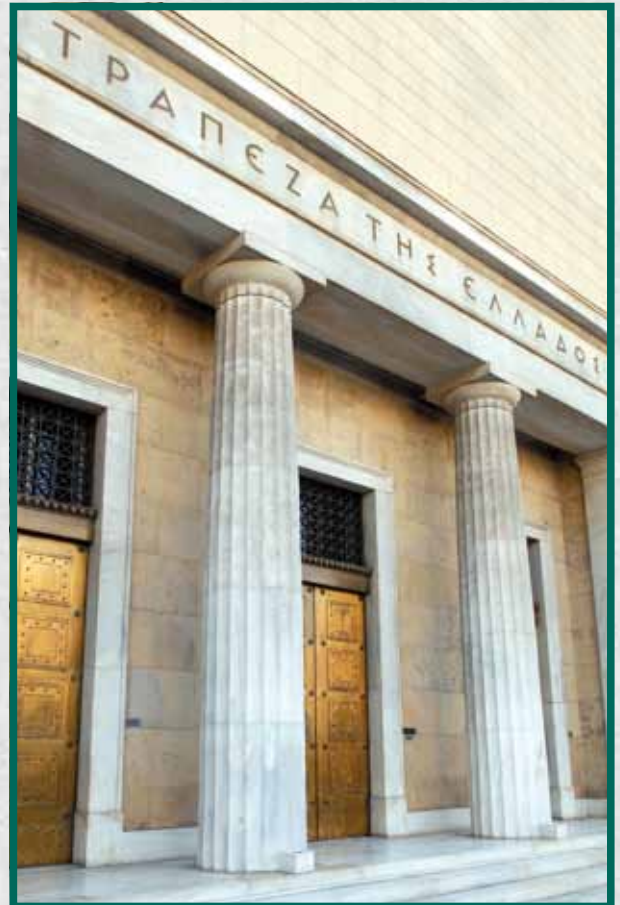


ECONOMIC BULLETIN

No 39



JULY
2014



BANK OF GREECE
EUROSYSTEM

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Printed in Athens, Greece
at the Bank of Greece Printing Works

ISSN 1105 - 9729

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THE FINANCING OF GREEK ENTERPRISES BEFORE AND DURING THE CRISIS*

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I INTRODUCTION

The crisis had a major impact on Greek enterprises, heavily affecting their access to external financing. The aim of this paper is to review the evolution of corporate financing, taking into account that the unhindered and adequate access of enterprises to external funds is a *sine qua non* condition for supporting the economy as a whole and achieving economic recovery.

The effects of the crisis on financing are largely attributable to developments in the financial sector. Banks' constrained lending capacity (owing to their limited access to the interbank market, their effort to repair their balance sheets and the increase in non-performing loans) led to a decline in bank credit to the private sector, especially to non-financial corporations, which resulted in a large number of businesses facing difficulties in financing their activities (Bank of Greece, 2014). This reduction in bank lending, combined with the difficulty in issuing bonds and shares due to the negative valuation of Greek enterprises on account of the debt crisis, resulted in an insufficiency of funding resources, which is one of the major problems facing Greek businesses, as well as one of the most crucial challenges for their viability. However, the reduction in financing observed amid the crisis is also attributable to the fact that businesses limited their production activity, postponing their immediate investment plans because of the uncertain economic climate, which resulted in a decrease in their borrowing requirements.

In the case of Greece, corporate financing is highly based on bank lending (Bank of Greece, 2014). According to a European Central Bank report on corporate financing (European Central Bank, 2013a), Greece, together with Italy and Cyprus, is one of the countries presenting the highest percentage of bank lending (in total financing) both before and during the crisis. Specifically, the average share of bank lending in total financing in Greece was 70.6% in 2003-2008, compared with 49.1% for the euro area as a whole, and this percentage remained particularly high during the crisis (2009-2012), at 72.9% (compared with 49.9% for the euro area). The largely bank-based structure of financing partly reflects the fact that the majority of Greek businesses have a small or medium size, which does not allow for easy access to alternative sources of debt financing. According to a European Commission report (European Commission, 2012), SMEs in Greece account for 70.2% of the value added in the Greek economy and 85.2% of employment in the private non-financial sector, while the corresponding shares in the European Union are much smaller (58.1% of total value added and 67.4% of total employment). The difficulty of small and medium-sized enterprises to access bank lending during the crisis, according both to ECB data and to a study by Bain & Company and the IIF (2013), has considerably

* The views expressed in this study are those of the authors and do not necessarily reflect those of the Bank of Greece. Any errors or omissions are the responsibility of the authors. The authors would like to thank Heather Gibson and Daphne Nicolitsas for their invaluable comments and remarks.

increased in other EU countries besides Greece, especially in those subject to economic adjustment programmes.

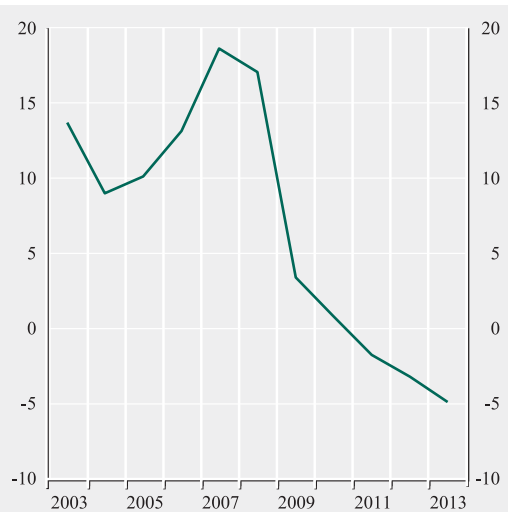
In light of the importance of bank lending for the financing of Greek enterprises, it becomes clear that the decline in the growth rate of bank credit observed over the past few years is expected to have a significant impact on firms' profitability and viability. In particular, according to Bank of Greece aggregated data (see Chart 1), the annual rate of change in bank lending to Greek enterprises fell sharply after 2008, while in 2011 it turned negative for the first time.

The aim of this study is to examine the evolution of the financing of Greek enterprises over the period 2003-2011, in particular to analyse the effect of the crisis on firms' access to debt financing. To this end, it uses data from the balance sheets and profit and loss accounts of more than 20,000 enterprises of all sizes across all (non-financial) sectors of the economy. Our analysis tries to answer the following questions: How has the crisis affected corporate financing? What are the characteristics of the firms that have been hit more strongly? How has financing evolved for firms of different sizes, i.e. have small, medium and large-sized enterprises been equally affected? Which are the sectors whose access to debt financing has been impaired the most as a result of the crisis? Our analysis demonstrates that the crisis has deeply affected corporate financing, with a marked decline observed since 2009, which was broadly based across sectors and across short- and long-term financing. This development followed a period of strong credit expansion, which peaked in 2008 and favoured mostly large enterprises. The latter proved also to be more resilient, as they managed to maintain access to some form of debt financing in the midst of the crisis.

This study is structured as follows: Section 2 presents the database, as well as the main variables used in the analysis. Section 3 provides an analysis of financing for the sample as a whole, for enterprises of different size, as well

Chart 1 Evolution of bank credit to enterprises (aggregated data)

(loans to non-financial corporations by domestic MFIs - % rate of change)



Source: Bank of Greece.

as a sectoral breakdown. The last section summarises the main conclusions of the study.

2 DESCRIPTION OF THE SAMPLE AND DEFINITION OF VARIABLES

The data of this study are taken from the ICAP database, which comprises balance sheet and profit and loss account data for almost 60,000 Greek firms. The main advantage of this database is that it contains data both for firms listed on the Athens Exchange and for non-listed firms that are predominantly small and medium-sized enterprises, i.e. the backbone of the Greek economy.

Our sample covers the period 2003-2011 and comprises non-financial corporations. This means that it excludes banks, insurance companies, leasing companies, investment holding companies and other firms that provide financial services, as well as corporations that are legal entities in public law and their activity is outside the scope of this research. After excluding firms for which full data series are not available for the period under review, firms

with zero sales, as well as outliers, we have ended up with a sample of 208,566 observations for the period 2003-2011. In general, it is observed that the total number of enterprises increases over time until 2007 and then it gradually decreases at an increasingly faster pace, before returning in 2011 to its 2004 levels. This change occurs at similar rates in all sectors and, as a result, the sectoral composition of the sample remains broadly stable before and after the crisis. However, it should be noted that the change in the size of the sample is due not only to business closures/openings, but also to changes in the coverage of the ICAP database.

Apart from the analysis of the whole sample, this study also aims at a sectoral analysis of corporate financing. To this end, enterprises have been classified by sector of activity on the basis of the two-digit NACE code.¹ According to this classification, our sample is divided into seven sectors or branches of economic activity: agriculture (383 enterprises); mining (128); construction (2,402); manufacturing (5,864); services (10,846); trade (9,481) and electricity, water and waste management (126). Services, trade and manufacturing, taken together, make up the bulk of the sample. In addition, in order to study the impact of firm size on financing, firms are grouped in three categories according to the book value of their assets, i.e. small, medium-sized and large firms, with each group equally (33.3%) represented in the sample.

One of the main features of our sample is that a high percentage of enterprises, namely 34% of all observations, have zero debt obligations for the period under review. As a result, our analysis is considerably influenced by the characteristics of firms with zero leverage and for this reason we divide our sample into two categories: firms with some sort of external debt financing and firms with no debt obligations.² Thus, we first discuss the characteristics of enterprises as a whole and then focus on enterprises with some sort of debt financing.

The analysis is based on the use of index numbers, as derived from firms' financial state-

Table 1 Number of enterprises in the sample

Year	Number of enterprises
2003	21,211
2004	23,323
2005	24,587
2006	24,897
2007	24,957
2008	24,712
2009	23,294
2010	22,264
2011	19,321

Source: Calculations based on data from the ICAP Database.

ments. More specifically, debt financing is defined as the sum of short-term and medium-to long-term debt obligations, while the debt ratio is defined as total debt obligations (both short-term and long-term) to total assets. To analyse the type of debt obligations of an enterprise, we use the ratio of long-term debt to total assets and the ratio of short-term debt to total assets, respectively. The database does not provide more detailed data about the type of debt obligations (corporate bonds, bank credit, etc). However, given that the majority of the sample consists in small and medium-sized enterprises without access to other forms of debt financing, we can assume that the bulk of debt obligations concerns bank credit (Hyz, 2011). The capital structure ratio or leverage ratio is defined as the debt-to-equity ratio of an enterprise, while the equity financing ratio is defined as the equity-to-total assets ratio and the internal financing ratio as the retained earnings-to-total assets ratio. Finally, the study also includes an analysis of profitability and productivity indices, which are defined as the

¹ NACE is the system of statistical classification of economic activities in the European Union (Eurostat, 2008).

² We assume that an enterprise belongs to the category of enterprises with some sort of external debt when it has debt obligations for at least half of its life span in the sample. For example, a company with a 10-year life span in the sample will be identified as having some sort of external debt if it has debt obligations in at least five years. Otherwise, we assume that it belongs to the category of enterprises with no debt.

ratio of pre-tax earnings or operating expenses to total assets, respectively.

3 THE STRUCTURE OF CORPORATE FINANCING BEFORE AND AFTER THE CRISIS

Chart 2 shows the evolution of certain key index numbers for the entire sample of Greek

enterprises in 2003-2011. We can observe that the size of the average enterprise in our sample on the basis of total assets increases over time, both before and during the crisis. For the pre-crisis period, this change is probably due to the fact that enterprises grew through investment in the context of an expanding economy, while over the crisis period the closing down of businesses, mostly small ones,

Chart 2 Evolution of key firm characteristics for the entire sample in the period 2003-2011



Source: Calculations based on data from the ICAP Database.
Note: The charts show averages for the entire sample over the period 2003-2011.

Table 2 Key characteristics of enterprises with debt and enterprises with no debt over the period 2003-2011

	Assets (in euro)	Equity/ assets	Pre-tax profits/ assets	Retained earnings/ assets	Operating expenses/ assets	Number of observations
Enterprises with debt	10,300,000	0.353	0.017	-0.088	0.944	142,067
	<i>(96,200,000)</i>	<i>(0.335)</i>	<i>(0.191)</i>	<i>(0.554)</i>	<i>(0.874)</i>	
Enterprises with no debt	2,331,933	0.509	0.021	-0.223	1.047	66,499
	<i>(11,400,000)</i>	<i>(0.599)</i>	<i>(0.409)</i>	<i>(1.129)</i>	<i>(1.170)</i>	

Note: The table shows the averages for the period 2003-2011. The standard deviation is indicated in italics and in parentheses.
Source: Calculations based on data from the ICAP Database.

which suffered the greatest losses due to the recession, as well as mergers and acquisitions, have most probably led to an increase in the average size of the enterprises in our sample. Regarding the performance of Greek enterprises, average profitability appears to be positive until 2010, albeit on a downward path after 2008, while in 2010 it turns negative. Retained earnings appear to be negative on average throughout the period under review, deteriorating further after 2009. In terms of efficiency, the ratio of operating expenses to total assets follows a downward course throughout the period under review. The decrease in operating expenses becomes stronger after 2008, as firms, in the absence of demand, try to increase their profitability by cutting costs. At the same time, the average leverage ratio (debt-to-equity) for the entire sample shows an upward trend until 2007 and continuous declines thereafter.

As mentioned in Section 2, almost two thirds of Greek firms in the sample have some sort of debt financing in the period 2003-2011. Of these, around 42% are large, 36% are medium-sized and 22% are small. By contrast, the category of enterprises with no debt consists for the most part (58%) of small-sized enterprises. Enterprises with debt are mainly active in trade (34%), services (31%) and manufacturing (26%). Table 2 compares the key characteristics of enterprises that have access to debt financing and of those that do not resort to borrowing. In general, the table shows con-

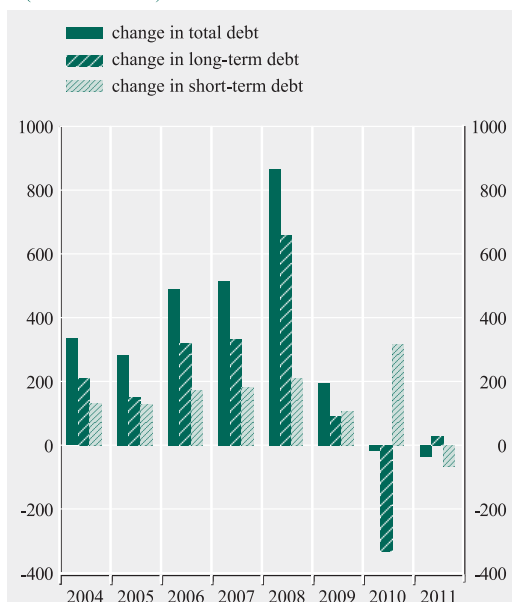
siderable differences between the two categories of enterprises. Specifically, enterprises with no debt appear to be less efficient, showing, on average, lower profitability and a higher operating expenses ratio, compared with enterprises that have access to debt financing. At the same time, enterprises that do not resort to borrowing are, on average, better capitalised on the basis of the equity-to-assets ratio. This could possibly be due to the fact that these enterprises rely on equity financing rather than debt financing.

The aim of the present study is to monitor changes in corporate financing after the crisis. For this reason, the analysis that follows focuses exclusively on firms with some sort of debt financing. Chart 3 shows the evolution of the total, short-term and long-term borrowing of firms. The strong credit expansion that the Greek economy experienced before the crisis is clearly visible in the chart. The positive change in total borrowing for the pre-crisis period is mainly driven by long-term borrowing, while short-term borrowing shows more moderate developments over time. The effect of the crisis on firms' debt financing becomes apparent from 2009 onwards, a period during which the positive change in firms' total borrowing continues but its size is considerably smaller compared with 2008 and mainly reflects the respective change in long-term debt. In general, we observe that Greek enterprises preserved their access to debt financing during the first years of the crisis.



Chart 3 Evolution of the change in firms' total, long-term and short-term debt

(in thousand euro)



Source: Calculations based on data from the ICAP Database.
Note: The change in total debt for a given year t is defined as the difference between total debt in year t and total debt in year $t-1$. Changes in short-term and in long-term debt are defined accordingly. The sample includes only firms with some sort of debt financing.

Chart 4 Evolution of firms' short-term and long-term debt



Source: Calculations based on data from the ICAP Database.
Note: The chart shows the evolution of the average short-term debt-to-assets ratio and the average long-term debt-to-assets ratio for firms with some sort of debt financing in the period 2003-2011.

However, the situation changes dramatically in 2010, when the change in total borrowing turns negative for the first time, and a slowdown is observed in firms' total borrowing. This stems exclusively from the sharp fall in long-term borrowing, while short-term borrowing, despite its considerable increase, does not offset the negative effect of the decrease in long-term borrowing. In 2011, the access of enterprises to debt financing becomes even more difficult, as the crisis starts to affect their short-term borrowing as well. That same year, the slight positive change in long-term borrowing is almost exclusively due to a corporate bond issue of €1 billion by OTE (Hellenic Telecommunications Organisation); excluding this company from the sample, the negative trend in total borrowing continues through 2011 as well.

Chart 3 shows that in 2010, in addition to a sharp decline in borrowing, the effects of the

crisis also manifest themselves as a substitution of long-term with short-term borrowing. This is likely a result of firms' effort to meet their financing needs through short-term borrowing, against the background of uncertainty about the future course of the economy and postponement of their investment plans. This is also confirmed by the findings of the European Central Bank's survey on access to finance of small and medium-sized enterprises (ECB, 2013b), suggesting that in recent years Greek enterprises take out a loan mainly to finance working capital rather than investment. However, this substitution of long-term with short-term borrowing is interrupted in 2011, when the crisis starts having an adverse impact on firms' short-term borrowing as well. In Chart 4, which shows the evolution of short-term and long-term debt as a ratio to total assets respectively, we can observe that the long-term debt ratio increases until 2009 and then decreases marginally, whereas the short-

Table 3 Key financial aggregates of enterprises with some sort of debt financing

	Assets (in euro)	Debt/ assets	Equity/ assets	Debt/ equity	Pre-tax profits/ assets	Retained earnings/ assets	Operating expenses/ assets	Number of observations
2003	7,791,478 <i>(83,100,000)</i>	0.238 <i>(0.203)</i>	0.372 <i>(0.297)</i>	1.267 <i>(2.120)</i>	0.037 <i>(0.176)</i>	-0.070 <i>(0.492)</i>	1.055 <i>(0.946)</i>	14,781
2004	8,100,494 <i>(78,700,000)</i>	0.255 <i>(0.208)</i>	0.364 <i>(0.313)</i>	1.358 <i>(2.248)</i>	0.033 <i>(0.199)</i>	-0.071 <i>(0.473)</i>	1.058 <i>(0.962)</i>	16,168
2005	8,427,370 <i>(80,700,000)</i>	0.269 <i>(0.212)</i>	0.344 <i>(0.356)</i>	1.517 <i>(2.451)</i>	0.018 <i>(0.243)</i>	-0.088 <i>(0.573)</i>	0.996 <i>(0.902)</i>	17,008
2006	9,252,654 <i>(85,200,000)</i>	0.292 <i>(0.215)</i>	0.336 <i>(0.308)</i>	1.686 <i>(2.610)</i>	0.024 <i>(0.193)</i>	-0.080 <i>(0.547)</i>	0.970 <i>(0.868)</i>	16,896
2007	10,500,000 <i>(96,600,000)</i>	0.305 <i>(0.221)</i>	0.334 <i>(0.344)</i>	1.785 <i>(2.715)</i>	0.031 <i>(0.144)</i>	-0.079 <i>(0.660)</i>	0.953 <i>(0.830)</i>	16,800
2008	12,000,000 <i>(106,000,000)</i>	0.303 <i>(0.226)</i>	0.344 <i>(0.325)</i>	1.691 <i>(2.617)</i>	0.022 <i>(0.146)</i>	-0.073 <i>(0.474)</i>	0.933 <i>(0.844)</i>	16,519
2009	12,200,000 <i>(108,000,000)</i>	0.313 <i>(0.224)</i>	0.358 <i>(0.339)</i>	1.627 <i>(2.550)</i>	0.008 <i>(0.210)</i>	-0.082 <i>(0.516)</i>	0.859 <i>(0.822)</i>	15,776
2010	12,400,000 <i>(109,000,000)</i>	0.293 <i>(0.230)</i>	0.360 <i>(0.339)</i>	1.451 <i>(2.534)</i>	-0.009 <i>(0.185)</i>	-0.114 <i>(0.490)</i>	0.830 <i>(0.821)</i>	15,108
2011	13,000,000 <i>(114,000,000)</i>	0.270 <i>(0.236)</i>	0.374 <i>(0.385)</i>	1.234 <i>(2.411)</i>	-0.020 <i>(0.197)</i>	-0.145 <i>(0.724)</i>	0.813 <i>(0.808)</i>	13,011
2003-2008	9,381,476 <i>(89,100,000)</i>	0.278 <i>(0.216)</i>	0.348 <i>(0.326)</i>	1.557 <i>(2.483)</i>	0.027 <i>(0.187)</i>	-0.077 <i>(0.542)</i>	0.993 <i>(0.893)</i>	98,172
2009-2011	12,500,000 <i>(110,000,000)</i>	0.293 <i>(0.231)</i>	0.364 <i>(0.353)</i>	1.450 <i>(2.509)</i>	-0.006 <i>(0.198)</i>	-0.112 <i>(0.578)</i>	0.835 <i>(0.818)</i>	43,895

Note: The table presents the average values per year for enterprises with some sort of debt financing, with the standard deviation in italics and in parentheses.

Source: Calculations based on data from the ICAP Database.

term debt ratio registers a negative trend already since 2006, which becomes even more marked during the crisis.

Table 3 shows the evolution of certain key financial indicators for the sample of enterprises with some sort of borrowing. Overall, a gradual worsening in the financial condition of enterprises is visible, as a result of the crisis. Specifically, the profitability of enterprises, as reflected in the ratio of pre-tax profits to total assets, has been on a downward trend since 2007, while in 2010 the average profitability turns negative for the first time. Firms' negative profitability as a result of the economic crisis has possibly affected their access to debt

financing. At the same time, we can see that throughout the period under review firms' retained earnings-to-assets ratio is negative on average, registering a considerable downward trend, which becomes much more pronounced after 2009. In the same period, firms try to cope with lower profitability by cutting their operating costs, which decrease over time, especially after 2008. It should be stressed though that those enterprises that managed to keep their profitability in positive territory during the crisis (see Table 4) and which represent about one third of the total sample, show a positive retained earnings-to-assets ratio both in the pre-crisis period and during the crisis. In addition, these enterprises, besides their higher

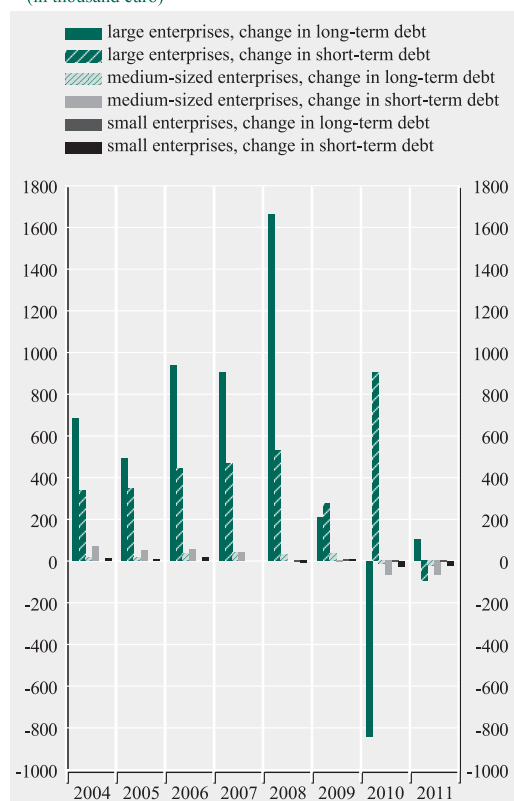
Table 4 Key characteristics of enterprises with positive/negative profitability during the crisis in 2009-2011

	Debt/ assets	Equity/ assets	Debt/ equity	Pre-tax profits/ assets	Retained earnings/ assets	Operating expenses/ assets
Enterprises with positive profitability	0.253 <i>(0.199)</i>	0.410 <i>(0.236)</i>	1.224 <i>(1.908)</i>	0.066 <i>(0.087)</i>	0.051 <i>(0.152)</i>	0.997 <i>(0.854)</i>
Enterprises with negative profitability	0.314 <i>(0.243)</i>	0.340 <i>(0.399)</i>	1.576 <i>(2.778)</i>	-0.044 <i>(0.227)</i>	-0.197 <i>(0.691)</i>	0.750 <i>(0.785)</i>

Note: The enterprises that had positive profits in the years 2009, 2010 and 2011 are defined as enterprises with positive profitability. The table presents the average values for the period 2009-2011, with the standard deviation in italics and in parentheses.
Source: Calculations based on data from the ICAP Database.

Chart 5 Evolution of the change in long-term and short-term debt

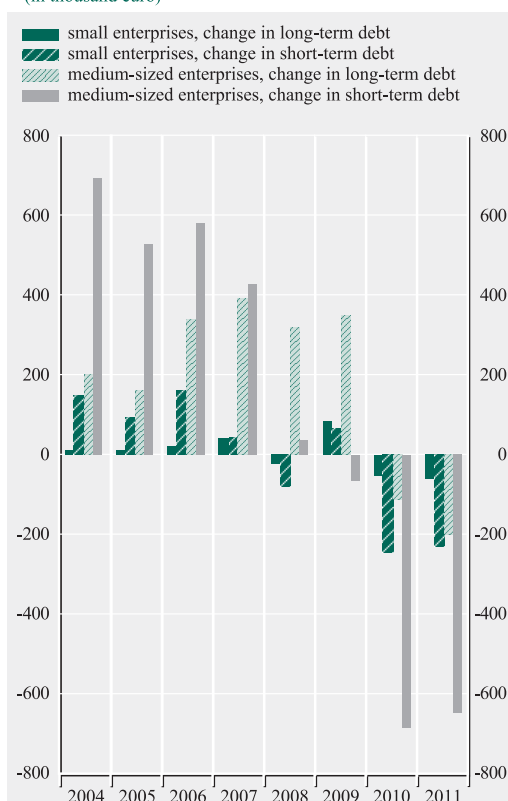
(in thousand euro)



Source: Calculations based on data from the ICAP Database.
Note: The change in debt for a given year t is defined as the difference between short-term or long-term debt in year t and short-term or long-term in year $t-1$. The sample includes only firms with some sort of debt financing.

Chart 6 Evolution of the change in the long-term and short-term debt of small and medium-sized enterprises

(in thousand euro)



Source: Calculations based on data from the ICAP Database.
Note: The change in debt for a given year t is defined as the difference between short-term or long-term debt in year t and short-term or long-term in year $t-1$. The sample includes only firms with some sort of debt financing.

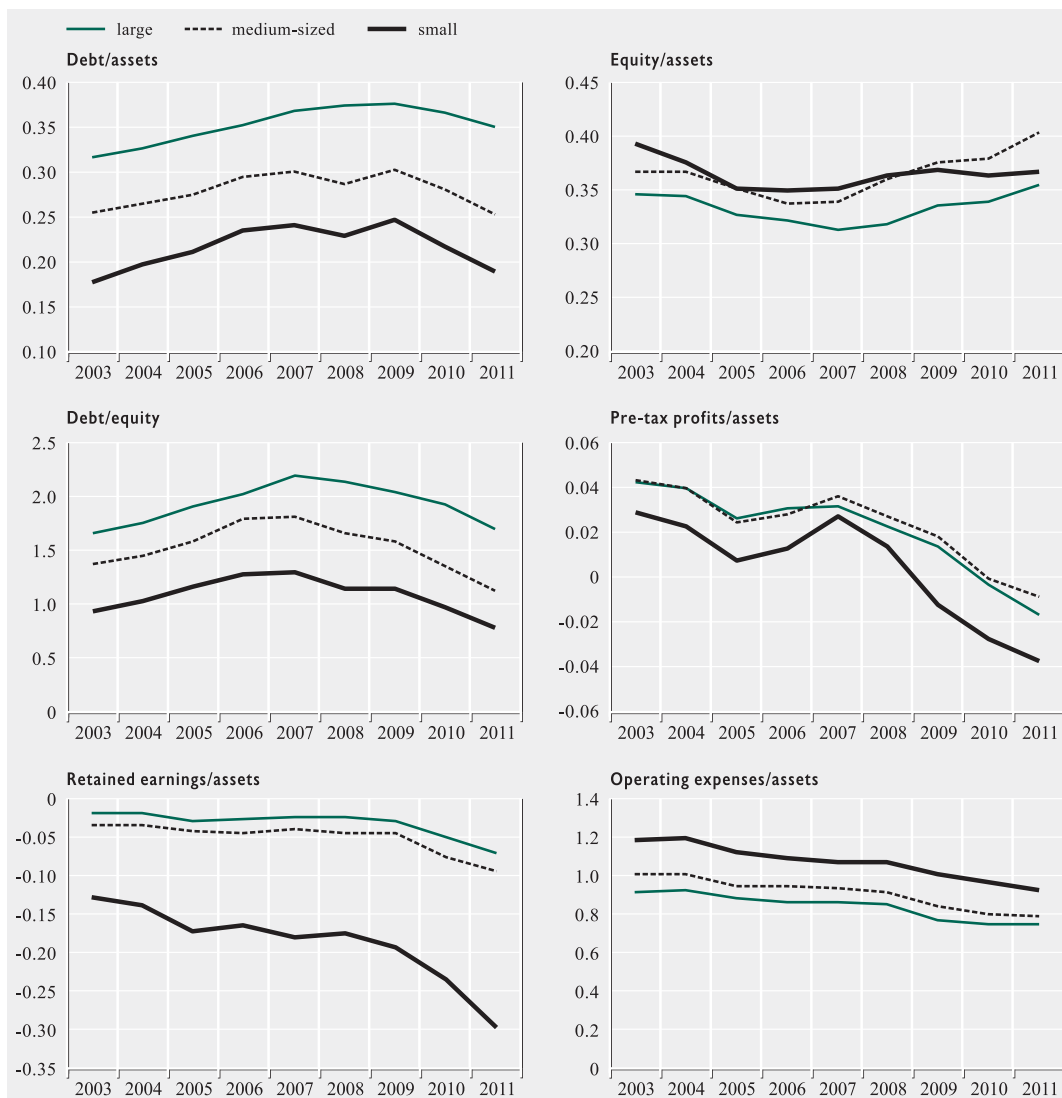
profitability, have a lower debt-to-assets ratio and are better capitalised compared with

enterprises that did not manage to maintain their profitability during the crisis.

As regards the financing of enterprises as a whole, the leverage ratio (debt-to-equity) shows a strong upward trend over the credit expansion period and until 2007, while afterwards this trend is reversed and the average leverage ratio reaches a trough in 2011. The significant drop in the average leverage ratio is attributable both to the decrease in total borrowing (as shown by the declining path of the

total loans-to-assets ratio which falls sharply after 2009) and to the increase in firms' equity financing, as shown by the upward trend of the capitalisation index from 2009 onwards. Generally we observe that amidst the crisis and due to the absence of debt financing, Greek enterprises turned to equity financing. Charts 5 and 6 show the evolution of corporate borrowing broken down by size of enterprise. We see that

Chart 7 Evolution of key characteristics of small, medium-sized and large enterprises in the period 2003-2011



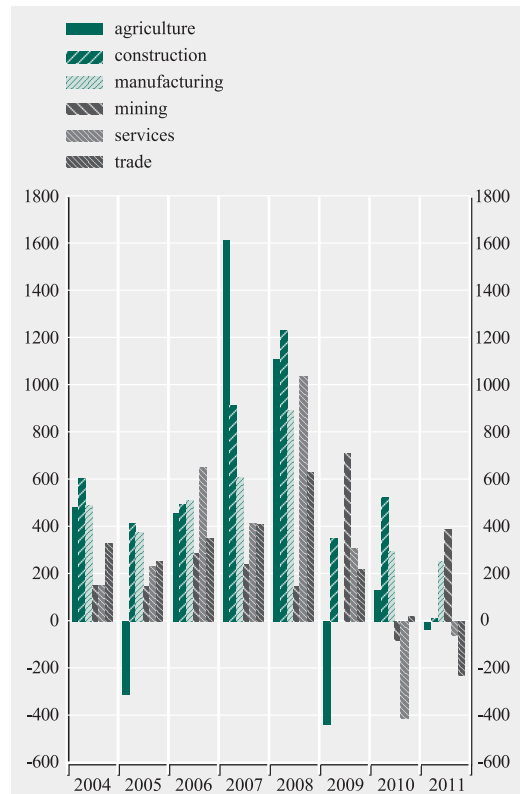
Source: Calculations based on data from the ICAP Database.

Note: The charts show the averages of the respective indices for small, medium-sized and large enterprises with some sort of debt financing in 2003-2011.

the pre-crisis credit expansion benefited mostly large enterprises, whose total debt registers the greatest growth. This is also supported by the considerably higher leverage ratio of large enterprises relative to small and medium-sized enterprises. In addition, most of SME's debt financing consists of short-term debt, as opposed to large enterprises which have, on average, a considerably higher ratio of long-term debt to total assets. As indicated by the charts, from 2009 onwards debt financing becomes visibly more difficult for all enterprises in the sample, and especially for small and medium-sized enterprises: both their long-term and short-term debt show negative changes after 2009. Moreover, according to a National Bank of Greece survey on SMEs (Mylonas and Tzakou-Lambropoulou 2013) for the first half of 2013, one third of all SMEs needed financing but were not able to obtain it (because either they did not apply for a loan or did apply and were rejected). By contrast, once their long-term borrowing starts declining due to the crisis, large enterprises manage to offset this decline by increasing their short-term borrowing. Therefore, unlike small and medium-sized enterprises that seem to be completely cut off from debt financing due to the crisis, large enterprises continue to have access to some sort of financing, thus covering at least their short-term financing needs and most likely pushing back their long-term plans. This is possibly due to large companies' higher profitability and lower operating expense ratio compared with the small enterprises in our sample, which probably makes them more eligible bank customers. Moreover, large enterprises have access to sources of financing other than bank credit, such as corporate bond or equity financing (see Chart 7). Additionally, Chart 7 shows that, during the crisis, medium-sized enterprises have been attempting to make up for their reduced access to debt financing by increasing their equity, whereas in the case of small enterprises, whose profitability was already negative since 2009 and has deteriorated considerably over the crisis, the equity-to-assets ratio remains practically unchanged after 2008.

Chart 8 Evolution of the change in firms' total debt by sector of activity

(in thousand euro)

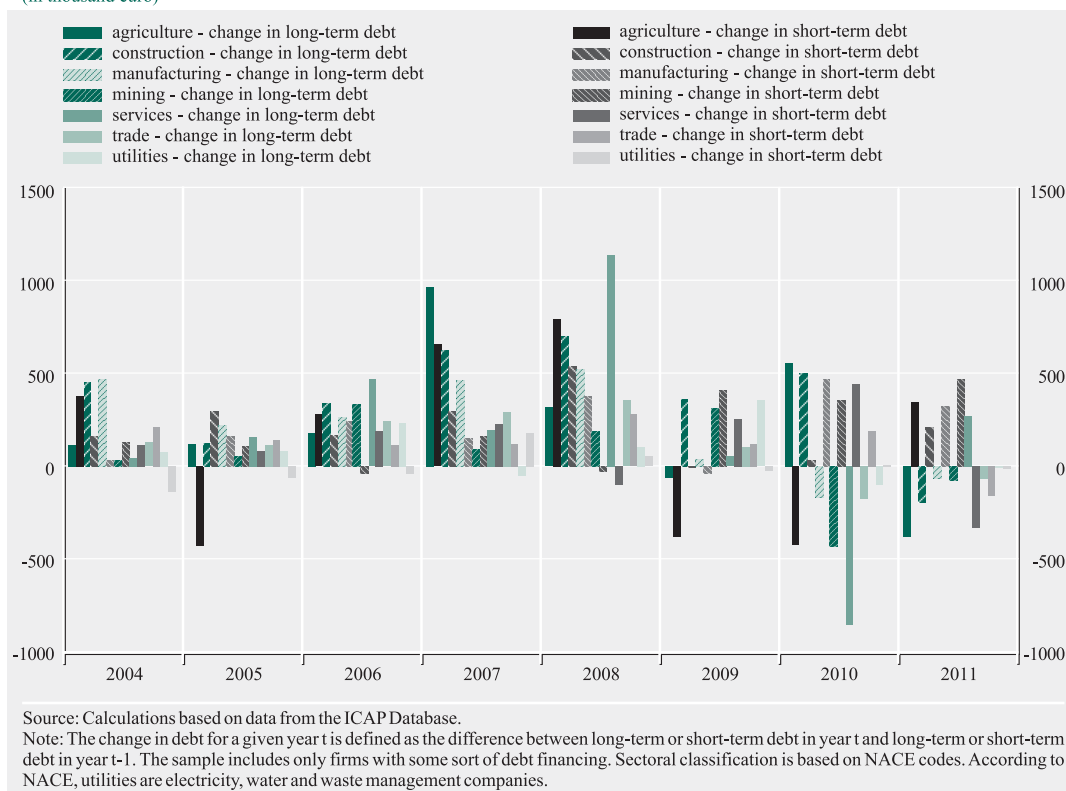


Source: Calculations based on data from the ICAP Database.
Note: The change in total debt for a given year t is defined as the difference between total debt in year t and total debt in year $t-1$. The sample includes only firms with some sort of debt financing. Sectoral classification is based on NACE codes.

Chart 8 illustrates the evolution of total borrowing by sector of economic activity, while Chart 9 provides a further breakdown between long-term and short-term borrowing. The sectoral breakdown broadly confirms the picture drawn for the whole sample, while at the same time revealing some variations across sectors. In the pre-crisis period, as can be expected, most sectors present relatively stable credit expansion that peaks in 2008. Of particular interest is the agricultural sector, which registers a very marked increase in corporate borrowing in 2007 and 2008, stemming primarily from the fish farming industry that increases considerably its debt obligations over that period. Also, until 2008, the construction sector records significant positive changes in its

Chart 9 Evolution of the change in firms' short-term and long-term debt by sector of activity

(in thousand euro)



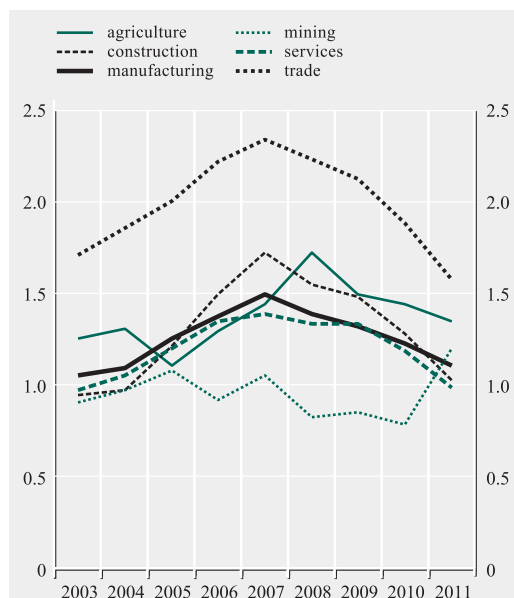
total borrowing. After the onset of the crisis, most sectors, such as manufacturing, mining, services and transport, register a negative change mostly in their long-term borrowing. On the other hand, the agricultural and construction sectors present a positive change in their long-term borrowing in 2010. In 2011, long-term borrowing seems to decline across all sectors (with the exception of the services sector, reflecting the effect of the above-mentioned OTE bond issue). In several cases, however, this decline has been offset by the positive change in short-term borrowing. By contrast, the trade sector shows decreases in both its short- and long-term borrowing in 2011, suggesting that enterprises in this sector face serious difficulties in obtaining debt financing.

Chart 10 provides a sectoral breakdown of the evolution of the leverage ratio. As a consequence of the strong credit expansion in all

sectors, leverage ratios increase over time until 2007 or even 2008, with the exception of the mining industry whose leverage ratio peaks in 2005 and remains close to 1. In all other sectors, leverage ratios are well above 1 in 2007, which is consistent with the pre-crisis credit expansion. It is worth noting the pattern for the trade sector, which had significant and growing dependency on borrowed funds already since 2003: its leverage ratio rises throughout the pre-crisis period and reaches 2.3% in 2007, while after the onset of the crisis it decreases gradually and in 2011 returns close to its 2003 levels.

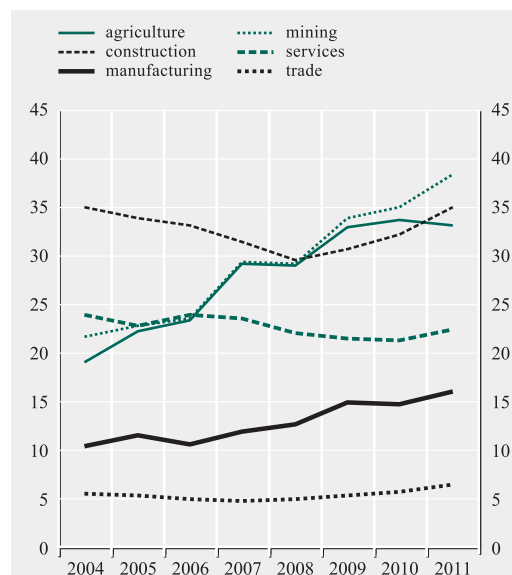
A similar pattern can also be observed in the remaining sectors from 2009 onwards. Debt financing decreases gradually and equity increases, resulting in a decline in leverage across almost all sectors. Moreover, we can conclude that in the pre-crisis period firms did

Chart 10 Evolution of firms' debt-to-equity ratio by sector of activity



Source: Calculations based on data from the ICAP Database.
Note: The chart shows the averages for each sector of activity in the period 2003-2011.

Chart 11 Evolution of firms' degree of concentration by sector of activity



Source: Calculations based on ICAP Database data.
Note: The chart shows the degree of concentration of each sector, as measured by the sum of the market shares of the three largest enterprises in each sector.

not use their profitability (which was on average positive until 2009) to build up capital buffers to accommodate future financing needs. This conclusion is supported by the evolution of retained earnings, which remain negative for all sectors throughout the period under review. It should be noted, however, that this does not apply for firms that managed to maintain positive profitability amid the crisis and which had also, on average, a positive retained earnings ratio throughout the period. The largest proportion of such firms belongs to the trade sector, followed by agriculture and manufacturing.

The strong increase in leverage ratios over the pre-crisis period is possibly attributable to the economy's growth path that favoured investment, as well as to credit expansion combined with low financing costs that enabled enterprises to borrow at low cost. During the crisis period, when access to credit becomes more difficult and profitability often turns negative, firms resort to equity financing. At the same

time, due to the economic downturn and the strains experienced by Greek enterprises, restructuring efforts can be observed in all sectors of the economy. Specifically, Chart 11 shows the evolution of the degree of concentration by sector of economic activity, as measured by the sum of the market shares of the three largest enterprises in each sector. Overall, the degree of concentration tends to increase across sectors throughout the period under review, including during the crisis. This tendency is particularly evident in agriculture and mining, which register the greatest decreases in the number of enterprises and the greatest increases in concentration over time. However, as changes in market structure and concentration take time to materialise, it is probably too early to identify a clear upward trend in the degree of concentration as a result of the crisis. Moreover, given that mergers and acquisitions tend to be procyclical and, more often than not, occur in economic upturns during which there are more financing possibilities, we cannot draw a safe conclusion about

whether this trend will continue or gain momentum as a result of the crisis.

