from -2 to 8.
	<b>AUXIL</b>	Area of auxiliary spaces in square meters
	<i>Dummy variables</i>	
	<b>mezonetta</b>	Property type: mezonettes
	<b>d_store</b>	Existing store rooms
	<b>d_park</b>	Existing parking spaces
	<b>quality</b>	Excellent construction quality
	<b>renovated</b>	Recent refurbishment



	Variable name	Variable description
<b>Location</b>	<b>Infra</b>	Infrastructure quality (values: 1=poor to 5=excellent)
	<b>BuiltEnv</b>	Built environment quality (values: 1=poor to 5=excellent)
	<b>SD_median</b>	Building factor within the municipality
	<b>Density</b>	Population density
	<b>NaturalEnv</b>	Natural environment quality (values: 1=poor to 5=excellent)
	<b>Uses</b>	Compatibilty of uses (values: 1=poor to 5=excellent)
	<i>Dummy variables</i>	
	<b>d_region</b>	Geographical areas (40 sub-markets)
	<b>d_level1</b>	Urban areas
	<b>d_level2</b>	Semi-urban areas
	<b>d_level3</b>	Rural areas
	<b>view</b>	Excellent view
	<b>depreciated</b>	Depreciated location
	<b>university</b>	Existence of University
	<b>access</b>	Accessibility
	<b>seaside_new</b>	Sea front
	<b>mountain_tourist</b>	Mountain touristic location
	<b>Hospital</b>	Existence of hospital
<b>Airport</b>	Existence of airport	



	Variable name	Variable description
Macro-economic variables	Population_nomos	Prefecture population
	GDP_2010_nomos	Gross Domestic Product (prefectures)
Time variables	<i>Dummy variables</i>	
	d_Y	Years 2006 to 2013
	d_Q	Quarters D_Q1, D_Q2, D_Q3, D_Q4 within the year
Credit institutions	d_BANK	Dummy variables for credit institutions (44 variables)



## Descriptive statistics of the variables used in the hedonic models (1/2)

Variable name	# cases	Mean	Min	Max	St.Dev
In_value	338,354	11.86	8	15	0.60
TM TOTAL SPACE AREA	338,354	97.73	20	440	48.46
AGE	285,480	15.49	0	163	15.72
FLOOR	333,161	1.80	-2	8	1.67
AUXIL	338,354	3.22	0	216	11.77
d store	338,354	0.21	0	1	0.41
d_park	338,354	0.10	0	1	0.30
quality	338,354	0.05	0	1	0.21
renovated	338,354	0.02	0	1	0.14
depreciated	338,354	0.00	0	1	0.06
access	330,546	0.80	0	1	0.40
seaside_new	330,546	0.77	0	1	0.42
mountain_tourist	330,546	0.04	0	1	0.19
Hospital	330,546	0.27	0	1	0.44
Airport	330,546	0.17	0	1	0.38
GDP_2010_nomos	332,821	20,749	10,213	30,860	5,348.99



## Descriptive statistics of the variables used in the hedonic models (2/2)

Variable name	# cases	Mean	Min	Max	St.Dev
d_REG	338,354		0	1	
d_level1	338,354	0.82	0	1	0.39
d_level2	338,354	0.12	0	1	0.32
d_level3	338,354	0.05	0	1	0.21
view	338,354	0.02	0	1	0.13
d_Y	338,354		0	1	
d_Q	338,354		0	1	
d_BANK	338,354		0	1	
Infra	24,627	3.84	2	5	0.80
BuiltEnv	24,627	3.50	3	5	0.65
SD_median	24,627	1.00	0	2	0.34
Density	24,627	7.29	0	15	3.89
NaturalEnv	24,627	2.86	2	5	0.86
Uses	24,627	3.20	1	5	0.87