4 CONCLUSIONS

The conclusions drawn from the above analysis is that the crisis has significantly affected the borrowing profiles of enterprises and led to an adjustment of the amount and form of financing for all enterprises in the sample. In the case of large enterprises, the tightening of financing conditions from 2009 onwards translated into a substitution of short-term borrowing for long-term borrowing. By contrast, small and medium-sized enterprises faced more serious difficulties in their access to finance and tried, to the extent possible, to substitute equity financing for debt financing. However, empirical evidence (Athanasoglou, Asimakopoulos and Siriopoulos 2006) suggests that financing the growth of Greek enterprises exclusively with the use of internally generated resources is extremely difficult. Therefore, the impact of the credit squeeze is very significant for the viability of the Greek business sector.

In conclusion, enterprises' size, profitability and low operating expenses were major factors in preserving access to financing, against a backdrop of increased risk aversion and shortage of financing.

Regarding the financing of individual sectors, we can see that, as a result of the crisis, borrowing dropped in almost all sectors, with the trade sector being most seriously affected, as both its short-term and its long-term borrowing have turned negative. At the same time, the leverage ratios decline gradually across all sectors from 2009 onwards, after increases over the credit expansion period. Conse-

quently, in sectors that are highly dependent on borrowed funds, such as trade, enterprises face greater difficulties in surviving, compared to sectors with lower leverage and sounder financial condition.

The developments that ensued from the crisis in relation to enterprises' financing opportunities are likely to accelerate the economy's sectoral restructuring. Since the lack of financing and the accumulation of losses compress firms' ability to implement their business plans and meet their cash needs, a number of firms may be heading towards failure. We already observe in our sample a significant decrease in the number of enterprises and a slight rise in concentration, which continue also during the crisis. Although it is too early to draw safe conclusions about whether the crisis has led to higher market concentration, the ongoing restructuring could help the enterprises that survive to gain better access to debt financing, with their larger size and improved profitability. In addition, given that the potential for credit expansion may remain limited in the short run, firms should turn to alternative sources (such as bonds, shares, private placements and other financial instruments) in order to finance their growth.

To sum up, the sectoral analysis of the evolution of corporate financing in the present study provides a first indication about a redistribution of financing resources and the possible implications of the crisis for the restructuring of the economy. However, in order to draw more definite conclusions, a more detailed sectoral analysis is needed, as well as data on the financial condition of enterprises after 2011, when the crisis escalated, which were not available at the time of writing.

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THE GREEK PRIVATE SECTOR LABOUR MARKET DURING THE CRISIS

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I INTRODUCTION

The purpose of the present study is to examine the evolution of key variables of the Greek private sector labour market during the past ten years, focusing on the period of the current economic crisis. Using mainly employment and wage statistics published by IKA (the Greek private-sector workers' social insurance fund), in connection with the successive labour market legislation reforms introduced after the onset of the economic crisis, it examines the dramatic impact of the crisis on the labour market, as well as the recent encouraging developments, and attempts a preliminary assessment of the effects of the reforms on key labour market variables. A salient trend identified here is that, starting from the summer of 2008, the numbers of IKA-insured workers and of enterprises with IKA-insured employees were on a path of decline, which took on massive proportions in 2011 and 2012; however, a remarkable turnaround has been observed since January 2013. By end-November 2013, the latest period for which data are available, both these variables had picked up, with employment in summer 2013 exceeding its 2012 level. These changes seem to partly reflect the effect of the labour market reforms implemented during the crisis.

The issue of this study is interesting in multiple ways. Greece is the euro area country which, since late 2009 when its fiscal derailment became apparent, sparking a sovereign debt crisis, has suffered the heaviest losses during the current economic crisis in terms of output and employment and displays the highest unemployment rates. All this occurred despite the fact that in May 2010 Greece became subject to an economic adjustment programme in exchange for financing through bilateral loans from its euro area partners and the IMF, under the memoranda of understanding signed with the EU/ECB/IMF troika, whereby the contin-

uation of financing was made conditional on reforms in various areas of the Greek economy, including the labour market. Any attempt to understand the above dramatic developments in a country which, following its entry into the euro area, has given up its right to conduct independent monetary and exchange rate policies and whose markets are characterised by more structural rigidities compared with other OECD countries should not overlook how labour markets react to shocks or policy actions. For example, wage rigidity is likely to make it harder for enterprises to adjust their costs to changes in the demand for their products or in productivity; thus, in the absence of support from monetary or exchange rate policies and in the face of strong foreign competition, they turn to staff cuts as a means of cost adjustment. Moreover, the international financial crisis has confirmed the interdependence of euro area economies, and the countries facing a sovereign debt crisis, such as Greece, have come under pressure to adopt concrete labour market reforms in order to improve their competitiveness, raise employment and ensure a more equitable distribution of the crisis-related costs across the society.

Against this background, the following section discusses and evaluates developments in the total number of IKA-insured workers, which can be considered a reliable proxy of employment in the private sector of the Greek economy, their daily wages and the number of firms with IKA-insured employees. The period under review is roughly the past ten years, spanning the pre-crisis and crisis periods, especially the unprecedented collapse of the labour market during the latter. It should be noted that IKA is the country's only social security organisation to regularly release a wide range

* Warm thanks are extended to Heather Gibson, Theodore Mitrakos, Daphne Nicolitsas, George Economou, Isaac Sabethai and George Symigiannis for their useful comments. Any mistakes are those of the author's alone.

of statistics, whereas all the others, particularly since 2009 when the latest Social Budget was published, remain largely unmapped territory. Section 3 provides an overview of the legislative reforms implemented in the labour market in response to the economic crisis and attempts a first assessment of such reforms. Section 4 examines whether the observed developments vary depending on the size of enterprises, the sector or activity or the international tradability of their output. Finally, Section 5 concludes.

2 DEVELOPMENTS IN EMPLOYMENT, THE NUMBER OF FIRMS AND WAGES

The total number of IKA-insured workers, which can be seen as a proxy of the total number of employees in the private sector, was on an upward trend between summer 2002 and June 2008, rising from 1,680.4 thousand to 2,084.3 thousand, up by 24% or around 400 thousand new jobs. Thereafter, the number of

IKA-insured workers declined, more strongly in 2011 and 2012, reaching a trough of 1,434.8 thousand in December 2012, which marked a fall of 31.2% in employment from its June 2008 peak or, equivalently, a loss of around 650,000 jobs, well above the jobs created during the upturn. IKA-insured employment then began to rise again showing positive month-on-month changes since May 2013. In November 2013, IKA-insured employment stood at 1,610 thousand persons, i.e. up by 160.2 thousand compared with November 2012, but down by 106 thousand relative to November 2002 (see Chart 1).

The available evidence suggests that the upward path of IKA-insured employment should continue throughout 2013 and 2014. According to data from OAED (the Greek Manpower Employment Organisation), hirings in 2013 exceeded separations by 133.5 thousand, partly reversing the negative hirings/separations net balance of the previous six years and showing that employment under pri-

Chart 1 Total IKA-insured employment

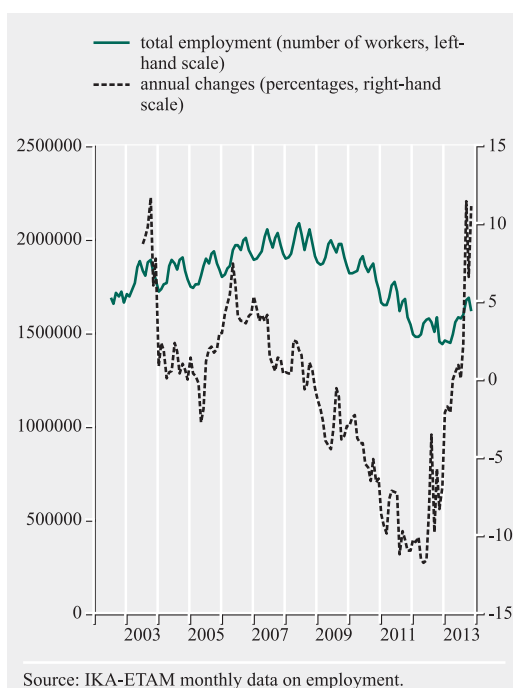
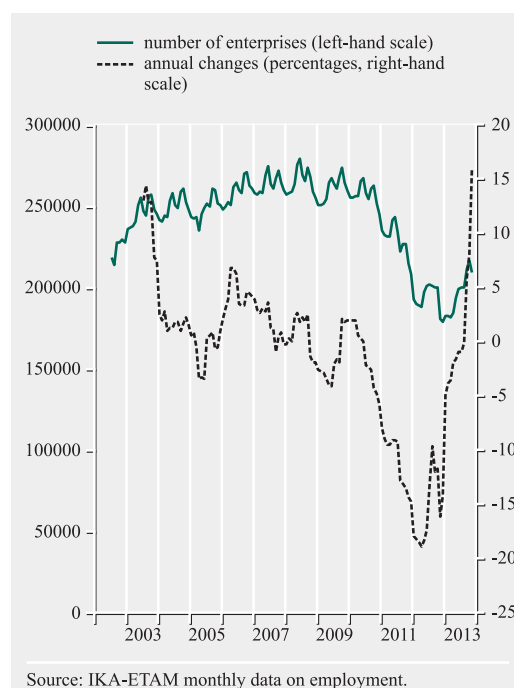


Chart 2 Number of enterprises with IKA-insured employees

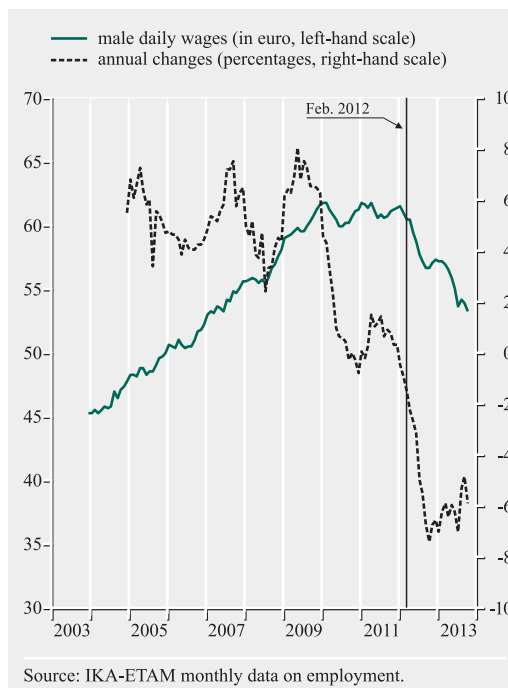


vate law contracts remains robust, with increasingly positive hirings/separations net balances continuing into the first five months of 2014. Furthermore, the Labour Force Survey (LFS), conducted by ELSTAT on the basis of updated population estimates according to the 2011 census, shows that the monthly declines in total employment stabilised in mid-2012 and have moderated ever since; in fact, March 2014 saw a small year-on-year increase (0.4%) in total employment, for the first time since 2008.

A similar pattern, although with stronger declines during the downturn, was exhibited by the total number of enterprises with IKA-insured employees. Between 2004 and June 2008, this number increased overall by some 30 thousand to 287 thousand. During the downturn, between June 2008 and December 2012, the number of enterprises with IKA-insured employees decreased by 100 thousand to 178.7 thousand (-36%), with particularly sharp declines recorded in 2011 and 2012. Thereafter and until autumn 2013, it rose by around 30 thousand, showing a year-on-year growth rate of 16% in November 2013 (see Chart 2). Although some caution is warranted as to whether these data truly reflect developments in the number of enterprises, given that certain enterprises were possibly still active without submitting Detailed Periodic Statements to IKA, the recorded changes are so big and the cases of closed businesses are so visible around us that it is hard to question the main trends. Besides, this is largely about businesses that submit detailed staff statements to IKA so as to avoid criminal proceedings, regardless of whether or when they actually pay the respective social security contributions. The increase in the number of reporting enterprises in 2013 suggests that, despite the deep crisis, pre-existing enterprises have resumed business or several new enterprises have been set up.

The above developments vividly illustrate the heavy toll that the deep and protracted economic crisis – which can be measured by the

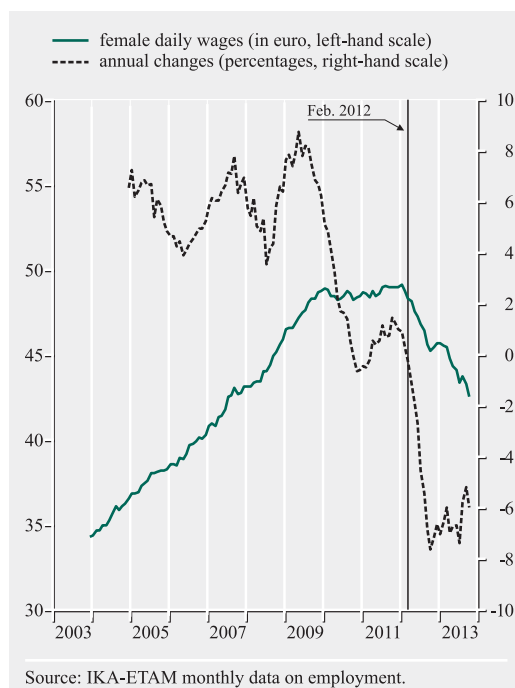
Chart 3 Male daily wages



unprecedented contraction of GDP by 22.6% in the 2008-2013 period – has taken on the real economy in terms of employment and activity. They also indicate that the existing institutional framework governing the labour market and the policies pursued have failed to mitigate and counterweigh, in a timely manner, these painful developments. Nevertheless, as already mentioned, the private sector labour market has started to show visible signs of recovery since early 2013, as manifested in increases in total employment and the number of enterprises.

It is worth pointing out that the average number of working days or, to be more precise, the number of insured working days per month, despite its notable decline during the upturn and its increase during the downturn for part-time workers, has changed little over time (see Table 3 below). This suggests that working time was not used as a tool for the adjustment of the labour market to the economic crisis. For male employees, average working days per

Chart 4 Female daily wages

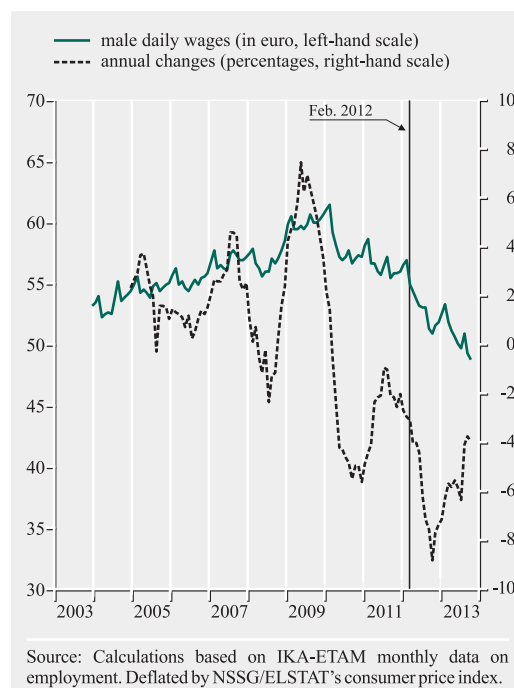


month fell from 23.5 during the upturn (2002-2008) to 23.3 during the downturn (2008-2012) and to 22.9 in 2013. The respective averages for female employees were 22.7, 22.7 and 22.4.

A different and lagged pattern can be seen in regular nominal daily wages (i.e. total daily wages excluding overtime pay and performance bonuses) according to IKA data. Daily wages, which during the 2004-2008 upturn had outpaced GDP per person employed, continued on a broadly upward course up until end-2011, only to decline sharply in 2012. For male IKA-insured employees, average daily wages, after increasing by 6.7% in 2009, 1.3% in 2010 and 0.7% in 2011, fell by 4.1% in 2012 (see Chart 3).

Female nominal daily wages followed a similar path to that observed for men, except that they grew more strongly in the upturn (by 37.5%, compared with 32.5% for men, in 2004-2011) and fell slightly less after January 2012 (-12.8%, compared with -13.0% for men, in

Chart 5 Male daily wages at constant prices



January 2012-November 2013). At any rate, the level of daily wages for women remains well below that for men (November 2013: €42.9, compared with €53.5 for men) (see Chart 4).

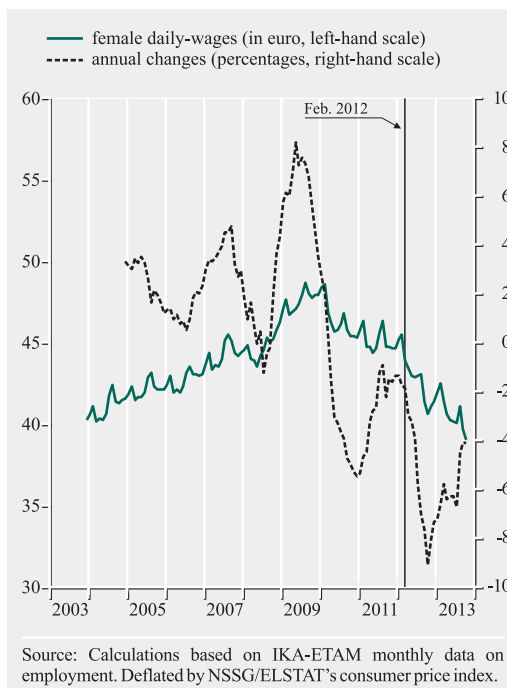
Developments in daily wages in real terms, deflated by the Consumer Price Index, are broadly the same. Real daily wages for male employees, after increasing by 3% in 2007, remained practically unchanged in 2008, to increase by 5.5% in 2009, and only started to decline significantly from 2010 onwards (-3.2% in 2010, -2.6% in 2011 and -5.5% in 2012). Overall, between summer 2008 (marking the start of the downturn in employment) and December 2012 (when employment reached a trough), real daily wages for male employees in the private sector fell by 7.3% (see Chart 5), while total employment declined by 31.2% in the same period.

Real daily wages for female employees evolved similarly to those for males, albeit with slightly

weaker declines, falling by a cumulative 6.3% during the downturn compared with a fall of 7.2% for males (see Chart 6).

Needless to say, the reliability of the above data on developments in daily wages depends on how closely IKA-based daily wages reflect reality. As already noted, daily wages according to IKA by definition exclude overtime pay and performance bonuses. However, it appears that overtime pay does not apply to many employees either before or during the crisis. While for the second quarter of 2007 in the Labour Force Survey question “Which is the main reason for the hours actually worked during the previous week being different from your usual hours?” about 25 thousand respondents (representing 0.84% of total employees) cited “overtime” as the main reason, for the second quarter of 2013 the respective figure was 20.5 thousand (0.92% of total employees). Also, according to data from the Hellenic Labour Inspectorate (SEPE) – from which enterprises must obtain prior approval for overtime work, although this does not mean that the requested extra hours are actually worked – in 2010 an average of 74 hours of overtime work were submitted for approval, with the employees concerned accounting for 15% of total IKA-insured employment. In 2011 and 2012, the respective percentages were 13.7% and 11.2%. Furthermore, the few rounds of the Structure of Earnings Survey (SES) conducted by ELSTAT show that performance-linked bonuses and/or participation in profits represent a very small fraction of total earnings. This suggests that the reliability of IKA’s daily wage figures is not materially impaired by the exclusion of these variable components of earnings. Still, some caveats may apply, given the possibility of underreporting prior to the crisis, when the daily wage data reported to IKA, mostly by SMEs, were often close to the minimum required levels – in an aim to save on social security contributions – and did not necessarily reflect the earnings actually paid. On the other hand, specific types of additional earnings paid during the boom years may have been recorded under

Chart 6 Female daily wages at constant prices



other expenditure categories. Thus, during the crisis, the decrease in daily wages, as reported to IKA, may not reflect the full size of the decline in actual earnings.

Notwithstanding these caveats, on the basis of the above developments in daily wages, employment and working time, it can be argued that the adjustment of the private sector labour market to the economic crisis took place mainly via staff reductions, i.e. by a downward adjustment in employment rather than in daily wages or working time. Initially, a fall in employment was observed, followed by a much smaller percentage reduction in wages or, as economists would put it, there was primarily a decline in quantities and secondarily in prices, suggesting that the labour market is neither competitive nor socially fair. The contraction of output was accompanied by a strong decrease in the number of employed persons rather than a reduction in daily wages or in working time. In this light, it seems that the labour market is not resilient, as it does not

weather economic downturns at the lowest possible social cost or, equivalently, with limited losses in worker welfare for a given decline in aggregate demand. Although losses in worker welfare are considered to stem from job losses and/or lower incomes, it is a widely shared view that the social costs of unemployment go beyond the loss of income, as unemployment also affects other outcomes, such as self-esteem, health and criminality. Thus, labour markets that adjust to economic downturns either through (temporary) reductions in wages and working time or through staff number reductions which are short-lived and are reversed soon, are identified as resilient and entail relatively limited social costs (OECD, 2012).

Another source of data broadly supporting the view that the response to the crisis initially involved a reduction in employment and later on a reduction in earnings is the Hellenic Labour Inspectorate (SEPE). The ex post data of SEPE show a dramatic drop in new hirings under full-time contracts (see Table 1), which fell by 161 thousand in 2010, 126 thousand in 2011 and 85 thousand in 2012 or, alternatively, in the three years from 2010 to 2012 new hirings under full-time contracts halved from around 750 thousand. Furthermore, over the same period, the roughly 35 thousand contracts for work or independent services almost disappeared (plummeting to 3 thousand in 2012), as did the already small number of piecework contracts, which however seems to have rebounded in 2012. These developments were only to a small extent counterweighed by the higher numbers of new part-time employment contracts – which increased particularly in 2010, by 71 thousand, and by 84 thousand overall in the 2010-2012 period – as well as of job rotation contracts, which rose by some 25 thousand in the same three-year period. The conversion of full-time labour contracts into part-time or job rotation contracts was more limited, albeit increasingly widespread. In the three years from 2010 to 2012, around 100 thousand full-time contracts were converted into part-time, and almost 70 thousand full-

time contracts were converted into job rotation contracts. On the other hand, cuts in earnings under firm-level collective agreements affected 94 thousand employees in 2012, while cuts in contractual wages, which must be communicated to SEPE and became effective in 2012, concerned only 261.3 thousand workers and in fact implied an average reduction of 22.2% (i.e. roughly as much as that in minimum wages) (SEPE *Annual Report 2012*, Table 16).

In examining the evolution of IKA-insured employment and daily wages, it is worth focusing on the construction industry in particular, given its large contribution to the aggregates of the economy in the past and its linkages with other industries. During the 2004-2006 period, construction employment increased substantially, by about 20 thousand persons to 205 thousand. In 2006, it started to decline and finally collapsed in 2009; by autumn 2013 it had dropped to around 40 thousand workers, showing some early signs of bottoming out. On the other hand, nominal daily wages in construction only started to decline in early 2011 and have been falling more strongly since spring 2012 (March 2012-November 2013: -36.1% for men, -28.0% for women, see Chart 7). In construction too, the decrease in the number of days worked per month was rather small, from 14.5 days during the upturn to 12.9 days during the downturn and 12.8 days in the first eleven months of 2013. Therefore, without overlooking the role of the excess housing stock in the construction slump or the cyclical character of construction activity, it appears that, in this industry as well, the downward adjustment of wages followed, and perhaps partly compounded the decline in employment.

The fact that the fall in employment was accompanied by a fall in the number of active enterprises indicates that businesses had probably no other viable options. Between the start of the downturn and December 2012, the number of enterprises with IKA-insured personnel (excluding construction) fell by about 36%, compared with declines of 31.2% in their employment and 7.35% in their real daily

Table I New employment contracts and conversions of existing contracts

(number of contracts in thousands)

	2009	2010	2011	2012
New hirings:				
Full-time employment contracts	746.9	586.3	460.7	375.8
Part-time employment contracts	157.7	229.0	233.6	242
Job rotation contracts	40.5	60.7	68.3	66.6
Contracts for work or independent service provision	35.5	16.5	4.3	3.0
Piecework contracts	2.0	0.6	0.2	0.9
Conversion of full-time employment contracts to:				
Part-time	12.2	18.7	32.4	49.6
Job rotation in agreement with employee	4.1	6.5	19.1	21.5
Job rotation, unilaterally	0.6	1.0	7.4	13.4

Source: Hellenic Labour Inspectorate (SEPE), Annual Report 2012.

wage. If the drastic cuts in employment had been implemented by some firms with the ulterior motive of maximising profits or just surviving the crisis, we would not have witnessed so large numbers of firms gone out of business. These developments also lead us to dismiss as a myth the view that the behaviour of Greek employers is to blame for higher unemployment and lower wages. Rather, it seems that keeping their staff during the crisis despite lower demand and hence production – through the so-called labour hoarding – and remaining in business had turned out to be an unattainable goal for firms, most likely because of their small/medium size and operation at the margins of the market. Nor did firms have the option to increase productivity soon or to directly suppress other costs, with the exception perhaps of rent costs. Instead, they faced substantial increases in several cost components, most notably financing costs, as a result of the exclusion of Greek banks from international financial markets, and higher direct, indirect and special taxes (including on energy) mainly in the context of fiscal consolidation, all of which weighed heavily on profitability, investment and employment. However, the fall in employment and the closing-down of businesses in the tradable sectors could have been partly avoided with an earlier timing of wage cuts or a more drastic reduction of working

times. This would have enabled to reduce the adjustment burden and distribute it in a more broadly-based manner across the workforce, even under the given strict austerity package of the troika.

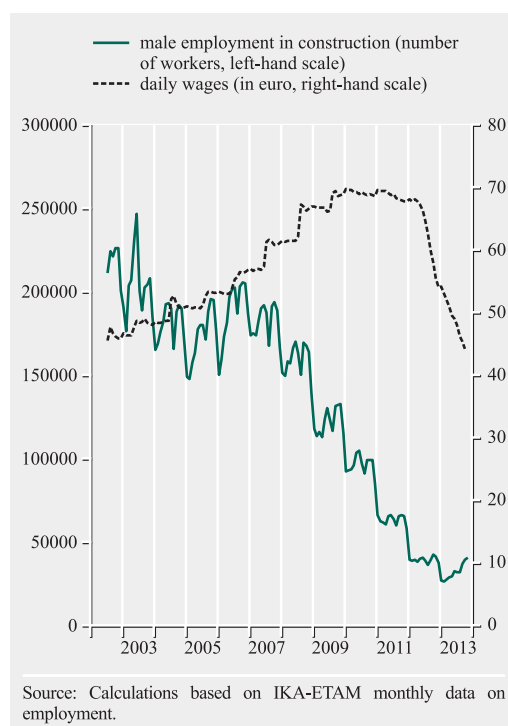
Chart 7 Male employment and daily wages in construction

Table 2 Response of enterprises to the economic crisis

Month of survey	Percentage of enterprises that in the past six months responded to the crisis by:				
	Staff cuts	Selected wage cuts	Across-the-board wage cuts	Wage cuts in general	Cuts in working time
February 2010	21.1				
July 2010	21.9			15.0	30.0
January 2011	24.1	8.0	7.6	15.6	30.2
July 2011	20.4	7.8	11.6	19.4	32.0
January 2012	20.1	13.8	14.8	28.6	37.4
July 2012	18.7	9.8	23.4	33.2	40.5
January 2013	16.6	8.8	34.8	43.6	47.7
July 2013	12.3	10.2	39.1	49.3	50.5

Source: <http://www.imegseevee.gr/ereunes-gnwmis/703--2013>.

The predominant economic explanation for downward wage rigidity is that employers avoid reducing wages because of their damaging effect on workers' morale. However, they do resort to wage cuts in circumstances where the firm faces serious problems (Bewley, 1999). Given that the economic crisis in Greece caused survival problems for many Greek businesses, which nevertheless refrained from a unilateral reduction in wages, it seems very likely that institutional rigidity was also present.

The above observations about the evolution of private sector employment and wages, on the basis of IKA administrative data, are corroborated by the results of the biannual Economic Sentiment Surveys conducted by the Small Business Institute of the Hellenic Confederation of Professionals, Craftsmen and Merchants (IME GSEVEE). These show that the percentage of SMEs reporting to have downsized their personnel during the first years of the crisis far exceeded the percentage of those reporting that they have resorted to wage cuts, whereas subsequently the opposite is the case (see Table 2). For the second half of 2010, almost one in four enterprises reported staff cuts, but only one in 13 firms reported across-the-board wage cuts. And it was only since the first half of 2012 that the percentage of enter-

prises reporting to have cut wages has been higher than that of firms reporting staff cuts. By the first half of 2013, the percentage of enterprises reporting staff cuts had fallen to 12.3%, while the percentage of those reporting across-the-board wage cuts had surged to nearly 49%.

It is interesting that firms initially responded to the crisis by reducing employment and only later turned to wage or working time adjustments. Similar behaviour on the part of firms is also suggested by the results of business surveys, in which the percentage of respondents indicating that they would reduce wages in order to cut labour costs is clearly smaller than that of those indicating that they would prefer to reduce the number of their employees or the hours worked (Bertola et al. 2012). However, such behaviour is not inevitable or necessarily observed in all countries during economic downturns: a case in point is Germany, where aggregate output contracted by more than 5% overall during the latest crisis and firms adjusted through a widespread reduction in working hours per employee (down by 3.1% in 2009 relative to the previous year), rather than through job shedding, i.e. higher unemployment. It should be noted however that part of the labour income lost as a result of the

reduced working hours was replaced by subsidies from the Federal Employment Agency, subject to certain eligibility conditions (see Bank of Greece, *Annual Report 2008*, Box V.1, and Caliendo and Hogenacker 2012).

3 INSTITUTIONAL MEASURES IN THE LABOUR MARKET TO ADDRESS THE CRISIS

Obviously, these developments are closely related to the prevailing institutional environment within which firms' employment and wage-setting decisions are made (Babecký et al. 2010). To the extent that wages are determined and/or adjusted through a set of complicated and time-consuming institutional procedures involving the government, employer organisations and labour unions without leaving much room for market forces to operate, the adjustment of firms to recession becomes slow and uncertain, if not impossible, leading to a further rise in unemployment.

In this regard, it should be noted that the first legislative measures, introduced in spring 2010 to address the country's fiscal derailment and the ensued cut-off from international money and capital markets, envisaged financial support from the EU/ECB/IMF, but also violent across-the-board cuts of wages in general government and the broader public sector as well as of pensions, whereas in the private sector, despite ongoing discussions, wages were not changed, after interventions from the social partners. However, the cumulative erosion of the Greek economy's international competitiveness, as manifested in persistently high external deficits, called for a swift reduction in unit labour costs too, which were not directly affected by the then restrictive fiscal policy. The market mechanism failed to respond to the deep recession through an adjustment of prices (including wages); instead, a contraction of output and employment occurred. It could be argued that the labour market failed to feature wage flexibility, which, as shown by Pissarides (1997) among others, is indispensable for the smooth functioning of euro area

economies, as EMU participation deprives them from an independent monetary policy and much of fiscal policy. This failure can be attributed to the unit labour cost rigidity embedded in the then applicable institutional framework and the fact that this could only be changed by consensus decisions on the part of the social partners and the government, which proved hard to reach in a timely manner, despite repeated appeals from the responsible ministers and from troika representatives.

Against this background, there were successive unilateral government institutional interventions in the private sector labour market, mostly in autumn and winter 2011, aimed mainly to reduce labour costs in order to restore the country's international competitiveness by means of what the economists call internal devaluation. Due to euro area membership, Greece could not resort to an external devaluation of the national currency, which would immediately make imports more expensive, thus reducing both the purchasing power of wages and real incomes without any changes in nominal incomes. At the same time, external devaluation would make Greece's tradable goods and services relatively cheaper, thereby encouraging exports and import substitution and ultimately helping to increase output and employment, as had repeatedly been attempted in the past without much social opposition. Deprived of the external devaluation tool, the country faced an urgent need to immediately reduce nominal costs — of which labour costs are a major component — and consequently prices (internal devaluation). Thus, cuts in nominal labour costs in Greece, implying a commensurate decline in incomes, could be used as a substitute for external devaluation, helping to recover part of the competitiveness lost in the pre-crisis period. It should be noted that the slow process of internal devaluation is likely to trigger stronger public opposition, given that it not only reduces real incomes as external devaluation does, but also compresses nominal incomes (thereby eliminating the money illusion that exists in the case of external devalu-

ation). This factor has probably made the adjustment process deeper than necessary.

The labour market legislation reforms introduced during the crisis were numerous, successive and far-reaching (for an overview, see Bank of Greece, *Annual Report 2010* and *2011*). These reforms were in fact prior actions required by the troika of lenders for the continuation of financing, which perhaps explains why they met with stronger opposition than if they had been a policy choice of the Greek authorities. Some of them aimed to increase the employers' ability to adjust labour inputs according to business needs, by reducing the cost of firing and hiring, with a view to preserving jobs at risk and encouraging new hirings. These included the introduction of a higher threshold for group layoffs, a shorter lay-off notice period, a longer probationary period of employment and the possibility to adjust working hours through a switch from full-time to part-time. Other legislative interventions directly targeted labour costs. These included a 20% cut in overtime pay, abolition of employer contributions to specific non-pension workers' funds, lower severance pay and, most importantly, a lowering of minimum wages under the National General Collective Agreement (NGCA) by 22% (32% for workers aged up to 24) as from 14 February 2012 and until completion of the fiscal adjustment programme, bringing them down to 40% of average wages. Lastly, successive reforms affecting the collective bargaining process and the respective roles of employers' and employees' representatives sought to decentralise wage setting and encourage firm-level agreements. As a first step, an additional type of collective agreement was introduced, the special firm-level collective agreement (SFLCA), which, subject to certain formalities, allows employers and employees to agree on lower wages than those stipulated in sectoral agreements but not below the minimum levels envisaged in the national collective agreement. SFLCAs did not take off, due to the formalities involved (employers and employees were required to jointly submit an explanatory report to the

Labour Inspectorate), as well as because of the difficulties in concluding such agreements in firms lacking a firm-level union. New legislation adopted in October 2011 abolished the SFLCAs altogether and enabled the signing of firm-level agreements with employees represented by an "association of persons" rather than a firm-level union, while sectoral agreements ceased to be binding on non-negotiating firms. Moreover, the duration of a collective agreement may not exceed three years plus an after-effect period of three months (previously six months), whereupon, unless a new collective agreement is concluded, with the exception of any provisions regarding four specific allowances the employer may otherwise impose the stipulations of the NGCA. In addition, recourse to arbitration now requires the consent of both sides; this prevented the renewal of several sectoral agreements which previously was possible through unilateral recourse by trade unions to the Organisation for Mediation and Arbitration. Finally, it is worth noting that the responsibility for setting the minimum wages was transferred from NGCA signatories to the Minister of Labour, who decides following consultation with the social partners, as is the case in almost all developed countries with national minimum wages.

Among these sweeping reforms to labour legislation, the full details of which may not be clear even to the officers and practitioners responsible for their implementation, those that seem to have the strongest impact are the one-off cut in the minimum wage and, most importantly, the ability of employers and employees to sign firm-level agreements that enable the firm to respond to possible adverse market developments by adjusting earnings and/or employment, but with the stipulations of the NGCA serving as a statutory minimum. If both sides agree and deem it necessary, the firm-level collective agreements can ignore e.g. the more favourable remuneration terms of sectoral or occupation-level collective agreements, thus helping to preserve employment and competitiveness. As sectoral agreements leave no room for firm-specific wage setting, it

is now possible to opt out from their provisions, while the principle of extending the scope of sectoral agreements to all businesses remains unchanged. In essence, this reform enables wages to better reflect the local labour market conditions and the firm's competitiveness, thereby supporting labour demand and helping to preserve jobs. It is indicative that relevant international organisations (ILO, OECD, IMF and the World Bank 2013) recommend wage-setting in line with productivity trend, while the NGCA can set wages that are compatible with the objectives of monetary stability and the promotion of employment (Blanchard et al. 2013). Dustman et al. (2014), on the other hand, attribute the remarkable performance of the German economy over the past decade to the decentralisation of the wage-setting process from the industry level to the firm level. Moreover, the decentralisation of collective labour agreements is likely to affect the scope and impact of the trade union movement, insofar as worker representation is at the firm level and the focus is on firm-specific circumstances.

The introduction of firm-level collective agreements in late October 2011 triggered a surge in the number of such agreements, which provide for a wage freeze or, more often, wage cuts. From 179 in 2011, a total of 976 firm-level agreements were signed in 2012, mainly in manufacturing (34.1%), retail trade (21.9%) and hotels and restaurants (19.8%), with almost half of them (47.8%) envisaging the same earnings levels as stipulated by the NGCA (Ioannou and Papadimitriou 2013). For 2013, firm-level agreements are estimated at more than 410, with an average change in earnings of -5.6% according to estimates from the Labour Inspectorate.

Regarding the impact of the legislated cut in minimum wages, this is clearly reflected in the evolution of average daily wages of IKA-insured workers (see Charts 3 and 4). For male workers, the average daily wage peaked at €61.45 in January 2012; since mid-February 2012, when the minimum daily wage was cut by

22%, it has been on a downward path, causing the average nominal wages to decline by 3.6% in 2012, following an increase of 0.6% in 2011. This systematic fall brought average daily wages down to €53.49 in November 2013, which represents a cumulative decrease of 13.0% since January 2012. On the other hand, the declines in average daily wages are already diminishing, suggesting that the pass-through of the minimum wage cut to average daily wages may have run its course, thus dispelling fears of wage deflation. In fact, the average male wage in August 2013 (€54.12) was slightly higher than in the previous month (€53.66), while in the September-November 2013 period it remained practically unchanged at around €53.

As a preliminary conclusion, it could be argued that the above changes (or reforms, as some prefer to call them) in the labour market and the relevant developments in key variables of the market have, although with some delay, reduced average daily wages in the private sector, contained further job losses and business shutdowns and contributed to a recovery in dependent private sector employment and in the number of active businesses in the Greek economy since early 2013.

4 VARIATIONS ACCORDING TO SIZE AND SECTOR

So far, the focus has been on aggregate developments referring to all firms and all IKA-insured workers. However, it would also be interesting to adopt a more disaggregated approach. Table 3 distinguishes between large and small firms as defined by IKA (i.e. those with at least 10 or less than 10 insured employees, respectively) and provides information on examined variables for selected months, namely: July 2002, the earliest available month; June 2008, when the number of IKA-insured workers peaked; December 2012, marking the respective low; and November 2013, the latest available month at the time of writing. Several interesting conclusions can be drawn from Table 3, such as the following:

Table 3 Employment and daily wages in large and small enterprises before and during the crisis

	July 2002	June 2008	December 2012	November 2013	Change 2002-08 (%)	Change 2008-12 (%)	Change 2012-13 (%)
Large enterprises (10+ employees)							
<i>Number of enterprises</i>	26,854	37,717	26,011	31,735	40.4	-31.0	22.0
<i>Employees</i>	953,672	1,402,534	1,060,771	1,180,210	47.0	-24.4	11.3
Men, full-time	521,818	698,584	500,143	539,796	33.9	-28.4	7.9
Women, full-time	350,977	527,231	388,077	397,260	50.2	-26.4	2.4
Men, part-time	29,137	59,175	58,552	95,375	103.1	-1.1	62.9
Women, part-time	51,740	117,544	113,999	147,779	127.2	-3.0	29.6
<i>Average daily wage</i>							
Men, full-time	46.68	63.06	65.57	63.76	35.1	4.0	-2.8
Women, full-time	37.36	51.44	54.6	53.78	37.7	6.1	-1.5
Men, part-time	35.98	37.63	34.08	29.07	4.6	-9.4	-14.7
Women, part-time	21.96	29.4	29.33	26.73	33.9	-0.2	-8.9
<i>Days worked</i>							
Men, full-time	24.63	24.16	23.82	23.55	-1.9	-1.4	-1.1
Women, full-time	24.15	23.89	23.65	23.37	-1.1	-1.0	-1.2
Men, part-time	19.65	16.78	18.43	16.56	-14.6	9.8	-10.2
Women, part-time	20.11	17.62	19.56	18.53	-12.4	11.0	-5.3
Small enterprises (10– employees)							
<i>Number of enterprises</i>	202,086	257,025	163,854	189,926	27.2	-36.3	15.9
<i>Employees</i>	510,418	553,925	361,539	440,078	8.5	-34.7	21.7
Men, full-time	242,349	231,473	132,090	143,241	-4.5	-42.9	8.4
Women, full-time	181,006	200,355	106,804	114,675	10.7	-46.7	7.4
Men, part-time	37,175	44,676	50,803	80,102	20.2	13.7	57.7
Women, part-time	49,888	77,421	71,842	102,060	55.2	-7.2	42.1
<i>Average daily wage</i>							
Men, full-time	32.77	41.40	43.27	38.67	26.3	4.5	-10.6
Women, full-time	28.57	37.63	39.73	35.89	31.7	5.6	-9.7
Men, part-time	19.87	24.72	24.56	21.78	24.4	-0.6	-11.3
Women, part-time	17.82	22.81	23.08	20.73	28.0	1.2	-10.2
<i>Days worked</i>							
Men, full-time	24.76	23.38	22.6	22.17	-5.6	-3.3	-1.9
Women, full-time	24.97	23.39	22.7	22.07	-6.3	-2.9	-2.8
Men, part-time	19.97	18.89	18.45	17.72	-5.4	-2.3	-3.9
Women, part-time	20.04	18.57	18.24	17.48	-7.3	-1.8	-4.2

Source: IKA-ETAM monthly data on employment.

- The role of large enterprises in employment seems to have increased over time, as they account for a growing share of employment. This should not come as a surprise, since average daily wages for full-time employees in large enterprises appear to be almost 50% higher than in small enterprises, implying that their productivity levels are as well higher.
- Compared with small enterprises, the number of large enterprises shows a stronger rise during the upturn and a weaker decline during the downturn. This is also the case during the 2013 recovery, when the growth in the number of large enterprises (22%) outpaces that for small ones (16%). In autumn 2013, the number of large enterprises is almost 32,000, clearly higher than in 2002, whereas the number of small enterprises, at about 190,000, is 5% less than in 2002. This suggests that large enterprises seem to have weathered the crisis better than small ones.
- New jobs during the upturn are concentrated in large enterprises (roughly 550,000, compared with 55,000 in small ones). Also, job losses in large enterprises during the crisis are almost four times those in small ones (340,000 and 90,000, respectively).
- Daily wages for full-time employees recorded a relatively stronger increase in large enterprises during the upturn; in the downturn, both large and small enterprises show moderate wage growth, while in 2013 wage reductions are stronger in small enterprises. Daily wages for part-time employees (particularly for male workers in large enterprises) grew less than those of full-time employees during the upturn, and their decline occurred earlier. By this token, it can be argued that part-time daily wages, as declared to IKA, are relatively more flexible.
- Working days per month for full-time employees do not show marked changes. The slight downward trend seen during the upturn continued through the downturn and the 2013 recovery, with small enterprises registering higher rates of decline than large enterprises. For part-time employees, working days also exhibit a downward trend overall, with a relatively stronger decline during the upturn, except in the case of part-time employees in large enterprises, for which working days rose significantly during the downturn.
- Part-time employment, defined by IKA to include all employees who work less than the usual full-time daily working hours irrespective of the number of days per week, increased markedly during the upturn (it more than doubled in large enterprises and rose by around 25% in small enterprises). During the crisis, part-time employment registered slight losses in large enterprises, whereas in small enterprises the number of part-time male employees rose significantly. In 2013, part-time employment recovered remarkably. Out of the total increase in employment by about 200 thousand persons between December 2012 and November 2013, 130 thousand were part-time employees. In November 2013, more than one in five IKA-insured employees (23.6%) are reported as part-time employees; for women, the proportion is more than one in three (33%) and for small enterprises it is more than four in ten (41.4%). The recent surge in part-time employment may also partly reflect sham part-time contracts used as a means of evading social security contributions.
- Lastly, it is worth noting that the recovery in employment in 2013 is concentrated in specific industries, most notably the following: within manufacturing, food (+5,000 persons), chemicals and plastics production both of which experienced relatively smaller job losses during the downturn, as well as clothing and footwear which collapsed during the downturn. Within the services sector, employment recovered in hotels (remarkably indeed), support activities for transportation and travel agency activities, health care and

social services, sewerage and disposal of waste, as well as energy and transport.

From another and increasingly relevant point of view, the variables discussed here can be examined on the basis of a distinction between tradables and non-tradables. The tradable sector can be approximated as the industries producing goods or services that are purchased and (re)sold internationally or could be traded internationally at some plausible variation in relative prices. The tradable sector typically includes all manufacturing industries and certain market services, such as air or sea transport, audit and consultancy services, whereas the non-tradable sector usually includes certain services that can only be provided domestically, such as public services, healthcare or education, retail and construction. Accordingly, workers in the production of tradables may be employed anywhere in the world, while workers in the production of non-tradables typically have to work within the specific country. It is clear that a well-developed tradable sector is associated with greater openness and competitiveness and better trade and balance of payments performance. This is of particular importance for small economies such as Greece, for which the only viable option is to be open and exposed to international competition. Particularly in the current conjuncture, a sustainable recovery of the Greek economy would be difficult to achieve without export growth or import substitution, i.e. without expanding the tradable sector. A strengthening in domestic demand would soon lead to higher imports, which would have to be financed mainly by receipts from higher exports, as the accumulation of additional external debt is not an option. Lastly, it should be noted that the robust economic performance of certain countries, such as Germany, goes hand in hand with wage leadership of their respective tradable sectors (Dustman et al. 2014; Blanchard et al. 2013; Jimeno and Thomas 2013), unlike what is the case in Greece, where the government, with the income policy it applies to its own staff, and often the judiciary have

led the way on wage increases, which are sooner or later followed by the private sector (Demekas and Kontolemis 2000, Kanellopoulos and Zervou 2010, European Central Bank 2012, p. 58).

In this study, adopting a relatively narrow definition of tradables, an industry is deemed to belong in the tradable sector if at least 10% of its output is exported, according to the 2010 input-output matrices. This threshold was selected because about 15% of Greece's aggregate final output is exported, and the results are not very sensitive to small variations of around 10%. Based on this criterion, tradable goods encompass those produced in the primary sector (excluding forestry) and in manufacturing (excluding printing/publishing) while tradable services include services such as water and airborne transport, post and telecommunications and insurance. The remaining activities come under the non-tradable sector.

Table 4 shows that employees and businesses are highly concentrated in the non-tradable sector, which is another reflection of the structural weaknesses of the Greek economy. Alternatively, it seems that the employment performance of the tradable goods sector lags significantly behind that of the tradable services and the non-tradable sectors. During the 2002-2008 upturn, employment in the tradable sector grew by 8.2%, compared with 54.8% in the non-tradable sector. Out of the almost 450 thousand new jobs created during the upturn, roughly 380 thousand were concentrated in non-tradables, i.e. a sector sheltered from foreign competition but also lacking new (external) sources to finance its growth. Similarly, during the crisis, job losses in the sector of tradable goods (-40.3%) significantly outpaced those in the non-tradable sector (-25.2%). However, it is encouraging that, during the 2013 recovery, employment in tradables, albeit subdued, grew by 22.1%, compared with 8.3% in non-tradables. A similar picture emerges with respect to tradable services, which appear to have suffered the small-

Table 4 Employment and daily wages in tradables and non-tradables before and during the crisis

	July 2002	June 2008	December 2012	November 2013	Change 2002-08 (%)	Change 2008-12 (%)	Change 2012-13 (%)
<i>Large enterprises (10+ employees)</i>							
Tradable industry							
Number of enterprises	7,151	7,992	4,992	5,759	11.8	-37.5	15.4
Employees	254.6	275.4	164.5	200.8	8.2	-40.3	22.1
Average daily wage (€)	41.8	58.8	63.1	63.6	40.7	7.3	0.8
Tradable services							
Number of enterprises	2,545	3,902	3,273	3,593	53.3	-16.1	9.8
Employees	109.3	158.6	141.1	136.1	45.1	-11.0	-3.6
Average daily wage (€)	52.9	68.8	67.8	67.6	30.1	-1.5	-0.3
Non-tradables							
Number of enterprises	16,026	24,075	17,746	22,721	50.2	-26.3	28.0
Employees	501.3	776.1	580.7	629	54.8	-25.2	8.3
Average daily wage (€)	41.4	56.5	58	57.2	36.5	2.7	-1.4

Source: IKA-ETAM monthly data on employment.

est losses during the crisis, in relative terms. For the three groupings reviewed in the table, developments in the number of businesses were broadly in line with the respective developments in employment.

Apart from the relative resilience of tradable services, another fact emerging from the above data is a remarkable shift to tradables in 2013, which is also suggested by sectoral output and investment indicators for the same period (Bank of Greece, *Annual Report 2013*, Box V.1). It is also interesting to note that the poor performance of the tradable goods sector in terms of employment and number of businesses coincides with relatively higher increases in daily wages, whereas the respective good performance of tradable services coincides with smaller increases in daily wages, which however are higher on average. In this light, it would perhaps be an exaggeration to argue that in today's globalised era, wages and labour costs in general (i.e. labour cost competitiveness) do not matter for job creation and preservation.

Of course, the above remarks overlook the fact that certain services defined as non-tradable can effectively be or could become internationally tradable. For instance, inbound tourism supports jobs in hotels, restaurants and even retail. Also, with the inflow of health tourists or foreign students, the non-tradable health and education industries can become internationally tradable.

5 CONCLUSIONS

This study examines the dramatic impact of the economic crisis on employment and enterprises in the private sector of the Greek economy. An encouraging finding is that the private sector labour market, after five years of contraction, has been recovering since early 2013. The recent positive developments seem to be associated with institutional changes in wage bargaining and setting. The depth and duration of job losses could perhaps have been smaller if the labour market had featured greater wage or working time flexibility.

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EUROPEAN BANKING UNION: “EUROPEANISING” BANKS’ FINANCIAL SAFETY NET

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I INTRODUCTION

The banking sector plays a crucial role in the economy, as efficient financial intermediation is a necessary condition for both the smooth conduct of transactions and economic growth. Banks act as financial intermediaries by transforming the (typically short-term) deposits into (typically longer-term) loans, a process exposing them to risks. A disruption of banking services or mal-functioning of any intermediation component leads to negative externalities, since the cost to shareholders, as a result of a bank failure, is lower than the overall cost to the society. Moreover, banks are very vulnerable to liquidity disruptions and to potential spillovers as a result of interlinkages within the banking system. In order to protect the banking sector and enhance financial stability, a framework of rules, controls and procedures, referred to as financial safety net, is in place. In most cases, this safety net includes organisations which are responsible for the prudential supervision of banks, crisis management, the oversight of payment systems and the protection of deposits through deposit guarantee schemes.

In the European Union (EU) the financial safety net lies within the competence of Member States. The efforts to harmonise the various components of the safety net date back to the late 80s, when specific directives were adopted concerning the elimination of barriers to entry in the banking sector, banks’ capital adequacy and the protection of deposits. However, a full development of the safety net at the European level lacked political support and, in order to avoid delays in establishing the single market of financial services, an alternative arrangement was established: the rule of mutual recognition, whereby the financial safety net remained within the competence of national authorities, while at the same time national rules and practices were mutually

recognised. Of course we have to take into consideration that these rules were based on common standards as further specified in various European directives. At the same time, the concept of home country control was introduced, which means that a bank authorised by one Member State (home Member State) can operate in any other Member State (host Member State) either as a new bank or by establishing a branch or without any establishment, without the host country being entitled to hinder this process. In other words, the principle of the “EU passport” was implemented, which enabled banks’ increasing cross-border expansion. Although host countries were allowed to impose a stricter regulatory framework, they were not expected to do so, as this would imply a competitive disadvantage for them.

Subsequently, the introduction of the euro as the single currency acted as a catalyst, eliminating some automatic corrective mechanisms that are present in all economies with a currency of their own. Thus, the automatic correction of imbalances was no longer possible. This had a major impact on financial markets, with the interbank market in particular becoming fully integrated into a single European-wide market and the (sovereign) bond market also moving towards a similar path. As a result, the bond markets became highly liquid, with increased marketability. Moreover, financial infrastructures were also integrated to a large extent as a result of the establishment of interbank payment systems with the introduction of TARGET (Trans-European Automated Real-time Gross settlement Express Transfer system) and the implementation of the Single Euro Payments Area (SEPA). On the other hand, the integration of bank credit markets

* The views expressed in this paper are personal and do not necessarily reflect those of the Bank of Greece. The author would like to thank Heather Gibson, Anastasia Koutsomanoli-Filippaki and colleagues from the Resolution Unit for their constructive comments.

lagged behind, and markets remained largely fragmented along national borders.

Despite the above important developments towards market integration, financial supervision has remained a national responsibility. But even coordination among national supervisors proved to be difficult, amid instances of national protectionism. No change was made to the financial safety net, which remained within the competence of Member States. When Economic and Monetary Union (EMU) was launched on 1 January 1999, the common effort focused on the monetary policy framework and, to a certain extent, on the fiscal policy framework. The European Central Bank (ECB) was entrusted with the single monetary policy, but the financial safety net or a part of it, e.g. bank supervision, was excluded from its tasks. The Lisbon Treaty did not bring about any changes in this particular area. From a political point of view, Member States were not prepared to fully transfer competences to a central level.

The global financial crisis of 2007-2008 and the debt crisis in the euro area acted as a second catalyst, forcing decision makers to redesign the architecture of the banking system. Among the studies and proposals put forward, the De Larosière Report (2009)¹ was the principal driver of the changes underway in the architecture of the regulatory framework applicable to banks in the EU. The report included proposals affecting the core of the financial safety net, such as the recommendation to transfer bank supervision from national authorities to a supranational authority or the recommendation to introduce a new aspect to supervision, that of macro-prudential supervision. As the crisis unfolded, political priorities shifted, and discussions expanded in scope to include a European banking union, which means essentially that the components of the financial safety net are transferred from the national to the European level. The crisis was seen as an opportunity to deepen the internal market and achieve consensus on the transfer of competences to a central level.

On 29 June 2012, the European Council authorised the European Commission² to develop a roadmap towards a banking union, which would signal commitment to the single currency and act as a catalyst for further economic and political integration. Top priority was given to the urgent objective of breaking the “sovereign-banking nexus”,³ i.e. the interdependence between over-indebted sovereigns and banks. On 12 September 2012, the Commission published its proposal, envisaging three pillars: a Single Supervisory Mechanism for banks, a Single Resolution Mechanism and a common system for Deposit Guarantee Mechanism. The three pillars are to be implemented successively. In order to enhance the credibility of the project, it was also decided to establish a permanent crisis management framework, the European Stability Mechanism (ESM).⁴ The ESM was given the possibility to recapitalise banks directly up to EUR 60 billion and develop common operational and supervisory rules with a view to harmonising the banking services framework.

Against this background, a banking union in the euro area means that Member States decided to coordinate their banking systems under three pillars and two actions. In particular, they decided to adopt:

1. a single rulebook;
2. single supervision;
3. single resolution;

1 Report of the High-Level Group on Financial Supervision in the EU chaired by Jacques de Larosière, Brussels, 25.2.2009.

2 See http://www.consilium.europa.eu/uedocs/cms_Data/docs/press_data/en/ec/131388.pdf.

3 “... to break the vicious circle between banks and sovereigns”. Some EUR 500 billion has been raised by euro area banks since the beginning of the crisis, half of which comes from private sources and the remainder from public sources. This amount is equivalent to about 5% of the euro area GDP.

4 The European Stability Mechanism (ESM) is an international organisation based in Luxembourg, which was established on 27 September 2012 to serve as a permanent backstop offering direct access to financial support programmes for euro area member countries facing financial difficulties, with a maximum lending capacity of EUR 500 billion and with the ability to intervene in the secondary government bond market. It replaced two earlier EU funding structures, namely the European Financial Stability Facility (EFSF) and the European Financial Stabilisation Mechanism (EFSM). Any new rescues of euro area member countries will be henceforth undertaken by the ESM, while the EFSF and the EFSM will continue to handle and monitor the rescue programmes already approved.

4. harmonised deposit guarantee schemes; and
5. common backstop arrangements.

1 and 5 are “supportive” actions, while 2, 3 and 4 are the three pillars, of which the former is “preventive” and the latter two are “remedial”. The supportive actions aim to build trust in the commitment to the whole project. The preventive pillar aims at reducing the risk and the intensity of a bank crisis, while the objective of the remedial pillars is to raise a permanent firewall for the euro area and protect national budgets. This implies stronger European solidarity, which is the politically acceptable proposal. Therefore, the banking union has an overall rationale and a comprehensive structure for the implementation of the above pillars and actions.

2 WHY A BANKING UNION?

Political decisions in favour of the implementation of a banking union enjoy broad academic support. When economists in the 60s developed the theory of optimum currency areas (OCA), which provided the underpinnings of the euro project, they contemplated three elements (Mundell criteria) as necessary conditions for a successful monetary union: (a) free movement of production factors and products; (b) a similar level of economic integration of participating states, and (c) a uniform response of economies to external shocks. If any of these criteria is not fully met, fiscal rebalancing measures (Kenen criteria) must be in place to address the negative externalities possibly created by a monetary union, so as to substitute fiscal transfers for the loss of the exchange rate tool. This was expected to mitigate the effects of an unforeseen external asymmetric shock. If, on the other hand, fiscal integration cannot be achieved, a risk-sharing mechanism through the integration of financial markets can be used as an imperfect substitute. Although there had been references in literature for the necessity of backstops (e.g. through deposit guarantees or a lender of last resort) (see Goodhart 2000),⁵ a banking union

was not considered as an additional condition for an optimum currency area (see Krugman 2012). For this reason, the set-up of the euro area did not initially include a banking union.

The lack of any reference to a single banking market largely reflected the economic structures prevailing at the time when the OCA theory was developed, whereby the real economy was dominant, while the financial sector had an ancillary role. Global capital flows mostly related to transactions in real goods, and speculative funds were limited. Over the next decades, the roles were reversed, and the financial sector gained prominence. The form of capital flows also changed, with its bulk now consisting of short-term speculative funds. Most of the crises that occurred during that period had originated in the financial sector, and the negative effects on the real economy brought to the fore the concept of financial stability. Meanwhile, economic thinking also shifted, as economic theory embraced the financial trilemma approach (see Schoenmaker 2011), stating that (a) financial stability, (b) financial integration and (c) national financial policies are incompatible objectives, as they cannot all be achieved at the same time in interconnected markets. Economic integration combined with national policies would lead to instability, as national policies would seek to increase national welfare, disregarding the externalities involved. This leads to an under-provision of financial stability as a public good.⁶ Therefore, one of these three objectives has to be abandoned. If (a) is abandoned, then there is a risk of financial instability with negative effects on economic growth. If (b) is abandoned, market integration and all the resulting benefits will be halted. In the European Union, given the political commitment to deeper integration, what seemed like the most

⁵ As the current crisis unfolded, there were also proposals in favour of a lender of last resort for Member States' government bonds (see De Grauwe 2011). This was partly realised by the ECB's decision to introduce a new sovereign bond purchase programme, the Outright Monetary Transactions (OMTs), involving unlimited purchases of sovereign bonds under certain conditions.

⁶ See Vítor Constâncio, Vice-President of the ECB, “Banking Union and European integration”, speech at the OeNB Economics Conference, Vienna, 12 May 2014.

obvious option was to abandon (c) and transfer national policies to a supranational level.

In the meantime, academic research progressed, and models were developed that advocated the need for a banking union within a monetary union (see Bignon et al. 2013). Examining the cost of cross-border credit, the relevant studies come to the conclusion that the benefits of a monetary union can be maximised with a single market for bank credit. The market must operate smoothly, and supervisory authorities can contribute to this by avoiding actions that increase the cost of cross-border credit, facilitating the collection of credit information and ensuring a level playing field for cross-border claims. All the above point to a banking union.

Apart from the theoretical underpinnings of a banking union, there is also the practical necessity to address the problem of banks that are too big to fail. This problem was exacerbated at global level, and governments were faced with moral hazard and adverse selection considerations (see Valiante 2012).

Moral hazard is an issue that has been studied extensively in banking theory, but the current crisis brought out in a dramatic manner an additional aspect: the impact of the increased size of banks through leverage. Fierce competition and falling yields led banks to search for an alternative way of enhancing return-on-equity, and this was achieved through leveraging. When a bank increases its size by borrowed funds, this essentially means that it takes higher risks and transfers them to those providing these funds, namely depositors and bondholders. This would not be a problem if the latter were able and had an incentive to impose discipline on banks regarding risk-taking. However, the ability of depositors and bondholders to impose discipline is questionable, as their ability to understand the riskiness of a bank or to influence its decisions is limited. Moreover, they are not motivated to do so, as the existence of a deposit guarantee scheme removes any incentive to impose discipline, at

least for those depositors who are covered by the guarantee limit. A mechanism for overcoming this inability to impose discipline is the supervision of banks by a supervisory authority that can control and limit risk-taking and, more importantly, risk shifting by banks. This is particularly important in the case of cross-border banks, where a number of supervisory authorities with diverse incentives and objectives are involved. A single supervisory authority can be more intrusive and effective in imposing discipline.

Furthermore, another dimension of moral hazard emerged in Europe: government support to failing banks was taken for granted. This distorted behaviours and amplified the impact of the crisis (see Nikolov and Popov 2014). Banks took advantage of low-cost ECB financing and channelled the liquidity into holdings of, presumably risk-free, higher-yield government securities (carry trade). These holdings primarily related to bonds issued by their home country (home country bias).⁷ At the same time, disinvestment from cross-border holdings was observed, particularly by banks in weaker countries,⁸ and the benefits of global diversification were wasted. This boosted banks' profitability and helped governments to raise funds while the crisis was evolving. On the other hand, it fostered the expectation that governments would save troubled banks at all costs. Given the size of banks and the negative effects that their failure would have on the government bond market and the real economy, it was deemed almost certain⁹ that the government would run to the rescue and bail the banks out.

⁷ European banks' holdings of home country bonds amount to some EUR 1.8 trillion or 6% of their total assets.

⁸ <http://www.bruegel.org/nc/blog/detail/article/1194-home-sweet-home-bias-and-other-stories/>.

⁹ An extensive body of literature examines the behaviour of investors in large banks and in particular the distortions caused by the "too big to fail" notion. Analysis typically focuses on bank bond and credit derivative spreads, bank stock returns, bank balance-sheet data, etc. In a recent study, Afonso et al. (2014) find that large and complex banks have a greater appetite for risk and that riskier banks are more likely to take advantage of potential government support. Findings also suggest that banks seen by rating agencies as more likely to receive government support take on more risk. In this respect, Fitch Ratings began to provide support ratings, which reflect the likelihood of support by the government or by institutional investors.

Thus, banks essentially linked their fates to those of sovereigns, and a doom loop was created, which aggravated uncertainty, as it made it more difficult to distinguish between country risk and counterparty risk. Countries retrenched behind national borders, and the euro area was fragmented into national markets in an attempt to ensure liquidity ring-fencing. In many cases, this ring-fencing was the result of political considerations rather than rational economic choice. Thus, the ability of banks to channel cross-border liquidity within their groups was impaired, and several banks had to disinvest or adjust their business models. National supervisors did not react to retrenchment within national borders and to the fragmentation of the euro area into national banking markets. A single supervisory authority with a pan-European scope would most likely have responded more promptly to this fragmentation¹⁰ and would have taken action to reduce it.

A further factor supporting the case for action to address fragmentation is the need to restore the normal functioning of the interbank market and the uniform transmission of monetary policy. From the onset of the crisis, the interbank market froze for the first time. This can be seen as a manifestation of the market for lemons theory: due to asymmetric information and inability to distinguish between “good” and “bad” banks, good banks were unable to obtain funding at acceptable interest rates, which led to a meltdown in the interbank market, and excess liquidity was increasingly placed under the deposit facility of the ECB. In response, the ECB repeatedly lowered its deposit facility rate and embraced the idea of negative interest rates, while it also modified the width of the corridor between the marginal lending facility and the deposit facility to contain the fluctuations of interest rates or induce a revival of the interbank market.

However, liquidity ring-fencing and market fragmentation are reinforced by the current regulatory framework for banks, in particular by the treatment of government bonds and sov-

ereign risk. In financial markets, sovereign risk has long been underrated, and government bonds are assumed by modern financial theory to be risk-free. This is the approach followed by the Basel framework, although recent episodes offer examples of sovereign defaults or quasi-defaults. Financial markets on the other hand have shifted away from treating government bonds as risk-free; the Basel framework has not kept pace and although it uses different weights depending on external ratings, it maintains a preferential status with a 0% weight for government securities funded in the same currency. Moreover, it allows to permanently exclude exposures to sovereigns from internal models and from a non-zero risk weight, as well as from the calculation of large exposures. Finally, the liquidity framework places emphasis on government bonds as highly liquid assets and identifies them as the main items counting against banks’ liquidity requirements. All the above suggest that intra-euro area sovereign debt is largely considered to be mutualised and free of other country-specific risks. This strengthens the incentive for exposure to sovereign risk, mostly to home country risk,¹¹ and does not contribute to breaking the link between banks and sovereigns.

Finally, a disruption emerged in the uniform transmission of the monetary policy across the euro area. Interest rate changes had an impact on some countries, as they fed into the real economy through the bank lending channel, while no such pass-through occurred in other countries whose banks were facing funding problems and the bank lending channel was impaired. Thus, interest rates on loans to the

¹⁰ Market fragmentation means the interruption of financial flows between market segments and the increase in financing costs for enterprises and households.

¹¹ The new Basel III framework has not changed the treatment of government securities held in the banking portfolio, although the possibility of changing the rules is being considered (see “Banks face new rules about risk”, *The Wall Street Journal*, 7 July 2014). It imposes, however, additional capital requirements for such securities held in the trading book to cover the credit risk component of market risk (IRC – Incremental Risk Charge). Also, by introducing a leverage ratio, makes a first step away from zero weight, since the total portfolio of government securities is taken into account in the ratio’s denominator.

real economy vary significantly across the euro area, with a visible division between Europe's north and south. Businesses across the euro area were, and still are, faced with different borrowing conditions, which have a direct impact on the real economy and reinforce fragmentation.

The EU and the euro area in particular is a bank-based economy. Bank credit is the main source of external financing for businesses, particularly for small and medium-sized enterprises (SMEs), and this is not expected to change drastically (see Bijlsma and Zwart 2013). As already mentioned, money and capital markets in the euro area have been integrated, but bank credit markets have remained fragmented along national borders. In a sense, large enterprises, which have access to capital markets, were less affected by the crisis than SMEs, for which banks are virtually their only source of funding. Furthermore, the crisis affected SMEs asymmetrically across the euro area, taking a much heavier toll on SMEs in peripheral countries relative to those in core countries. While this could be interpreted in terms of competitiveness and using creative destruction arguments, it is also due to asymmetric access to financing, which generated externalities independent of the idiosyncratic risk and necessitated a policy response. Governments had to remedy market failure, but not all governments had fiscal capacity to provide a backstop. Against this background, commitment to the euro project dictated the transfer of responsibilities to a central level, and the political option of promoting a banking union was seen as the appropriate solution. Besides, remedying the problems of the banking sector will reinforce the financing of the economy, as banks will be given appropriate incentives to channel funds into productive investments.

In order to address ring-fencing and fragmentation, it was necessary to establish a mechanism to disentangle country risk from counterparty risk, as well as a mechanism to provide signals of counterparty risk. The former would have to address the collective

action problem¹² which entails that action must be taken by a common mechanism in the euro area (e.g. the ECB). Indeed, the ECB introduced a number of both conventional and non-conventional monetary policy measures in an attempt to rebalance money and capital markets, and succeeded in doing so to a large extent. With the normalisation of the government bond market, it will be possible to accurately assess country risk and then disentangle it from counterparty risk. This would also normalise credit conditions in the euro area and would enable corporate financing to be based on a company's risk profile rather than on its country of origin or country of operation. Thus, banks would no longer be considered as banks of individual euro area countries and would become euro area banks.¹³ With regard to the signalling mechanism, it should aim at strengthening confidence in the European banking system and dispel doubts about the soundness of banks and the true value of their assets. The initiatives to carry out and disclose the results of the European-wide stress tests and the Asset Quality Review are geared towards this direction. This would also strengthen depositor confidence, to prevent transfers of deposits from one euro area country to another. Such transfers surged during the crisis and were due both to inability to assess banks' soundness and to the lack of confidence in the ability of state budgets to accommodate bank failures and protect deposits. Deposits were transferred to countries with healthier public finances, often despite negative yields. In this context, harmonised deposit protection schemes are seen as a means of mitigating depositors' concerns.

At the same time, however, there are also concerns from the markets that need to be alleviated; markets essentially ask for rapid solu-

¹² The term "collective action problem" refers to a situation in which the members of a collectivity would benefit from a certain action, but the cost of undertaking it prevents each member from taking action individually. The rational choice would be to take collective action and share costs.

¹³ See Christian Noyer, "Why the economic and monetary union needs a banking union", address at the conference "The euro dilemma: inside or outside", Budapest 31.1.2014.

tions, relative certainty as to who will incur the cost of an eventual failure and reduced systemic impact. In practice, diverging national behaviours, particularly for cross-border banks, have proven to cause delays in decision making, while uncertainty about the allocation of costs leads to higher risk aversion. Market concerns can be addressed by a uniform procedure for the orderly resolution of troubled banks. Thus, any problems in cross-border banks would not generate tensions in the EU, and further benefits from the single market of financial services could be reaped.

3 THE FINANCIAL SAFETY NET

3.1 BUILDING BLOCKS

Economic theory anticipates that government intervention is required when a market fails to produce optimal outcomes and identifies three main causes for this failure: negative externalities, asymmetric information and systemic problems. Regulatory intervention in the banking market can be justified by the above reasons and typically involves a financial safety net designed to protect banks from shocks and mitigate problems. The extent to which problems are mitigated depends on the design of the safety net. Pre-crisis academic research suggested that the financial safety net should provide appropriate incentives for preventing banking problems from spreading to the rest of the economy due to credit constraints and depositors' rational or irrational overreaction, which can lead to a bank run (see Calomiris 1999). However, the crisis proved that the traditional safety net was not adequate, mostly with regard to the resolution of banks with cross-border activities. It appeared necessary to establish an ex-ante loss allocation mechanism, and there were some first suggestions to coordinate national mechanisms or introduce supranational mechanisms. Schoenmaker and Gros (2012) update the criteria in the light of the lessons learnt from the crisis and suggest key principles for an appropriate financial safety net:

- (a) When banks face difficulties, private sector solutions (e.g. bail-in) should be tried first before any public support.
- (b) The safety net should have the same geographical reach as the main activities of a bank.
- (c) The least cost principle should be applied, implying that the resolution method to be chosen should be the one having the lowest cost to the deposit guarantee system and the resolution system.
- (d) The resolution and deposit guarantee schemes should be funded with ex ante levies on the insured banks.
- (e) An ultimate backup of government support is needed (fiscal backstop).
- (f) Decision-making within the safety net should be swift and strictly confidential.
- (g) Good governance, ensuring that the resolution and deposit insurance authority acts within its mandate and is held accountable to the relevant bodies.

The safety net established in the euro area is based on the above principles and includes three components.

1. Prudential supervision

Supervisory authorities take prudential measures to detect as early as possible any problems in banks. To this end, they have designed a set of prudential supervision rules intended to minimise the likelihood of bank failure and crisis contagion (for a more detailed discussion, see Annex A).

2. Crisis management

Crisis management structures implement measures to facilitate bank liquidity, activate the lender of last resort, if necessary, and ensure the orderly resolution of troubled banks (for a more detailed discussion, see Annex B).

3. Deposit insurance

The competent authorities have developed a deposit guarantee scheme to avert the risk of

depositor panic that could trigger a bank run (for a more detailed discussion, see Annex C).

Based on motivation analysis, academic literature proposes that prudential supervision and crisis management can co-exist under the same organisational structure, as opposed to deposit guarantee, which should be separate. This is largely the case in the euro area, as the prudential supervision authority (ECB) has a say in bank resolution, mostly in determining the need for resolution, although a distinct resolution authority is established. It has also been proposed (see Schoenmaker and Gros 2012) that the safety net should take place under a “veil of ignorance”, i.e. everybody should be interested in participating since *a priori* it is not known where the losses will arise. However, this is not feasible in the present circumstances of the euro area, since it is clear where most of the losses are to be expected.

3.2 GROUP RESOLUTION

The crisis management framework in Europe reflects a consensus that developed post-war and can be summarised in two aspects: (a) a bank failure is considered as a very important event, and historical experience shows that very rarely is a bank let to fail; and (b) all bank deposits are guaranteed. This has resulted to a stability of the system, but over time it has also caused distortions in the behaviour of banks and depositors, as they took government support for granted. However, the severity of the current crisis prompted for a reconsideration of these stereotypes, and Europe started to review its methods for bank crisis management, particularly in the case of cross-border banks. The resolution of cross-border banks came into focus, as it became evident that a non-coordinated resolution could substantially impair the going-concern value of banks¹⁴ and threaten financial stability.

Also, given the special nature of banking and the possibility of problems in one bank spreading to the rest of the banking system, it became obvious that resolution procedures must be

swift in order to protect the sensitive operations, the depositors and the confidence in the banking system. This, in most cases, cannot be ensured by the standard insolvency procedures stipulated in the Bankruptcy Code, given the peculiar nature of bank liabilities (see Sommer 2014). A distinction is often made between operational liabilities and funded capital: the former need stronger, pre-agreed protection. Moreover, standard bankruptcy procedures take time, during which deposit withdrawals can add to tensions and further reduce the possibilities of a resolution. This is why specific (out-of-court) procedures are required in the context of bank resolution. But this is still not adequate in the case of cross-border banks, where resolution procedures involve several authorities that are faced with the prisoner’s dilemma, which implies that although collective action would yield better results, it cannot be taken for granted. The lack of a common framework results in non-collective action and often to diverging national solutions. These reflect national priorities, which in many cases are beyond a country’s means and have a higher overall cost. This was observed in Europe during the debt crisis, and it became clear that significant preparation was needed to implement optimal solutions (the conventional resolution tools are outlined in Box 1). A crisis management framework is necessary in order to ensure that rules and procedures are known in advance and to prevent uncertainty and instability. Mechanisms must be developed that would allow swift decision-making under conditions of strong social and political pressure. Moreover, these mechanisms must take into account the peculiarities of cross-border banks and the challenges inherent in the resolution of banking groups (see Gleeson 2014 and Randell 2014). The majority of systemically important banks operate in

¹⁴ Resolution is an advisable policy measure for a failing bank when it brings about a better outcome in terms of lower value impairment compared with winding down and liquidation. In general, the “no creditor worse-off than in liquidation” (NCWOL) principle should be applied. The success of a resolution scheme depends on the extent to which this principle is fulfilled. Therefore, bank resolution poses more challenges than bank liquidation, as the rights of creditors and the value of a bank have to be preserved.

the form of multiple entities, i.e. subsidiaries, branches or even offshore agencies, dispersed across several host countries with different systems and levels of bank supervision, if any. Whenever resolution is needed, the most common practice is the territorial approach, whereby domestic assets are ring-fenced within national borders to satisfy domestic creditors¹⁵ without taking into account the interests of the group. This approach can impair the group's value, as it prevents any intra-group support and transfer of assets. In parallel, the complexity of organisational structures limits the flow of information to supervisory authorities regarding the part of the group in need of resolution, which drags along the entire group. This can lead to a disruption of core operations of a bank that may be significant from a financial stability viewpoint. The problem is aggravated with the growth of shadow banking activ-

ities, which remains at large outside the scope of supervision. A further complication arises when intra-group agreements are in place for cross-border provision of services, in which case a discontinuation of operations in one country can affect systemic operations in another country.

To address these problems, the Financial Stability Board has described the key attributes of an effective bank resolution regime (see Financial Stability Board 2011, 2012), which should be incorporated in national legislations. The European Union has adopted the Bank Recovery and Resolution Directive (BRRD), which deals specifically with many of the above issues.

¹⁵ As the Governor of the Bank of England put it, "Global banking institutions are global in life but national in death".

Box I

CONVENTIONAL RESOLUTION APPROACHES

(i) Restructuring

The restructuring approach implies supervisory forbearance and is used when a bank has significant problems but it seems likely to recover through reorganisation. Restructuring involves radical changes at many levels and can be materialised with or without the bank's existing managerial structure. It includes operational restructuring (e.g. improving internal control systems), organisational restructuring (e.g. change in the ownership structure) and financial restructuring (e.g. deleveraging).

(ii) Bridge bank

A bridge bank is authorised to operate for a limited period of time on a temporary basis. Its sole purpose is to bridge the gap between the failure of a bank and the time required for finding an appropriate buyer or for implementing an alternative process. Selected assets and liabilities of the troubled bank are temporarily transferred to the bridge credit institution. Banking operations are not discontinued, and customers continue to have access to banking services through the bridge institution. The troubled bank is put into liquidation preserving the non-selected assets, which can be liquidated by the bank itself or transferred to a special asset management company. This essentially entails a separation of assets into a good bank and a bad bank, with the former continuing to carry out operations in the form of a bridge bank and the latter being put into liquidation.

(iii) Purchase and assumption

Under this method, the assets and liabilities of a troubled bank are transferred to a healthy bank following competitive bids. The authorisation of the troubled bank is withdrawn, and selected assets and liabilities are transferred to the healthy bank, without transferring the authorisation of the

troubled bank. The assets that are not transferred are liquidated or transferred to an asset management company. This in effect entails asset separation between healthy and unhealthy assets.

(iv) Open bank assistance

This is direct assistance to a troubled bank that would otherwise fail, with repercussions on the financial system. Assistance can take many forms and can be provided by various entities. It can be capital injection, liquidity injection, troubled portfolio management, guarantees, etc. Whatever the form of the assistance, it is usually accompanied by a restructuring plan.

(v) Nationalisation

In this context, a bank is declared bankrupt, shareholders lose their capital and the government acquires a majority stake in the bank and carries on its operations. This can be a permanent or a temporary solution.

(vi) Liquidation

All operations are suspended, and the bank is put into liquidation in accordance with the procedures of the bankruptcy code. All the assets are sold and the amounts recovered are used to pay the liabilities, according to the creditors' seniority.

3.3 DEPOSITOR PROTECTION

When a bank fails and the value of its assets falls short of the value of its liabilities, then the loss has to be allocated among its creditors. The normal insolvency proceedings entail that all creditors within the same class should be treated in an equitable manner. However, it is broadly accepted that some creditors (mostly retail depositors) should enjoy stronger protection in insolvency situations (see Hardy 2013). In general, depositors can be protected in three manners:

- **Explicit guarantee:** Deposits are insured by a specialised organisation, therefore losses are allocated among those that participate in the organisation and pay a premium. Coverage may be limited or unlimited.
- **Implicit guarantee:** Deposits are not directly insured, but government intervention is deemed certain in case of problems, which means that the loss is shared among all taxpayers.
- **Depositor preference:** Deposits are not directly insured, but depositors have pref-

erence over other creditors in the process of a bank liquidation, therefore the loss is allocated among the non-depositor creditors.

There is a difference between explicit and implicit deposit guarantee. Explicit deposit guarantee relies on a regulatory framework, which determines the conditions for guarantee, the compensation procedures, as well as other issues such as funding, the amount of coverage, etc. In the absence of such a regulatory framework, the guarantee is implicit, i.e. depositors are covered either by the soundness of banks, which is "safeguarded" by the supervision exercised by the relevant regulatory authorities, or by the "common belief" that deposits are in general covered and that, in any event, the losses would be covered by the government. This belief has been (and still is) widespread in many countries; this averts systemic risks, but, on the other hand, entails distortions in the behaviour of banks and creditors.

Depositor preference provides stronger incentives for depositors to impose discipline on banks, as uninsured depositors can incur losses from a bank's leverage. Therefore, they are properly motivated to carry out transactions

with a bank in a way that imposes discipline (or not to carry out transactions at all). Unlike explicit or implicit guarantee schemes, in the case of depositor preference the imposition of discipline is transferred to third parties with more limited intervention capacity. In theory, implicit protection and depositor preference are mutual substitutes. However, depositor preference alone cannot work, as it does not ensure prompt payment to depositors to prevent a bank run. Rather, practice tends to favour a combination of explicit protection and depositor preference, whereby the deposit insurance organisation explicitly covers insured depositors and becomes subrogated into their claims with a preferential ranking over other creditors. Non-insured depositors have preference over other creditors, but they are subordinated to the claims of the insurance organisation.

Specific mention should be made to the national depositor preference regime, in which claims of depositors in the home country are preferred to the claims of branch depositors outside the home country, if the bank becomes insolvent. Although the proposals of the Financial Stability Board state that “national laws and regulations should not discriminate against creditors on the basis of their nationality, the location of their claim or the jurisdiction where it is payable”, several countries, including the United States and Australia, operate national depositor preference regimes.

4 THE SINGLE SUPERVISORY MECHANISM (SSM)

4.1 SINGLE SUPERVISORY FRAMEWORK

Although the key rules of banking law are generated at the EU level, national authorities have the discretion to tighten these rules or interpret them in the light of national specificities and priorities. This has resulted in a divergent set of regulations that gives rise to legal uncertainty, enabling banks to take advantage of regulatory arbitrage, thereby distorting competition. With the growing integration of financial markets, such disparities

can have a negative impact, as any shock can spread quickly. The use of common definitions and supervisory practices, as well as a common methodology is seen as one measure to address market fragmentation. For example, common standards on the development of internal models for supervisory purposes will mitigate differences in the calculation of risk-weighted assets. The implementation of the common rules and supervisory practices (single rule-book) in the EU has been undertaken by the European Banking Authority. Its mandate includes the establishment of binding technical standards on Basel III (CRD IV/CRR) and other supervisory issues, which will have legal effect and will become part of the national law of the Member States.

The completion of this project is expected to result in a more resilient, transparent and efficient European banking sector. A single rule-book will ensure that prudential supervision rules will be implemented, to the extent possible, throughout the EU and that the financial condition of banks will be more transparent and comparable, while at the same time reducing the cost of regulatory compliance, as banks will no longer have to comply with several regulatory frameworks. Moreover, a uniform EU-wide framework for banks can build a common supervisory culture and lay the foundations for a level playing field, which would have a positive impact on competition and reduce country bias. This will enhance the credibility of the supervisory framework and curb regulatory capture. In any case, the new regulatory framework must be set up in a manner that allows for a degree of national flexibility, given that the same risk can manifest itself in different ways across countries, reflecting their different economic conditions. Also, it should be taken into account that economic or credit cycles are not synchronised across Europe.

4.2 MICROPRUDENTIAL SUPERVISION AT THE EU LEVEL

In designing supervision at the EU level, a number of questions had to be answered. Why is a

single supervisory mechanism necessary? Which should be the supervisory body at the European level? Which banks should be covered? What is the relationship between bank supervision and monetary policy? How to design uniform supervision? We will attempt a brief analysis of these questions and the solutions adopted.

(i) Single Supervisory Mechanism

The Single Supervisory Mechanism represents a centralised approach to banking supervision, which can take three forms: (a) extended cooperation between national supervisory authorities; (b) a reinforced lead supervisor; and (c) a supranational supervisory body. Forms (a) and (b) already existed in Europe, but proved to be less efficient than expected. Cross-border banks expand by establishing branches or subsidiaries; the former are subject to home country supervision, while the latter are subject to supervision by the host country. Effective supervision at group level requires cooperation of all the supervisory authorities involved. However, voluntary cooperation is an incomplete contract whose enforcement is not safeguarded. Experience has shown that cooperation among supervisory authorities is difficult, particularly in crisis periods, as issues of domestic accountability and tax considerations arise. It is clear that the earlier architecture, a result of political compromise, had not taken into account the negative externalities associated with cross-border banking, as the geographical reach of banks' activities did not coincide with the reach of supervision.

Among the three alternatives, the one chosen was the centralised approach to supervision on the basis of a supranational authority, which reduces coordination problems between home and host countries.¹⁶ At theoretical level, the choice of the centralised approach can be justified by a cost-benefit model, in which the biased behaviour of national supervisory authorities represents the cost,¹⁷ and their better knowledge of local banks is the benefit. It can be shown that the optimal architecture of a supervisory system depends on three factors

(see Colliard 2013): (a) the severity of the conflict of objectives between the supranational authority and the national authorities; (b) the opacity of the supervised bank; and (c) the specificity of its assets. The greater the severity of the conflict of objectives and/or the lower the specificity of assets, the more a supranational authority is appropriate. On the other hand, a national authority is appropriate when the bank is opaque due to complex structure and/or products. An additional conclusion of the study is that it is easier for banks supervised at the central level to borrow from foreign sources.

(ii) Supervisory body

Three options were considered: (a) the European Central Bank (ECB); (b) the European Banking Authority (EBA); and (c) a new entity. The third option was rejected for practical reasons and the second option for political reasons, as the EBA is located in London. Under the compromise arrangement chosen, the ECB will act as the single supervisory authority within a single framework of supervisory rules (single rulebook) established by the EBA. Moreover, Regulation 1024/2013 (the founding Regulation of the single supervisory body) requires the ECB to internally separate supervision from monetary policy and specifies the ECB's relations with national supervisory authorities. A two-tier system is used, whereby the ECB has responsibility for the main supervisory matters, having the power to grant and withdraw authorisation, assess mergers and acquisitions, ensure compliance with the Basel capital framework, remove a member from a bank's management body and

¹⁶ Other proposals were also put forward, which were alternative approaches to (a) and (b). For example, it was proposed to strengthen national supervisory authorities by imposing the obligation on all banks to operate in any country through subsidiaries and be subject to supervision by the host country. It was also proposed to enable host countries to supervise cross-border banks depending on the effects on the economy of the host country (effect-based regulation). The above solutions were not adopted, as they were seen as halting the completion of the internal market in the European Union.

¹⁷ A number of studies have shown that national supervisors may have distorted incentives when deciding to intervene in a troubled bank with cross-border activities (see Bignon et al. 2012).

carry out supervision on a consolidated basis. National supervisors will continue to exist, given their long-standing expertise. They will assist the ECB in its supervisory tasks and they will retain responsibility for certain areas of supervision, such as consumer protection and the fight against money laundering.

Of course, the selection of the ECB as the supervisory body is not without risk. First of all, in any delegation of authority there is an agency problem, primarily stemming from conflicting motives. ECB supervision may be more intrusive compared with the forbearance possibly shown by national supervisors, but national interests are hard to disregard. If the problems arising from the conflict of interests prove to be insurmountable, the cost will be significant and may cast doubt on the ECB's role in the conduct of monetary policy and put into question the delegation of national powers both in monetary policy and in bank supervision.

(iii) Scope

Regarding the scope of supervisory activities, there were two options: (a) all banks established in participating Member States or (b) only systemically important banks established in participating Member States. Although the initial Commission proposal favoured the former option, political processes within the euro area led to the adoption of the latter option. Criteria were set for determining the systemically important banks¹⁸ and 128 banks were thus selected¹⁹ – accounting for 85% of total bank assets – to be supervised by the ECB beginning in November 2014. The remaining banks will be supervised by the national supervisory authorities based on common supervision standards, while the ECB will reserve the right to take most of the decisions relating to these banks or the right to take over direct supervision of any bank.