## Descriptive statistics of main variables used in the hedonic models for the 25 big cities of Greece

Cities	TM TOTAL SPACE AREA	AGE	mezonetta	FLOOR	d_store	d_park
Athens	86.2	15.8	0.05	1.67	0.21	0.13
Thessaloniki	81.4	23.9	0.04	2.17	0.10	0.03
Patra	95.0	13.5	0.05	1.26	0.12	0.04
Larissa	106.0	10.5	0.05	1.62	0.18	0.10
Heraklion	101.5	12.8	0.06	0.99	0.18	0.06
Volos	97.2	14.1	0.07	1.36	0.14	0.06
Ioannina	100.0	11.3	0.11	1.03	0.17	0.06
Trikala	110.4	14.2	0.04	1.29	0.11	0.06
Chalkida	102.8	10.6	0.07	1.36	0.17	0.07
Serres	101.4	14.7	0.04	1.74	0.14	0.05
Alexandroupoli	92.3	11.6	0.06	1.46	0.24	0.04
Xanthi	98.0	10.4	0.03	1.60	0.20	0.03
Katerini	109.0	15.0	0.05	1.17	0.13	0.05
Kalamata	94.0	13.3	0.05	1.42	0.14	0.05
Kavala	98.3	15.7	0.08	1.42	0.12	0.03
Chania	110.0	11.4	0.09	0.90	0.16	0.06
Lamia	96.4	13.8	0.04	1.18	0.17	0.05
Komotini	92.1	12.9	0.03	1.72	0.18	0.03
Rodos	100.3	14.2	0.09	0.62	0.12	0.04
Agrinio	104.5	14.9	0.03	1.78	0.15	0.06
Drama	110.3	14.7	0.05	1.35	0.20	0.04
Veria	102.8	15.2	0.03	1.41	0.15	0.09
Kozani	98.9	12.5	0.03	1.47	0.16	0.06
Karditsa	108.1	13.1	0.02	1.49	0.11	0.06
Rethimno	99.1	10.9	0.05	0.81	0.18	0.06
Total	90.5	15.2	0.05	1.57	0.19	0.10



## Hedonic model summary results: beta-coefficients

Explanatory variables	Greece	Athens	Athens North	Thessaloniki
(Constant)	10.390	10.916	10.687	10.519
TM TOTAL SPACE	0.016	0.017	0.016	0.020
TM_SQ	-0.000	-0.000	-0.000	-0.000
AGE	-0.016	-0.018	-0.018	-0.014
AGE_SQ	0.000	0.000	0.000	0.000
mezonetta	0.045	-0.012	-0.026	-0.128
FLOOR	0.035	0.035	0.028	0.044
AUXIL	-0.002	-0.002	-0.002	-0.004
quality	0.104	0.093	0.061	0.171
view	0.049	0.042	0.012	0.112
depreciated	-0.136	-0.149	-0.116	-0.178
d_store	0.103	0.090	0.074	0.080
d_park	0.057	0.060	0.052	0.068
access	0.043			
Airport	0.002			
d_level1	0.042			
d_level2	-0.057			
D_Y2013	-0.303	-0.338	-0.265	-0.388
seaside_new	0.094			
Density			-0.009	
GDP_2010_nomos1	0.016			
BuiltEnv			0.117	
Infra			0.022	
NaturalEnv			0.015	
SD_median			-0.083	
Uses			0.029	



**Question: Which are the factors affecting residential property values?**

## Property technical characteristics

- Total space area: +1.6%, declining
- Age: -1.6%, stable
- Property type: mezonetta +4.5%
- Floor level: +3.5%
- Construction quality: +10.4%
- View: +4.9%
- Storage area: +10.3%
- Parking spaces: +5.7%



## ✓ Location (Country and regional level)

- **Accessibility:** +4.3%
- **Depreciated area:** -13.6%
- **Population density:** urban areas +4.2%  
rural areas -5.7%
- **Other amenities:** limited effect (e.g. Airport +0.2%)
- **Regional submarket:** strong effect
- **Level of economic development:** +1.6%



## Location (city/town level) – Case study for Northern greater Athens Area

- Infrastructure: +2.2%
- Built environment: +11.7%
- Building Factor: -8.3%
- Population Density: -0.9%
- Natural environment: +1.5%
- Compatibility of uses: +2.9%



# Residential property price changes during the crisis (hedonic results)

**GREECE: -30.3%**

Cities	# cases	Median value (€)	Median Value (€/sq.m)	Price changes (hedonic est.) during the crisis	Estimated hedonic value (€)	Actual vs estimated value
Athens	151,208	165,000	1,865	-32.2%	157,938	4.5%
Thessaloniki	12,933	125,000	1,580	-38.8%	116,134	7.6%
Patra	8,260	115,879	1,400	-22.4%	104,977	10.4%
Larissa	5,345	128,103	1,319	-28.2%	117,315	9.2%
Heraklion	4,138	160,000	1,727	-21.9%	144,641	10.6%
Volos	4,447	120,000	1,364	-21.9%	123,556	-2.9%
Ioannina	4,624	146,000	1,568	-19.3%	131,008	11.4%
Trikala	2,119	122,000	1,201	-33.3%	110,724	10.2%
Chalkida	2,895	143,500	1,595	-35.4%	131,819	8.9%
Serres	1,978	100,000	1,094	-21.9%	93,554	6.9%
Alexandroupoli	2,730	122,000	1,400	-16.8%	115,924	5.2%
Xanthi	2,372	108,000	1,199	-15.1%	112,710	-4.2%
Katerini	3,214	118,365	1,192	-36.5%	116,047	2.0%
Kalamata	2,048	130,000	1,503	-31.3%	119,905	8.4%
Kavala	1,737	130,400	1,402	-34.4%	118,148	10.4%
Chania	3,323	165,000	1,688	-21.6%	160,710	2.7%
Lamia	2,781	122,380	1,358	-32.0%	116,460	5.1%
Komotini	1,925	105,000	1,272	-17.5%	97,434	7.8%
Rodos	4,210	160,000	1,697	-26.8%	143,916	11.2%
Agrinio	2,727	107,000	1,100	-20.0%	117,525	-9.0%
Drama	1,365	101,058	1,000	-24.0%	108,493	-6.9%
Veria	1,941	113,000	1,144	-18.9%	102,323	10.4%
Kozani	2,192	110,000	1,208	-21.3%	105,639	4.1%
Karditsa	1,905	105,000	1,051	-24.1%	117,153	-10.4%
Rethimno	2,069	160,000	1,818	-26.9%	144,589	10.7%