(iv) Bank supervision and monetary policy

As already mentioned, the Regulation establishing the single supervisory mechanism

requires the separation of supervision from monetary policy within the ECB. During the past 15 years, several European countries decided to establish an independent authority to supervise the financial market as a whole, distinct from the national central bank, which retained responsibility for monetary policy. The main argument for this separation was that it would mitigate potential conflicts of interest between the two objectives of price stability and banking supervision. In general, the pursuit of two different objectives warrants the use of two policy instruments. When synergies outweigh conflict of interest issues, both objectives should be assigned to a single body; if not, two different bodies are more appropriate. The implementation of monetary policy requires a high degree of credibility and any negative events in the field of supervision could give rise to reputational risk and affect the functioning of monetary policy. There is a wider margin of tolerance towards a troubled bank in the context of supervision than in the context of monetary policy, e.g. when a capital increase is necessary in relation with the provision of liquidity. Besides, addressing a crisis may require monetary policy measures that run counter to the objective of financial stability, e.g. the provision of liquidity may lead to inflation of asset prices. However, there are arguments to the contrary. The most important of them has to do with information. The conduct of monetary policy requires information on counterparties which is available to supervisors, e.g. emergency liquidity assistance (ELA) may only be provided to solvent banks. However, the notion of a “solvent bank” can only be defined by a supervisory authority. Moreover, modern economic theory has shown that there is a close relationship between monetary policy and financial stability, as the banking system is the main channel for the transmission of monetary

¹⁸ The four criteria are the following: (a) total value of assets; (b) importance for the economy of the relevant Member State or the EU; (c) complexity from cross-border activity and as an additional criterion, (d) banks that request and receive direct support from the EFSF and ESM.

¹⁹ The list includes four systemically important banks in Greece: National Bank of Greece, Piraeus Bank, Alpha Bank and Eurobank.

policy to the real economy. Information sharing is easier when supervision is not very distant from monetary policy. Therefore, segregated but not separate supervision can help in the conduct of monetary policy. This model has been chosen for the EU. In particular, within the ECB a Supervisory Board has been established, which is segregated from the monetary policy structures. This Board will propose draft decisions to the ECB's Governing Council and will be deemed adopted by the latter through the non-objection procedure.

(v) Planning a single supervision

During a transitional period prior to the full assumption of its supervisory tasks in November 2014, the ECB will carry out a comprehensive assessment, which is anticipated in the “founding act” of the SSM. The scope of this exercise is threefold: (a) to enhance transparency, by improving the quality of information available on the condition of banks; (b) to strengthen balance sheets by repairing the problems identified through the necessary remedial actions; and (c) to build confidence by assuring all stakeholders that, on completion of the identified remedial action, banks will be soundly capitalised. If a capital shortfall is identified, the bank concerned will be required to take corrective actions, and the ECB will be monitoring and enforcing the implementation of these measures. Such measures could include, for example, recapitalisation by retention of earnings, issuance of equity instruments, rearranging the sources of funding, asset separation, etc. Although decision makers have stated that corrective measures will be implemented rigorously,²⁰ many doubts have been expressed in literature based on motivation analysis and the ability to support decisions (see Valiante 2014).

4.3 MACROPRUDENTIAL SUPERVISION AT THE EU LEVEL

The crisis in the international financial system and in the euro area prompted a number of changes in the architecture of supervision. In

2010, the European System of Financial Supervisors (ESFS) was established. The ESFS is not a legal entity, but simply marks the emergence of the three new supervisory authorities in the EU: the European Banking Authority (EBA) (for the banking sector – Regulation 1093/2010), the European Insurance and Occupational Pensions Authority (EIOPA) (for the insurance sector – Regulation 1094/2010) and the European Securities and Markets Authority (ESMA) (for capital markets – Regulation 1095/2010). While the above three bodies succeeded previous similar bodies, the ESFS, for the first time, also included the European Systemic Risk Board (ESRB), which is responsible for macroprudential supervision at the EU level (Regulation 1092/2010),²¹ while Council Regulation No 1096/2010 conferred specific tasks upon the ECB concerning the functioning of the European Systemic Risk Board (ESRB).

The establishment of the ESRB changed the long-standing supervisory philosophy (see Brinkhoff et al. 2012), according to which the soundness of the parts of the system, namely the soundness of financial intermediaries, would suffice to ensure the soundness of the system as a whole. This proved to be wrong, as the soundness of individual banks can trigger behaviours that put the whole system at risk. For example, selling stocks when prices are rising seems rational from a bank's point of view. But if all banks do the same, then prices will collapse. Corrective actions by banks can multiply repercussions and, given asset price linkages, the fall in prices could spread to other markets. Furthermore, if the portfolio exposures of one or more banks are concentrated in one sector, this may not be a problem when these banks have the required capital. But if the concentration of risks materialises across the banking system, then imbalances and instability can arise. Thus, micro-policies can have

²⁰ See “Toward the European Banking Union: achievements and challenges”, speech by Danièle Nouy, Chair of the Supervisory Board of the Single Supervisory Mechanism, at the OeNB Economics Conference, Vienna, 12 May 2014.

²¹ In 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act established the US Financial Stability Oversight Council (FSOC), with responsibilities similar to those of the ESRB.

negative macro-consequences, and this is what economists call “fallacy of composition”. Therefore, macroprudential supervision is useful when it can influence microprudential supervision, which cannot ensure the soundness of banks without taking into account macroeconomic factors.

Based on the above arguments, the ESRB was entrusted with identifying systemic risks and the accumulation of risks within the system. Using both quantitative and qualitative criteria, i.e. expert judgment, analysis of interconnections and stress tests, it identifies and prioritises systemic risks and issues warnings and recommendations for remedial action on a “comply or explain” basis. It also works together with the other parties to the ESFS in the identification of systemic risk and provides a forum for the discussion of financial stability issues at the EU level. The ESRB is not authorised to implement macroprudential oversight measures, which are entrusted to Member States. This is reasonable, taking into account that economic and credit cycles, as well as financial structures vary across EU countries.

However, the Single Supervisory Mechanism (SSM) has also introduced systemic risk aspects and incorporates macroprudential oversight elements, since the ECB is responsible for microprudential supervision tools that can be used for macroprudential purposes. The main tools available to ECB are the capital buffers, the additional requirements for systemically important banks and the Pillar II requirements. As a rule, the above fall within the competence of national supervisory authorities, but the ECB may apply stricter thresholds.

5 THE SINGLE RESOLUTION MECHANISM (SRM)

5.1 LEGISLATIVE INITIATIVE

Although the establishment of the single supervisory mechanism represents an important step towards a European Banking Union,

it must also be accompanied by a reliable solution regarding the handling of troubled banks. Efforts have focused on putting in place common bank resolution mechanisms and procedures through two legislative initiatives: the Bank Recovery and Resolution Directive (BRRD) at the EU level, and the SRM Regulation, at the euro area level. The BRRD seeks to ensure that competent authorities have the necessary means to intervene both in a preventive manner, i.e. before banks get into difficulties, and ex post corrective manner i.e. when resolution measures must be implemented to ensure the continuation of a bank’s critical operations without putting too much strain on taxpayers as a result of resolution costs. Under the BRRD, bank resolution remains within national responsibility, while a common framework as well as European resolution colleges are introduced for the coordination of actions. The SRM Regulation seeks to establish a single resolution mechanism in the euro area through the establishment of a Single Resolution Board and a Single Resolution Fund.

5.2 LIVING WILL

A novelty of the new resolution framework is the introduction of the “living will” concept, which has been seen as one of the most fundamental interventions in the field of supervision after the crisis (see Avgouleas et al. 2013) and is considered superior to other alternatives (see Llewellyn 2013). It marks the “will” of banks to remain “living”, possibly in a smaller scale and/or in a different business model, and their commitment to the implementation of the required policies. This “will” has two components: the necessary actions for a bank to continue its operations (going concern basis) and the necessary actions for a bank to adhere to orderly resolution (gone concern basis), which must be demonstrated in a recovery plan and a resolution plan, respectively (see Hüpkes 2014 and Otto 2014). These restructuring plans correspond to two different aspects of a crisis. A bank can face difficulties and strong pressures and needs to have a con-

tingency plan for restoring its viability and normal operation. A recovery plan describes the alternative policies to achieve this. If these policies fail, then resolution policies must be activated by the competent authorities. A resolution plan provides them with all necessary information for an orderly resolution. In essence, a recovery plan aims to reduce the probability of an intervention by competent authorities becoming necessary, while a resolution plan aims to reduce the cost of an intervention, should it become necessary. Obviously, the resolution plan is put into effect if the recovery plan fails. Moreover, the aim of both these plans is to introduce a degree of discipline and encourage a bank's management (as well as competent authorities) to search for optimal solutions in the event that a bank faces problems. It is preferable that these plans be designed in advance, particularly for banks with cross-border activity, given that ex post consultation has been proved to be prone to coordination failure, due to bias (and political pressure) in favour of national strategies (see Angkinand and Wihlborg 2013).

The predetermined "will" of the banks for an orderly restructuring contributes to the reduction of moral hazard, since the actions required in a distress situation have been anticipated in advance. Banks are given the opportunity to simplify their organisational structure and make its components less opaque, so as it is identified in advance which of them are to be used in case of restructuring. This reduces interlinkages between banks and, potentially, the systemic importance of a bank.

Finally, it is particularly important that recovery and resolution plans are prepared both at individual and at group level. This would enable a group to maintain its overall value and insulate itself from a failure in any of its member institutions. The possibility of intragroup support (e.g. from a parent bank to a foreign branch) is acknowledged. Such support can take the form of loans, guarantees or collateral. Banks operating within a group are given the possibility to enter into a financial support

agreement with another group member, and this must form part of the restructuring plan. For this to happen, support must be considered presumably certain.

(i) Recovery plans

Every bank must prepare and update recovery plans to ensure that action is taken to address problems at an early stage. These plans pre-describe the measures a bank is intended to take in order to restructure in the event of extreme macroeconomic and financial distress and to cope with liquidity or funding problems. They must be detailed and realistic, assume no government bail-out and describe how liquidity facilities provided by monetary authorities are to be used. Recovery plans do not envisage the factors that can lead to a crisis, but lay down the alternative policies to be implemented in different distress scenarios of various forms and intensities, particularly those that lead to a capital shortage and liquidity constraints. These alternative policies are not conventional measures, but measures that are to be implemented in exceptional circumstances, such as recapitalisation by the market, disinvestment with downsizing, restructuring of liabilities, deleveraging or liquidity injection. Also, the activation of any policy cannot be automatic, e.g. through an activation threshold, but should rather rely on recovery indicators serving as triggers for each of the alternative policies. Triggers must be used as an early identifier of the best alternative and must be integrated in a bank's risk management and/or capital planning and refer to solvency and liquidity aspects. Moreover, for each alternative policy, recovery plans must identify the impact on the bank's operations and on the overall financial intermediation, as well as the potential risks from a failure to implement each alternative. It is obvious that recovery plans are an additional tool in a bank's risk management toolkit.

(ii) Resolution plans

Under the BRRD, resolution plans are drawn up by resolution authorities and describe the

actions to be taken by a resolution authority to ensure the orderly resolution of a bank, should it become necessary, so as to protect financial stability, depositors and the bank's assets, minimise dependence on public funds and preserve key intermediation functions. It is obvious that with the activation of resolution plans, the bank in question loses its autonomy and the necessary actions are determined by the resolution authority. For the intervention to be effective, the resolution authority must possess a variety of information, which the banks are required to have gathered and submitted in advance. On the basis of this information, the most appropriate policies will be defined. Thus, collecting information under pressure is avoided. Needless to say that resolution authorities are not bound by the plan and can implement an alternative plan as they see fit in the circumstances.

Simplifying a bank's organisational structures is a key element of a resolution plan and can be achieved by (a) identifying a bank's critical functions and strategy to ensure the continuity of such functions in a period of disturbances; (b) identifying shared services in the case of groups, e.g. common infrastructures or common activities; and (c) defining intragroup relations at various levels, e.g. mutual guarantees or mutual use of staff. In order to identify critical functions, account can be taken of the negative impact of an abrupt discontinuance of functions, as well as market perceptions of the criticality of particular functions, mainly with regard to their substitutability. Subsequently, there is a need to identify the alternative resolution options for each legal entity in the group and potential obstacles to an orderly resolution. A bank is deemed to be "resolvable" if it can be resolved with its core activities protected and without adverse effects on the financial system. Resolvability assessment can be seen as a two-step process. The first step involves a feasibility assessment, aimed to identify feasible resolution strategies based on the available resolution tools and the ability of authorities to implement them immediately.

The second step is a systemic impact assessment, in which the credibility of feasible resolution strategies is assessed on the basis of systemic impacts at the domestic and/or international levels.

Finally, it should be pointed out that, as resolution tools may imply a significant interference with the property rights of shareholders and creditors, resolution mechanisms must ensure that resolution measures are taken only when all other realistic recovery options have been exhausted.

5.3 THE RESOLUTION MECHANISM

Academic literature has demonstrated that the ex post resolution of cross-border banks can give rise to coordination problems, due to national strategies in the negotiation process. Considering the issue in game theory terms, non-cooperative equilibrium dominates in non-repeated games (e.g. resolution), while cooperative equilibrium prevails in repeated games (e.g. supervision) (see Schoenmaker 2010). Therefore, the ex ante establishment of a resolution mechanism has been suggested, which means an ex ante pooling of resources. In the case of the euro area, the questions that had to be answered regarding the resolution mechanism related to: (i) the resolution body; (ii) the decision making mechanism; and (iii) the funding of the resolution body.

(i) Resolution body

A single resolution framework required the establishment of an independent single resolution body. In this regard, several options were considered. One option would be to designate the European Central Bank (ECB) or the European Banking Authority (EBA) as the resolution body by expanding their mandate from prudential supervision. Although this option failed to gather support, amid concerns about over-concentration of powers, the two organisations were assigned ancillary roles, with the ECB determining which banks are not viable and should be resolved and the EBA

entrusted with the task of developing a manual with rules and practices in the area of recovery and resolution. A second option would involve the European Stability Mechanism (ESM), which is the result of a mixed political and technocratic approach, has been designed to support Member States facing difficulties and can participate in the recapitalisation of troubled banks when systemic stability is threatened. This could make ESM a likely candidate, but this option was rejected as it would be incompatible with the main policy for addressing the interdependence between over-indebted sovereigns and distressed banks and could give rise to conflict of interests. Third, a Deposit Guarantee Mechanism could serve as the resolution body, as is the case in the United States, where the Federal Deposit Insurance Corporation (FDIC) has resolution powers in parallel with the protection of deposits. The two activities share similar features, as their common objective is to protect depositors and prevent panic. However, in the European Union, deposit protection, which forms the third pillar of the banking union, is to remain at the national level and, in general, discussions are not mature enough for a combination of the two mechanisms. Against this background, a different solution was chosen as a result of political compromise: the establishment of a new “quasi” single resolution body. The word “quasi” suggests that the body has a Board and a Fund (see below), but the executive arm is formed by the national resolution authorities. Although not optimal, this solution offers the advantage that a new entity is established with bank resolution as its sole objective, and this overrides all conflicts of interest entailed by the other alternatives. This arrangement ensures mutualisation of risks, as well as the necessary speed, independence and transparency in decision making. A negative aspect is that this is a new organisation, whose decision making behaviour has not been tested in practice. This is very important, as the new body will need to co-exist with other structures, and in many cases conflict of interest is endogenous.

(ii) Decision making mechanism

A complex mechanism has been set up, as a result of a compromise between maintaining national policies and promoting common European policies. A Single Resolution Board (SRB) has been established, which will begin to take resolution decisions in 2016²² for banks within its field of responsibility, on the initiative of the ECB or on the SRB’s own initiative (under certain conditions). The procedure can be initiated when all of the following conditions are met:

- (a) a bank is failing or is likely to fail;
- (b) there is no alternative resolution approach, either through private funds or through supervisory interventions; and
- (c) resolution is in the public interest.

A bank is deemed to be failing or likely to fail on the basis of specific indicators, such as non-compliance with regulatory thresholds (e.g. minimum capital requirements), negative equity and likely inability to repay depositors and bond holders. The “public interest” condition is met when resolution practices are proportional to the resolution objectives.

Once a resolution procedure is initiated, the bank loses its autonomy, and the use of the Single Resolution Fund is triggered (see below). The decision is taken by the SRB, meeting in either the executive or the plenary session. Resolution must be completed within 48 hours and always over the weekend. The decision-making process is an important issue, as any failure could generate instability. The ECOFIN Council may object to the decisions of the SRB, upon proposal from the European Commission, on public interest grounds or if the Commission has requested a material modification to the use of the Fund in a specific resolution scheme, which partly politicises the procedure. National resolution authorities are required to implement the decisions taken by

²² A transitional period is necessary, as otherwise the mutualisation of risks would also include old risks that existed before the establishment of the SRM (legacy assets).

the Board. In general, the whole procedure has been criticised as complex and contrasting with the need for swift decision making and, at the same time, confidentiality.

(iii) Funding

It was decided to establish a Single Resolution Fund (SRF), in order to pool national resources and ensure that banking crises can be addressed more effectively. Ex ante funding is envisaged, as this choice can be more easily accepted at the political level and motivates banks to factor in costs in their decisions. In addition, provision has been made for ex post funding, to be used only in exceptional circumstances, given its procyclical nature.

The Fund will be built up over a transitional period of eight years, through contributions from banks authorised in banking union member states, reaching an estimated amount of about EUR 55 billion. At the final phase of negotiations, it was decided that the mutualisation of funds would be front-loaded, starting with 40% in the first year and a further 20% in the second year, with the remainder being equally distributed over the subsequent six years until full mutualisation.²³ If in the meantime further funds are required in excess of the built-up funds, the difference can be covered by alternative sources of financing (bridge financing). Finally it is straightforward that there are special arrangements to ensure that banks' contributions will vary, depending on their respective business models.

The issues arising regarding financing relate to (a) the premium that each bank has to pay, and (b) the total amount of funding. For the former, the theory is in favour of risk-based premiums, otherwise riskier behaviour would be subsidised. Although this policy has been endorsed, it is difficult to implement, as it entails redistributive effects across banks and across banking systems.

With regard to the amount of financing, the calculation is based on the estimation of max-

imum potential loss and the time needed to build up this amount. As both parameters were difficult to calculate, a target level of 1% of the amount of covered deposits was set, i.e. about EUR 55 billion. This amount has been criticised as insufficient. It should be noted, however, that this amount is not meant to provide loss coverage, but support the recovery and recapitalisation of banks created as a result of the resolution procedure. Under the present conditions, this amount is sufficient to address problems in the euro area banking system, apart from the very large banks, and can address a crisis in a small or medium-sized banking system.²⁴ Obviously, the Single Resolution Fund cannot address a widespread systemic crisis. In this case, in order to preserve the system's key functions, e.g. payment systems, and maintain the supply of credit to the economy, a fiscal backstop is needed. This has been recognised by Member States, which are committed to elaborating specific solutions during the transitional period.²⁵

5.4 BURDEN SHARING MECHANISM

Resolution costs and burden sharing are among the most difficult aspects of a resolution framework in both political and economic terms (see Mayes 2004). During the 2008 crisis and the shock from the collapse of Lehman Brothers, national governments and the ECB were against any imposition of losses on a bank's creditors and, more importantly, on depositors. However, the write-down in the face value of Greek government bonds (PSI) and the imposition of losses on non-guaranteed deposits in Cypriot banks changed this stance. In the euro area, a burden sharing mechanism had to be adopted (a) at cross-border level and (b) at bank creditor level. More-

²³ The mutualisation procedure is described in the Intergovernmental Agreement (IGA) of 21.5.2014 (see ECOFIN press release).

²⁴ Spain raised EUR 40 billion from the ESM for its banks, and the recapitalisation programme for Greek banks reached EUR 50 billion.

²⁵ See Vanden Bosch, Xavier (2014), "Is the EMU ready for future shocks? An overview of available 'backstops'", BTTD, *Banking Union and beyond*. Discussion Papers.

over, the components of such a mechanism had to be defined.²⁶

(i) Cross-border burden sharing

There are two approaches to cross-border burden sharing:

- The single point of entry (SPOE) approach, under which resolution tools are implemented at the top holding or parent company level, typically by the resolution authority of the home country. The assets of subsidiaries are preserved on a going concern basis, while lower organisational levels units within the group are exempted from the resolution techniques.
- The multiple point of entry (MPOE) approach, under which resolution tools are implemented, usually simultaneously, by two or more authorities that are responsible for the respective parts of a group. The split can be carried out on a national or regional basis, along functional lines, or some combination of each. In this case, the resolution authority of the home country plays the role of the coordinator. Resolution procedures need not be the same for all parts and could include different resolution tools.

In the euro area, the latter strategy had been followed, given that the approach to bank resolution had been basically national but it is questionable whether the notion of a coordinator was effectively implemented. The new framework marks a shift towards the SPOE strategy, aimed to address the possibility that a domestic resolution authority ring fences a bank's domestic assets, thereby exempting them from the resolution of a group.²⁷

(ii) Burden sharing among creditors

With regard to burden sharing among a bank's creditors, the officially stated EU policy is that public resources or ESM funds can only be used to bail-out a bank when all other sources have been exhausted, that is when up to 8% of

the funds of bank shareholders and creditors has been depleted (bail-in), while the contribution of the Resolution Fund cannot exceed 5% of total liabilities (including own funds). Above these thresholds, Resolution Fund support is not mandatory, and creditors could be called on to contribute further. Essentially, this mechanism is a type of guarantee by creditors against a bank's insolvency, which can mitigate or prevent bank runs in periods of crisis.

As for how the burden will be allocated among creditors, the most important issue that arises is the pecking order of creditors. In this regard, the framework clearly specifies that common shareholders (Common Tier 1, Additional Tier 1 and Tier 2) are ranked first, followed by quasi shareholders (holders of subordinated debt) and, finally, creditors, bondholders and depositors. Among depositors, those covered by a deposit guarantee scheme are explicitly exempted. The deposit guarantee scheme will have to cover the loss on their behalf, without being required to make a further contribution to the recapitalisation. The framework offers a degree of flexibility to Member States, by allowing national resolution authorities to exempt certain classes of creditors in advance. This perhaps introduces a discrimination against some classes of depositors and increases uncertainty, but it also frees the mechanism from e.g. legal impediments. In this case, the cost is incurred by the resolution entity, which can intervene under certain conditions. A general problem is that, if the bail-

²⁶ Goodhart and Schoenmaker (2009) suggest a general and a specific burden sharing scheme. The general scheme involves all countries, given that the stability of the European financial system is seen as a public good and, like any other public good, is subject to the free-rider problem. An additional negative aspect is that this scheme entails cross-border fiscal transfers, which can be difficult to manage from a political point of view. The European Stability Mechanism (ESM) and the credit facility it provided to Greece can be considered as an example of a general scheme. In the specific scheme, only countries directly affected by the impact of bank resolution participate in burden sharing. Such a mechanism can be considered compatible with incentives, as it provides incentives for the fiscal authority to press for optimal supervisory effort.

²⁷ In the United States, the FDIC has adopted the SPOE approach, but instead of focusing on the top-tier (holding) company of a bank, it forms a bridge company to which all assets are transferred and a securities-for-claims exchange is organised (see "Resolution of Systemically Important Financial Institutions: The Single Point of Entry Strategy," 78 Fed. Reg. 76614, Dec. 18, 2013).

in tool is applied to two banks, the terms of burden sharing can be different in the two cases, which means that the equal treatment of all creditors is not ensured.

It should be noted that bail-in is considered as a resolution tool (for more details, see Box 2 and Box 3) and can be applied only when a bank meets certain criteria, namely when (a) a bank has failed or is likely to fail; (b) there is no other resolution alternative through private funds or supervisory interventions, and (c) resolution is in the public interest. The decision as to whether these criteria are met is taken by the ECB with regard to the first criterion and by the Resolution Board with regard to the other two. If all three criteria are met, the Board may apply the bail-in tool either individually or combined with other resolution tools, such as a bridge bank or the sale of business tool.

A debated issue is the definition of “likely to fail”, as it is open to several interpretations. For example, if a bank is in a pre-resolution regime (early intervention) and its capital planning envisages the use of public funds, is this a sign that the bank is likely to fail? The Directive allows a degree of flexibility, as it

stipulates that in some cases the use of public funds does not necessarily mean that a bank is likely to fail. It should be noted that the use of public funds only applies to solvent banks and is subject to the requirements of the communication from the Commission on the application of State aid rules in the financial sector (see Banking Communication 2013/C, 216/01, 30 July 2013).²⁸ In practice, this means that the use of public funds is acceptable when it is of a precautionary and temporary nature and proportionate to remedy the consequences of a serious disturbance (see Micossi et al. 2014).

²⁸ Since 2008, the European Commission has adopted a series of decisions on the framework of State aid to the financial system. The legal basis for these decisions was the provision in the Treaty (Articles 107-109 TFEU) that State aid can be granted to remedy a serious disturbance in the economy of a Member State. As the crisis evolved, this framework was revised repeatedly to take account of new conditions. When the planned banking union was announced, the European Commission considered that a temporary framework was required for the period up to the completion of the banking union and adopted the Communication of 30 July 2013. The novelty of the new framework is that it introduces the mandatory participation of a bank's creditors in the recapitalisation, before any State aid is provided. In particular, two cases are envisaged: (a) the bank does not meet the minimum capital requirements; and (b) the bank meets the minimum capital requirements, but the supervisory authority has identified a capital shortfall. In the first case, the contribution of creditors comes before any State aid, while in the second case, which can arise e.g. on the basis of the results of a stress test, the contribution of creditors can take the form of conversion into equity only when the capital shortfall cannot be covered in any other way.

Box 2

THE BAIL-IN TOOL

Bail-in is a resolution tool designed to ensure that the cost of a bank failure is borne by the bank's investors. This can be achieved by two methods: (a) mandatory debt conversion, whereby creditors are converted into shareholders; and (b) writing down the nominal value of creditors' claims (see IMF 2012). Both approaches presuppose that financial instruments considered as quasi-capital for supervisory purposes are available. The Basel III framework clearly defines these instruments and how they can be used when a bank reaches a point of non-viability.

It is important to distinguish between automatic conversions and contractual conversions. The former refer to financial instruments that are converted into stock when a specified trigger event occurs (e.g. Contingent Convertible Securities – CoCos). In this case, conversion into equity is automatic. By contrast, in the case of contractual conversions the decision is not automatic and it is taken by the competent authority. In both cases, the crucial parameter is what triggers the conversion. The objective is to ensure that the bank will remain a going concern and, therefore, a delayed conversion is to be avoided. It offers the advantage that the value of assets is protected

and the competent authority has more discretion in implementing the conventional resolution measures.¹ However, in both cases, conversion ensures that equity is increased when it is most needed, and this is why it is considered as a counter-cyclical measure par excellence.

For this to happen, each bank must have financial instruments that can be written down to absorb losses and/or converted into equity under certain conditions (bail-inable instruments) to ensure that there are sufficient reserves to absorb losses. In the context of the Single Resolution Mechanism, the Supervisory Board, in cooperation with the supervisory authorities, can determine the share of these instruments in a bank's capital structure (Minimum Requirement of Eligible Liabilities – MREL). The ring fencing of these financial instruments can contribute to transparency, as well as to the creation of secondary markets for the relevant products. (see Kenadjian 2014).

Expanding bail-in to financial instruments not considered as capital or quasi-capital gives rise to issues that need to be addressed. In this regard, there are two approaches (see Huertas 2014): First, the waterfall approach, under which a further class of financial instruments that can be used in the recapitalisation is determined, and, second, the carve-out approach, under which all instruments are considered usable in case of a recapitalisation, with the exception of particular financial instruments. In essence, both approaches attempt to make some kind of distinction among a bank's creditors and are usually combined with the depositor preference policy.

1 See a speech by Ben S. Bernanke at the Federal Deposit Insurance Corporation's Forum on Mortgage Lending for Low and Moderate Income Households, Arlington, Virginia, 8 July 2008 and his testimony before the Committee on Financial Services, U.S. House of Representatives, 10 July 2008.

Box 3

DEPOSITOR DISCIPLINE

Through the new Directive on bank resolution, the European Union attempts a shift in its bank resolution policy by introducing the concept of depositor discipline.

Market discipline is a broader concept understood as a set of measures that market participants can take collectively in the event that a bank assumes excessive risks. However, the ability of market participants to discipline banks depends on their ability (a) to have an informed view of a bank's financial condition (monitoring ability); and (b) to influence a bank's decisions (influencing ability). The pressure that can be exerted by market participants can be manifested as a price effect, where depositors demand an additional risk premium, or as a quantity effect, where they withdraw their deposits from the bank.

Academic literature has studied this issue, but the results are inconclusive. In general, it seems that it is possible to impose discipline in more developed markets, while in less mature markets there are many factors that negatively affect incentives, such as the "common belief" that deposits are fully safeguarded based on the resolution policies followed in the past, when deposits were protected in their entirety. In a study on a sample of banks from the United States and the EU, Berger and Turk-Ariss (2013) examined the effects on depositor discipline before and after the 2007/08 crisis. They concluded that depositor discipline existed before the crisis, but at a varying degree between the US and the EU. Also, the degree of discipline depends on the size of a bank and on whether or not it is listed on the stock market. After the crisis, depositors are more sen-

sitive to bank-specific fundamentals, but the degree of discipline they impose has decreased as a result of government bail-out policies.

Despite conflicting theoretical findings, at the institutional level it has now been finalised that depositors who are not covered by a deposit guarantee scheme, i.e. large depositors, may bear the cost of a bank resolution. This changes their behaviour, as they have to “act like investors”, a concept used for the first time following the legislative changes in the United States in the early 1990s.¹ For this to be implemented, it must be accompanied by measures to strengthening bank transparency and improving the ability of depositors to determine the risk profile. The effect of additional transparency has been studied by Gick and Pausch (2012), who focus their analysis on a very specific event, the disclosure of the stress-testing method and of the outcome of the stress tests carried out in the United States.² Using the framework of game theory, they develop a model of a persuasion game in which the sender of the signal is the supervisory authority and the receivers are the market participants. The authorities have an incentive for optimal stress test design and optimal disclosure. Disclosure of stress test methodology and results has a positive impact on the decisions of information receivers.

1 See Jens, William G. and David F. Scott (1992), “Banks in distress: Depositors must act like investors”, *Business Forum*, 17(4).

2 Before the disclosure of the results, intense internal consultations within supervisory authorities took place as to the degree of disclosure of the findings. Finally, the decision to disclose findings was taken based on the following reasoning: “the decision to depart from the standard practice of keeping examination information confidential has led supervisors to take the unusual step of publicly reporting the findings of this supervisory exercise.”

6 HARMONISED DEPOSIT GUARANTEE SCHEME (HDGS)

The deposit guarantee framework in the European Union was established in 1994 in order to strengthen retail banking by setting minimum standards on deposit insurance. However, harmonisation across Member States has been very limited. Various schemes were in place in individual EU countries including different provisions regarding coverage levels, eligible depositors, payout period, etc. These schemes proved to be inadequate during the crisis, as they were not designed to address a crisis of that scale, thus necessitating government intervention (e.g. United Kingdom, Iceland). In this context, a series of legislative initiatives were undertaken²⁹ (see Cariboni et al. 2008, Gerhard and Lannoo 2011), the latest of which was the 16 April 2014 revision of the Directive on deposit guarantee schemes. The revisions represent an ongoing process aiming at the harmonisation of rules and the improvement of depositor protection. However, the basic structure of the European deposit guarantee scheme has not changed substantially.

Although there have been proposals for a modification of the framework (see Schoenmaker and Gros 2012) by delegating supervisory powers or bank resolution and liquidation powers according to the FDIC model, there is a lack of political support for such drastic changes.

The main features of the deposit guarantee scheme in the EU and in particular the evolution of the regulatory framework are discussed below.

(i) Form

In the EU, it is mandatory for Member States to have in place at least one national deposit guarantee scheme. The deposit guarantee Directive maintains the national schemes and seeks to ensure greater harmonisation

29 The reform of deposit guarantee schemes was one of the proposals of the de Larosière Group for the reform of the financial supervision architecture in the European Union. Report of the High-Level Group on Financial Supervision in the EU chaired by Jacques de Larosière, Brussels, 25.2.2009. “Recommendation 14: Deposit Guarantee Schemes (DGS) in the EU should be harmonised and preferably be pre-funded by the private sector (in exceptional cases topped up by the State) and provide high, equal protection to all bank customers throughout the EU.”

between them. This approach is easier to implement and avoids political tensions, but gives rise to competition issues and cannot effectively address the problem of “flight to safety” capital flows. Within the EU, a bank can expand by establishing a subsidiary, which will be subject to the deposit guarantee scheme of the host country, or a branch, which will be subject to the deposit guarantee scheme of the home country. This differentiation can give rise to competition concerns. Moreover, the issue of “flight to safety” within the euro area amplified during the debt crisis. Funds from the periphery were transferred to the core as the crisis unfolded. This could have been avoided under certain conditions, namely if a Single Entity had been established to cover all deposits across the EU. However, such a decision is difficult to implement from a political point of view, as it would lead to a full mutualisation of risks. Harmonising the different schemes is a partial solution, as each scheme is ultimately supported by the national budget, which was often what triggered the flights of capital in the first place. On the other hand, the establishment of a Single Entity cannot be considered in isolation, as it forms part of the financial safety net and is also related to the resolution mechanism, which still remains at the national level. In the euro area, although the Single Resolution Mechanism is underway, a Single Deposit Guarantee Scheme is still a long-term objective. In the short term, political compromise led to the solution of maintaining the national deposit guarantee schemes and ensuring their further harmonisation.

(ii) Participation

Initially, participation in the national deposit guarantee schemes was not mandatory for all banks, as long as they participated in other equivalent schemes. This has now changed, and participation is mandatory, so that all depositors are covered against the failure of any bank in the scheme’s jurisdiction. Thus, the cost of failure is shared by all banks rather than only by those that are participants in the scheme.

(iii) Coverage level

At the European level, the amount of coverage had been set at a minimum of EUR 20,000, but national schemes varied widely as a result of historical patterns and differences in per capita income and there was no political decision to harmonise these schemes. This changed dramatically in 2008, when the Council raised the minimum coverage amount to EUR 50,000 and targeting a uniform level of EUR 100,000 by the end of 2010. This is the standard level which is currently applicable,³⁰ and all national schemes have been adjusted accordingly.

A high level of coverage is necessary for psychological as well as political reasons, so as to avert panic and assure of the authorities’ commitment. The amount of EUR 100,000 covers an overwhelming part of deposits in the EU (95%), and the system now offers virtually unlimited coverage. In addition, considering that the limit of protection applies per depositor per bank, the actual coverage is higher than the statutory limit.³¹

Finally, the new framework has eliminated coinsurance, a possibility often available but not actually used. For example, coinsurance up to 10% was in force in the United Kingdom when Northern Rock failed, but was not applied in that context.

(iv) Funding

How a deposit guarantee scheme is funded and the total amount of its available resources are

³⁰ In certain special cases, deposits over EUR 100,000 are covered for a limited period.

³¹ Following harmonisation at the amount of EUR 100,000, the topping-up clause enabling branches to offer supplementary deposit guarantee up to the level offered by the host country, has become inapplicable. For branches operating in a country with a higher protection limit, depositors enjoyed the protection offered by the home country and the extra protection offered by the host country. This had the advantage of equal treatment between depositors of the same bank, but also the disadvantage of unequal treatment of depositors within the same country. Moreover, in case of failure the deposit guarantee scheme had to make payments to a bank that was not under its direct supervision. Even greater problems arose when a class of depositors was eligible in one country and not eligible in another.

issues of relevance to depositors' confidence in the system. The original Directive did not address these issues, and differences existed across Member States. In a report of 2008, the European Commission found that, in most countries, funds did not cover 1% of eligible deposits, with the average coverage ratio in the EU-15 countries being around 0.53%. Also, a stress test of deposit guarantee schemes throughout the EU showed that the system is adequate for a small-scale bank crisis scenario. Some countries are able to cope with a medium-scale crisis, but none is in a position to cope with a large-scale crisis. In practice, it turned out that even the large-scale crisis scenario (assuming losses of EUR 8.9 billion) was mild, as the Northern Rock crisis in the United Kingdom generated losses of GBP 25 billion, forcing the UK government to intervene.

The new Directive stipulates that the national deposit guarantee schemes shall raise funds that will reach a target level of 0.8% of the amount of eligible deposits, over a period of ten years, through ex ante contributions, which are calculated using a mixed system of a fixed rate and a risk-based varying rate. If, in case of a bank failure, funds are not sufficient, banks must provide ex post financing up to 0.5% of eligible deposits. In effect, the Directive introduces a combination of ex ante and ex post financing at a ratio of 60%-40%, given that the current profitability of European banks is not particularly strong. It also introduces the possibility of borrowing among national deposit guarantee schemes.

(v) Eligible deposits and repayment period

The main principle for a deposit instrument to be eligible is that it must be fully repayable, i.e. its principal must be repayable at par. Simple deposits schemes in any currency fall within this definition, but deposits with more complex features, such as index-linked deposits, are not covered. Also, in the event of a bank failure, repayment must be effected within a period of 20 days, which should be reduced to 7 days by 2024. For this to be achieved, procedures have

to be simplified a lot, as an EU study has shown that in some countries this process includes up to 21 steps.³²

(vi) Differences from the Single Resolution Fund

As already discussed, it has been decided to establish a Single Resolution Fund in the euro area. The establishment of a single deposit guarantee fund has not been decided as yet, although it remains a long-term objective and all relevant factors will be considered during this year. It should be noted that the two funds will not be quite similar, as they will have different objectives. A deposit guarantee fund covers eligible depositors only, while the resolution fund covers the cost of recovery and resolution of a failing bank.

7 CONCLUDING REMARKS

The report of the four Presidents (see H. Van Rompuy, J.M. Barroso, J.C. Juncker, and M. Draghi (2012), "Towards a Genuine Economic and Monetary Union") describes the steps for the establishment of a stable and comprehensive architecture in the financial, fiscal, economic and political areas, in order to ensure the stability of the euro and the European Union as a whole. Important steps have been made towards fiscal integration and some tentative steps towards political integration, mostly by improving economic governance. The most significant headway has been made in the banking union, where developments have been very fast. The establishment of a banking union resting on three pillars, as detailed in this study, was decided with a view to disrupting the sovereign-banking nexus, reducing the fragmentation of capital markets, restoring the transmission of monetary policy and normalising the flow of credit to businesses. The legal groundwork

³² In the event of failure of their credit institutions, depositors will not be required to submit a reimbursement request, as the process will be initiated automatically. Moreover, the host country scheme acts as a single point of contact for depositors, without a need to contact other schemes. Schemes are required to have appropriate communication channels in place.

has been completed and the implementation phase has begun, which is expected to be difficult and long.

The banking union seeks to address these problems starting with the restoration of normal conditions in the government bond market in order to disentangle country risk from counterparty risk. Moreover, the initiatives for the establishment of uniform rules and single supervision are intended to send a clear message regarding the soundness of banks and remove all doubts on the quality of bank assets. In case of problems, the single resolution framework envisages procedures and the mutualisation of resources in order to reduce potential systemic problems. Most importantly, it sets out a burden sharing mechanism, known in advance, under which large depositors are, for the first time, involved in bank resolution. This will certainly lead to a change in behaviours both on the part of depositors and on the part of banks. For small depositors, the harmonisation of deposit guarantee schemes is

expected to instil a stronger sense of safety and discourage deposit flows within the EU.

The above developments are expected to restore normal conditions in the euro area banking market and deliver a more efficient banking system capable of supporting economic growth. Cross-border banking may regain momentum and banks' risk aversion trend may be reversed. Monetary policy will be more effective and transmit its stance to the real economy. This will create favourable conditions for the financing of businesses. Interest rates will return to normal, and most likely without large variations across Member States, and, more importantly, will be driven by idiosyncratic risk rather than home country sovereign risk. Sovereign risk will of course continue to influence risk premia and interest rates, for as long as the regulatory framework remains biased in favour of government bonds and the other components of a "genuine" economic and monetary union are not carried ahead.

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ANNEX A

PRUDENTIAL SUPERVISION

The banking sector is central to the European financial system, as it provides two thirds of total credit, which highlights its importance for the functioning of the real economy. The supervision of the banking sector is not a merely technical issue, as it requires a significant degree of judgment. A comprehensive and effective prudential supervision system should examine the banking sector through two different approaches:

- micro-prudential supervision;
- macro-prudential supervision.

I MICRO-PRUDENTIAL SUPERVISION

Micro-prudential supervision of banks focuses on all those factors that can affect the safety and soundness of banks, with a view to the protection of depositors. The ultimate objective is to minimise the possibility of a bank failure. The available micro-prudential tools provide several layers of protection.

(i) Capital adequacy

The first layer of protection refers to bank capital, in particular capital adequacy. An adequately capitalised bank is one that has sufficient own resources to back the risks it assumes. It is universally accepted that a bank should operate with a specific level of minimum own funds as a guarantee for depositors in the event of distress.

(ii) Internal control system and risk management

The second layer of protection refers to banks' internal control systems, specifically risk management systems. Efficient governance is equally important as financial soundness and enables a bank to avoid problems arising from systems, processes and human error. In other words, banks need to have in place effective internal control systems, ensuring that their operations are carried out in accordance with documented rules and procedures, as well as

preventive control systems to avoid malfunctions and losses.

(iii) Liquidity management

The third layer of protection refers to liquidity management. The current crisis dramatically revealed the importance of liquidity risk, which had partly been overlooked, since sufficient liquidity was seen as a sign of soundness. However, it was not anticipated that this could lead to an easing of credit standards. Moreover, the securitisation schemes for raising liquidity introduced a new aspect of liquidity which was not fully understood. Therefore, the aim is to clearly define the adequate "level" of liquidity.

2 MACRO-PRUDENTIAL SUPERVISION

Macro-prudential supervision is the systematic monitoring of characteristics and trends in the financial system, the real economy and the channels linking the financial system with the other sectors of the economy. As opposed to micro-prudential supervision, which focuses on individual institutions (e.g. banks, insurance undertakings, etc.), macro-prudential supervision examines risks and assesses resilience at the system level, also taking into account the interactions among the different parts of the system. The main macro-prudential management tools are:

(i) Leverage ratios

Capital leverage ratios, i.e. a bank's own funds as a ratio to its total assets, have been proposed as a tool to address excess leverage. When applied to all banks, leverage ratios can contain the build-up of leverage at the system level during an economic upturn. In addition, leverage ratios could be used as complementary to traditional risk-based measures and make up for any underestimation of risk, irrespective of its causes (misapplication of supervisory standards, model risk, etc.).

(ii) Restrictions on profit distribution

Putting restrictions on the discretion of banks with respect to profit distribution is fundamental, especially in times of crisis, as they may help a bank to cope with problems and survive. Discretion encompasses, among other things, the distribution of dividends, the buyback of shares, the staff bonuses and additional insurance benefits or the early repayment option for hybrid instruments.

(iii) Capital buffers

Banks have to operate with a capital buffer above minimum capital requirements. The purpose of this additional capital is to make banks more resilient in bad times and better prepared to absorb shocks. This is achieved by reversing pro-cyclical behaviour which tends to amplify the impact of a crisis. The Basel III capital framework introduces three types of

buffers: a) a conservation buffer equal to 2.5% of risk-weighted assets, designed to restrict profit distribution until the capital base is restored; b) a countercyclical buffer equal to 0%-2.5% of risk-weighted assets, determined at a national level and applying during periods of high credit growth to avert excessive risk-taking; and c) a capital surcharge of up to 3.5% of risk-weighted assets for systemically important banks.