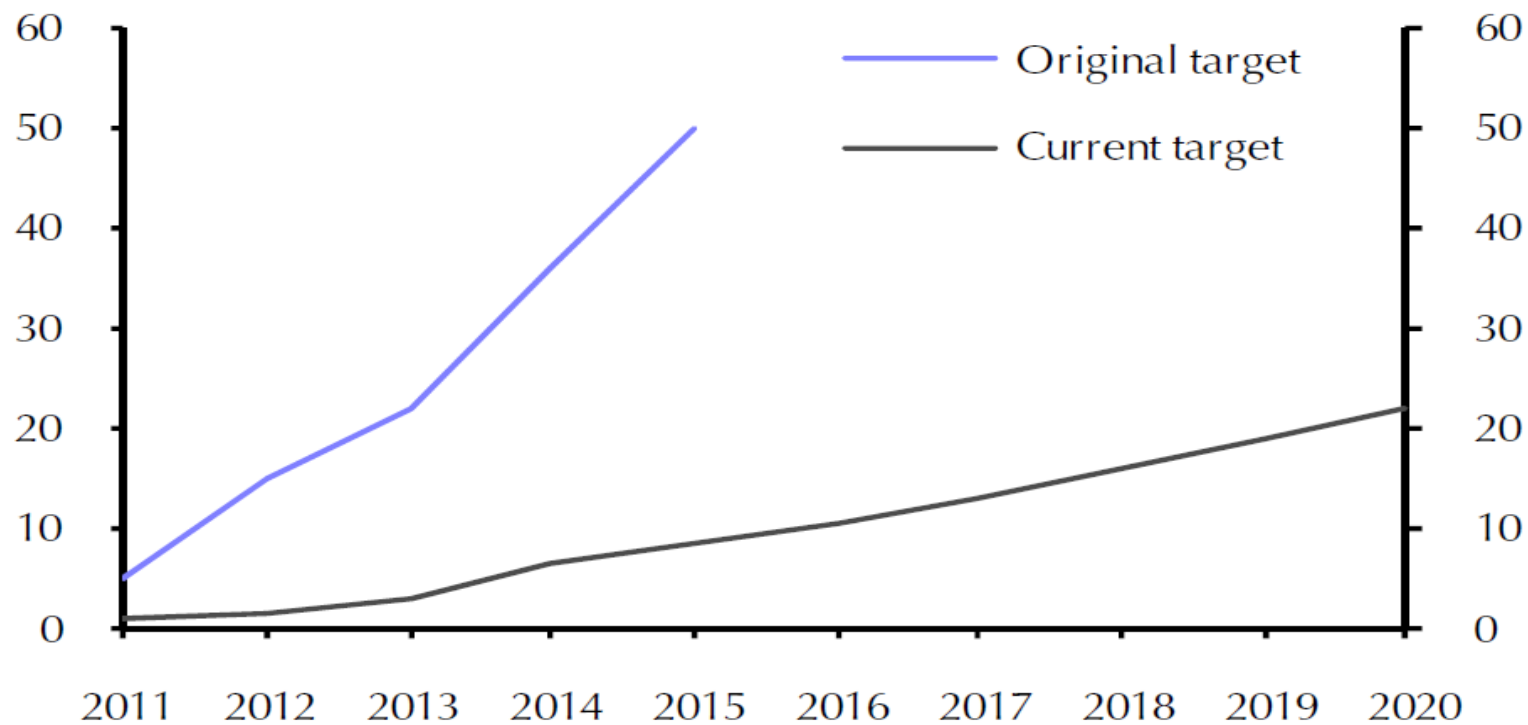
# Recent reforms, risks and pending issues



# Privatization program

- ✓ Very optimistic initial target
- ✓ Continuous reviews of targets
- ✓ Significant implementation obstacles throughout the process

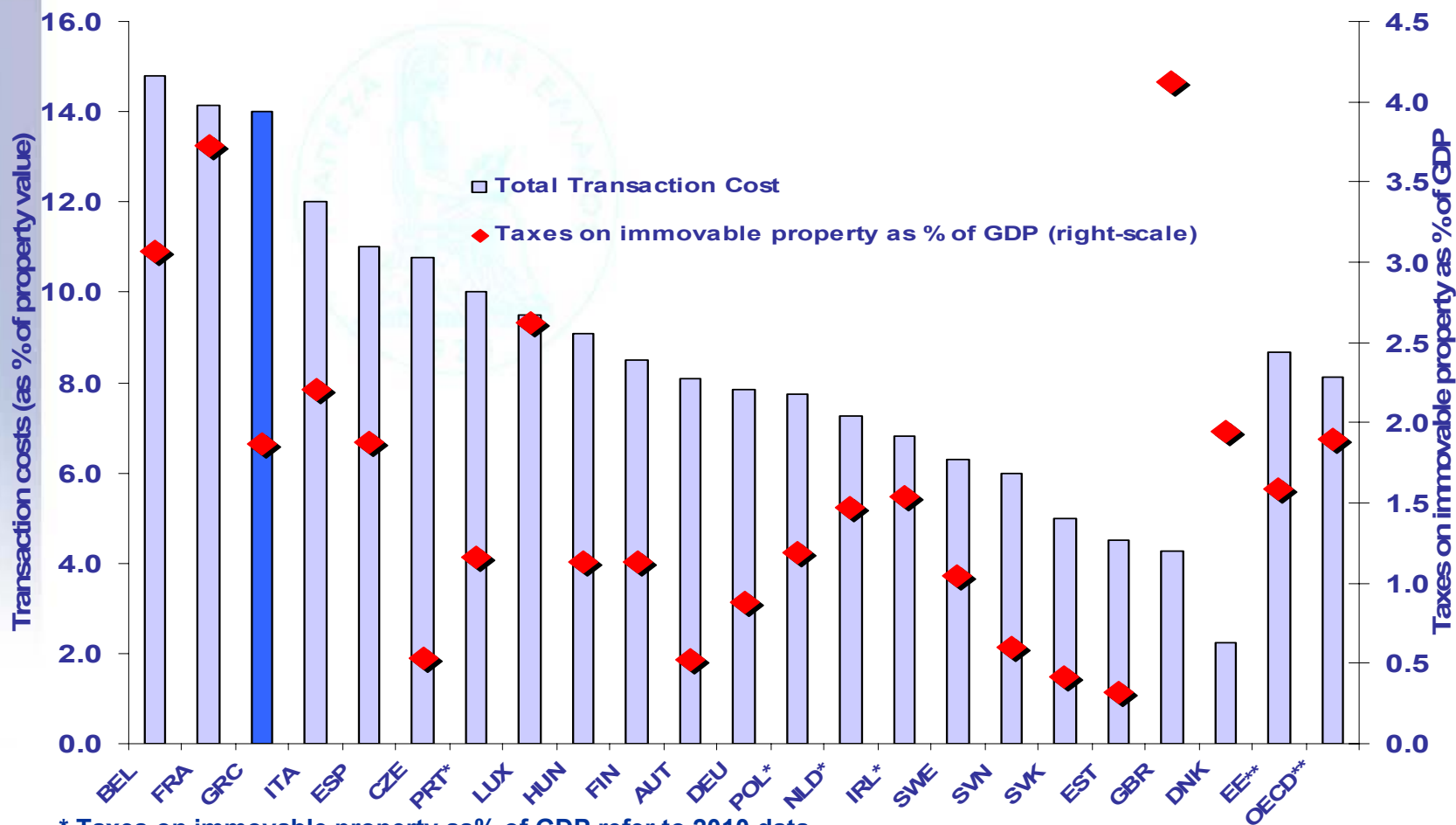
## Privatisation Targets (€bn)





# Property taxation

- ✓ Excessive tax burden and unstable tax-framework
- ✓ Postponing of the introduction of the single property tax