(iv) Dynamic provisions

Provisioning policy is associated with bank profitability. In boom years, banks are likely to make lower provisions than required to cover expected losses, thus showing increased profitability. Under a dynamic provisioning system, banks would have to accumulate additional provisions during the expansionary phase of the economic cycle, to be utilised during contractionary phases.

ANNEX B

CRISIS MANAGEMENT

An effective crisis management framework is designed to avert the emergence of a domestic or international crisis with a negative impact on the real economy. Such a framework can involve three stages:

- prevention;
- early intervention; and
- resolution.

I PREVENTION

The prevention stage is aimed to ensure the early detection of potential problems, as well as to increase banks' preparedness for addressing severe difficulties. This is achieved by:

(i) Reinforced banking supervision

Reinforced banking supervision forms the core of the new crisis management framework. In this context, in addition to improvements in traditional supervisory tools, two further tools have gained in importance, namely business model analysis and stress testing.

The business model of any bank is inextricably linked to the regulatory framework by a two-way causality. Four main bank models can be identified: (a) universal banking; (b) retail banking; (c) corporate banking; and (d) investment banking, with each model being associated with different prospects and risks. Business model analysis focuses on the vulnerabilities and the sustainability of the existing business model, which is a function of the bank's economic and operational environment as well as its corporate culture and business strategy. The business model can be analysed on the basis of quantitative and qualitative factors. Quantitative factors refer to the bank's profitability dynamics, the evolution of key balance sheet aggregates and risk appetite. Qualitative factors refer to the bank's relations with external parties, internal structure, reputation, comparative advantage, corporate governance, internal audit and risk management capacity.

A stress test is a 'what if' exercise which considers what might happen to individual banks and/or the financial system, when and if, specific exceptional but plausible risks materialise. The effects can be measured by using two alternative techniques, the sensitivity approach or the scenario approach. The sensitivity approach assumes a change in a particular risk factor, without specifying the reason and independently of other risk factors, and the impact is quantified. The scenario approach considers several underlying factors, assumed to materialise all at the same time, and which are driven either by a specific portfolio e.g. changes in the loan portfolio due to pressures on both interest rates and real estate prices, or by a specific event that has an horizontal impact on the bank, e.g. changes in interest rates that may affect corporate and/or retail loan portfolios and the relation between assets and liabilities.

(ii) Cooperation among supervisory authorities

In cases of cross-border banks, home and host countries should cooperate to identify the practical obstacles to coordinated action in the event of a financial crisis. This cooperation is coordinated by supervisory colleges. In general, supervisory colleges are permanent structures that enable coordination, cooperation and information-sharing among supervisory authorities jointly responsible for banks with cross-border activities. Particular emphasis is placed on developing information-sharing mechanisms and communication channels among the institutions involved, as well as of a framework to facilitate crisis management. It has been proposed to set up crisis management groups, mainly entrusted with the task of developing recovery and resolution plans, so as to ensure preparedness to address problems.

2 EARLY INTERVENTION

In the phase of early intervention, monetary authorities may intervene as lenders of last resort and provide emergency liquidity to sol-

vent banks, while supervisory authorities may intervene proactively, in order to minimise the impact. In both cases, appropriate mechanisms must be in place for intervention to be activated.

(i) Lender of last resort

Under normal conditions, bank funding takes the form of liquidity-providing operations at the policy rate (e.g. the ECB's regular main refinancing operations and marginal lending facility). In times of strain, it takes the form of non-regular liquidity injections (e.g. the ECB's extraordinary longer-term refinancing operations conducted at a fixed rate with full allotment) and, under extreme conditions, the form of Emergency Liquidity Assistance (ELA).³³ The latter is effective when (a) the bank faces temporary liquidity problems, but is solvent; (b) there is eligible collateral available; (c) the interest rates are higher than market rates; and (d) unlimited liquidity is provided to banks that meet criteria (a) and (b). Naturally, the definition of a solvent bank that faces temporary liquidity problems, as opposed to an insolvent bank, is complex and not straightforward. Often, liquidity problems can lead to insolvency and exclusion from markets until resolution measures are implemented. On the other hand, a precise definition may be undesirable to monetary authorities and constructive ambiguity may be preferable, so as to minimise moral hazard issues.

In the euro area, the responsibility for emergency liquidity assistance lies with the competent national monetary authorities, which also bear the associated risks, as these operations do not form part of the single monetary policy framework. Although the Single Supervisory Mechanism will ensure much more timely and reliable information, the ECB appears unwilling to increase its balance sheet risk, and national monetary authorities also appear reluctant to add another loss-sharing mechanism. The ECB may of course prohibit emergency liquidity assistance when it deems it con-

tradictory to its monetary policy objectives, as the ECB remains the only authority with power to provide liquidity to the system as a whole through its monetary policy tools.

(ii) Triggers

Directive CRD IV/CRR (Basel III), confers the necessary powers of early intervention powers to supervisory authorities (Article 104), enabling them to implement administrative measures in banks that are unable to satisfy the requirements of the Directive. In this regard, supervisory authorities have the following powers:

- to require institutions to hold own funds in excess of minimum requirements;
- to require the reinforcement of the arrangements, processes, mechanisms and strategies in respect of internal capital adequacy assessment, internal governance and recovery and resolution plans;
- to require institutions to present a plan to restore compliance with supervisory requirements;
- to require institutions to apply a specific provisioning policy;
- to restrict or limit the business, operations or network of institutions or to request the divestment of activities that pose excessive risks;
- to require the reduction of the risk inherent in the activities, products and systems of the institution;
- to require institutions to limit variable remuneration (bonuses etc.);
- to require institutions to use net profits to strengthen own funds;
- to restrict or prohibit distribution or interest payments, where the prohibition does not constitute an event of default of the institution;
- to impose additional or more frequent reporting requirements;

³³ See González-Páramo, J.M. (2013), "Innovations in Lender of Last Resort Policy in Europe", *Handbook of Safeguarding Global Financial Stability*, Chapter 41, Elsevier.

- to impose specific liquidity requirements.

In addition, supervisory authorities may intervene proactively and request an institution to draw up a timetable for the implementation of policies set out in the recovery plan, change bank administration, call a shareholders' meeting etc. The supervisory authority may also appoint a special manager for a limited period.

3 RESOLUTION

The resolution phase is initiated when (a) the bank is failing or likely to fail; (b) no private sector arrangement or supervisory interventions can avert failure; and (c) resolution is in the public interest. If all three conditions are met, the resolution authority can apply one or more of the conventional resolution techniques (see Box 1).

ANNEX C

DEPOSIT GUARANTEE SCHEME

I THE RATIONALE BEHIND DEPOSIT PROTECTION

Deposit guarantee schemes are in place in most countries around the world. They were first introduced in the wake of the Great Depression of 1929-1933 as a means to minimise or eliminate the risk of deposits being lost in the event of a bank failure.³⁴ The sense of safety is important, since, for households and small businesses, deposits represent lifetime savings or funds necessary for transactions. The necessity of deposit protection tends to be underestimated in boom periods and highlighted in periods of crisis. In fact, deposit guarantee schemes have historically been established or adapted after a big shock.

In general, a deposit guarantee scheme has to strike a balance between two objectives: to prevent a bank run and eliminate moral hazard. The depositors of a bank do not have the means or knowledge to assess the bank's financial condition and uncertainty can easily result in panic. The analytical framework of the well-known Diamond and Dybvig model finds two equilibriums, a "good" equilibrium and a "bad" equilibrium. In the good equilibrium, the bank run only affects unsound banks; however, if loss of confidence also spreads to sound banks, the bad equilibrium will prevail, resulting in widespread panic and a bank run. In this case, even sound banks may fail. On the other hand, with deposits fully guaranteed, there are reduced incentives to exercise discipline. When they know that any loss will be compensated for, depositors do not have an incentive to impose discipline on banks' risk taking.

2 FEATURES OF DEPOSIT GUARANTEE SCHEMES

The key features of deposit guarantee schemes are the following:³⁵

(i) Legal status, objective and membership

Deposit guarantee providers can be public or private. This distinction matters in terms of lia-

bility and accountability, since in the former case it is the government that is liable, whereas in the latter case it is a private entity. As regards the objective, it depends on the historical evolution of the economy and how it approaches the cost allocation issues, given the conflicts of interest involved. How these issues are tackled defines the role of a deposit guarantee scheme. Membership, on the other hand, should be specified in a way to ensure that the system remains sound on an ongoing basis. Membership can be compulsory or voluntary. When membership is voluntary, sounder banks are more prone to avoid participation, while less sound banks have an incentive to participate.

(ii) Coverage level

As far as the level of coverage is concerned, there are three approaches: (a) blanket guarantee; (b) limited coverage; and (c) co-insurance. Blanket guarantee may create moral hazard, whereas limited coverage may lead to the splitting of deposits into smaller amounts which are covered by the scheme. The coverage level should be such as to encompass a large part of deposits, while at the same time averting indifference to discipline. In the case of co-insurance, depositors are essentially insured for a pre-specified portion and bear part of the loss. Alternatively, small depositors may enjoy full coverage, while co-insurance may apply to larger eligible depositors.

(iii) Funding

The funding of deposit guarantee schemes can be (a) ex ante; (b) ex post; or (c) a combination of the two. In the case of ex ante funding, covered institutions pay premiums to finance a fund, which is activated when a covered institution fails. In the case of ex post funding, the funds are accumulated if and when a participating member fails. Ex ante funding has the

³⁴ For the historical background, see Bradley, Christine M. (2000), "A historical perspective on deposit insurance coverage", *FDIC Banking Review*, 13(2).

³⁵ See Financial Stability Board (2012), "Thematic Review on Deposit Insurance Systems", Basel.

advantage that funding is provided on an ongoing basis by participating members, including distressed banks, and that stability is preserved as long as the accumulated resources are adequate; its disadvantage is that this ongoing funding reduces banks' profits. Ex post funding on the other hand has the advantage that it provides incentives to monitor banks' behaviour and the disadvantage of pro-cyclicality, as the necessary funds are raised in a period of distress and without a contribution from the failing bank.

(iv) Contributions

The two alternative contribution systems are (a) a flat rate premium on insured deposits; and (b) a risk-based premium. The flat rate, combined with voluntary membership, may generate an adverse selection problem, as only less sound banks are motivated to participate, given that they will be subsidised by sounder banks. A risk-based premium that differentiates among banks with different risk profiles would seem more appropriate, as it provides incentives to monitor the risk profiles of indi-

vidual banks, but involves more complex calculations and requires the development of a calculation methodology.

(v) Eligibility

As a key principle, depositors are eligible for coverage when they are unsophisticated and unable to understand the soundness and financial condition of a bank. In this perspective, deposit guarantee schemes typically cover retail depositors (natural persons), but may also cover legal persons, mostly SMEs. Inter-bank deposits and deposits connected with money laundering are typically excluded from coverage.

(vi) Pay-out timing

The main function of a deposit guarantee scheme is the fast reimbursement of depositors in the event of a bank failure. Procedures are usually time-consuming, and the actual time until reimbursement depends on (a) the time when failure is established and (b) the payout timeframe.

THE SMART ECONOMY: CULTURAL AND CREATIVE INDUSTRIES IN GREECE. CAN THEY BE A WAY OUT OF THE CRISIS?¹

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“If artistic expression can be valued as an energy potential that can be invested and bear fruit, then surely the economic crisis will not dampen the spirit of the restless artistic world.”

Athens Art Network (October 2013)²

I INTRODUCING THE CULTURAL AND CREATIVE ECONOMY

In spring 2014, the European Commission will announce the winning city of its first “European Capital of Innovation” competition.³ The competition seeks to encourage urban areas to build up a “sustainable innovation ecosystem”, connecting citizens, businesses, universities and research centres, public organisations and financial institutions, with a view to “creating an appropriate network of cities which can share their best ideas for the future”.⁴ The winning city has to demonstrate that it is following a comprehensive strategy, which is (a) innovative, in terms of concepts, processes and tools; (b) inspiring, with the aim of attracting talent, funding and investment; (c) integrated, i.e. pursuing smart, sustainable and inclusive growth in line with the goals of the “Europe 2020” strategy; and (d) interactive, building a community for innovation within the city and with other cities.

The launch of this competition attests to the European Commission’s growing interest in the new “cultural and creative economy” and to the pivotal role that this new economy can play in economic growth and competitiveness, in the context of the Commission’s ultimate goal of making the EU an “Innovation Union”.

Over the past few years, the cultural and creative industries have emerged as one of the most dynamic sectors of the European economy. They are seen as “...a catalyst for innovation in industry and in the services sector...” and thus “...play a prominent role in the

Europe 2020 strategy as they are contributing to a new type of growth...”, strengthening the EU’s international competitiveness and promoting its linguistic and cultural diversity.⁵ They are closely linked to education and training, and their dynamic evolution is reflected in both economic and social development. “Culture can contribute to inclusive growth through promoting intercultural dialogue in full respect for cultural diversity.” It is acknowledged that creative industries “...play a central role in growth, competitiveness and the future of the EU28 and its citizens... They are generators of comparative advantage that cannot

1 This article forms part of a more extensive paper commissioned by the Ministry of Culture and Sports and presented at the conference on “Financing Creativity” (20-21 February 2014), which was held in the context of the 2014 Greek Presidency of the European Union. I would like to thank Lina Mendoni, Zoi Kazantzaki, Monika Tsiliberti and Maria-Xeni Garezu for their invaluable contribution throughout the preparation of this study. I also extend warm thanks to Grigoris Karantinakis, Myron Michailidis and Maria Fasoulaki for kindly providing me with statistics from their respective institutions. I am greatly indebted to Marlen Moulou, George-Michael Klimis and Dionysis Potsolakis for the extensive and constructive discussions and the very fruitful exchange of views I had with them. They helped me to better grasp key concepts and get a clearer picture of the state of play in Greece. I also thank Dimitris Malliaropoulos for his pertinent remarks and for his encouragement. Last but not least, among my colleagues at the Bank of Greece, I would like to express my gratitude to Christos Catiforis for his help with certain trade statistics and to Penelope Tsalaporta for her assistance in the collection of background material at the early stages of the study. Any errors or omissions remain the sole responsibility of the author, and the views expressed here do not necessarily reflect those of the Bank of Greece.

2 The Athens Art Network is a society of artists, which since 2012 has launched a project of cultural intervention in the city of Athens. A part of this project was the “Little Paris in Athens” festival, which ran between 9 and 16 October 2013.

3 IP/13/808, iCapital. It is worth noting that the EU programme *Horizon 2020* (2014-2020) will be more focused on ways of funding innovation at all of its stages of development, from the lab to the market.

4 Máire Geoghegan-Quinn, Commissioner for Research, Innovation and Science, 3 September 2013.

5 CCMI/098, Opinion of the European Economic and Social Committee on the proposal for a regulation of the European Parliament and of the Council on establishing the *Creative Europe Programme*, 28 March 2012, p. 1.

be reproduced elsewhere, ... factors for local development and drivers of industrial change... They can strengthen social cohesion and community development as well as enable individuals or a community to fully engage in the social, cultural and economic life".⁶

The social and cultural changes of the past few decades, most notably the advances of information and communication technologies,⁷ including the internet, new forms of digitisation and remixing, mashing and sampling techniques, have strengthened the demand of European citizens for cultural goods, intellectual creations and new types of entertainment and recreation. Moreover, in the context of population ageing in the developed world, a new group of active consumers has emerged: people in their third age, who can afford the time and money for enjoying experiences and emotions by consuming cultural and creative goods and services. At the other end of the demographic scale, members of the new generation are increasingly familiar with the new information and communication technologies and emerge as a dynamic market that does not only consume, but also has an interactive involvement, thereby becoming a co-producer and co-creator of the end product.

These changes have paved the way for the emergence of new types of businesses and innovative industries (e.g. those engaging in the design of computer games and web applications), while at the same time inducing a reorientation of the traditional cultural industries away from targeting intellectual and/or economic elites towards wider social strata and mass consumption. They have also prompted consumer goods industries to redesign and redefine their products, their supply and distribution networks and funding sources, in response to their customers' ever-growing and changing needs. As a result, the general public now has easier access to art, both in its traditional forms, such as painting, sculpture, music, architecture or theatre, and in more modern forms, such as television and cinema.

The existence of an audience eager to consume cultural goods, the availability of sufficient funding in the form of grants, investment or credit and a supply of human capital and creators have all helped to bring together traditional industry and the economy in general with culture and creativity. Thanks to new technologies and their applications, investment in culture and creativity does no longer require so large amounts of capital as in the past. What it still does require, however, is ingenuity, imagination, originality, quality of expression, extroversion, craftsmanship, versatility and an ongoing process of learning and keeping abreast of developments. Sufficient funding, low production costs and low selling prices are no longer the sole factors of successful business activity in this area. Uniqueness and authorship and the ability to offer personal experiences and emotions are equally important determinants of productivity and comparative advantage.

The European cultural and creative sector is currently emerging as a global leader, with a world market share of 70%.⁸ Having a comparative advantage in export trade to third countries, it is ideally positioned to act as an ambassador for European industry and for EU and national identity and cultural heritage. Using knowledge, emotion, culture and innovation as its main inputs, it can spread Europe's moral values and political virtues to the rest of the world.

Based on the latest available data, the cultural and creative sector accounts for 3% of the

⁶ See OJ C 51, 17 February 2011, pp. 43-49, and the conclusions of the EU Council meeting on education, youth, culture and sport, 19-20 May 2011.

⁷ According to the latest report of the International Telecommunication Union, 2.7 billion people in the world are connected to the internet via personal computer or mobile telephone, and the number of mobile subscriptions stands at 6.8 billion. Also, 50% of the world population is covered by 3G mobile broadband networks. In the EU28, the percentage of households that have internet at home has reached 79% (Eurostat, December 2013). In Greece, half of the population aged between 16 and 74 use a personal computer or have access to the internet. The percentage is higher (86%) for young people aged up to 24. See ELSTAT survey on the use of information and communication technologies by Greek households, March 2012.

⁸ European Commission, *Commission Staff Working Document on Competitiveness of the European High-End Industries*, SWD(2012)286 final, 26 September 2012.

EU27 GDP – excluding the financial sector – and for more than 7 million jobs, of which about 1 million are self-employed or independent professionals. According to the Green Paper (European Commission 2010), the sector contributes about 2.6% of the EU27 GDP and offers employment to more than 5 million people.⁹ Between 2002 and 2011, Europe’s cultural and creative exports to the rest of the world rose by an average of 6.3% annually.

The sector has shown remarkable resilience to the current debt crisis and recession and has the potential to grow further and create jobs, especially for the youth.¹⁰

While in the first decade of the new millennium the sector was growing at a steady pace, since 2010 its annual growth rate has exceeded 10% and is expected to remain strong in coming years.¹¹ Moreover, the high correlation between GDP per capita and employment levels in the cultural and creative industries (CCIs) has been statistically verified (Power, 2011) for a sample of 266 regions in 30 European countries, suggesting that CCI employment and specialisation can explain about 50% of the variance in GDP per capita across regions.

1.1 THE GREEK ECONOMY, CULTURE AND CREATIVITY

The importance of CCIs for the Greek economy cannot be overstated. The structure of the Greek economy and society exhibits a number of peculiar features that offer a comparative advantage to Greek businesses in the sector, such as:

- (i) predominance of medium-sized or micro businesses;
- (ii) high labour intensity;
- (iii) a distinctive personal character;
- (iv) productive or creative imagination, seen as the ability to process new useful images and concepts;
- (v) free thinking and critical spirit;
- (vi) adaptability to an ever-changing environment;
- (vii) high aesthetics and quality of expression;
- (viii) emphasis on innovation;
- (ix) the country’s advantageous geographic location and mild climate;
- (x) the uniqueness of the Greek language;
- (xi) a large inventory of expertise and skills.

Although statistics on the evolution of CCIs in Greece are, at best, scarce and incomplete, a recent European Commission paper (Power 2011) ranked the region of Attiki in Europe’s top 30 CCI employment clusters in a total of 266 regions in European countries (based on 2007 data).¹² At a more detailed sectoral level, Attiki is ranked among the top 10 regions in terms of radio and TV media employment and among the top 20 regions in terms of print media employment.¹³ Greece as a whole has a score of 4.1% in CCI focus (measured by the share of CCI employment in total employment), ranking 18th in 30 countries. This is clear evidence of not only the bright outlook of the sector, which encompasses a wide variety of activities, but also its importance as a driver of economic growth, given its potential to diffuse significant benefits to several other sectors of the

⁹ See Frontier Economics (2012) and European Commission (2010). Including people employed in cultural tourism, employment in the sector amounted to 5.9 billion or 3.1% of the EU27 labour force in 2014 (see KEA 2006). Between 2004 and 2007, its share in total employment remained stable at 2.5%, with only slight divergences across countries. For 2009, based on the ISCO-08 classification of activities (2011), it was estimated at 1.7%. This apparent decrease in employment was largely due to the change in the statistical methodology and the revised classification of activities and occupations. Thus, data are not comparable across time.

¹⁰ See *Youth employment initiative*, European Council of 7-8 February 2013.

¹¹ For 2012, its growth rate is estimated to have remained between 7% and 9%. See *Altagamma Monitor Update* (2012).

¹² It is ranked 9th in CCI employment and 25th in regional population size.

¹³ Ranked 10th and 6th, respectively.

national economy. Indeed, the European experience so far has shown that:

First, the business model used in the CCIs is considered to be very successful.¹⁴ It is largely based on the significance of origin and branding and on the symbolic or intrinsic value of the product, offering pricing power relative to standard non-branded products. Higher prices are justified by: the product's expressive value; the high standards of production, such as strict criteria for selecting the raw materials and for quality assurance of the final product; the originality of concept and uniqueness of design; the author's personal touch; the harmonious co-existence of traditional styles with new technologies; and the adaptability of the product to the needs of each and every consumer. These factors make the product unique and cause its demand to be relatively inelastic to prices. This means that productivity in the CCIs depends not so much on production costs, but rather on skill, inspiration and imagination, as well as on the intensity of the personal emotions that the product can evoke in its consumers.

Second, skill and talent are essential conditions for the product to be unique, original and branded. This calls for high specialisation, continuous learning and training, as well as preservation of the knowledge of traditional techniques. At the same time, in view of the constant need to design new products, it encourages innovation, both in production methods and in the use of materials.

Third, the production, supply and distribution of cultural products and services involve a nexus of several and typically small or medium-sized businesses as suppliers, providers and distributors and diverse labour inputs (manual or intellectual workers), often located in smaller urban centres or less wealthy regions. In this respect, the development of CCIs can contribute to the overall development of local economies and to job creation in the respective regions.

Fourth, given that culture and creativity as economic activities, by definition, rely on exploit-

ing the potential of innovation, whether technological, scientific, aesthetic or artistic, they promote patenting across the economy and actively contribute to the adoption and implementation of policies to protect intellectual property.¹⁵

Over the past few decades, the national effort to establish Greece as a major pole of attraction for foreign visitors and, by extension, to communicate its cultural values and lifestyle beyond its borders relied exclusively on the traditional triad of "sea, sun and antiquities", which combined leisure, recreation and comfortable accommodation with the country's natural landscape and history. Arguably, this model has so far worked well, as demonstrated by sharp increases in the number of foreign visitors and tourism receipts after a protracted period of declines; however, today it seems rather outdated within the emerging global economic environment.

As early as the 1990s, there was a shift in the global industrial production paradigm as a result of the advent and integration of the new knowledge and information economy. By the first decade of the new millennium, the frontiers of this new economy were pushed forward to include culture and creativity as additional wealth-generating factors. Moving beyond being identified with cultural heritage and the fine arts only, culture has come to be seen as a wider concept, as a way of life and as a set of shared values and experiences. Moreover, the internationalisation of telecommunications and digital technology has revolutionised cultural and creative expression and exchange. On the one hand, consumers have changed their behaviour, turning from passive recipients of information to active (co-)creators of the product to be consumed. On the other hand, industries have shifted away from mere reproduc-

¹⁴ The widely shared view that culture can be a tool of economic growth has been incorporated into the British national economic policy since the mid-1990s, with excellent results for economic performance, as will be shown below.

¹⁵ For a discussion of how innovation, research and technology can contribute to Greece's exit from the current adverse situation, see Herrmann and Kritikos (2013).

tion towards production and distribution for targeted markets, in which aesthetics, design and innovation have prominence. Furthermore, there is a need to link the CCIs with cultural tourism, which provides a reliable tool for leveraging the cultural and creative assets that determine each region's growth outlook.¹⁶

Against this background, we can identify three underlying forces that shape the growth path of the cultural and creative economy: technology,¹⁷ strong demand for experiences and emotions,¹⁸ and tourism.¹⁹

In line with the new international growth paradigm whereby the economy of knowledge and technology fuses with the economy of culture and creativity, Greek policy-makers, in their quest for a new sustainable growth model, cannot afford to disregard the visible benefits of the smart economy, which is widely recognised today as the next engine of growth. In the light of these trends, the challenge for Greek society and economy today is not only to protect and preserve the existing national cultural heritage and historical past, but also to create new forms of culture, engaging all citizens in the process of generating knowledge and ideas, promoting originality, personal expression and innovation, which after all is what culture is all about. In other words, the challenge for the country's cultural management policy is a shift away from a static (heritage) towards a dynamic approach to culture (creation of new forms). Clinging to a static approach would turn society into a passive consumer of, typically imported, cultural products. Instead, a shift to a dynamic approach would deliver a creative society, with a positive impact on the economy as a whole.²⁰

This shift is the key point that this paper intends to make. Apart from representing a first tentative attempt to quantify Greece's performance in this new sector of economic activity, in the absence of adequate statistics that would enable a safe and clear picture to be drawn, this study is mainly aimed to raise the awareness of stakeholders (economic agents

and social partners, private and public bodies, economic policy makers, public opinion) about the need to factor in the CCIs in the current debate on a new growth model for the country, better suited to the requirements of the modern, internationalised Greek economy and society. The study thus advocates a holistic approach to the new growth strategy, one that would place emphasis on identifying and fostering the country's distinctive cultural features as a solid component of its competitive advantage. Such an approach should tap the potential of the creative nexus whereby culture and creativity are linked to growth, technology, investment and international trade, thus ultimately helping to increase employment and combat unemployment and social exclusion, especially among the youth.

These considerations can be of much relevance and use in the context of the current adverse circumstances of Greece. We hope that this first endeavour in the field of cultural and creative economics will kick off a systematic effort to record Greece's "new economy", which remains largely unmapped territory, to study its specificities and monitor its performance and, at the same time, will inspire concrete policy initiatives aimed to strengthen this type of economy.

Specifically, we will attempt to take stock of the Greek experience to date and outline the growth prospects and challenges of the CCIs. In so doing, we will try to answer the following questions: First, can the CCIs become a driver of growth for the Greek economy? Second, can

¹⁶ For the importance of cultural tourism, see Khovanova-Rubicondo (2011) and Greek Ministry of Culture (2010).

¹⁷ Digital technology has hugely contributed to the development of content distribution channels, such as cable, satellite and digital television, computer games, podcasting and streaming.

¹⁸ The growth of world population to 9 billion by 2050, increased life expectancy and lower prices as a result of technological advances are factors bolstering demand for cultural and creative goods.

¹⁹ Although the current global financial and economic crisis has taken a toll on all sectors of activity, tourism has recovered faster worldwide. According to estimates from the World Tourism Organization (UNWTO 2009), the number of tourist arrivals globally will increase by 4% per year, reaching 1.6 billion by 2020.

²⁰ The links between culture and tourism, between "creative" and "traditional" sectors or between regional and local economy are quite obvious. See http://www.ceanet.eu/report/BISC_creative_industries.pdf and <http://www.europe-innova.eu/creative>.

they contribute to the reorientation of the country's economic model from an introvert consumerist economy, largely based on retail trade and construction, towards a "smart", extrovert economy focused on establishing a strong comparative advantage in terms of skills, technology and innovation? Third, what are the challenges faced by the CCIs within a domestic environment of deep and protracted recession, excess and now cheap labour supply, economic uncertainty and credit squeeze, but also in a global environment of stagnation, deflation and intense competition?

The remainder of the study is structured as follows. In Section 2 we propose a definition of the cultural and creative economy, setting out the necessary preconditions for its growth and describing its multiple dimensions. In Section 3 we attempt for the first time to outline Greece's profile in this field. We assess the country's performance over the last decade, focusing on the challenges it faces as an integral part of a globalised economy. In more detail, we experiment with defining, measuring, and classifying culture and creativity within a conceptual framework which is useful for the statistical delineation of the smart economy. We define the statistics which are necessary for monitoring, assessing and evaluating its performance and attempt to describe culture and creativity in numbers. In Section 4 we discuss the specific features of the cultural and creative sector in Greece and suggest 11 practical recommendations that would foster the emergence of a new virtuous circle linking culture, creativity and the economy.

2 CONCEPTUAL CONTENT: IN SEARCH OF A DEFINITION

In traditional industrial organisation theory and practice, the terms "cultural industries" and "creative industries" often refer to activity sectors that lie on the periphery of the focus of economic and industrial analysis and typically cover the area of culture and the performing and visual arts.²¹ The harmonious

blending between the notion of culture and artistic and intellectual creativity on the one hand and the market economy on the other has resulted in a new concept, the "cultural and creative sector", and has opened up new fields of interest for economic science, those of "cultural economics"²² and "creative economy".²³

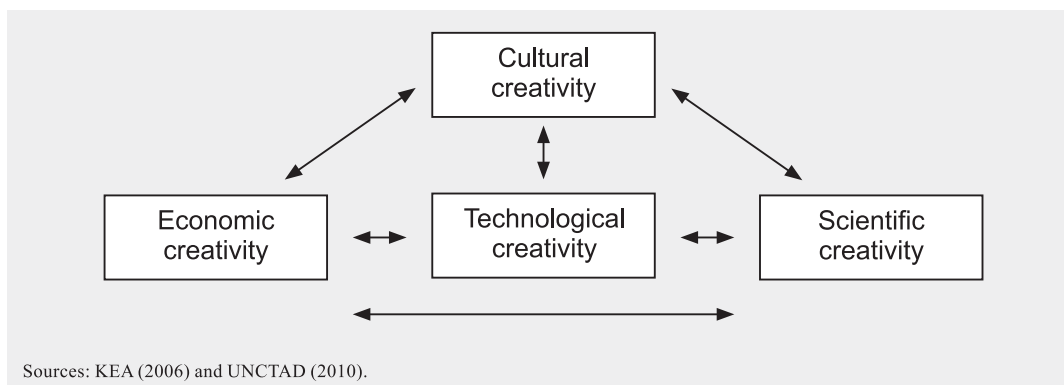
The rapid growth of the CCIs worldwide in recent years has led to their recognition as a distinct sector of the economy, encompassing many activities that are significant from a production viewpoint, such as advertising, architecture, design, mass and social media, film, the plastic arts, literature and drama, software, music, photography, libraries and archives, museums and archaeological sites and, more generally, various forms of cultural heritage and folk tradition, publishing, art and concert halls. The sector therefore spans a wide range of diverse activities that are related to culture in a broader sense. However, as shown in Figure 1, there are strong similarities, interdependencies and interactions between cultural, economic, scientific and technological creativity. *Cultural creativity* is the ability to conceive an original expressive idea or a different aesthetic interpretation of the world around us. *Scientific creativity* is the desire to study and experiment in an aim to acquire systematic knowledge and find new ways of solving problems. *Economic creativity* is the ability to exploit a comparative advantage to achieve gains in terms of growth, employment and trade shares. Finally, *technological creativity* is the ability to introduce new methods of production, distribution and dissemination.

²¹ As recently as fifteen years ago, the term "cultural and creative economies or industries" meant absolutely nothing to economists, sociologists, statisticians and cultural managers. The British paradigm, dating from the mid-1990s, introduced the term to describe, identify, delineate and quantify this sector of the UK economy. Related terms include "creative economy", "creative society", "creative class" and "creative workers" (see British Council 2010).

²² A definition of cultural economics is implicitly provided by the prestigious *Journal of Cultural Economics*, which, in defining its own scope, states that "it applies economic analysis to all of the creative and performing arts and the heritage and cultural industries [...]. It also explores the economic organisation of the cultural sector and the behaviour of producers, consumers and governments within the cultural sector" (see <http://www.springer.com/economics/micro-economics/journal/10824>).

²³ According to Howkins (2005), the term denotes the link between creative capacity and the economics of wealth creation.

Figure I The concept of creativity in today's world



“Creative entrepreneurs” are called upon to bridge the gap between artists/creators and audiences/consumers. Across the entire spectrum of creative industries, creative entrepreneurs, whether publishers, broadcasters, music and film producers, interactive game developers or craftsmen, decide what cultural products, and how, will be consumed, while at the same time caring for the viability of their businesses.

The term “creative industries” (Mato 2009, Miller 2009, UNCTAD 2010, Throsby 2001) encompasses all enterprises that have creation at the heart of their activity, where creation is understood as any intellectual and social process generating new ideas, concepts, designs, associations, procedures and clusters.²⁴ A new idea has to be original, personal, meaningful, useful (Howkins 2005) and capable of leading to a comparative economic advantage (Florida 2002, 2005). Alternatively, according to the British paradigm (see DCMS 2001), in an effort to quantify the added value of the arts and culture sector, which until the mid-1990s was financially dependent on state aid, creative industries are defined as “those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property” (p. 4). In other words, the emphasis is on knowledge and talent as a key input rather than on the end product itself, which is

more relevant for the cultural industries (Power 2009). Creative industries thus cover a broader field than cultural industries, in a way that new dynamics emerge, which had hitherto largely slipped the attention of cultural, employment and education policies.

Over the past decade, academic literature in the fields of economics and the arts has featured an overwhelming number of terms and concepts seeking to describe the cultural and creative economy. Various notions and ideas have alternated around such terms as “cultural industries”, “creative industries”, “creative economy”, “experience economy”.²⁵ A lively debate is also ongoing on whether the cultural and creative economy is a sector, an industry or an activity, as well as on whether it is appropriate to use a purely economic term such as “market economy”, with its strong for-profit connotations, to describe activities which are largely not-for-profit.

While the formulation of simple and functional definitions is still hotly debated²⁶ in academic

²⁴ A cluster is defined as a geographically concentrated, complex group of strongly interdependent companies, suppliers, providers and relevant institutions promoting innovative thought and competition (Porter 2005).

²⁵ Underlying the term “experience economy” is the view that consumers are willing to spend an increasing share of their disposable income to get emotional experiences and feelings, and this is reflected in stronger demand for cultural and creative products (Pine and Gilmore 1999).

²⁶ See e.g. Kroeber and Kluckhohn (1952), who gathered more than 150 definitions of culture. See also Flew and Cunningham (2010).

literature, given the blurring lines between these industries, the common practice is to consider cultural and creative industries together, due to the large overlaps between their activities (Jeffcutt and Pratt 2009, Power and Scott 2004), and the two terms are used interchangeably to describe those enterprises that conceive, produce, disseminate and distribute marketable goods and services by extensively using knowledge, innovation, creativity and culture as their main inputs. According to the US paradigm,²⁷ a crucial element for a business to be classified in this sector is whether it is market-oriented so that it can fund itself and is liable to pay turnover tax (Söndermann et al. 2009). In this regard, distinctive features of the end product would be the following:

- (i) innovativeness;
- (ii) symbolic meaning;
- (iii) intellectual property, i.e. protected origin and branding;
- (iv) experimentation and originality;
- (v) use value, i.e. the product should respond to actual personal needs and thus carry exchange value in market terms.

The Green Paper, on the other hand, adopts a more flexible approach, in an effort to combine activities of both commercial and social character. In particular, Article 2 of the proposal for a Regulation establishing a “Creative Europe” framework programme defines cultural and creative sectors as “all sectors whose activities are based on cultural values and/or artistic and other creative expressions, whether those activities are market- or non-market-oriented, whatever the type of structure that carries them out...” (European Commission 2011).²⁸ This definition is based on the “concentric circles model” (Throsby 2001, KEA 2006, ESSnet-Culture 2012): the more intense the content of artistic, cultural and creative expression of a product is, the more clearly it is placed at the

core of the cultural and creative economy (see Figure 2). It is clear from the figure that industries in the broader area of culture and creativity cover a diverse range of activities. All of them, however, share a common feature: they all earn income and make profit, first, from the creative inspiration of their workforce and, second, by the exclusive exploitation of the relevant intellectual property rights. The protection of intellectual property itself is important because it transforms what would otherwise be a mere amateur pursuit or an isolated productive activity into an industry.

2.1 PREREQUISITES AND INTERACTIONS

The development of the cultural and creative economy requires five essential conditions, known in academic literature as the “four Ts” (plus one) (Florida 2002, British Council 2012, Levickaité 2011):

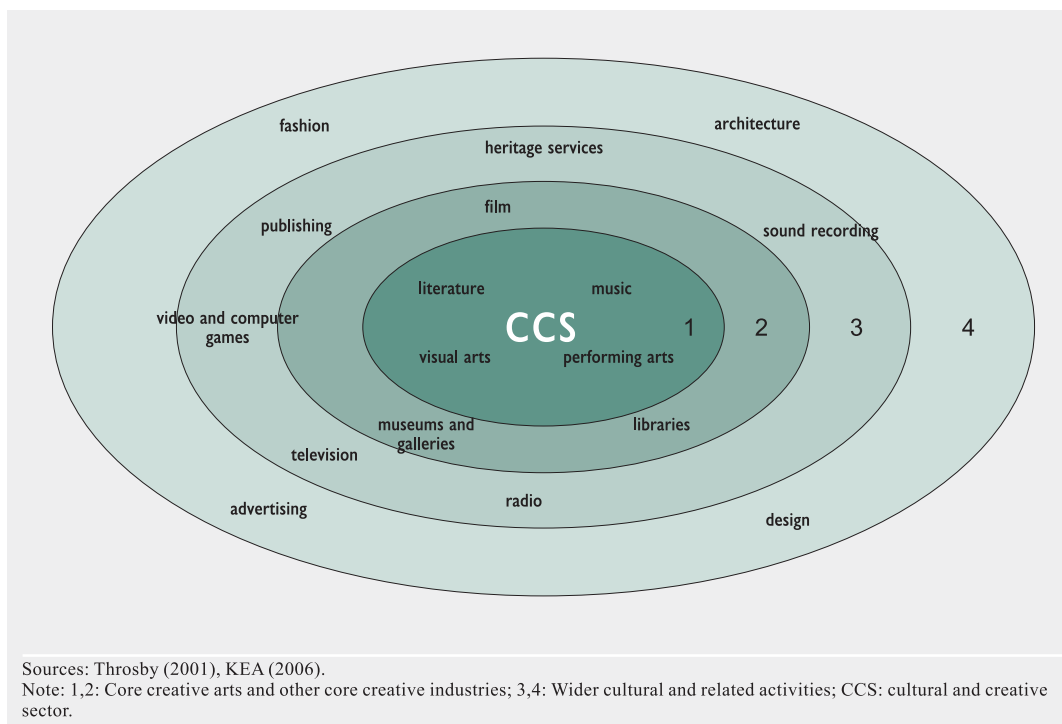
- (i) technology, i.e. applied human knowledge;
- (ii) talent and identity, i.e. human capital;
- (iii) tolerance, i.e. absence of physical or other barriers between communities, cities and regions which hamper or discourage citizens’ access to, and participation in, the society of knowledge, information and innovation;
- (iv) territorial assets that influence business location decisions; and
- (v) experimentation, i.e. the experience of constantly introducing new ideas, products and processes.

An additional significant prerequisite is the existence of “creative workers” that are char-

²⁷The US paradigm refers to building a cultural/creative sector characterised by minimal reliance on state aid, with a clear market and profit orientation as well as adequate self-financing.

²⁸The European Commission defines as market-oriented those cultural and creative enterprises whose income (including subventions, sponsorships, donations, etc.) is at least 50% earned by selling their own products and services. See ESSnet-Culture (2012, p. 172).

Figure 2 The cultural and creative sector: the concentric circles model



acterised by: (i) diversity, specialisation, free thinking, quality education²⁹ and lifelong learning; (ii) high mobility across jobs and geographical regions; (iii) multi-skilling and multi-tasking as workers/creators and producers/entrepreneurs; (iv) less attachment to old patterns of collective/corporatist formations and unions in the labour market; and (v) less confinement by traditional boundaries, such as social class and origin (McRobbie 2005).

Moreover, it should be noted that the exponents of culture and new ideas are faced with multiple challenges in the entrepreneurial sphere.³⁰ First, unlike traditional industries, creative enterprises often find it hard to convince consumers of the value of their output, since every re-production of an idea is not just a repetition, but a whole new production with results and returns that cannot be known in advance.

Second, knowledge and new ideas can best be generated in a context of small-sized and

loosely regulated networks of self-employed practitioners rather than within large and cumbersome organisations.

Third, related to the previous, the small size of CCI businesses³¹ and the development of communication channels among many small and diverse parties complicates the exploitation of economies of scale, access to financing, protection of intellectual property rights, penetration of foreign markets, coordination of actions and interconnection with other productive sectors or mobility of artists/creators across geographic regions and in/out of the cultural and creative sector. On the other hand, the oligopolistic structure of certain creative

²⁹ Quality education requires a shift of basic education from imitative and sterile learning towards intellectual freedom and creative-thinking skills.

³⁰ See European Economic and Social Committee (2013).

³¹ There is a strong presence of micro, small- and medium-sized enterprises, which account for almost 80% of the total. See Opinion 2011/C 51/09 of the European Economic and Social Committee on "Unlocking the potential of cultural and creative industries (Green Paper)" COM(2010) 183 final (17 February 2011).

industries, such as the media and advertising, reduces competition.

Fourth, with free thinking and expression lying at their core, creative and cultural industries often come in conflict with the social and economic establishment.

Fifth, the high fragmentation of the European market, the absence of a commonly accepted definition that would help to identify CCIs at the local, national and regional levels, and the inadequacy of reliable quantitative data regarding their contribution to the national and European growth process raise significant obstacles to the establishment of a body in charge of strategic planning and coordination of action.

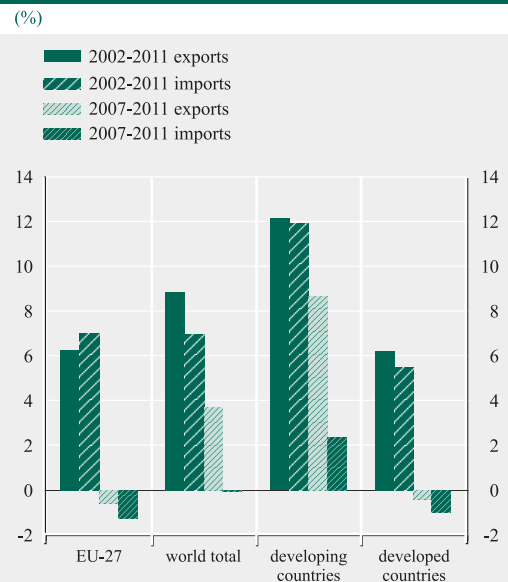
Sixth, with the rapid diffusion of new technologies in production and distribution processes, skills become quickly outdated; to address this, direct synergies within the cultural and creative communities as well as partnerships between education/training and the business world are urgently needed.

Seventh, the inherent difficulties, financial institutions' insufficient familiarity with, or even cautiousness towards, enterprises that are predominantly based on intangible assets and are thus hard to assess in terms of credit risk, combined with uncertainty regarding future demand for their products, all contrive to limited or no access of such enterprises to credit markets, making them fully dependent on state aid.