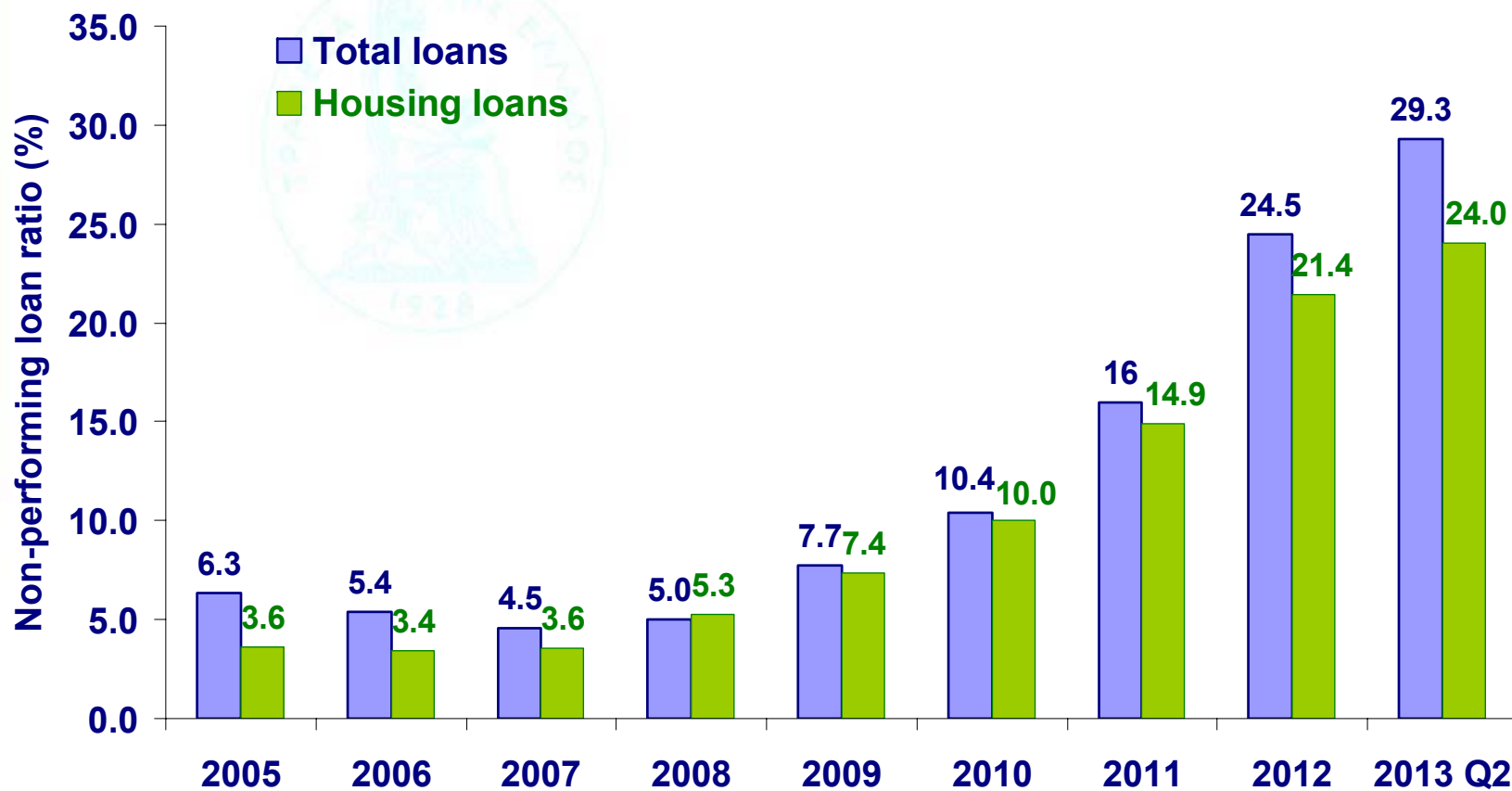
\* Taxes on immovable property as % of GDP refer to 2010 data

\*\* Un-weighted average for the EU countries and the OECD data available



# Non-Performing loans

- ✓ Re-capitalization of commercial banks
- ✓ Financial stress and high rate of non-performing loans