2.2 THE EUROPEAN AND INTERNATIONAL EXPERIENCE

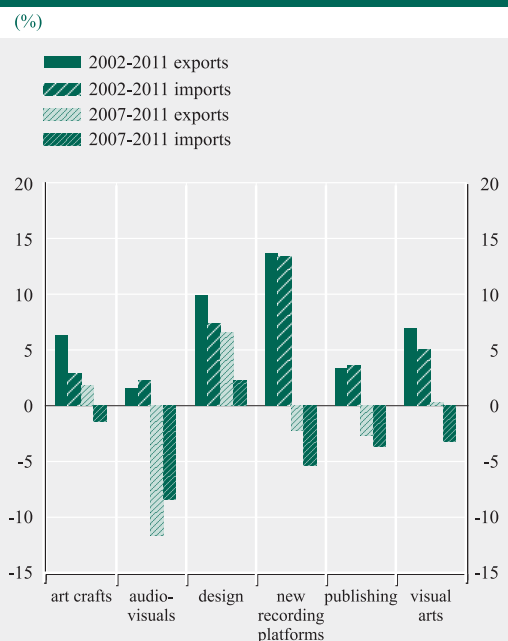
Despite the extensive work that has so far been done at the EU level, the delimitation of activities and occupations covered by the cultural and creative sector still remains largely unclear, preventing a precise assessment of the sector's contribution to domestic output and total employment or the development of an EU-wide regulatory framework that can

Chart 1 Average annual growth of cultural and creative trade (2002-2011 and 2007-2011)



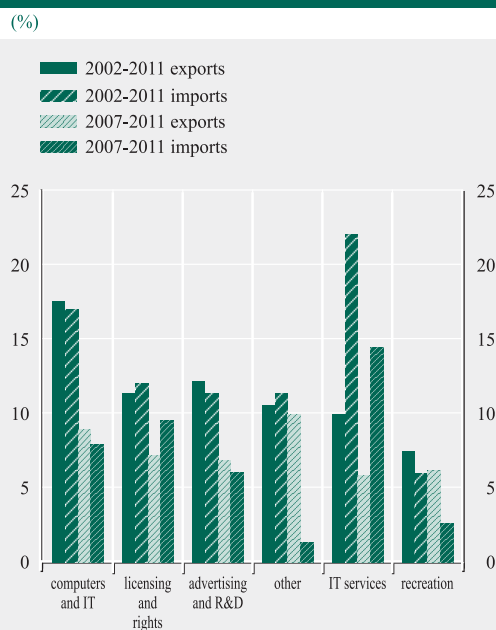
Source: UNCTAD Database, June 2013.
Note: All categories.

Chart 2 Average annual growth of global cultural and creative goods trade by category (2002-2011 and 2007-2011)



Source: UNCTAD Database, June 2013.

Chart 3 Average growth of global cultural and creative services trade by category (2002-2011 and 2007-2011)



Source: UNCTAD Database, June 2013.

recognise and address the specific needs of the sector.³²

However, we have a clearer picture of the sector's performance and relative weight in international trade. Global exports of cultural and creative goods and services grew at an average rate of 14.4% annually between 2002 and 2008. In 2008, exports of cultural and creative goods and services represented 2.7% and 4.8%, respectively, of the total volume of global exports. In 2009, the first year after the breakout of the crisis, the volume of total global trade shrank sharply by 10.6%.³³ By contrast, during the crisis period (2007-2011), according to the latest available data,³⁴ exports of cultural and creative goods continued their upward trend, rising on average by 3.7% per annum, whereas the respective imports declined slightly by 0.08%.

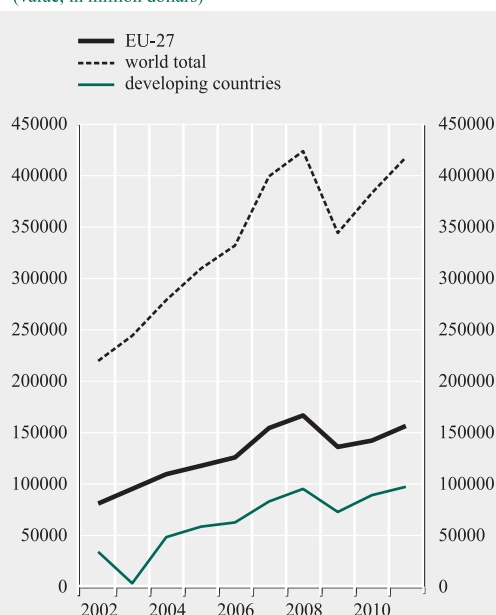
³² Museums and fashion design were only recently included in the EU cultural and creative sector. See European Economic and Social Committee (2013).

³³ See IMF, *World Economic Outlook*, October 2013.

³⁴ <http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx>.

Chart 4a Cultural and creative imports (2002-2011)

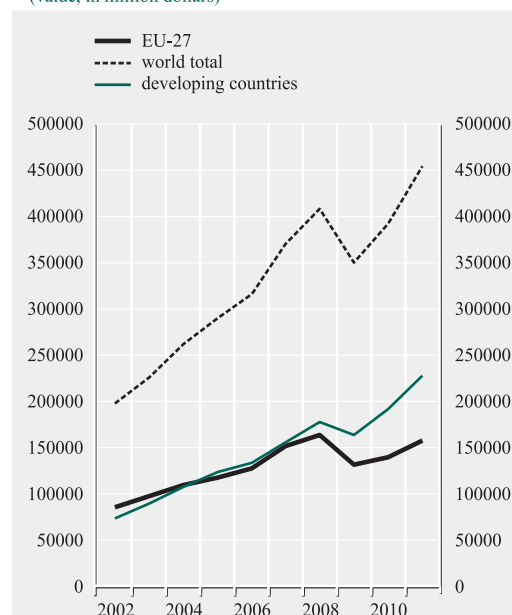
(value, in million dollars)



Source: UNCTAD Database, June 2013.

Chart 4b Cultural and creative exports (2002-2011)

(value, in million dollars)



Source: UNCTAD Database, June 2013.

Chart 5 The share of the EU-27 in global cultural and creative trade (2002 and 2011)

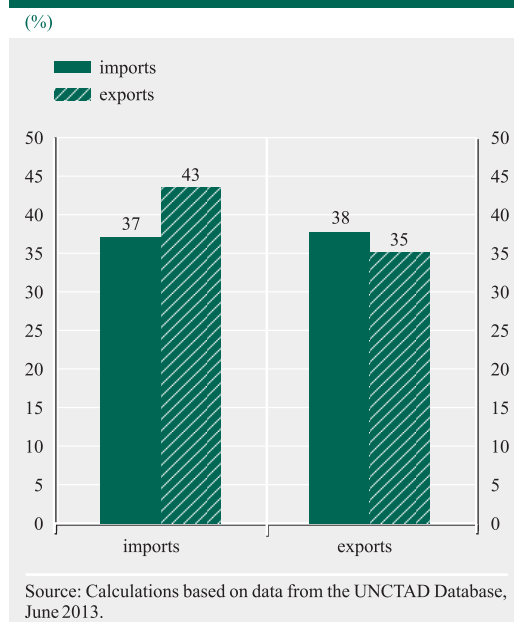


Chart 1 shows the evolution of cultural and creative trade. Between 2002 and 2011, global trade of cultural and creative goods grew rapidly, with exports rising by 8.8% and imports by 7% on average per annum. The corresponding figures for the EU-27 were 6.2% and 7%, respectively. During the crisis, however, stagnation or a slight decline was observed for the EU-27 and the developed world. Although the global export growth rate halved, it remained positive and robust, mainly owing to the buoyant exports of China and India. The industries which posted the strongest growth of cultural and creative exports throughout the decade 2002-2011 and the smallest contraction during the crisis were: art crafts, design (fashion, furniture), new media and video and computer games (see Chart 2). By contrast, publishing and audiovisuals (film and video) recorded the largest falls.

Turning to services (see Chart 3), computer and IT services, together with advertising, licensing and rights, are seen as the most dynamic industries globally. Moreover, the value of cultural and creative imports and

exports was between 1.5 and 2 times higher in 2011 than in 2002, while for developing countries it was almost three times higher (see Charts 4a and 4b). The EU27 accounts for more than one third of the value of global cultural and creative trade (see Charts 3, 4a, 4b and 5).

3 THE GREEK EXPERIENCE: PROSPECTS AND CHALLENGES

In the early 21st century, Greece, as an integral part of the globalised economy and society, is faced with the complex challenges arising from a protracted global recession, a retrenchment of societies worldwide to fruitless nationalism, and growing inequalities across and within countries. Having for long followed a self-chosen carefree path, by developing and maintaining an unsustainable growth model which resisted adapting to the requirements of the world economy, Greece is now called upon to embark on an effort to reconstruct its national economy within the new post-crisis global economic environment.

In the context of this national effort to achieve sustainable growth, the cultural and creative industries represent a crucial link in the creative nexus between culture, economy and technology. Today's world is full of images, sounds, colours, symbols and ideas that can generate employment, income and wealth, but also new, marketable forms of culture. Nowadays, no one can claim exclusivity of knowledge, information and creativity; creators of intellectual and artistic expressions are constantly changing the way in which we produce and exchange goods, services and knowledge and, more generally, the way we live and communicate.

In designing a successful and sound national CCI growth strategy, there are three areas to be explored and worked upon:

First, identification of the institutional, structural and organisational features of the cultural

and creative sector: which are the stakeholders? How do they interact? What is their impact on other sectors of the economy?

Second, systematic analysis of how the sector functions and how it influences key economic and social parameters at the national level.

Third, collection and compilation of comprehensive statistics for quantifying the sector's impact on output, employment and trade.

3.1 DEFINITION, CLASSIFICATION AND MEASUREMENT

Defining, measuring and classifying culture and creativity within a conceptual framework enabling statistical identification is a daunting task. This is so because, for one, culture and creativity are not the final products of a single branch of production or distribution; unlike traditional industries, CCIs are not homogeneous in terms of structure and product identity. Instead, the CCI sector comprises a variety of activities that cross, or hide in, several other sectors, such as manufacturing, services, communications or trade. Second, culture encompasses various manifestations of social life that are not specific to any single social group; it represents individual values, aesthetics and morals, intellectual values, behaviours and beliefs, habits and practices that define personal identity.

The European Commission only recently (see ESSnet-Culture 2012)³⁵ formulated four main criteria to delineate cultural and creative activities: (i) the creativity criterion, i.e. the ability to create, invent and be original; (ii) the notion of intellectual property (trademarks, patents, etc.); (iii) method of production (cost structure, reproducibility, economies of scale); and (iv) use value, i.e. the intrinsic or symbolic value of the product to its individual user.³⁶

On the basis of these criteria, the European Commission offered a broad delineation of the cultural and creative sector which can accommodate the ethnic, religious and demographic

features of each Member State (see Figure 3). This framework identifies ten cultural domains, based on six successive functions³⁷ that form the sector's value chain. Further, in a first attempt at quantification, it includes four economic and social statistics and four broad indicators for measuring the economic performance of the sector and the diffusion of its impact across the economy.³⁸

Today, in crisis-hit Greece, we have little information about the cultural and creative sector:³⁹ we can hardly spot it on the economy's map, or on the geographical map for that matter; we know virtually nothing about its size, employment patterns and contribution to national output and export trade. Even less is our knowledge of its specific features and needs.

A *first step* towards mapping the cultural and creative sector would be to determine which occupations and professions come under its scope and clearly distinguish them from other, less creative-intense categories. In particular, a decision has to be taken at the administrative and practical level, identifying and finally selecting the industries to be included in the cultural and creative sector. Obviously, there is a need to formulate and adopt a flexible, but at the same time clear, definition, which should:

³⁵ The effort of the European Commission, and Eurostat in particular, to develop cultural statistics started on the basis of a French initiative in 1997 and became more systematic in 2000 with the establishment of the Leadership Group Culture (LEG-Culture). A further step was taken in 2009 with the setting up of the Working Group European Statistical System Network on Culture (ESSnet-Culture), in the context of the Europe 2020 strategy. The ESSnet-Culture submitted its final report for consultation in May 2012. See also WIFO (2010).

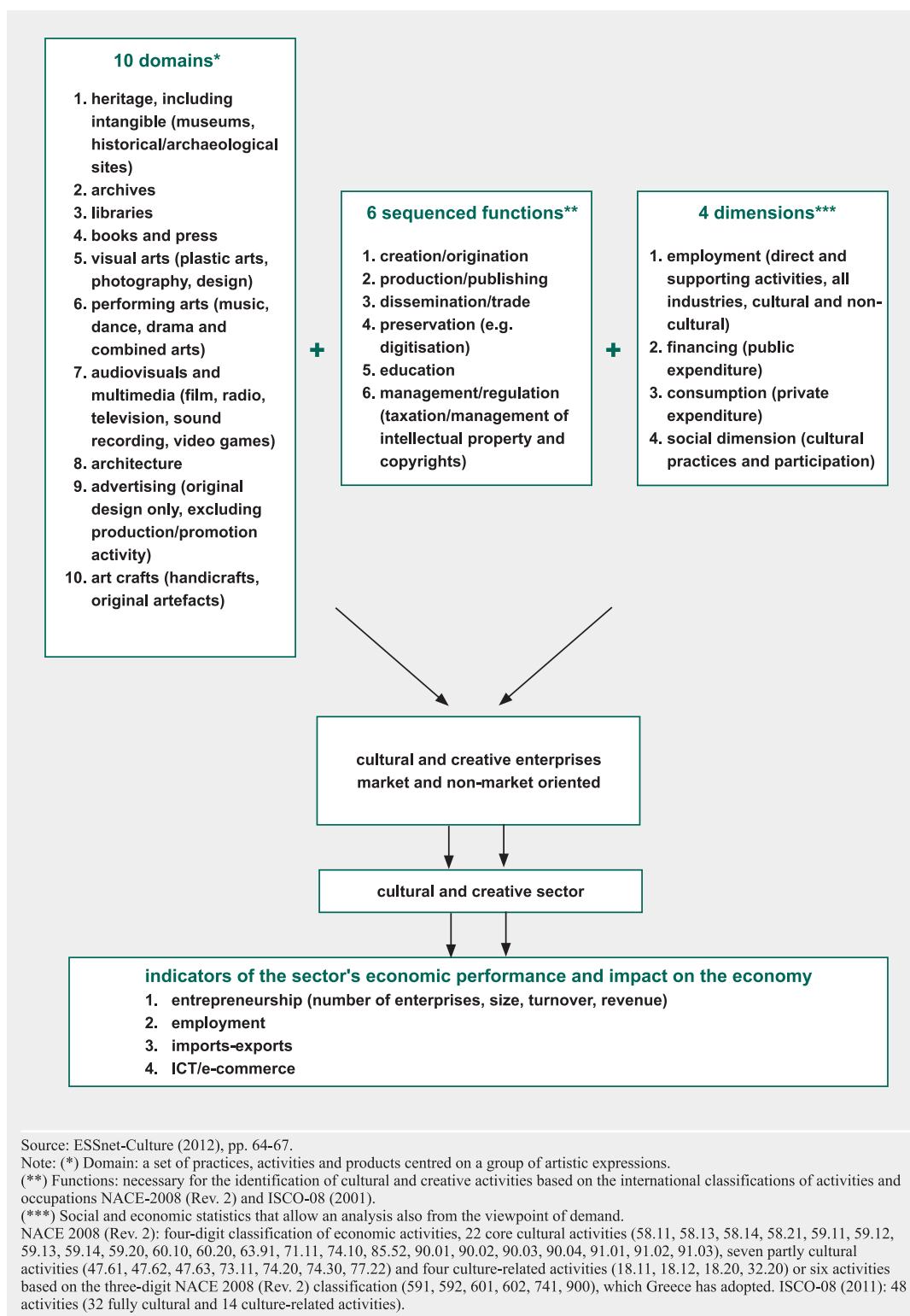
³⁶ Included are both market-oriented and non-market activities (the latter are also referred to as the non-market, social, third or non-profit sector).

³⁷ These are quite different from the forces of supply and demand that determine the functioning of the market for traditional goods and services.

³⁸ According to the British approach, a production or distribution business irrespective of its size is classified as creative when the proportion of people doing creative jobs to its total workforce is substantial and above a threshold of 30%. Based on this "creative intensity" criterion, creative employment in the United Kingdom was estimated at over 2 million people for 2002, accounting for 5.1% of total employment (see DCMS 2013).

³⁹ A comprehensive study of the Greek case in this field is still lacking. The only references are: Louri (2007), Kyriazidis (2007) and Karamatsou-Pachaki (2000).

Figure 3 The proposed European framework for cultural statistics



- (i) be compatible with the specific features and needs of the country;
- (ii) place emphasis on cultural, intellectual and artistic creation itself;
- (iii) exclude activities and occupations that are more related to retail trade rather than to production; and
- (iv) capture forms of cultural and creative production that are hidden in other traditional, non-creative industries.

The *second step* would be to prepare a mapping report document. Specifically, based on the definition reached in the first step, such document would record all industries, occupations and forms of employment fully or partially active in this sector. In this regard, direct contact with all stakeholders through a questionnaire would be an effective way to derive comprehensive and reliable information. The mapping report exercise would help to draw a safe and accurate picture of the size and turnover of this emerging sector in measurable terms. Furthermore, the mapping of all forms of economic activity and employment in the sector would throw the market for cultural and creative market into sharper relief, revealing such features as: (i) the existence of numerous very small businesses, often with only one worker who is also the creator, alongside a few large-sized domestic or multinational companies; (ii) location (urban or semi-urban centres); (iii) the forms of employment (self-employed, entrepreneurs/producers, employees, amateurs, part-time workers); (iv) type of participation (e.g. youth and female entrepreneurship); (v) consumer behaviour patterns; (vi) level of public expenditure on cultural investment; and (vii) level of private (business and consumer) expenditure. These facts reflect the cultural participation of a society, at both the sending and the receiving ends of the creative activity.

Given the need for an evidence-based policy, the *third step* would be to establish a periodic ex post report (e.g. every three years), which

would not only monitor, document and assess the sector's performance, but also quantify its impact on the national economy and society, using economic and social statistics. In addition to economic aggregates (such as national output or gross value added, employment and unemployment rates and export trade volume), statistics on violence and criminality rates, educational attainment and drop-out levels and social indicators of inequality, poverty and social cohesion are also crucial statistics in this respect.⁴⁰

3.2 COMPILATION AND PROCESSING OF STATISTICS

The Greek cultural sector has never been subjected to a process of monitoring, assessment or quantification. Policy actions in this field have rarely been informed by an analysis of economic costs and benefits and almost never have they been evaluated ex post based on their results. Culture used to be seen as a social value that a welfare state must fund and safeguard. Of course, how much money a government spends on culture and the arts in a given year or number of years does not alone determine the size and quality of the cultural output of the respective country. Planning, vision, efficient organisation and implementation, valorisation of cultural resources, awareness of, and adaptability to, the changing needs, as well as dynamism and extroversion are equally important determinants of healthy and sustainable cultural activity.⁴¹

A number of crucial questions arise in this respect:

⁴⁰ For details, see the latest OECD report (2012) on education and OECD (2012), *Equity and Quality in Education: Supporting Disadvantaged Students and Schools – Spotlight Report: Greece* (<http://www.oecd.org/greece/49603577.pdf>). Moreover, recently released Eurostat data on poverty in Greece (December 2013) reveal the extent of poverty and social exclusion experienced by more than 30% of the country's population (3.8 million people): based on data referring to the year 2012, one out of three Greeks was in at least one of the following three conditions: at-risk-of-poverty, severely materially deprived or living in households with very low work intensity.

⁴¹ See ACE (2010). Notable examples are the recent dynamic comeback of the Greek National Opera, the success of the Athens and Thessaloniki Biennales (October-November 2013 and December 2013, respectively) and the new cultural park under construction at the Faliron Delta.

First, is private funding appropriate for a sector whose output promotes culture and fosters social development and therefore has a strong “public good” character?

Second, how can cultural and social development be quantified?

Third, how to statistically depict an activity such as that of the cultural and creative sector, when its forms and models of production constantly change in line with ongoing technological change?

To answer these questions, we need to have clear statistics on key aggregates such as expenditure (public and private), employment, productivity and profitability. The compilation and processing of such statistics would enable us to quantify the impact of this sector on the rest of the economy, which is essential information not only for entrepreneurs/investors, but also for economic policy-makers. More specific questions to be answered using this statistical base would include the following:

- (i) What is the sector’s share in total employment and what are the qualitative features of its workforce, such as type of employment, gender, education and skills?
- (ii) What is the sector’s contribution to reducing school dropout rates and raising participation to lifelong learning?
- (iii) What is the sector’s contribution to improving the country’s international competitiveness through the promotion of research and technology?
- (iv) What is the sector’s contribution to reducing poverty, social exclusion and long-term unemployment and to the successful inclusion of disadvantaged and economically and socially declining regions and social groups?⁴²

In an attempt to take stock of the Greek experience, we encounter a number of stumbling blocks:

First, the lack of a commonly accepted definition of the cultural and creative sector.

Second, the lack of a statistical database, at least for key economic and social statistics of the sector, such as turnover and value added, number and size of enterprises, employment, export values and volumes, expenditure (public and private, consumption and investment) and consumption patterns (participation and time use).

Third, even if the methodology proposed by the European Commission (see Figure 3) were to be adopted, it would still not be possible to accurately quantify and statistically depict this sector. This is so because Greece applies the three-digit classification of activities (NACE Rev. 2) and occupations (ISCO-08),⁴³ which prevents classification on the basis of different cultural and creative intensity, i.e. “fully cultural occupations”, “partly cultural occupations”, “culture-related occupations”, etc. A more detailed breakdown by four-digit code is thus necessary, otherwise there is a risk that their size and importance might be overestimated or underestimated.

Fourth, in the pre-crisis period, culture in Greece was largely financed at central, regional and local level with taxpayer money. The projects to be financed were selected on criteria which had little to do with their efficiency or their impact on the local and national economy and society. Ex post, results-based evaluation was non-existent. The harsh austerity measures implemented during the crisis included drastic cuts in public expenditure also in the area of culture. Most importantly, the

⁴² The effort that started in the early 2000s to quantify the UK cultural and creative sector showed that the sector has a positive and growing impact not only on the economic level, but also on the social and cultural levels. It also showed a number of benefits to other public policy agendas, such as urban regeneration, the reduction of crime, conflict resolution and cultural diversity. This prompted a shift of public investment resources from more traditional sectors of the British economy towards the broader sector of culture and the arts. See Pembroke (2013), DCMS (2011), ACE (2011) and McMaster (2008).

⁴³ Categories of activities related to culture, arts and creativity: 591, 592, 601, 601, 602, 741, 900. Categories of occupations: 216, 235, 262, 264, 265, 343, 352, 731.

scarcity of public funding highlighted the need for an evidence-based approach in the selection of projects to be funded with public money, with social and economic effectiveness being the primary criterion.

3.3 GREECE'S CULTURAL AND CREATIVE PROFILE

Despite the limited availability of statistics on the new cultural and creative economy in Greece, in this section we will attempt for the first time to sketch the country's profile in this area.

Trade performance

Based on international trade statistics, which are virtually the only sources of complete and comparable data,⁴⁴ we can conclude that, although between 2002 and 2011 Greece's trade in cultural and creative products and services grew sharply in value terms, the balance remained negative, as can be seen in Table 1 and Chart 6 showing the country's cultural and creative trade performance (exports and imports). The deficit position stemmed from the category of goods, while the small – albeit rising – surplus in the category of services is not sufficient to reverse the overall negative balance.

Charts 7-10 show the country's cultural and creative trade performance by good and service category between 2002 and 2011. The data point to rapid growth, which was broadly based across all categories of goods and services. The most export-oriented activities were design, publish-

Chart 6 Greece's creative trade performance (2002-2011)

(value, in million dollars)



ing, computer games and advertising/market research. As shown in Table 2, design (mostly fashion and furniture) was the single best performer, with a share of 76.8% in total cultural and creative exports in 2011, but also had the highest share in terms of exports (66%). Audio visuals and visual arts were the least export-oriented industries. Table 3 provides similar data for services. Advertising/market research/opinion polls was the most export-oriented

⁴⁴ According to the UNCTAD classification (2012, pp. 283-284).

Table 1 Greece's cultural and creative sector: trade performance

(value, in million dollars)

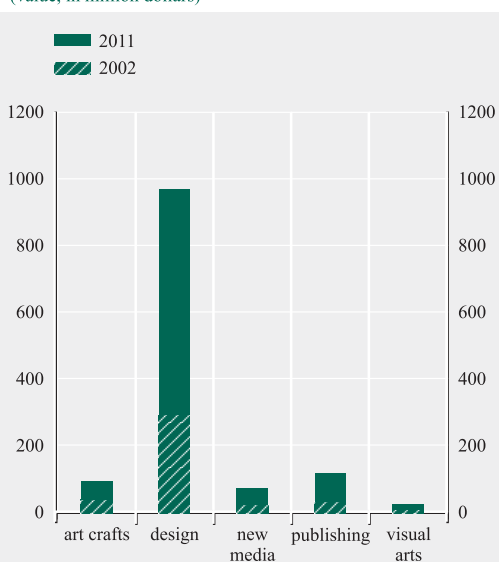
	2002			2011		
	Exports	Imports	Balance	Exports	Imports	Balance
All categories	836	1,517	-681	1,646	2,348	-702
Goods	413	1,146	-733	875	1,712	-837
Services	423	371	52	771	636	135

Note: A negative sign denotes deficit.

Source: Calculations based on data from the UNCTAD Database, June 2013.

Chart 7 Greece's exports of creative goods by category (2002 and 2011)

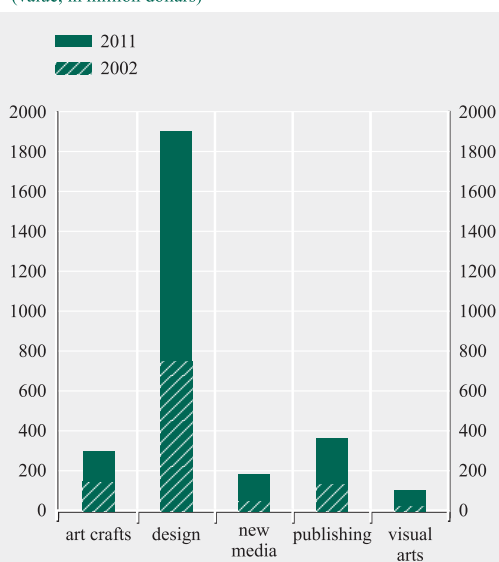
(value, in million dollars)



Source: Calculations based on data from the UNCTAD Database, June 2013.

Chart 8 Greece's imports of creative goods by category (2002 and 2011)

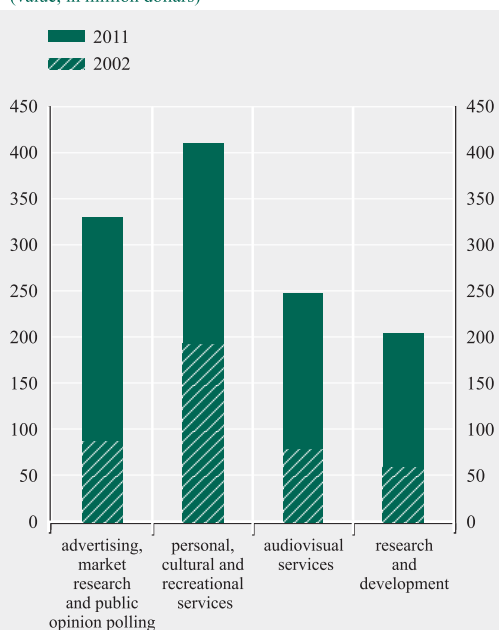
(value, in million dollars)



Source: Calculations based on data from the UNCTAD Database, June 2013.

Chart 9 Greece's exports of creative services by category (2002 and 2011)

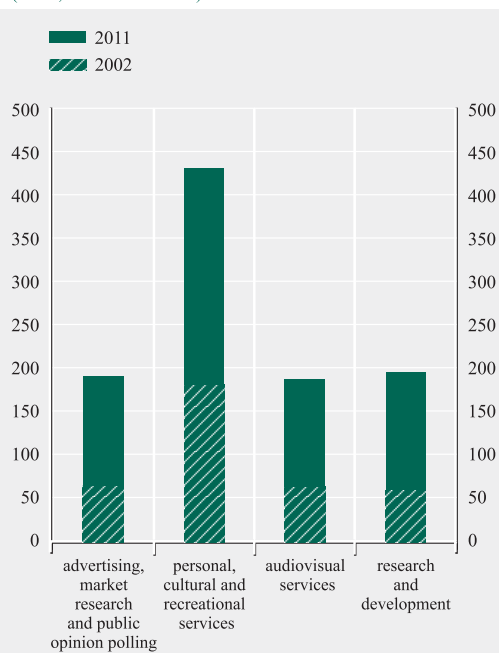
(value, in million dollars)



Source: Calculations based on data from the UNCTAD Database, June 2013.

Chart 10 Greece's imports of creative services by category

(value, in million dollars)



Source: Calculations based on data from the UNCTAD Database, June 2013.

Table 2 Greek exports and imports of cultural and creative goods: percentage breakdown (2002 and 2011)

	Imports (%)		Exports (%)	
	2002	2011	2002	2011
<i>All categories</i>	100.0	100.0	100.0	100.0
Art crafts	13.32	8.42	9.68	6.30
Audiovisuals	0.14	0.11	0.12	0.05
Design	65.31	66.83	70.98	76.79
New recorded media and video games	5.09	7.40	6.36	5.51
Publishing	12.65	13.09	9.07	9.62
Visual arts	2.81	4.14	2.11	1.70

Source: Calculations based on data from the UNCTAD Database, June 2013.

industry, while research & development remained the least export-oriented one.

Furthermore, Greece's share in global or EU27 cultural and creative trade in value terms is low, without visible signs of increased penetration of export markets (see Tables 4 and 5 and Charts 11a and 11b). Unweighted for country size, Greece has a share of 0.86% in total cultural and creative EU27 imports and just 0.4% in exports. Using population-based weights, the per capita value of exports is four times lower than the per capita value of total exports of the EU27, ranking Greece to the fourth lowest place, after Romania, Bulgaria and Cyprus, and four places below Portugal.

Similarly, the per capita value of imports in Greece is two times lower than the respective figure for the EU27.

Employment

While consultation on a consistent EU-wide methodology for the compilation of complete statistics on cultural and creative employment is still under way, it might be useful to look at the available, even if incomplete, statistics on employment in the sector in Greece. Based on the latest Eurostat data release referring to 2009 (Cultural Statistics 2011), employment in five selected cultural occupations (taken together) had a share of 1.2% in total employ-

Table 3 Greek exports and imports of cultural and creative services: percentage breakdown (2002 and 2011)

	Imports (%)		Exports (%)	
	2002	2011	2002	2011
Advertising, market research and public opinion polling	17.79	19.81	21.04	31.26
Audiovisual and related services	16.98	19.65	18.91	21.92
Personal, cultural and recreational services	49.06	39.15	45.86	28.02
Research and development	16.17	21.38	14.18	18.81

Source: Calculations based on data from the UNCTAD Database, June 2013.

Table 4 Greece's share in global cultural and creative goods trade (2002 and 2011)

(% of total value)

	Imports		Exports	
	2002	2011	2002	2011
<i>All categories</i>	0.521	0.410	0.208	0.193
Art crafts	0.751	0.495	0.228	0.161
Audiovisuals	0.377	0.388	0.110	0.097
Design	0.579	0.424	0.256	0.223
New recorded media and video games	0.292	0.271	0.150	0.110
Publishing	0.489	0.523	0.125	0.195
Visual arts	0.188	0.250	0.057	0.048

Source: Calculations based on data from the UNCTAD Database, June 2013.

Table 5 Greece's share in EU-27 cultural and creative goods trade (2002 and 2011)

(% of total value)

	Imports		Exports	
	2002	2011	2002	2011
<i>All categories</i>	0.95	0.86	0.28	0.40
Art crafts	1.61	0.81	0.55	0.57
Audiovisuals	0.79	2.03	0.22	0.46
Design	1.26	1.01	0.31	0.49
New recorded media and video games	0.64	0.66	0.23	0.23
Publishing	0.69	0.98	0.20	0.32
Visual arts	0.14	0.11	0.11	0.10

Source: Calculations based on data from the UNCTAD Database, June 2013.

ment in Greece, compared with 1.7% in the EU27. The respective headcount cultural employment was 52.6 thousand in 2009.

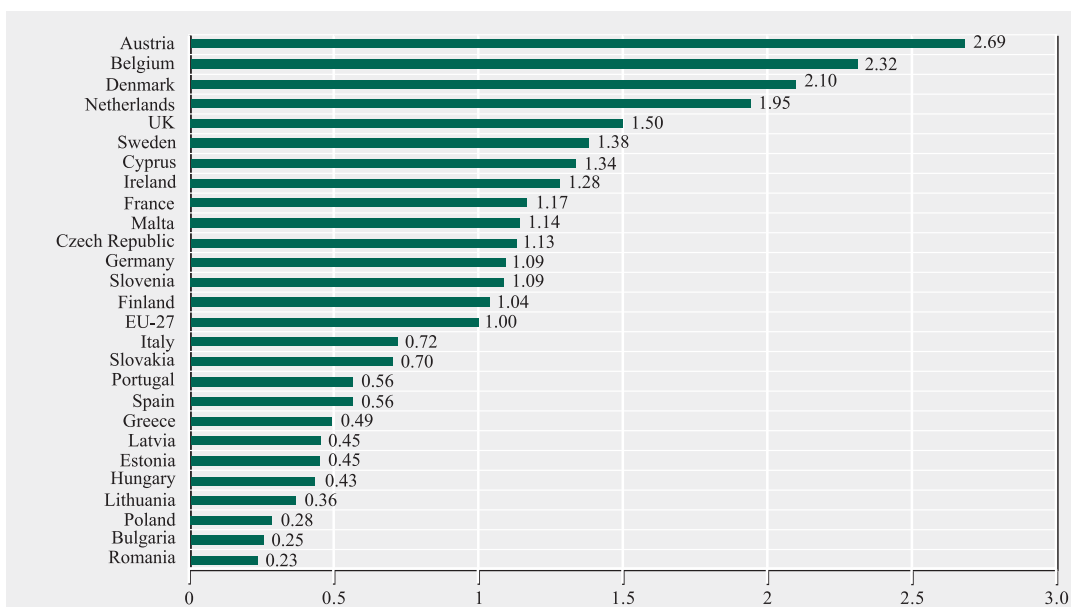
As shown in Table 6, providing more detailed data on cultural employment in Greece and the EU27 for that same year, publishing activities had the highest share (30.6%) in total employment in the case of Greece. Moreover, female employment accounted for 40% of total employment in the sector, and the number of tertiary education graduates was more than 1.5 times higher than the total number of tertiary education graduates in the national economy. Of the total employment in the sec-

tor, around 30% were self-employed or workers in family businesses, more than 10% had occasional or part-time jobs and more than 20% worked at home. Overall, the picture of cultural employment in Greece was quite similar to that for the EU27.

Turnover

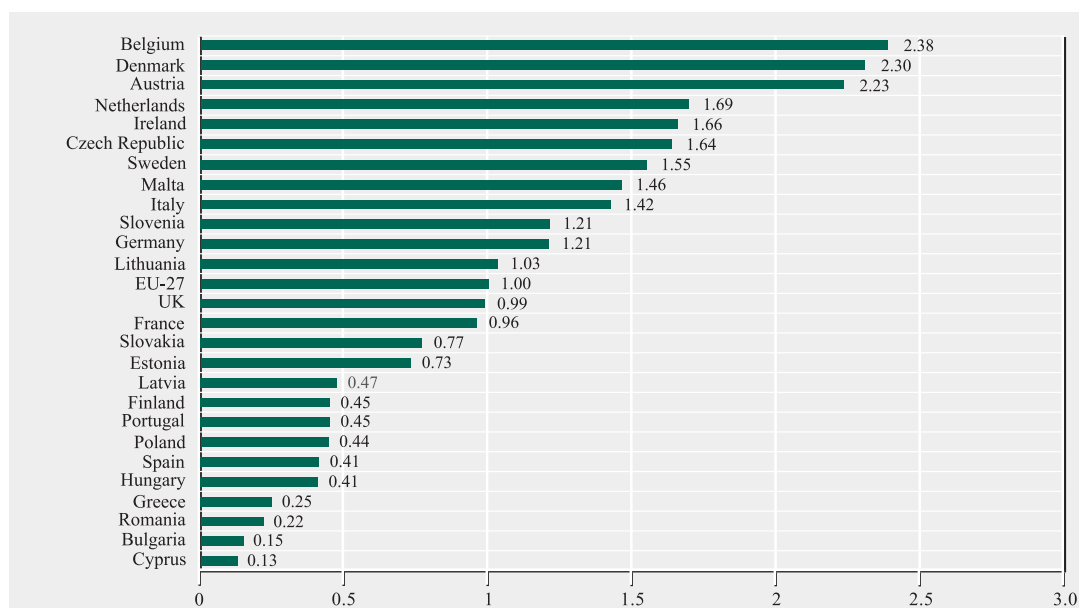
Chart 12 shows the evolution of the turnover of three cultural and creative industries for the period 2001-2012. In all three industries, with publishing as the leader, turnover grew strongly between 2004 and 2008. However, since 2009 the turnover index has been on a

Chart IIa Country shares in total cultural imports (2011, per capita value of imports)



Source: Calculations based on data from the UNCTAD Database, June 2013.

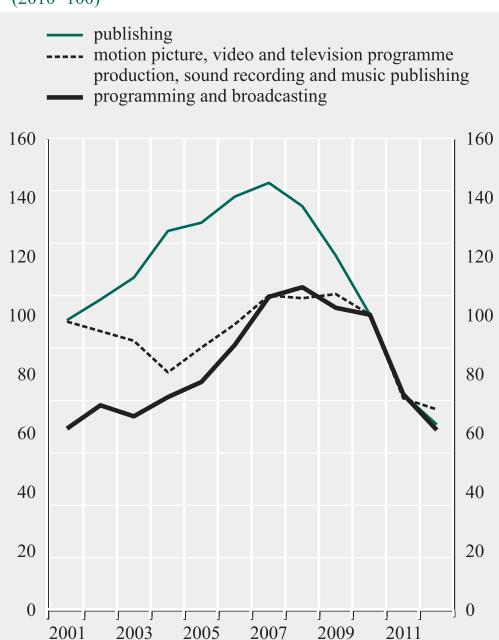
Chart IIb Country shares in total cultural exports (2011, per capita value of exports)



Source: Calculations based on data from the UNCTAD Database, June 2013.

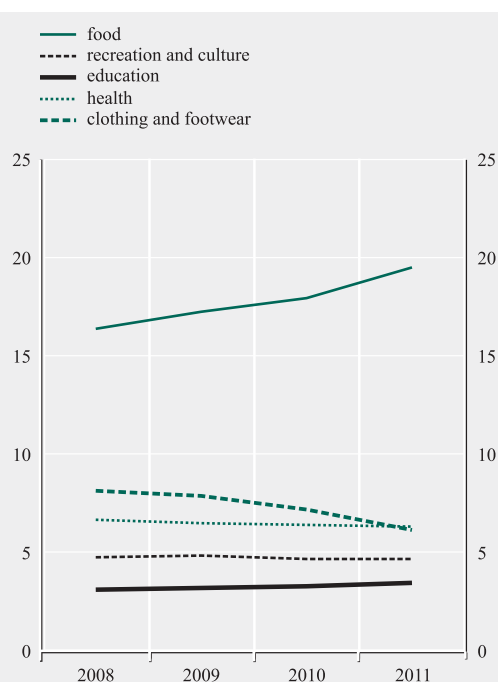
Chart 12 Turnover index of selected creative services in Greece (2001-2012)

(2010=100)



Source: Eurostat, sts_setu_a.
Note: Classes of activities based on NACE Rev.2 J58, J59 and J60. Annual data, adjusted by working days.

Chart 13 Percentage distribution of average monthly expenditure of households (2008-2011)



Source: ELSTAT, *Living standards in Greece*, November 2013.

Table 6 Cultural and creative employment (2009)

	Greece		EU27	
	Headcount (thousand persons)	%	Headcount (thousand persons)	%
<i>All CCIs</i>	52.6	1.2	3,638.5	1.7
Publishing	16.1	30.6	1,251.7	34.4
Film, video, TV, music recording and publishing	5.4	10.3	402.3	11.1
Programming and broadcasting	11.7	22.2	348.6	9.6
Creative arts and entertainment	9.1	17.3	1,045.6	28.7
Libraries, museums, archives	10.2	19.4	590.3	16.2
<i>Women</i>		36.1		43.9
<i>Tertiary education graduates</i>		49.8		68.6
<i>Self-employed and family workers</i>		28.5		42.2
<i>Working at home</i>		20.1		45.9

Note: Occupations and activities according to NACE Rev 2. (58, 59, 60, 90, 91) and ISCO-88 (243, 245) classifications.
Source: Eurostat pocketbooks, *Cultural Statistics*, 2011.

sharp downward path, owing to adverse national and international circumstances, and fell to almost half of its 2008 level.

Consumer participation

Household expenditure on cultural goods and services can be used as an indicator of cultural participation and engagement on the part of consumers. As shown in Chart 13, the share of culture and recreation in the average monthly expenditure of Greek households remained broadly unchanged during the crisis period, in contrast to the shrinking share of clothing and footwear. As another measure of cultural participation, the total number of cinema tickets sold in Greece increased from 9.7 million in 2008 to 12.5 million in 2009 and stood at 11.7 million in 2010 and 10.9 million in 2011, before returning close to 2008 levels in 2012 (9.9 million).⁴⁵

4 PRACTICAL RECOMMENDATIONS

Each country is different, each market has its specific features, and each cultural and creative product offers a singular touch and unique glamour to its user. It is therefore the task of each country to identify the distinctive features of its citizens' cultural and creative capacities and develop a strategy for promoting its cultural and creative economy, exploiting its comparative advantages and addressing its shortcomings.

In Greece, as in other developed countries, cultural policy has traditionally and historically been confined to matters concerning grants, tax exemptions and reliefs, and education in the fields of visual and performing arts. However, the emergence of a new inter-sectoral and multidimensional economy such as the cultural and creative economy has revealed an urgent need to align the current cultural policy with a comprehensive national growth strategy.

In particular, given the multifaceted impact of such strategy on the country's cultural, economic, tourist and educational development, it

is logical that political and administrative responsibility should be shared among multiple policy domains, with the involvement of a multiplicity of stakeholders.⁴⁶ Fragmented strategies and piecemeal action to foster this new economy entail a visible risk of self-reversing measures, hesitation and unnecessary delays. This points to a need for a holistic approach to the sector and its impact, as well as for a single, comprehensive policy to boost its growth. To address this need, an efficient body should be set up and undertake to coordinate action across the various parties involved, and a well-designed, sound and transparent regulatory framework.

More specifically, action along these lines could include the following:

- **Government and infrastructure.** The government should continue to provide infrastructure (facilities, transport, distribution, access to technology and communications) as necessary for the functioning of the sector. Furthermore, through public investment, it should protect and preserve cultural capital, which is the main input for the production of cultural goods and services.

- **Interministerial observatory for culture and creativity.** This would be a new institution with a consultative, executive and supervisory role. Its main points of focus would be, first, the design of a comprehensive medium- to long-term national strategy for culture. Second, starting and maintaining a regular and structured dialogue (as detailed below) among all stakeholders. Such dialogue would be informed by a periodical stocktaking exercise and report. And third, launching an online platform for open communication and information sharing. The latter is particularly relevant for the less favoured geographic areas or low-income regions or social groups.

⁴⁵ Data provided by the Greek Film Center, November 2013.