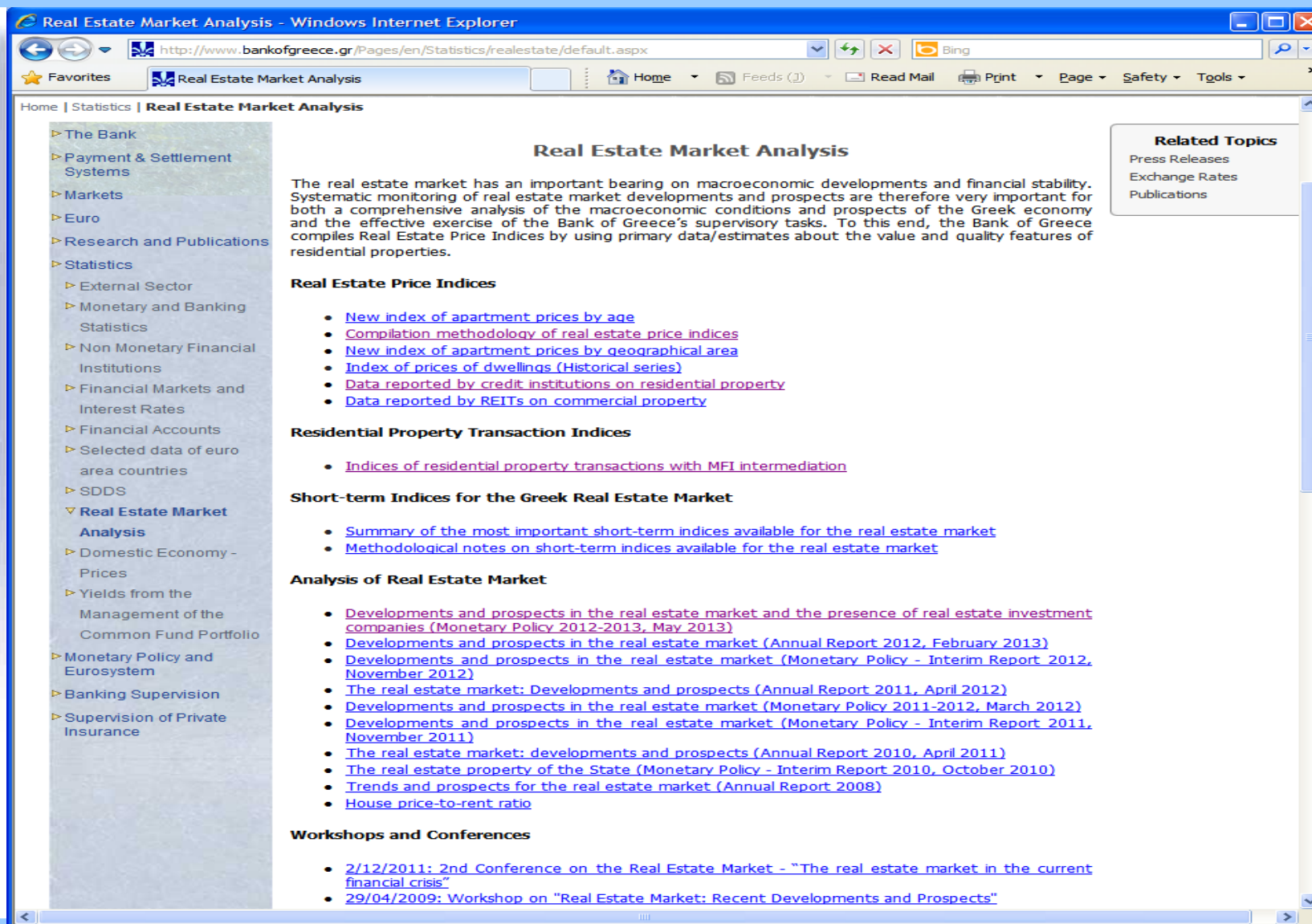
# Conclusions: Recent developments and prospects in the real estate market

- ✓ Negative short-term expectations remain (economic, employment, taxation, etc.) despite the recent improvement in business expectations
- ✓ Rent prices decline and renegotiations of lease contracts
- ✓ Cautiousness in developing new investment projects and general shift to more affordable commercial properties
- ✓ Expectations of further small adjustment in prices
- ✓ **Important pending issues:**
  - prohibition of auctions for primary residence
  - prohibition of commercial lease contracts
  - urban planning regulations? land uses? etc
  - uncertainty about the real estate tax regime (e.g. adjustment of objective values, etc)
- ✓ The recovery of the property market is linked directly to:
  - improving the expectations
  - reducing the prevailing uncertainty
  - reducing the tax burden and establishing a constant real estate taxation system
  - financing the market by the banking system
  - the overall prospects for dealing with the problems of the Greek economy (fiscal, structural, etc.)