⁴⁶ A diverse set of public entities, non-profit organisations (some of which benefit from state aid), private for-profit organisations, associations of the civil society, institutions, academies, professional and artistic associations and clubs.

4.1 SPECIFICITIES

The cultural and creative sector in Greece exhibits more or less the same specificities as its counterparts elsewhere in the world.

– *The so-called “missing middle”.* The market is characterised by the co-existence of few big players, usually multinational corporations, alongside numerous local or regional micro-enterprises, mostly sole proprietorships and vertically integrated businesses.⁴⁷

– *Segmentation of the domestic market,* which is characterised by individual creative contributions, lack of professionalism and limited financial resources. The market is typically organised around best-selling artists and creators. This pattern largely reflects the fact that the use of technology enables mass production and direct dissemination, keeping reproduction and distribution costs to a minimum and low sunk costs. Large corporations are able to make substantial profits, while small producers and individual artists can at best recover the cost of their initial investment.

– *The probability of financial failure is very high.* The launch and dissemination of a cultural and creative product should be well-timed to coincide with the public’s desire to use it; this results in a volatile and unclear business cycle. Bad timing can spell commercial failure, no matter how good the product is. In addition, demand for the product remains highly uncertain,⁴⁸ how it will be received by consumers cannot be known in advance or safely assessed or interpreted afterwards.

– *Lack of strict and formal employment relationships.* The most common type of work is project-based, whereby a team or network is set up on an ad hoc basis for a given period of time. In their vast majority, the members of such team or network are freelancers or self-employed. Once the project is completed, the team or network is dis-

solved. Therefore, in designing and implementing any policy initiatives in the sector, this peculiarity of the relevant labour market should be given serious consideration.

– *Clustering and co-location.* One aspect of the sector’s specificity is a tendency towards clustering, concentration and co-location in a specific geographic area, with a view to the benefits that creators/producers can gain from coexistence, collaboration, interaction, specialty complementarities and competition, as well as from the designation of a geographical area as a pool of creative workers and a hub for consumers. In other words, creative clusters function as a meeting place for creators, artists, producers, entrepreneurs, creative workers and consumers and as a place for an exchange of experiences, emotions and expertise. Athens is a good case in point.

– *Use of social media,* which can be a key driver of the sector’s development and expansion, by bringing together artists/creators, entrepreneurs and consumers, disseminating information and promoting and establishing trademarks.

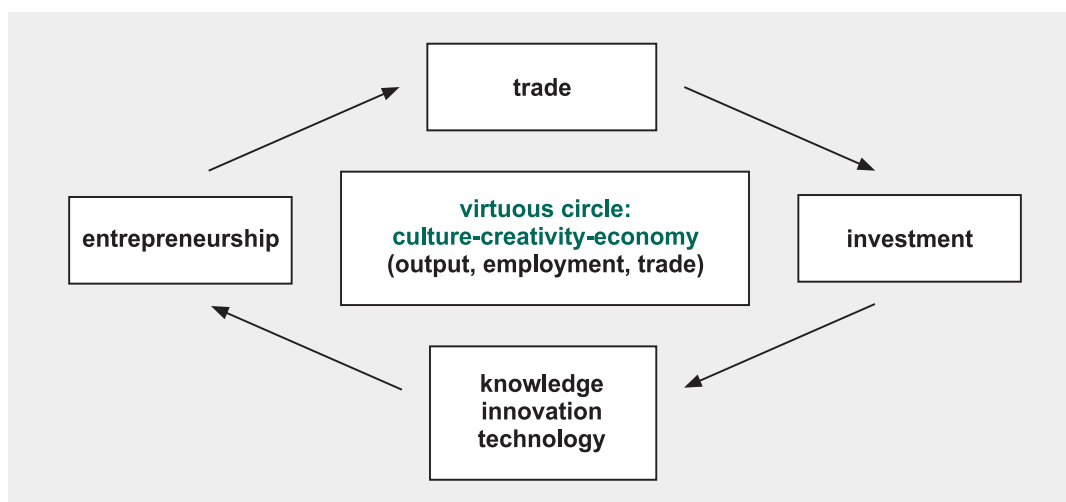
4.2 SUGGESTED POLICY ACTIONS

In light of the above, this section attempts to suggest a set of policy actions that, as a minimum framework, can contribute to the emergence of a new virtuous circle linking culture, creativity and the economy, as illustrated in Figure 4. This virtuous circle reflects the positive externalities generated by the combination of private investment, knowledge, innovation and technology, entrepreneurship and export-orientation, which can have a quantitative impact on output, employment and trade. In this regard, the role of the government shifts towards taking initiative for concerted action in the context of the interministerial observatory in four main areas:

⁴⁷ This type of organisation is prevalent both in the developed and the developing economies, although absolute aggregates vary across countries (see KEA 2006, Higgs et al. 2007).

⁴⁸ This is referred to as the “nobody knows” hypothesis.

Figure 4 The virtuous circle of culture-creativity-economy



First, providing strong incentives to attract investment.

Second, providing appropriate infrastructure that will allow to reap the benefits of digital technology and its applications.

Third, providing incentives to promote entrepreneurial talent, through education and recognition of the social role of entrepreneurship.

Fourth, formulating a policy to increase the extroversion of the economy, focused on modernising and streamlining export promotion policies.

Fifth, adopting and credibly implementing a regulatory framework governing the operation of the new cultural and creative economy (legal protection of intellectual property, equal tax treatment, labour arrangements, strengthening competition).

Indicatively, we would suggest **11 policy actions**:

1. Tax treatment. Can tax policy promote economic and social development? If the answer to this question is yes, then taxes can

be a tool for the promotion of culture and creativity. There is the common but wrong belief that cultural and creative products are luxury goods and as such should be subject to high tax rates. The current VAT rate structure should be reviewed on the basis of the principle that similar goods should be taxed at the same rate.⁴⁹ Other matters refer to the tax burden arising from dual taxation of international co-productions, as well as tax rebates. Finally, the 1.5% levy imposed on annual advertisement revenue of all private TV broadcasters for the production or co-production of Greek films is also a crucial issue (see Laws 1866/89 and 3905/2010).⁵⁰

⁴⁹ An example is the different tax treatment of theatre and music. Theatre is subject to a reduced VAT rate (6.5% on the admission ticket), while the rate applied to music is 13%. Adding the applicable 7% tax in favour of the Hellenic Society for the Protection of Intellectual Property (AEPI, i.e. the entity managing the rights of music artists) and the special tax on entertainment shows, levied at a rate of 5% on gross profit per concert in the areas of Attiki and Thessaloniki (introduced in 1950 as a levy in favour of “pauper maidens”), the tax burden on a music product is disproportionate, at a total rate of 25% in Athens and Thessaloniki and 20% in the rest of the country, or 35% or 40% respectively if we also add a levy on the use of sports facilities (15% of turnover).

⁵⁰ Public broadcasters, pay TV operators and companies in the telecommunications and new technology sector are subject to a special tax of 1.5% on their annual turnover. Revenue from this tax is allocated to the Greek Film Center (80%) and the Ministry of Culture and Sports (20%). Up to half of the allocation of the Greek Film Center is granted in the form of advertising time for the promotion of Greek films.

2. Education. There is an urgent need to redefine education, including basic schooling, further education and lifelong learning. This is so because: (i) the link between education and entrepreneurship is today loose or even non-existent, which prevents an active fostering of creative entrepreneurship; (ii) primary and secondary education is not geared to encouraging and expanding pupils' creative skills and talents; (iii) cultural and creative subjects are conspicuously absent from school curricula; (iv) IT literacy and skills in new technologies are inadequately developed not only among mainstream students, but also among students of fine arts and design; (v) opportunities to acquire practical experience through internship programmes and training are absent or scarce; (vi) initiatives for competitions and awards of excellence for new talent and new entrepreneurs remain limited in scale and scope;⁵¹ and (vii) there is also a lack of initiatives aimed at familiarising artists and creators with business and technology matters.

3. Launching a structured dialogue, in the context of the interministerial observatory, with all stakeholders (public and private entities, civil society, local bodies and authorities, trade and professional associations) aimed to establish a network for communication, planning and coordination. A questionnaire-based survey and consultation with the various parties involved would help to gather useful inputs. Needless to say, public initiative should be entrusted to people with expertise in the field, selected on the basis of transparent criteria. This collaborative network should work to design a comprehensive and coherent strategy for developing the cultural and creative sector. In pursuing this goal, the network should build on the experience of other countries, tailored to the specific needs of the Greek economy, and should undertake the following tasks: *first* a mapping exercise. This exercise, to be reviewed at regular intervals, should adopt an evidence-based approach,

building on the available experience of people active in the sector. *Second*, collection and processing of all relevant information and data, with a view to establishing a reliable statistical database with facts and figures about the sector's profile, size and contribution. This should be an ongoing process, with the database being subject to constant review and updates, enabling economic and political decision-makers to have an informed view of the sector and helping to raise awareness of its importance for economic growth and social progress. *Third*, establishing transparent and merit-based criteria for planning and budgeting. Although private economy criteria tend to prevail, budgets should not only target profits, but also focus on the broader benefit to society. The key criterion should thus be a proper mix of marketability and quality. *Fourth*, introducing ex post audits and performance assessments, both of which are sufficient and necessary conditions for a successful mapping exercise.

4. Labour market. Cultural and creative occupations need to be recognised by the establishment of a registry of creative workers, and appropriate legislation should be adopted to govern labour relations in the sector. The lack of such recognition, together with the informal and loose work arrangements, mainly in the form of short-term contracts, the absence of a social safety net and the inadequate protection of very short-term contracts lead to a high unemployment rate in the sector and long intervals between jobs. Emphasis should also be placed on lifting obstacles to cross-sectoral and cross-border mobility of artists/creators, as well as barriers to market entry. Both the domestic and the international cultural and creative labour markets remain closed, divided along corporatist lines and subject

⁵¹ Examples include the recent partnership of the Hellenic Federation of Enterprises (SEV) with Google aimed to support youth entrepreneurship by providing expertise, as well as the innovation awards competition jointly organised by the Ministry for Development and Eurobank.

to administrative obstacles linked to differences in legislation across countries, but also across sectors within the same country.

5. Intellectual property protection. It is necessary to improve, strengthen and modernise the existing legislation in order to ensure effective protection of intellectual property, i.e. the right on patent, industrial design, the right to use an appellation of origin or trademark. Relevant matters in this respect are the monetary valuation of intellectual property, the sharing of relevant profits and the fight against piracy.⁵²

6. Opening up to international partnerships/co-productions. A crucial role in this regard can be played by a less restrictive regulatory framework, as well by initiatives to organise periodical events and/or internet campaigns for the promotion of Greek cultural and creative products abroad. A successful example is the regular showcasing of Greek film-making in London every year.⁵³

7. Measures to strengthen competition, especially in industries characterised by oligopolistic structures.

8. Creating physical locations for production and exhibition. The numerous small and geographically scattered creators/producers can benefit from their location in a large working space gathering a large number of producers and buyers.⁵⁴ Abandoned industrial buildings, rundown public spaces and decommissioned infrastructures can be transformed into vibrant places and homes to new ideas and products, but also to educational and training activities. Such co-locations have multiple and positive spillover effects on tourism, on the economic development of disadvantaged and poor areas and on urban and regional regeneration. A good example is the Athens Gazi Industrial Archeological Park, a former gasworks site which has been redeveloped and repurposed as a major venue for cultural and entertainment activities.⁵⁵

9. Forms and sources of funding. Financial institutions are not familiar with considering “experimental”, “original”, “smart” or “creative” projects for funding. The European Commission (2013) estimated that the financing gap of the cultural and creative sector as a result of difficulties in access to finance would come to up to €13.4 billion in the EU28 over a 7-year period. On the other hand, though, neither have creators/producers or artists, in their majority individuals and very small firms, the managerial skills to draft a solid business plan. A further impediment is the fact that the notion of creative entrepreneurship is not adequately recognised, while there is also a lack of specialists in, and clear guidelines on, the drafting and evaluation of such plans. Building expert capacities and establishing clear guidance in this field are essential conditions for ensuring the sector’s access to private finance. The termination of grants, subsidies and other forms of state aid and the lack of bank financing have led, in the past few years, to a quest for alternative sources of funding, such as: (i) private cultural sponsorship;⁵⁶ (ii) the programme Creative Europe 2014-2020 and its Culture and MEDIA sub-programmes;⁵⁷

⁵² It has been estimated (TERA 2005) that as a result of piracy of cultural and creative products (software, film, recorded music, TV series), the European Union’s creative industries lost €10 billion in retail revenue and 185,000 jobs in 2008 only.

⁵³ 6th Annual Greek Film Festival, Westbourn Studios, London, 7-18 October 2013.

⁵⁴ Virtual reality and multimedia parks, computer media centres, business centres.

⁵⁵ See Gonis and Defner (2011).

⁵⁶ Cultural sponsorship (see Law 3525/2007) is an institution established by the Greek state and is aimed to ensure funding for cultural activities undertaken by public and private entities with resources coming exclusively from the private sector. It is a form of corporate social responsibility, whereby companies seek to raise awareness of social, environmental and cultural issues, while at the same time strengthening their corporate image. However, cultural sponsorship has not worked in practice. A major shortcoming of the relevant legal framework is its failure to clearly define the rewards to be gained by the sponsor, which would provide strong incentives for sponsoring.

⁵⁷ The new programme, with a budget of €1.46 billion (increased by 9%), launched in January 2014 as a follow-up to the previous Culture Programme (2007-2013), will provide funding to at least 250,000 artists and cultural professionals, 2,000 cinemas, 800 films and 4,500 book translations. It will also establish a financial guarantee facility of up to €750 million, enabling small businesses in the cultural and creative sector to have access to bank credit (see http://ec.europa.eu/programmes/creative-europe/opportunities/index_en.htm).

(iii) venture capital and private equity funds;⁵⁸ (iv) crowdfunding⁵⁹ and peer-to-peer lending;⁶⁰ and (v) the new National Strategic Reference Framework (2014-2020) focusing on technology, innovation and youth entrepreneurship.

10. Redefining export policy. Greek and international experience confirms the extrovert character of the cultural and creative economy. Given the very small size of the domestic market and the sector's positive impact on export trade and on attracting foreign investment, the national export strategy should be redefined in order to include this new economy as well, with an emphasis on the protection of designation of origin and branding and on the observance of high quality standards. An example is the revival of the once forgotten brand "Greek Cinema" and increasingly recognised brands such as the "Armonia Atenea-The Friends of Music Orchestra",⁶¹ the Greek National Opera, as well as the "Stavros Niarchos Foundation Cultural Center". Second, emphasis should also be placed on facilitating exports by simplifying export procedures and everyday business practice, in terms of customs clearance and other bureaucratic procedures. And third, efforts should be made to establish a big city of Greece as an international or regional cultural and creative hub, exploiting the country's geographic and cultural proximity to both the rest of Europe.

11. Linking culture and creativity to tourism with a view to better coordinating all parties involved and to advertising cultural activi-

ties in time for the forthcoming tourist season. To date, cultural event programmes (theatre, music, dance, visual arts, etc.) are usually announced so late that travel agents are not able to include them in cultural holiday packages (e.g. events of the Epidavros Festival). If such events were announced several months in advance, travel agents would be able to provide their customers with timely information regarding cultural activities in Greece during the forthcoming tourist season; this would eventually make cultural tourism an important component of overall tourism.

⁵⁸ These entities can provide substantial amounts of capital for the implementation of an artistic and creative idea and, by so doing, assume all the risks of the investment; they can thus play a pivotal role in mobilising funds and investors and in promoting artistic and creative entrepreneurship.

⁵⁹ See Röthler and Wenzlaff (2011). Crowdfunding is one of the most successful and rapidly developing methods of financing new ideas worldwide, whereby creators address the public directly in order to raise funds for their ideas. The benefits are multiple. This is more than about securing money; it is also about building a community among people sharing a common goal, who thus become active co-creators and not passive recipients of the artwork. Moreover, the internet-based crowdfunding platform can be a useful market research tool for the artwork in question. See *The Economist*, "Equity crowdfunding: Cream of Devon" (2 November 2013) and *Financial Times*, "Investors rush to be a part of the crowd" (1 September 2013). Although this practice is hardly known in Greece, the first Greek crowdfunding web platform already operates successfully (<http://www.groopio.com>).

⁶⁰ Peer-to-peer lending (P2PL) is a new form of funding and online lending that is growing rapidly in the United States and in Northern Europe. In Greece it is completely unknown, with the exception of the private firm Profile, which has developed relevant software. Peer-to-peer lending operates under the supervision of regulatory authorities via a web platform, connecting demand and supply. Individuals and businesses obtain interest-bearing loans by directly addressing other individuals, savers and investors via the platform, which acts as a complement to traditional banking intermediation. The benefits are multiple. Investors can secure higher remuneration relative to a term deposit account, while borrowers can secure funds, often at a lower interest rate, which they could not have otherwise been raised in the context of bank deleveraging and restricted supply of bank loans to small and medium-sized enterprises.

⁶¹ Evidence of the extrovert character of Greek culture is the recent international acclaim for the Athens Camerata/Armonia Atenea production of Händel's *Alessandro*, which was voted "Opera of the year" at the Mezzo TV awards (December 2013) and its recorded version won first prize at the International Opera Awards 2013.

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THE HOUSING SITUATION IN GREECE DURING THE CRISIS YEARS 2008-2012*

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INTRODUCTION

The aim of the present study is to investigate trends in the housing situation of the residents of Greece in the years of the economic crisis, in terms of both the quality of their housing conditions and their ability to maintain them.

To this end, it examines data for the period from 2008 to 2012 (the last year for which data are available) and compares them with those for the preceding five years and those of selected countries of the European Union (EU) and the euro area, as well as with the averages of these two areas.

The study draws on the Household Budget Survey (HBS), conducted by the Hellenic Statistical Authority (ELSTAT), and the EU-wide Survey on Income and Living Conditions (SILC).

As mentioned in their respective methodological notes, both surveys use stratified two-stage sampling method, with a rotating (for the HBS) or partly overlapping sample (for the SILC) of the permanent population according to the 2001 Census. The stratification criteria refer to the region in which the reporting unit is located (based on the country's geographical division) and degree of urbanisation, using the household as the sampling unit and a questionnaire as the data collection mode.

The study is structured in two parts. Part I presents Greece's total population per year, as well as natural and migrant population growth, given that these variables, although not directly linked to the households' housing situation, still reflect changes in their housing needs. It also presents the same variables at the average levels of the EU-27 and of the euro area-17 (based on their membership as in the last year of the reference period), as well as at the level of individual selected countries — four euro area members (Germany, Italy, Spain and Por-

tugal) and two non-members (Sweden and the UK) — with a view to comparing data with those for Greece, while it also provides data for the previous five years, where possible.

Furthermore, the study examines household structure (types of family), which is closely associated with the prevailing economic situation.

Data on percentage distributions are compared with those for the EU-27, the euro area and the selected countries for the years 2005, 2008 and 2012.

Part II examines the housing situation in terms of number of rooms, surface area, year of construction, type of building and tenure status of the primary dwelling, as well as type and use of any secondary residence. In addition, it explores the relationship between the number of rooms of the primary dwelling and the number of household members, calculating the relevant correlation and regression coefficients. Finally, it examines household incomes by income brackets and number of household members, as well as income inequality by looking at as the mean and median income.

The aim of this study, as mentioned in the first paragraph, is to record the trends in housing during the period under review, as regards the quality of housing conditions and the ability of the households to maintain their existing housing conditions, given the changes in their income levels.

According to the findings, a considerable number of households have seen their housing situation deteriorate, while several others are in

* The author would like to warmly thank Ms. Heather Gibson, Director, Head of the Special Studies Section of the Bank of Greece, and Ms. Hiona Balfoussia, Deputy Head of the Special Studies Section, for their useful comments. The views expressed do not necessarily reflect those of the Bank of Greece. Any errors are the responsibility of the author.

Table 1 Population and shares of people aged 65 or over in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

	Total population				
	2008	2009	2010	2011	2012
EU-27	497,896,605	499,100,105	500,700,753	500,306,522	501,403,599
Euro area-17	329,239,731	330,091,818	331,004,021	330,300,357	331,090,429
Germany	82,002,356	81,802,257	81,751,602	80,327,900	80,523,746
<i>Greece</i>	<i>11,190,654</i>	<i>11,183,516</i>	<i>11,123,392</i>	<i>11,123,034</i>	<i>11,062,508</i>
Spain	46,239,273	46,486,619	46,667,174	46,818,219	46,727,890
Italy	59,000,586	59,190,143	59,364,690	59,394,207	59,685,227
Portugal	10,563,014	10,573,479	10,572,721	10,542,398	10,487,289
Sweden	9,256,347	9,340,682	9,415,570	9,482,855	9,555,893
UK	62,042,343	62,510,197	63,022,532	63,495,303	63,896,071
	2003	2004	2005	2006	2007
EU-27	488,403,575	490,463,738	492,320,886	494,095,017	496,116,956
Euro area-17	320,735,945	322,640,305	324,274,626	325,853,528	327,824,250
Germany	82,531,671	82,500,849	82,437,995	82,314,906	82,217,837
<i>Greece</i>	<i>11,037,745</i>	<i>11,073,713</i>	<i>11,112,113</i>	<i>11,143,780</i>	<i>11,182,224</i>
Spain	42,547,451	43,296,338	44,009,971	44,784,666	45,668,939
Italy	57,495,900	57,874,753	58,064,214	58,223,744	58,652,875
Portugal	10,473,050	10,494,672	10,511,988	10,532,588	10,553,339
Sweden	8,975,670	9,011,392	9,047,752	9,113,257	9,182,927
UK	59,793,759	60,182,050	60,620,361	61,073,279	61,571,647
	Share of people aged 65 or over in total population				
	2008	2009	2010	2011	2012
EU-27	17.3	17.4	17.6	17.9	18.2
Euro area-17	18.1	18.3	18.4	18.7	19.0
Germany	20.4	20.7	20.6	20.6	20.7
<i>Greece</i>	<i>18.7</i>	<i>18.9</i>	<i>19.3</i>	<i>19.7</i>	<i>20.1</i>
Spain	16.6	16.8	17.1	17.4	17.7
Italy	20.3	20.4	20.5	20.8	21.2
Portugal	18.0	18.3	18.7	19.0	19.4
Sweden	17.8	18.1	18.5	18.8	19.1
UK	16.1	16.3	16.4	16.8	17.2
	2003	2004	2005	2006	2007
EU-27	16.4	16.6	16.8	17.0	17.1
Euro area-17	17.1	17.3	17.6	17.8	17.9
Germany	18.0	18.6	19.3	19.8	20.1
<i>Greece</i>	<i>18.0</i>	<i>18.3</i>	<i>18.5</i>	<i>18.6</i>	<i>18.6</i>
Spain	16.8	16.6	16.6	16.5	16.4
Italy	19.2	19.5	19.9	20.1	20.2
Portugal	16.9	17.2	17.4	17.5	17.7
Sweden	17.2	17.2	17.3	17.4	17.5
UK	15.9	15.9	15.9	15.9	15.9

Source: Calculations on Eurostat and ELSTAT primary data.

a precarious state as regards their ability to maintain their current housing situation, either due to mortgages on their owner-occupied homes or because they are accommodated in conceded (rent-free) dwellings, which may not be available in the future. All households have suffered an income reduction, but the households that have drifted into the lowest income bracket markedly outnumber those that have fallen off the highest income bracket.

PART A: POPULATION GROWTH – HOUSEHOLD COMPOSITION

A.1 Total population

As can be seen in Chart 1, the population of Greece decreased at an average annual rate of -0.3% in the period under review, after having grown by 0.3% annually in the previous five-year period.

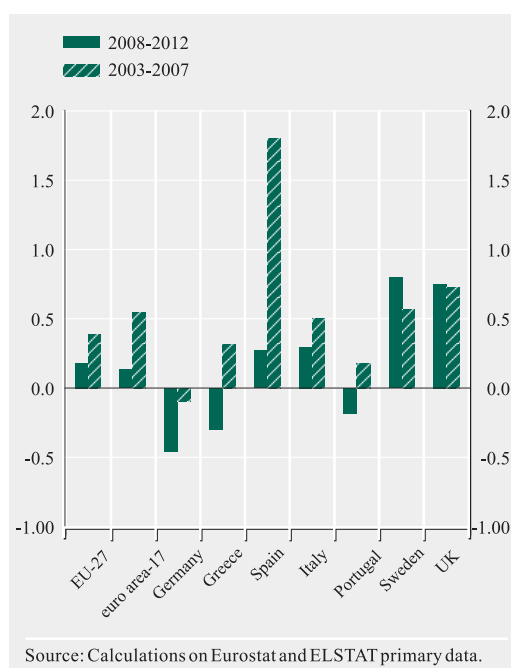
Population growth rates also declined on average in the EU and the euro area, but remained positive (0.2% and 0.1% per annum respectively, in 2008-2014, compared with 0.4% and 0.5% per annum in 2003-2007).

Turning to individual countries, population declined significantly in Germany (-0.5% on average, compared with -0.1% in the previous five-year period), while in Spain the population growth rate weakened from 1.8% in 2003-2007 to 0.3% in the period under review. A marked fall is also observed in Portugal (-0.2%, from 0.2% in the previous five-year period), while in Italy the population growth rate declined from 0.5% to 0.3%.

A steady rate of population growth was seen in the UK (0.7% in both periods), while Sweden is the only country in the panel to show an acceleration: 0.8%, from 0.6% in the previous five-year period.

As regards the composition of the population, the share of elderly population (aged 65 or over) has increased in all the countries exam-

Chart 1 Population average rate of change in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK



ined, both in the period under review and in the previous five years (with the exception of the UK for which the share remained unchanged at 15.9% for all the years of the period 2003-2007).

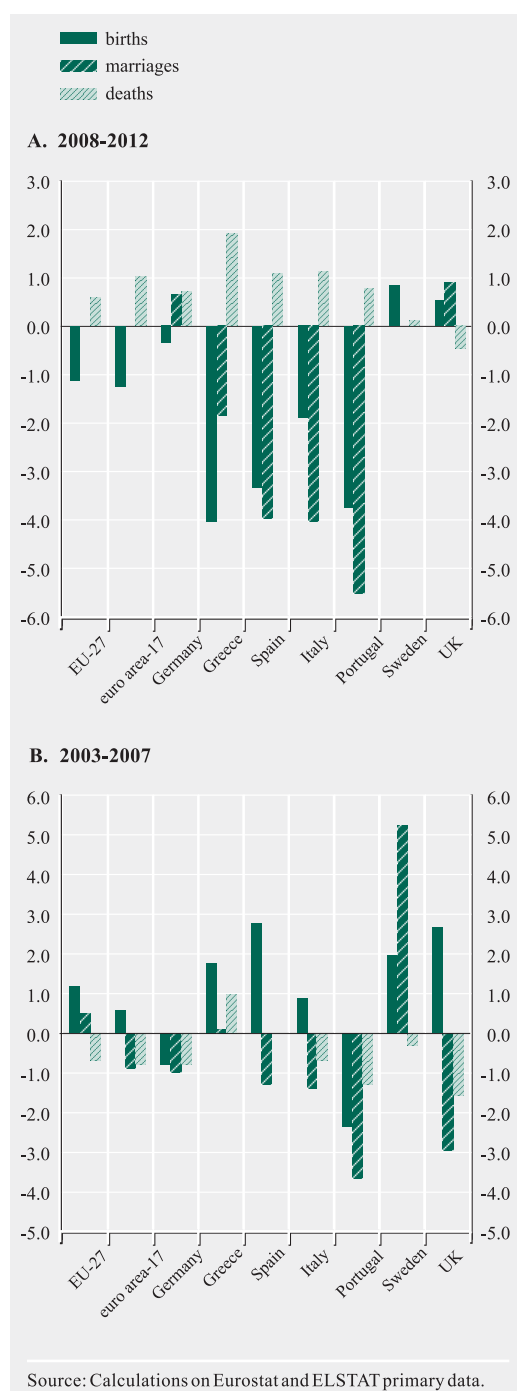
Greece has a quite high share of elderly population for 2012 (20.1%) and ranks third after Italy (21.2%) and Germany (20.7%). The lowest share is seen in the UK (17.2%).

A.2 Natural changes in population

Births: The average annual rate of change for Greece is -4.0% (see Chart 2), down from 1.8% in the previous five years. A decline in the number of births is also observed at EU and euro area average levels: -1.1% and -1.2%, compared with 1.2% and 0.6%, respectively, in the previous five-year period.

Turning to individual countries, the next two largest declines in births after Greece's are recorded in Portugal (-3.7%, from -2.3% in the

Chart 2 Average rate of change in natural population growth in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK



previous five years) and Spain (-3.3%, from 2.8% in 2003-2007).

Marriages: The average annual rate of change for Greece is -1.8%, whereas in the previous five years it was marginally positive (0.1%). The markedly lower numbers of marriages in the years 2004, 2008 and 2012 can be explained by cultural factors, as many Greeks consider it unlucky to marry in a leap year.

The countries with the strongest declines in marriages are Portugal, Italy and Spain (-5.5%, -4.1% and -4.0%, respectively, against -3.6%, -1.3% and -1.3% in the previous five years), while the UK and Germany show the largest increases (0.9% and 0.7% respectively, compared with -2.9% and -0.9% in the previous five years). A marginally negative change of -0.1% is observed in Sweden, against 5.2% in 2003-2007.

Deaths: Greece records a high positive average annual rate of change of 2.0% (up from 1.0% in the previous five years), the highest among all countries in both periods. Italy, Spain and Portugal follow with 1.2%, 1.1% and 0.8%, against -0.7%, 0.1% and -1.2%, respectively, in 2003-2007.

A moderation of the downward trend in the number of deaths is observed in the UK (-0.5% from -1.5% in the period 2003-2007), while the negative average annual rates of the previous five years recorded in the EU and the euro area (-0.7% and -0.8%, respectively) have turned positive (0.6% and 1.0%). A marginally positive rate of 0.1% is observed in Sweden (against -0.3% in 2003-2007).

With particular regard to Greece, which – as already mentioned – shows the largest increase in deaths, it can be seen that in the period under review births came to 557,800 while deaths to 553,146, i.e. the two figures stand at roughly the same level.

As well documented in the literature,¹ this only slight excess of births over deaths, combined with increased life expectancy, is an indicator

¹ See Appendix, 1a-1f, for a brief review of the relevant literature.

Table 2a Natural population growth in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK: years 2008-2012

	Absolute numbers					Per 1,000 residents				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Births										
EU-27	5,425,681	5,367,995	5,367,768	5,224,965	5,189,406	10.9	10.8	10.7	10.4	10.4
Euro area-17	3,468,196	3,413,240	3,422,488	3,345,102	3,299,660	10.6	10.4	10.4	10.1	10.0
Germany	682,514	665,126	677,947	662,685	673,544	8.3	8.1	8.3	8.1	8.4
<i>Greece</i>	<i>118,302</i>	<i>117,933</i>	<i>114,766</i>	<i>106,428</i>	<i>100,371</i>	<i>10.6</i>	<i>10.5</i>	<i>10.3</i>	<i>9.6</i>	<i>9.0</i>
Spain	518,503	493,717	485,252	470,553	453,348	11.3	10.6	10.4	10.1	9.7
Italy	576,659	568,857	561,944	546,585	534,186	9.8	9.6	9.5	9.2	9.0
Portugal	104,594	99,491	101,381	96,855	89,841	9.9	9.4	9.6	9.2	8.5
Sweden	109,301	111,801	115,641	111,770	113,177	11.9	12.0	12.3	11.8	11.9
UK	794,383	790,204	807,271	807,776	812,970	12.9	12.7	12.9	12.8	12.8
Marriages										
EU-27	2,360,356	-	-	-	-	4.7	-	-	-	-
Euro area-17	1,437,769	1,383,699	1,366,516	-	-	4.4	4.2	4.1	-	-
Germany	377,055	378,439	382,047	377,816	387,423	4.6	4.6	4.7	4.6	4.8
<i>Greece</i>	<i>53,500</i>	<i>59,212</i>	<i>56,338</i>	<i>55,099</i>	<i>49,710</i>	<i>4.8</i>	<i>5.3</i>	<i>5.1</i>	<i>5.0</i>	<i>4.5</i>
Spain	192,123	172,357	165,641	158,220	163,173	4.2	3.7	3.6	3.4	3.5
Italy	246,613	230,613	217,700	204,830	208,947	4.2	3.9	3.7	3.4	3.5
Portugal	43,228	40,391	39,993	36,035	34,423	4.1	3.8	3.8	3.4	3.3
Sweden	50,332	47,259	50,028	46,922	50,044	5.5	5.1	5.3	5.0	5.3
UK	270,403	-	-	-	280,444	4.4	-	-	-	4.4
Deaths										
EU-27	4,839,783	4,849,599	4,854,217	4,820,020	4,958,323	9.7	9.7	9.7	9.6	9.9
Euro area-17	3,061,109	3,085,045	3,089,870	3,084,916	3,187,836	9.3	9.4	9.3	9.3	9.6
Germany	844,439	854,544	858,768	852,328	869,582	10.3	10.4	10.5	10.4	10.8
<i>Greece</i>	<i>107,979</i>	<i>108,316</i>	<i>109,084</i>	<i>111,099</i>	<i>116,668</i>	<i>9.7</i>	<i>9.7</i>	<i>9.8</i>	<i>10.0</i>	<i>10.5</i>
Spain	384,198	383,209	380,234	386,017	401,122	8.4	8.3	8.2	8.3	8.6
Italy	585,126	591,663	587,488	593,417	612,883	9.9	10.0	9.9	10.0	10.3
Portugal	104,280	104,434	105,953	102,845	107,612	9.9	9.9	10.0	9.7	10.2
Sweden	91,449	90,080	90,487	89,938	91,938	9.9	9.7	9.6	9.5	9.7
UK	579,697	559,617	561,666	552,232	569,024	9.4	9.0	8.9	8.7	8.9

Source: Calculations on Eurostat and ELSTAT primary data.

Note: “-” denotes data unavailability.

Table 2b Natural population growth in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK: years 2003-2007

	Absolute numbers					Per 1,000 residents				
	2003	2004	2005	2006	2007	2003	2004	2005	2006	2007
Births										
EU-27	5,040,797	5,116,866	5,134,358	5,222,654	5,281,515	10.3	10.5	10.4	10.6	10.7
Euro area-17	3,311,059	3,349,934	3,338,607	3,377,310	3,393,594	10.4	10.4	10.3	10.4	10.4
Germany	706,721	705,622	685,795	672,724	684,862	8.6	8.6	8.3	8.2	8.3
<i>Greece</i>	<i>104,420</i>	<i>105,655</i>	<i>107,545</i>	<i>112,042</i>	<i>111,926</i>	<i>9.5</i>	<i>9.6</i>	<i>9.7</i>	<i>10.1</i>	<i>10.0</i>
Spain	440,531	453,172	464,811	481,295	491,138	10.4	10.6	10.6	10.8	10.9
Italy	544,063	562,599	554,022	560,010	563,933	9.5	9.8	9.6	9.6	9.7
Portugal	112,515	109,298	109,399	105,449	102,492	10.8	10.4	10.4	10.0	9.7
Sweden	99,157	100,928	101,346	105,913	107,421	11.1	11.2	11.2	11.7	11.7
UK	695,549	715,996	722,549	748,563	772,245	11.7	11.9	12.0	12.3	12.6
Marriages										
EU-27	2,371,663	-	-	-	2,419,543	4.9	-	-	-	4.9
Euro area-17	1,507,609	1,493,005	1,487,902	1,453,197	1,457,017	4.7	4.6	4.6	4.5	4.5
Germany	382,911	395,992	388,451	373,681	368,922	4.6	4.8	4.7	4.5	4.5
<i>Greece</i>	<i>61,081</i>	<i>51,377</i>	<i>61,043</i>	<i>57,802</i>	<i>61,377</i>	<i>5.5</i>	<i>4.6</i>	<i>5.5</i>	<i>5.2</i>	<i>5.5</i>
Spain	210,477	214,309	206,432	201,566	199,660	5.0	5.0	4.7	4.5	4.4
Italy	264,097	248,969	247,740	245,992	250,360	4.6	4.3	4.3	4.2	4.3
Portugal	53,735	49,178	48,671	47,857	46,329	5.1	4.7	4.6	4.5	4.4
Sweden	39,041	43,088	44,381	45,551	47,898	4.4	4.8	4.9	5.0	5.2
UK	308,623	-	-	-	273,920	5.2	-	-	-	4.5
Deaths										
EU-27	4,932,260	4,724,246	4,819,541	4,746,176	4,794,056	10.1	9.7	9.8	9.6	9.7
Euro area-17	3,106,270	2,949,271	3,026,200	2,972,125	3,013,601	9.7	9.2	9.4	9.1	9.2
Germany	853,946	818,271	830,227	821,627	827,155	10.3	9.9	10.1	10.0	10.1
<i>Greece</i>	<i>105,529</i>	<i>104,942</i>	<i>105,091</i>	<i>105,476</i>	<i>109,895</i>	<i>9.6</i>	<i>9.5</i>	<i>9.5</i>	<i>9.5</i>	<i>9.8</i>
Spain	382,455	369,564	385,056	369,391	383,249	9.1	8.6	8.8	8.3	8.5
Italy	586,468	546,658	567,304	557,892	570,801	10.2	9.5	9.8	9.6	9.8
Portugal	108,795	102,012	107,464	101,990	103,512	10.4	9.7	10.2	9.7	9.8
Sweden	92,961	90,532	91,710	91,177	91,729	10.4	10.1	10.2	10.0	10.0
UK	611,185	583,082	582,663	572,224	574,687	10.2	9.7	9.6	9.4	9.4

Source: Calculations on Eurostat and ELSTAT primary data.

Note: “-” denotes data unavailability.

of low fertility and population ageing: as the number of people aged 65 or over outpaces the number of births, the share of older people in the population increases and that of younger people declines accordingly.

A.3 Migrant population growth

As can be seen in Table 3, in the five years from 2008 to 2012 Greece ranked third in terms of migrant inflow (44.8 immigrants per 1,000 residents) after Sweden (53.3) and the UK (44.6). But in terms of migrant outflows it ranked first, with 46.0 emigrants per 1,000 residents, followed by Spain with 41.4 (which follows Greece also in terms of immigrants, with 43.5 per 1,000 residents).

Chart 3 shows net migrant flows for Greece and for the selected countries: Greece and Portugal are the only countries for which migrant outflows exceed inflows, with 1.2 and 3.1 fewer immigrants than emigrants per 1,000 residents, respectively.

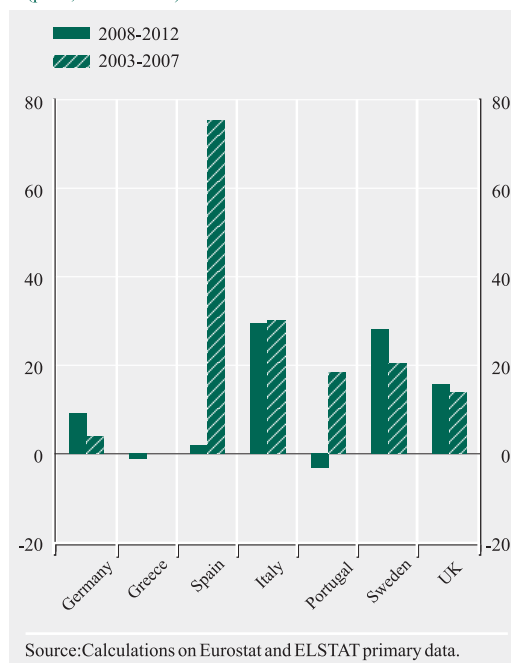
The highest net inflow of migrants is recorded in Italy (29.4), followed by Sweden (28.2), the UK (16.0), Germany (9.2), and Spain (2.2). Compared with the previous five-year period, net inflows have increased in Sweden (by 7.7), Germany (by 4.7) and the UK (by 1.8), while they have marginally declined in Italy (by 1 immigrant per 1,000 residents).

The country with the largest and very sharp decrease in net migrant inflow is Spain, which from 75.3 immigrants per 1,000 residents in 2003-2007 came down to 2.2 in 2008-2012. Quite obviously, this is due to the collapse of residential construction activity, after the housing boom of 2003-2007.² Falling construction activity is clearly the main cause of the reversal of migrant inflows also in Greece, as more than half of foreign male workers were employed in construction during the thriving years of the Greek real estate market.³

According to relevant studies,⁴ migrant inflow in a country is typically associated with eco-

Chart 3 Net migrant inflow/outflow in Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

(per 1,000 residents)



nomic upturns, whereas the reverse is the case in downturns. This is because an economic upturn implies higher production and hence stronger labour demand, thereby attracting immigrants, whereas economic downturns cause production and demand for workers to shrink, thereby discouraging new immigrants from coming to a country in distress or leading existing immigrants to leave a country in which they have lived and worked in the years of economic growth.

A.4 Household composition

Table 4a shows the composition of households in Greece in the period under review. Households are classified into nine categories, with the first six corresponding to a specific number of household members, and the last three having an open-ended upper limit.

² See Appendix, 2a-2b.

³ See Appendix, 3a-3b.

⁴ See Appendix, 4a-4c.

Table 3 Migrant inflow/outflow in Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

Immigrants							Per 1,000 residents
	2008	2009	2010	2011	2012	2008-2012	2008-2012
Germany	682,146	346,216	404,055	489,422	592,175	2,514,014	30.9
<i>Greece</i>	<i>74,724</i>	<i>84,193</i>	<i>119,070</i>	<i>110,823</i>	<i>110,139</i>	<i>498,949</i>	<i>44.8</i>
Spain	599,075	392,962	360,705	371,331	304,053	2,028,126	43.5
Italy	534,712	442,940	458,856	385,793	350,772	2,173,073	36.6
Portugal	29,718	32,307	27,575	19,667	14,606	123,873	11.7
Sweden	101,171	102,280	98,801	96,467	103,059	501,778	53.3
UK	590,242	566,514	590,950	566,044	498,040	2,811,790	44.6
	2003	2004	2005	2006	2007	2003-2007	2003-2007
Germany	768,975	780,175	707,352	661,855	680,766	3,599,123	43.7
<i>Greece</i>	-	-	-	-	-	-	-
Spain	672,266	684,561	719,284	840,844	958,266	3,875,221	88.0
Italy	470,491	444,566	325,673	297,640	558,019	2,096,389	36.1
Portugal	72,400	57,920	49,200	38,800	46,300	264,620	25.2
Sweden	63,795	62,028	65,229	95,750	99,485	386,287	42.6
UK	431,487	518,097	496,470	529,008	526,714	2,501,776	41.3
Emigrants							Per 1,000 residents
	2008	2009	2010	2011	2012	2008-2012	2008-2012
Germany	737,889	286,582	252,456	249,045	240,001	1,765,973	21.7
<i>Greece</i>	<i>51,489</i>	<i>60,362</i>	<i>119,985</i>	<i>125,984</i>	<i>154,435</i>	<i>512,255</i>	<i>46.0</i>
Spain	288,432	380,121	403,377	409,034	446,606	1,927,570	41.4
Italy	80,947	80,597	78,771	82,461	106,216	428,992	7.2
Portugal	20,357	16,899	23,760	43,998	51,958	156,972	14.9
Sweden	45,294	39,240	48,853	51,179	51,747	236,313	25.1
UK	427,207	368,177	339,306	350,703	321,217	1,806,610	28.7
	2003	2004	2005	2006	2007	2003-2007	2003-2007
Germany	626,330	697,632	628,399	639,064	636,854	3,228,279	39.2
<i>Greece</i>	-	-	-	-	-	-	-
Spain	64,298	55,092	68,011	142,296	227,065	556,762	12.6
Italy	62,970	64,849	65,029	75,230	65,196	333,274	5.7
Portugal	8,900	10,680	10,800	12,700	26,800	69,880	6.6
Sweden	35,023	36,586	38,118	44,908	45,418	200,053	22.1
UK	313,960	310,389	328,408	369,470	317,587	1,639,814	27.0

Source: Calculations on Eurostat and ELSTAT primary data.