# Visit our website in Real Estate Market Analysis Section

<http://www.bankofgreece.gr/Pages/en/Statistics/realestate/default.aspx>



The screenshot shows a Windows Internet Explorer browser window displaying the 'Real Estate Market Analysis' page on the Bank of Greece website. The browser's address bar shows the URL: <http://www.bankofgreece.gr/Pages/en/Statistics/realestate/default.aspx>. The page content includes a navigation menu on the left, a main heading 'Real Estate Market Analysis', an introductory paragraph, and several sections with bulleted links to various reports and indices.

**Real Estate Market Analysis**

The real estate market has an important bearing on macroeconomic developments and financial stability. Systematic monitoring of real estate market developments and prospects are therefore very important for both a comprehensive analysis of the macroeconomic conditions and prospects of the Greek economy and the effective exercise of the Bank of Greece's supervisory tasks. To this end, the Bank of Greece compiles Real Estate Price Indices by using primary data/estimates about the value and quality features of residential properties.

**Real Estate Price Indices**

- [New index of apartment prices by age](#)
- [Compilation methodology of real estate price indices](#)
- [New index of apartment prices by geographical area](#)
- [Index of prices of dwellings \(Historical series\)](#)
- [Data reported by credit institutions on residential property](#)
- [Data reported by REITs on commercial property](#)

**Residential Property Transaction Indices**

- [Indices of residential property transactions with MFI intermediation](#)

**Short-term Indices for the Greek Real Estate Market**

- [Summary of the most important short-term indices available for the real estate market](#)
- [Methodological notes on short-term indices available for the real estate market](#)

**Analysis of Real Estate Market**

- [Developments and prospects in the real estate market and the presence of real estate investment companies \(Monetary Policy 2012-2013, May 2013\)](#)
- [Developments and prospects in the real estate market \(Annual Report 2012, February 2013\)](#)
- [Developments and prospects in the real estate market \(Monetary Policy - Interim Report 2012, November 2012\)](#)
- [The real estate market: Developments and prospects \(Annual Report 2011, April 2012\)](#)
- [Developments and prospects in the real estate market \(Monetary Policy 2011-2012, March 2012\)](#)
- [Developments and prospects in the real estate market \(Monetary Policy - Interim Report 2011, November 2011\)](#)
- [The real estate market: developments and prospects \(Annual Report 2010, April 2011\)](#)
- [The real estate property of the State \(Monetary Policy - Interim Report 2010, October 2010\)](#)
- [Trends and prospects for the real estate market \(Annual Report 2008\)](#)
- [House price-to-rent ratio](#)

**Workshops and Conferences**

- [2/12/2011: 2nd Conference on the Real Estate Market - "The real estate market in the current financial crisis"](#)
- [29/04/2009: Workshop on "Real Estate Market: Recent Developments and Prospects"](#)

**Related Topics**

- Press Releases
- Exchange Rates
- Publications

**Navigation Menu:**

- ▶ The Bank
- ▶ Payment & Settlement Systems
- ▶ Markets
- ▶ Euro
- ▶ Research and Publications
- ▶ Statistics
  - ▶ External Sector
  - ▶ Monetary and Banking Statistics
  - ▶ Non Monetary Financial Institutions
  - ▶ Financial Markets and Interest Rates
  - ▶ Financial Accounts
  - ▶ Selected data of euro area countries
  - ▶ SDDS
  - ▶ **Real Estate Market Analysis**
  - ▶ Domestic Economy - Prices
  - ▶ Yields from the Management of the Common Fund Portfolio
- ▶ Monetary Policy and Eurosystem
- ▶ Banking Supervision
- ▶ Supervision of Private Insurance



**Thank you!**

**For any further information please do not hesitate to contact us:**

**Economic Research Department  
Real Estate Market Analysis Section  
Tel: + 30 210 320 2376, 3837, 2372, 2436  
Fax: + 30 210 320 2660**

**Email: [sec.realestate@bankofgreece.gr](mailto:sec.realestate@bankofgreece.gr)**

**URL address:**

**<http://www.bankofgreece.gr/Pages/en/Statistics/realestate/default.aspx>**