Notes: Percentage totals for the years 2008-2012 and 2003-2007 are calculated based on average population in the reference years; “-” denotes data unavailability.

Table 4a Distribution of households by household composition: Greece

(country total, years 2008-2012)

	2008	2009	2010	2011	2012
Household composition	Absolute numbers				
Person aged under 65	436,614	400,356	420,515	382,785	414,627
Person aged over 65	382,851	430,661	418,706	457,333	434,406
Couple without children	831,644	873,610	874,030	898,827	901,538
Couple with 1 child aged up to 16	229,450	338,107	322,584	324,340	297,348
Couple with 2 children aged up to 16	540,448	508,230	520,499	529,356	583,364
Couple with 3 or more children aged up to 16	39,676	30,908	30,987	26,876	27,929
Single-parent families with children aged up to 16	21,035	39,466	37,148	60,501	47,470
Couple or 1 parent with children aged over 16	1,003,441	941,078	951,148	947,520	982,780
Other	587,016	551,735	555,648	521,323	473,775
Total	4,072,175	4,114,151	4,131,265	4,148,861	4,163,237
Household composition	Changes (%)				
		2009/2008	2010/2009	2011/2010	2012/2011
Person aged under 65	-	-8.3	5.0	-9.0	8.3
Person aged over 65	-	12.5	-2.8	9.2	-5.0
Couple without children	-	5.0	0.0	2.8	0.3
Couple with 1 child aged up to 16	-	47.4	-4.6	0.5	-8.3
Couple with 2 children aged up to 16	-	-6.0	2.4	1.7	10.2
Couple with 3 or more children aged up to 16	-	-22.1	0.3	-13.3	3.9
Single-parent families with children aged up to 16	-	87.6	-5.9	62.9	-21.5
Couple or 1 parent with children aged over 16	-	-6.2	1.1	-0.4	3.7
Other	-	-6.0	0.7	-6.2	-9.1
Total	-	1.0	0.4	0.4	0.3

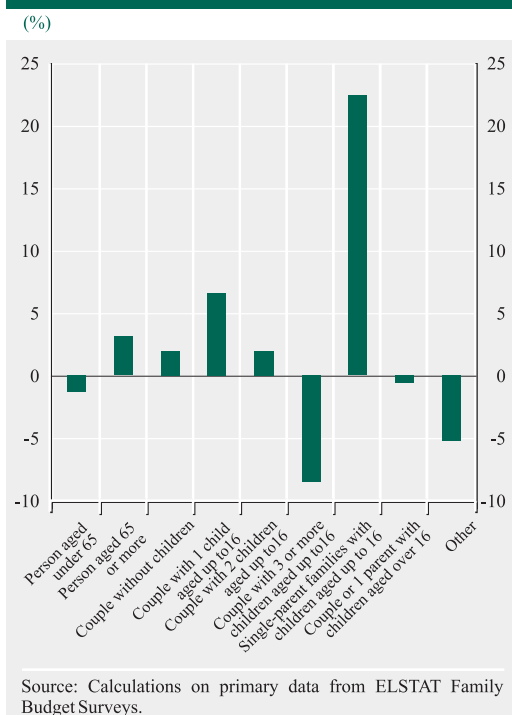
Source: Calculations on ELSTAT primary data.

It can be seen that the number of single-member households comprising a person aged less than 65 has shrunk at an annual rate of -1.3%, whereas that of single-member households comprising a person aged 65 or more has increased by 3.2%. Given that the age threshold of 65 years is conventional (it reflects the typical retirement age), both categories include unmarried, divorced and widowed persons, though the second category illustrates more clearly the increased number of the elderly.

The category of “couple without children” also shows a relatively high annual rate of change (2.0%). This reflects the low number of births,

which results in a higher number of couples without children, as well as the increased numbers of unmarried cohabiting couples and couples whose adult children have left the parental home at a relatively young age without necessarily having been married. A considerable increase is observed in the category of “couple with one child aged up to 16” (6.7%). The rate of increase is smaller in the category of “couple with two children aged up to 16” (1.9%), while the category of “couple with three children aged up to 16” shows a large decrease (-8.4%). It is obvious that this decline represents a shift towards the two previous categories and reflects the couples’ choice to have fewer children or none at all. Single-parent

**Chart 4 Household composition in Greece:
average rate of change, 2008-2012**



families with children aged up to 16 have also increased considerably, at an average annual rate of 22.6%. According to relevant studies,⁵ single-parent families emerge on account of not only social, but also economic reasons, as marriages or cohabitations (usually after unplanned pregnancies) are often postponed or called off, due to the couple's financial difficulties, while there are also cases where couples (married or not) split apart, as one of the parents (usually the father) moves to another town or country to work for a long period of time. Therefore, it can safely be argued that the high rate of increase in the specific category is mainly attributable to the economic crisis.

The number of households classified under the category of "couple or one parent with children aged over 16" has also declined, at an average annual rate of 0.5%, as more and more young adults choose to become independent from the parental family. Yet, the decline is small and disproportionate to the emancipation tendencies prevailing among the youth, which can

again be explained by economic factors, implying that many young adults cannot afford to leave the parental home.⁶ Finally, the category of "other type of household" shows a considerable decrease (-5.2%). This category largely refers to households where two or three generations live together, i.e. couples with parents or couples with children and parents.

Table 4b shows household composition statistics for the EU, the euro area and the selected countries for the years 2005, 2008 and 2012. As can be seen, household structure as defined in the Survey on Income and Living Conditions (SILC) is somewhat different from that in the Household Budget Survey (HBS), since the former survey (conducted by Eurostat) takes into account all types of cohabitations, whether families or not. Thus, it uses the notion of "adult" instead of "parent" as in ELSTAT's HBS and does not identify a distinct category of "other type of household". However, it was thought appropriate to show both typologies here, as SILC household composition statistics refer to percentage distribution data only and not absolute figures too, which would have enabled to calculate changes in the number of households in each category.

As can be readily observed, in the category "one person aged under 65" Greece has a share of 8.9%, 10.8% and 10.7%, respectively, for the three years under review, consistently short of the EU or the euro area average and ranks second to last, only followed by Portugal (with 6.0%, 6.5% and 7.6%, respectively) in all three years. In Spain, the share is 11.1%, 12.2% and 13.4%, and in Italy 14.1%, 15.1% and 16.1%. For 2005, Sweden tops the list with 26.7%, followed by Germany with 23.3%, while the UK is a rather distant third with 18.4%. For the next year examined, i.e. 2008, the share of Germany appears to have increased (26.1%), whereas those of Sweden and the UK have fallen (to 23.5% and 16.3%, respectively). For 2012, the share of Germany rises further to

⁵ See Appendix, 5a-5b.

⁶ See Appendix, 6a-6b.

Table 4b Distribution of households by household composition: in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

(years 2005, 2008 and 2012)

Household composition	Distribution (%)								
	EU-27	Euro area-17	Germany	Greece	Spain	Italy	Portugal	Sweden	UK
2005									
Person aged under 65	16.4	17.3	23.3	8.9	11.1	14.1	6.0	26.7	18.4
Person aged over 65	12.6	12.9	13.8	10.9	10.6	14.1	10.6	15.0	13.6
1 adult with dependent children	4.1	3.9	5.1	1.8	1.8	2.5	3.0	6.3	6.7
2 adults	28.1	28.4	31.0	27.4	25.9	25.6	26.0	27.6	32.1
2 adults with 1 dependent child	9.9	9.9	9.1	10.1	10.8	10.3	15.8	7.2	7.8
2 adults with 2 dependent children	10.6	10.8	8.7	17.2	10.6	11.2	11.1	9.7	8.8
2 adults with 3 or more dependent children	3.4	3.3	2.9	0.9	3.0	2.5	2.2	4.4	3.4
3 or more adults	8.9	8.8	3.9	17.1	16.6	13.4	15.0	1.5	6.2
3 or more adults with dependent children	5.9	4.8	2.1	5.7	9.7	6.3	10.3	1.5	3.0
Total	100	100	100	100	100	100	100	100	100
2008									
Person aged under 65	17.4	19.0	26.1	10.8	12.2	15.1	6.5	23.5	16.3
Person aged over 65	13.0	12.7	13.0	9.3	10.0	14.8	11.1	14.2	14.8
1 adult with dependent children	3.9	3.7	4.6	1.3	1.8	3.0	2.9	5.5	5.5
2 adults	28.1	28.4	31.1	27.3	27.1	25.1	27.9	30.9	31.8
2 adults with 1 dependent child	9.6	9.4	8.1	8.6	11.1	10.7	14.3	7.9	8.3
2 adults with 2 dependent children	10.0	10.1	7.9	16.7	11.0	10.9	11.2	9.8	9.4
2 adults with 3 or more dependent children	3.2	3.2	2.6	1.3	2.4	2.3	2.0	4.1	3.6
3 or more adults	8.9	8.8	4.6	18.7	15.6	12.6	15.1	2.0	6.6
3 or more adults with dependent children	5.9	4.6	2.1	5.9	8.9	5.6	9.1	2.3	3.7
Total	100	100	100	100	100	100	100	100	100
2012									
Person aged under 65	18.0	19.8	27.5	10.7	13.4	16.1	7.6	23.6	16.1
Person aged over 65	12.8	12.8	12.8	9.9	9.7	15.0	11.7	15.2	12.8
1 adult with dependent children	4.1	4.0	4.6	1.4	2.8	3.2	4.1	5.0	6.4
2 adults	28.8	28.9	31.5	27.6	28.4	25.0	28.9	30.0	32.5
2 adults with 1 dependent child	9.5	9.3	7.9	8.4	11.4	10.4	13.2	7.5	8.7
2 adults with 2 dependent children	9.7	10.0	7.2	18.2	11.5	10.4	10.5	11.1	8.7
2 adults with 3 or more dependent children	2.9	2.9	2.3	0.7	2.2	2.2	1.3	3.7	3.4
3 or more adults	8.8	8.3	4.3	18.6	13.5	12.4	15.1	2.0	7.4
3 or more adults with dependent children	5.4	4.0	2.0	4.6	7.0	5.4	7.6	2.0	3.8
Total	100	100	100	100	100	100	100	100	100

Source: Eurostat, Surveys on Income and Living Conditions (SILC).

(*) Eurostat and ELSTAT categorisations differ, most likely due to the fact that the European statistical agency also takes into account cohabitations, which the Greek statistical agency includes under "other" types of household.

27.5%, that of Sweden increased marginally to 23.6% and that of the UK declines marginally to 16.1%.

There is a visible gap between northern and Mediterranean countries, which is probably attributable to the fact that young adults in the latter group of countries tend to delay leaving the family home. However, the upward trend of single-member households in the southern countries suggests that the tendency to become independent from the parental family is catching up there as well.

For the next type of household, that of “one person aged 65 or over”, shares vary across countries, yet not as widely as for the previous household type. For 2005, three out of the four Mediterranean countries (Greece, Spain and Portugal) stand at roughly the same level (10.9% the first and 10.6% the other two), while north-western European countries are led by Sweden, with 15.0%, followed by Germany and the UK, with 13.8% and 13.6%, respectively. Italy, a partly northern and partly Mediterranean country, ranks right after Sweden, with 14.1%.

For the next year examined, i.e. 2008, the share shows a small decline in Greece (9.3%), as well as in Spain (10.0%), but picks up somewhat in Portugal (11.1%). Slight decreases are also seen in Sweden (14.2%) and Germany (13.0%), whereas an increase is observed in the UK (14.8%).

Finally, for 2012, compared with 2008, higher shares are observed in Sweden (15.2%), Portugal (11.7%), Italy (15.0%) and Greece (9.9%), whereas in the UK, Spain and Germany the shares drop to 12.8%, 9.7% and 12.8%, respectively.

It can be observed that the shares are generally higher in the northern countries, which can be explained by their stronger pattern of elderly people remaining in their own homes and not moving in with the families of their children.⁷

In the household type of “one adult with dependent children”, Greece records a mere 1.8% in 2005, 1.3% in 2008 and 1.4% in 2012, ranking last for all three years. Spain stands relatively close, with 1.8%, 1.8% and 2.8% respectively, while Italy’s shares are 2.5%, 3.0% and 3.2% respectively. Portugal starts from 3.0% in 2005, which falls to 2.9% in 2008 and springs back up to 4.1% in 2012.

The opposite pattern can be observed in north-western European countries: in Germany, the share drops from 5.1% in 2005 to 4.6% in 2008 and remains unchanged in 2012; in Sweden, it falls from 6.3% in 2005 to 5.5% in 2008 and 5.0% in 2012; in the UK, it starts from 6.7% in 2005, falls to 5.5% in 2008 and rebounds to 6.4% in 2012.

As already noted when discussing Table 4a, the category of single-parent households, in addition to cases of divorced or widowed people, also includes persons, mostly women, who have chosen to have children out of wedlock or cohabitation, as well as persons forced to raise children on their own, due to economic factors, either because of an unplanned childbirth that was not followed by marriage or cohabitation, or because one of the parents, usually the father, had to move to another town or country to work. In any event, the generally higher share of single-parent households in northern countries reflects the larger number of women who opt for non-conjugal births.

In the category of “two adults”, Greece maintains a roughly unchanged share for all three years (27.4%, 27.3% and 27.6%, respectively). The top two positions, for all three years, are held by the UK (with 32.1%, 31.8% and 32.5%) and Germany (with 31.0%, 31.1% and 31.5%), followed by Sweden (with 27.6%, 30.9% and 30.0%), Portugal (with 26.0%, 27.9% and 28.9%), Italy (with 25.6%, 25.1% and 25.0%) and Spain (with 25.9%, 27.1% and 28.4%).

⁷ See Appendix, 7a-7c.

Given that this is a very broad category that encompasses several forms of co-residence – couples of the same or opposite sex, married or cohabiting; two friends; a parent and adult child; etc. – no safe conclusions can be drawn; however, here again, the higher shares recorded in the northern countries reflect a stronger tendency to avoid having children than in the Mediterranean countries.

In the next category, that of “two adults with one dependent child”,⁸ Portugal ranks first for all three years, with 15.8%, 14.3% and 13.2%, respectively, whereas Sweden ranks last with 7.2%, 7.9% and 7.5%. Greece records shares of 10.1%, 8.6% and 8.4%; Italy of 10.3%, 10.7% and 10.4%; Spain of 10.8%, 11.1% and 11.4%; followed by Germany with shares of 9.1%, 8.1% and 7.9%, and the UK with 7.8%, 8.3% and 8.7%.

In the category of “two adults with two dependent children” Greece leads with very high shares for all three years (17.2%, 16.7% and 18.2%, respectively), well above those of Italy (11.2%, 10.9% and 10.4%), Portugal (11.1%, 11.2% and 10.5%), Spain (10.6%, 11.0% and 11.5%), the UK (8.8%, 9.4% and 8.7%) and Germany (8.7%, 7.9% and 7.2%).

In the category of “two adults with three or more dependent children”, Greece – in contrast to the previous category – ranks last for all three years, with 0.9%, 1.3% and 0.7% respectively, while Sweden is leading with 4.4%, 4.1% and 3.7% respectively, followed by the UK with 3.4%, 3.6% and 3.4%, Spain with 3.0%, 2.4% and 2.2%, Germany with 2.9%, 2.6% and 2.3%, Italy with 2.5%, 2.3% and 2.2%, and Portugal with 2.2%, 2.0% and 1.3%.

The latter three categories should be considered together, given that they have as a common denominator the existence of dependent children and obviously involve cross-category shifts. Yet, the shares, both at EU and euro area average levels and at individual country levels, suggest a trend, among these categories, towards two-children households, with the

exception of Portugal and Spain where the shares of households with two children decline (markedly in the former and slightly in the latter over the years). In Greece, this trend appears to be particularly strong.

The category of households with three or more children falls short of the immediately previous group, in all the countries examined, as well as at EU and euro area average levels. It is obvious that in the countries where immigrants represent a considerable part of the population, the emerging household types exhibit more mixed (rather than national) characteristics, while in the countries where foreigners are relatively fewer, household characteristics and types are more in line with typical national patterns. The fact that Italy and Sweden are the two countries in the sample with the highest net migrant inflow (average for 2008-2012: 29.4 and 28.2 immigrants per 1,000 population, against 30.4 and 20.5 in 2003-2007) probably explains why Italian or Swedish households with three or more dependent children are significantly more than those in countries with low migrant flows, since, as is commonly known, immigrants coming from African or Asian countries tend to have more children than natives do. In the particular case of Sweden, the country's well-known welfare system must also play a role.

In the category of “households with three or more adults”, Greece ranks first for all three years, in fact with rising shares (17.1%, 18.7% and 18.6%, respectively), most probably due to the economic crisis, followed by Spain with 16.6%, 15.6% and 13.5%, Portugal with 15.0%, 15.1% and 15.1%, Italy with 13.4%, 12.6% and 12.4% and the UK with 6.2%, 6.6% and 7.4%, while Germany ranks last with 3.9%, 4.6% and 4.3%, respectively.

In this household category as well, there is a sizeable gap between the northern and the

⁸ According to Eurostat clarifications, all persons aged less than 18 are considered as dependent children, plus those economically inactive aged 18-24 living with at least one of their parents.

southern countries, reflecting a stronger tendency of young adults in the former to become independent from the parental family, but also the dampening effect of the economic crisis on youth emancipation in the latter.

In the category of “three or more adults with dependent children”, higher shares are once again observed in the countries of the south relative to those of the north, with Portugal having a clear lead with 10.3%, 9.1% and 7.6%, followed by Spain with 9.7%, 8.9% and 7.0%, and Italy with 6.3%, 5.6% and 5.4%. Greece comes next with 5.7%, 5.9% and 4.6%, while the UK is third to last (with 3.0%, 3.7% and 3.8%) before Germany (with 2.1%, 2.1% and 2.0%) and Sweden (with 1.5%, 2.3% and 2.0%). This type of household refers mainly to the co-residence of three generations, traditionally more common in the countries of southern Europe.⁹

Chart 5 illustrates average household size. As would be expected in light of the foregoing analysis, the average number of household members is markedly higher in the countries of southern Europe.

Greece has an average of 2.7 members per household in the period from 2004 to 2010, which thereafter drops to 2.6. In Portugal, the average is 2.8 members in 2004 and remains unchanged through to 2007, before falling to 2.7 members from 2008 to 2010 and further to 2.6 members in the last two years examined. The Spanish average starts from 2.7 members in 2004, rises to 2.8 in 2005, returns to 2.7 in 2006, remains unchanged until 2009, and in 2010 falls back to 2.6 members and stays at this level until the end of 2012.

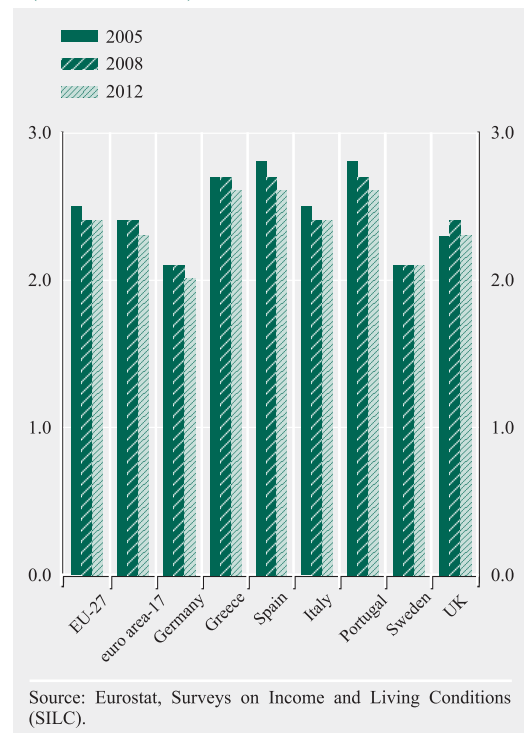
The lowest averages are observed in Sweden and Germany: 2.1 in the former for almost all years (except 2009 for which it averages 2.0 members) and 2.1-2.0 members in the latter.

Summary of Part A

Population growth in Greece is declining and the share of the elderly (aged 65 or over) in

Chart 5 Average household size in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

(number of members)



the population is growing. The population variables examined here also reveal a similar, albeit not as strong, trend in the EU and the euro area. At the level of individual countries, the downward trend appears to be particularly strong in Spain, and somewhat less so in Portugal.

In the last five years, Greece, Spain and Portugal, have turned from migrant-receiving to migrant-sending countries, to the detriment of their demographic figures and their economies.

With respect to household structure in Greece, single-parent households are on a particularly strong upward trend. Comparatively less strong, but significant is a similar trend in households comprising a couple and one child aged up to 16.

⁹ See Appendix, point 8.

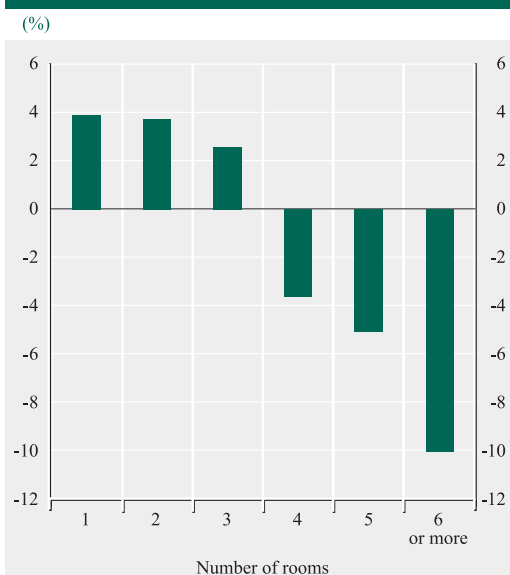
In the EU and the euro area, based on the percentage distribution of population by household type, there is a relatively high share of single-parent households in the countries of north-western Europe (mainly Sweden, Germany and the UK), while the same countries also show increased shares of households with two adults without children, as well as households comprising one person aged under 65.

PART B: HOUSEHOLDS AND THEIR DWELLINGS – HOUSEHOLDS BY INCOME BRACKET

B.1 Distribution of households and dwellings by number of rooms, type of building, tenure status and year of construction

Number of rooms: As can be seen in Chart 6, the annual rate of change for the first three categories of dwellings in terms of number of rooms stands at 3.8%, 3.7% and 2.6% respectively, while for the last three categories (i.e. four, five and six rooms) the respective rates of change are -3.7%, -5.1% and -10.1%.

Chart 6 Average rate of change in the number of rooms of household dwellings: Greece (years 2008-2012)



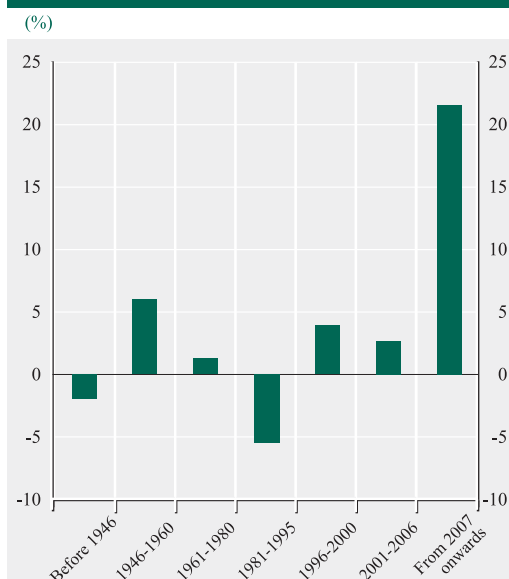
Source: Calculations on primary data from ELSTAT Family Budget Surveys.

Needless to note that no direct correlations can be established between the number of household members and an equal number of rooms, but the fact that the rates of change in small dwellings are substantially stronger than those in small households represents a first indicator that the housing situation of households has deteriorated.

Year of construction:¹⁰ Chart 7 shows a negative rate of change (-1.9%) for dwellings built before 1946, and a particularly high positive rate of change (6.1%) for the 1946-1960 dwelling age band. Dwellings dating from the following two decades (1961-1980) have increased at an annual rate of 1.2%, while those built during the next fifteen years (1981-1995) have decreased at a quite high rate of -5.5%. Thereafter, for the categories of dwellings built in 1996-2000, 2001-2006 and

¹⁰ Owing to the country's high seismicity, anti-seismic building regulations are in place, which are regularly updated with increasingly stricter safety standards. As a result, older buildings are considerably inferior to more recent constructions in terms of seismic protection.

Chart 7 Average rate of change in the number of household dwellings by year of construction: Greece (years 2008-2012)



Source: Calculations on primary data from ELSTAT Family Budget Surveys.

Table 5 Household dwellings by number of rooms and year of construction: Greece

(country total, years 2008-2012)

Household composition	2008	2009	2010	2011	2012
Absolute numbers					
Number of rooms used by the household					
1 room	152,200	129,091	164,186	157,411	177,001
2 rooms	742,937	808,461	850,762	808,772	858,596
3 rooms	1,738,959	1762,475	1,801,586	1,873,212	1,923,331
4 rooms	1,082,847	1089,023	1,017,510	993,589	930,727
5 rooms	262,527	256,608	244,376	262,428	212,952
6 or more rooms	92,703	68,493	52,844	53,448	60,629
Total	4,072,173	4,114,151	4,131,264	4,148,860	4,163,236
Dwelling's year of construction					
Before 1946	229,438	186,881	191,257	215,384	212,789
1946-1960	402,799	495,301	532,336	483,173	510,134
1961-1980	1,681,199	1788,622	1,824,107	1,760,046	1,763,631
1981-1995	1,080,974	1008,219	960,153	871,592	862,573
1996-2000	304,884	295,495	267,178	332,198	354,129
2001-2006	329,720	291,271	326,057	414,549	365,755
From 2007 onwards	43,161	48,362	30,177	71,918	94,225
Total	4,072,175	4,114,151	4,131,265	4,148,860	4,163,236
Distribution (%)					
Number of rooms used by the household					
1 room	3.7	3.1	4.0	3.8	4.3
2 rooms	18.2	19.7	20.6	19.5	20.6
3 rooms	42.7	42.8	43.6	45.2	46.2
4 rooms	26.6	26.5	24.6	23.9	22.4
5 rooms	6.4	6.2	5.9	6.3	5.1
6 or more rooms	2.3	1.7	1.3	1.3	1.5
Total	100	100	100	100	100
Dwelling's year of construction					
Before 1946	5.6	4.5	4.6	5.2	5.1
1946-1960	9.9	12.0	12.9	11.6	12.3
1961-1980	41.3	43.5	44.2	42.4	42.4
1981-1995	26.5	24.5	23.2	21.0	20.7
1996-2000	7.5	7.2	6.5	8.0	8.5
2001-2006	8.1	7.1	7.9	10.0	8.8
From 2007 onwards	1.1	1.2	0.7	1.7	2.3
Total	100	100	100	100	100

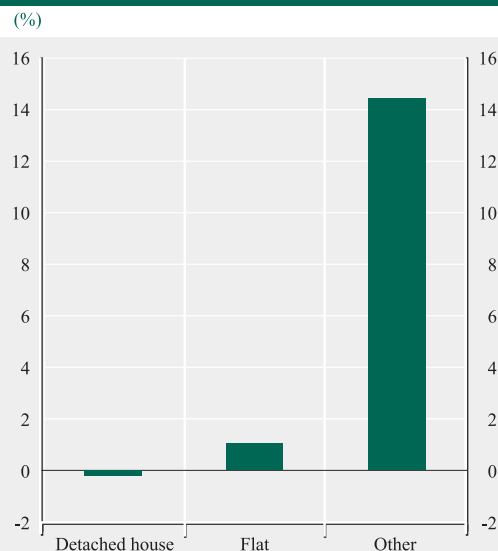
Source: Calculations on primary data from ELSTAT Family Budget Surveys.

from 2007 onwards, the annual rates of change are 3.8%, 2.6% and 21.6%, respectively. Looking at the distribution of dwellings by age (see Table 5), dwellings built until 1946 have a share of between 4.5% and 5.6% in total dwellings, those constructed in 1946-1960 range from 9.9% to 12.9%, those between 1961 and 1980 (the majority) range between 41.3% and 44.2% of the total, while the immediately next age band (1981-1995) range between 20.7% and 26.5% of all dwellings. Dwellings dating from 1996-2000 range between 6.5% and 8.5%, those from 2001-2006 between 7.1% and 10.0%, while those built from 2007 onwards start from 0.7% and reach 2.3%.

Given that households' mobility across different categories of dwellings coexists with the addition of new dwellings to the existing stock each year, it is hard to know the extent to which the negative rates of change concern dwellings that at a specific point in time are vacant (available for sale or rental) or have been demolished, and the extent to which they concern dwellings occupied at the same point in time. However, one can generally take into consideration that Law 3427/2005, which took effect on 1 January 2006 (no longer applicable today) and introduced an automatic price premium tax on the sale of property, unless the property had been owned by the seller for more than 25 years, is likely to have prompted a number of sales of old dwellings from richer to poorer social strata and encouraged purchases of newly-built residences. The growing number of households living in dwellings built before 1960 represents a second indicator of a deterioration in the housing situation in terms of dwelling age.

At the same time, the fact that only a relatively small percentage (around 10% of the total) of households live in dwellings built after 2000, although more than 1 million residences were built during this period (ELSTAT data on building permits), represents a third indicator pointing to an entrenchment of worse housing conditions in

Chart 8 Average rate of change in household dwellings by type of building: Greece (years 2008-2012)



Source: Calculations on primary data from ELSTAT Family Budget Surveys.

terms of oldness. A calculation of the average annual rates of change for dwellings constructed before and after 2000 reveals an almost zeroed-out rate for the former and 5.4% for the latter. This would at first glance suggest a welcome shift towards newer dwellings. But the simultaneous growth of 6.1%, on average, in the number of dwellings built between 1946 and 1960, i.e. 52 to 67 years old, clearly outweighs any positive trends.

Type of building: Three types are identified (see Table 6a), i.e. detached house, flat and other type of building. The first type records a slight decline (-0.2%), the second rises by just 1.0% and the third shows a sharp increase of up to 14.4% (see Chart 8). Given that according to the clarifications by ELSTAT (which is the source of the primary data) this “other type” refers to shacks, huts and shops, the latter growth rate represents a fourth indicator of a worsening in housing conditions, as a growing number of households are housed in constructions of poor quality, while several more use their shops as homes.

Table 6a Household dwellings by type of building and tenure status: Greece

(country total, years 2008-2012)

Dwelling characteristics	2008	2009	2010	2011	2012
Absolute numbers					
Type of building					
Detached house	1,802,356	1,696,052	1,629,721	1,736,582	1,785,882
Flat	2,253,869	2,413,658	2,473,215	2,392,649	2,350,026
Other	15,951	4,440	28,327	19,629	27,329
Total	4,072,176	4,114,150	4,131,263	4,148,860	4,163,237
Tenure status					
Owner-occupied without mortgage or loan	2,524,107	2,500,802	2,427,845	2,511,276	2,548,231
Owner-occupied with mortgage or loan	457,339	491,502	483,101	513,479	514,365
Conceded free of charge	257,244	257,857	251,952	258,416	283,498
Rented	833,485	863,989	968,367	865,689	817,143
Total	4,072,175	4,114,150	4,131,265	4,148,860	4,163,237
Changes (%)					
	2009/2008	2010/2009	2011/2010	2012/2011	2012/2008
Type of building					
Detached house	-5.9	-3.9	6.6	2.8	-0.9
Flat	7.1	2.5	-3.3	-1.8	4.3
Other	-72.2	538.0	-30.7	39.2	71.3
Total	1.0	0.4	0.4	0.3	2.2
Tenure status					
Owner-occupied without mortgage or loan	-0.9	-2.9	3.4	1.5	1.0
Owner-occupied with mortgage or loan	7.5	-1.7	6.3	0.2	12.5
Conceded free of charge	0.2	-2.3	2.6	9.7	10.2
Rented	3.7	12.1	-10.6	-5.6	-2.0
Total	1.0	0.4	0.4	0.3	2.2

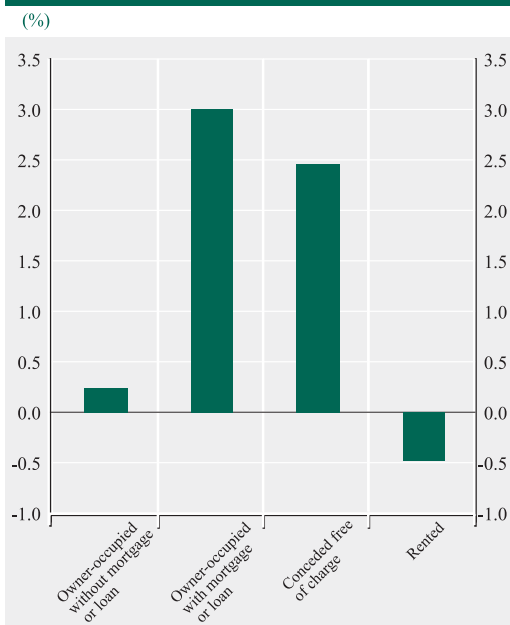
Source: Calculations on primary data from ELSTAT Family Budget Surveys.

Tenure status: The four categories seen in Table 6a refer to “owner-occupied without mortgage or loan”, “owner-occupied with mortgage or loan”, “conceded free of charge” and “rented” dwellings. The first category, accounting for about 60% of the total, records a slightly positive rate of change (0.2%), while a much higher growth rate of 3.0% is observed in the second category (see Chart 9). Given that the period reviewed saw a decrease (rather than an increase) in the number of housing loans (data from the Real Estate Market Analysis Section of the Bank of Greece), it can be presumed that

this strong growth corresponds to earlier housing loans with an extended maturity or subject to the provisions protecting the primary residence from forced sale. A robust growth rate is also observed in conceded dwellings (2.5%), while rented dwellings show a slight decline (-0.5%) (see Chart 9).

The positive growth rates in both owner-occupied with mortgage or loan and dwellings conceded free of charge cannot be interpreted as indicators of a deterioration in housing conditions; still they point to potential precari-

Chart 9 Average rate of change in household dwellings by tenure status: Greece (years 2008-2012)



Source: Calculations on primary data from ELSTAT Family Budget Surveys.

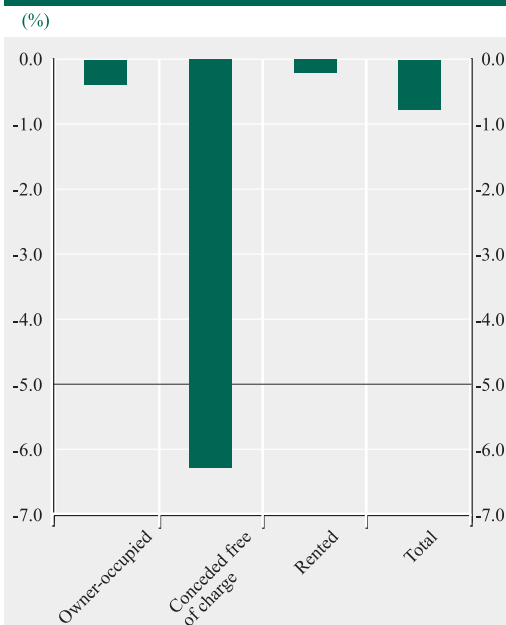
ousness of the existing housing situation, since the primary residence protection framework could be lifted or the concession of a house could be discontinued.

It is worth noting, however, that the share of owner-occupied dwellings with no outstanding mortgage or loan in Greece remains well above the EU and euro area averages, as well as the respective shares in all the other countries examined (see Table 6b). The exact opposite is true with respect to owner-occupied dwellings with mortgage or loan: Greece ranks last, with shares of between 11.8% and 17.5%, compared with the EU and the euro area averages that range from 26.9% to 27.8% and from 25.9% to 28.3%, respectively.

The highest shares of owner-occupied dwellings with mortgage or loan are observed in Sweden (between 54.4% in 2007 and 68.0% in 2010).

Secondary residence: use and tenure status. The share of owner-occupied secondary residences

Chart 10 Average rate of change in the use and tenure status of secondary residences: Greece (years 2008-2012)



Source: Calculations on primary data from ELSTAT Family Budget Surveys.

is very high, around 90.0% for 2008, 2009, 2011 and 2012, rising to as much as 95.6% in 2010, 9.1% up from the preceding year, before declining by 7.3% between 2010 and 2011 after the introduction of the Property Tax (Law 3842/2010).

By contrast, secondary residences conceded free of charge or rented rise substantially, by 29.9% and 113.9% respectively in 2011. For the entire period reviewed, the average annual rates of change for the three tenure status categories of secondary dwellings stand at -0.4% (owner-occupied), -6.3% (conceded), -0.2% (rented) and -0.8% for all three combined.

The overall negative change in the use of a secondary residence does not point to a deterioration in housing conditions, as it concerns second homes, summer houses, etc. Yet, it could be a sign of unfavourable developments in household income during the period under review.

Table 6b Distribution of households by tenure status of the dwelling in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

(years 2005-2012)

Tenure status	Distribution (%)								
	EU-27	Euro area-17	Germany	Greece	Spain	Italy	Portugal	Sweden	UK
2005									
Owner-occupied without mortgage or loan	41.1	37.7	24.0	-	-	60.0	44.6	13.2	26.0
Owner-occupied with mortgage or loan	26.9	25.9	29.4	-	-	12.9	29.8	54.9	44.0
Conceded or rented at highly-discounted prices	11.9	12.6	9.9	-	-	14.8	15.0	0.1	14.1
Rented at market prices	20.1	23.8	36.8	-	-	12.3	10.7	31.7	15.9
Total	100	100	100	0	0	100	100	100	100
2006									
Owner-occupied without mortgage or loan	-	-	-	-	-	59.7	49.4	15.4	25.7
Owner-occupied with mortgage or loan	-	-	-	-	-	13.2	26.1	53.4	45.7
Conceded or rented at highly-discounted prices	-	-	-	-	-	14.7	15.2	1.1	19.1
Rented at market prices	-	-	-	-	-	12.4	9.3	30.2	9.5
Total	0	0	0	0	0	100	100	100	100
2007									
Owner-occupied without mortgage or loan	47.1	44.5	-	63.9	48.6	59.0	49.9	15.1	26.4
Owner-occupied with mortgage or loan	25.7	26.4	-	11.8	32.0	13.8	24.3	54.4	46.9
Conceded or rented at highly-discounted prices	14.6	12.7	-	6.5	8.6	14.5	16.0	2.0	18.4
Rented at market prices	12.7	16.3	-	17.9	10.7	12.8	9.8	28.5	8.3
Total	100	100	0	100	100	100	100	100	100
2008									
Owner-occupied without mortgage or loan	46.7	44.0	-	63.8	47.2	57.8	44.2	13.3	26.6
Owner-occupied with mortgage or loan	26.5	27.3	-	12.9	33.0	14.8	30.3	55.6	45.9
Conceded or rented at highly-discounted prices	14.6	13.5	-	5.4	8.4	14.2	14.2	1.0	18.2
Rented at market prices	12.2	15.2	-	18.0	11.4	13.1	11.3	30.2	9.4
Total	100	100	0	100	100	100	100	100	100
2009									
Owner-occupied without mortgage or loan	46.3	43.8	-	61.1	46.8	57.0	44.7	12.9	25.4
Owner-occupied with mortgage or loan	26.9	27.6	-	15.4	32.8	15.4	29.9	56.8	44.5
Conceded or rented at highly-discounted prices	14.2	13.4	-	5.7	8.5	14.2	14.5	0.5	17.6
Rented at market prices	12.6	15.2	-	17.9	12.0	13.3	10.9	29.8	12.5
Total	100	100	0	100	100	100	100	100	100
2010									
Owner-occupied without mortgage or loan	42.7	38.0	25.4	59.8	45.5	56.4	42.4	2.8	26.0
Owner-occupied with mortgage or loan	27.8	28.3	27.8	17.5	34.4	15.4	32.5	68.0	43.9
Conceded or rented at highly-discounted prices	12.0	11.7	7.1	4.6	8.3	14.1	12.3	0.5	18.1
Rented at market prices	17.5	21.9	39.7	18.2	11.9	14.0	12.7	28.7	11.9
Total	100	100	100	100	100	100	100	100	100
2011									
Owner-occupied without mortgage or loan	42.9	38.4	25.3	60.1	47.7	57.3	41.0	3.7	26.0
Owner-occupied with mortgage or loan	27.6	28.2	28.1	15.7	32.0	15.6	34.0	65.9	41.9
Conceded or rented at highly-discounted prices	11.7	11.5	6.7	6.9	7.8	13.8	12.8	0.3	18.8
Rented at market prices	17.9	21.8	39.9	17.2	12.4	13.3	12.2	30.0	13.3
Total	100	100	100	100	100	100	100	100	100
2012									
Owner-occupied without mortgage or loan	43.2	38.4	25.2	60.7	47.2	58.0	40.7	8.6	28.4
Owner-occupied with mortgage or loan	27.3	28.5	28.0	15.2	31.8	16.1	33.8	61.6	38.3
Conceded or rented at highly-discounted prices	11.0	10.8	8.1	5.9	8.3	12.6	14.5	0.2	17.5
Rented at market prices	18.6	22.3	38.6	18.2	12.7	13.3	10.9	29.7	15.9
Total	100	100	100	100	100	100	100	100	100

Source: Eurostat, Surveys on Income and Living Conditions (SILC).

Note: "-" denotes data unavailability.

Table 7 Households by use and tenure status of secondary residences: Greece

(country total, years 2008-2012)

Use and tenure status of secondary residences	2008	2009	2010	2011	2012
Absolute numbers					
Owner-occupied	650,251	662,215	722,226	669,749	640,551
Conceded free of charge	52,571	40,382	22,299	28,963	40,545
Rented	20,562	30,768	10,610	22,690	20,376
Total	723,384	733,365	755,135	721,402	701,472
Distribution (%)					
Owner-occupied	89.9	90.3	95.6	92.8	91.3
Conceded free of charge	7.3	5.5	3.0	4.0	5.8
Rented	2.8	4.2	1.4	3.1	2.9
Total	100	100	100	100	100
Changes (%)					
	2009/2008	2010/2009	2011/2010	2012/2011	2012/2008
Owner-occupied	1.8	9.1	-7.3	-4.4	-1.5
Conceded free of charge	-23.2	-44.8	29.9	40.0	-22.9
Rented	49.6	-65.5	113.9	-10.2	-0.9
Total	1.4	3.0	-4.5	-2.8	-3.0

Source: Calculations on primary data from ELSTAT Family Budget Surveys.

B.2 Distribution of households by dwelling surface area

The data of table 8 are very informative on small dwellings, but much less so as regards larger dwellings, for which the surface area bands are very broad, i.e. 61-100 m² and 101 m² or more.

The table presents the distribution of households in each dwelling surface area band, for total households and by household size (number of household members).

Total households: In terms of average annual changes (see Chart 11), the number of households living in very small dwellings of up to 40 m² has grown by a substantial 7.3%, compared with 3.3% for small dwellings of 40-60 m², 1.1% for large dwellings of 61-100 m² and a decline (-3.6%) for very large dwellings of 101 m² or more. These figures indicated a visible shift towards smaller dwellings, which is particularly notable in the year 2010, when the shares of households living in very small dwellings rose

from 4.4% to 5.7% (i.e. up by 30.5%) and that for small dwellings from 15.8% to 18.6% (i.e. up by 17.7%), whereas the shares of the two largest surface area bands fell from 53.3% to 51.9% and from 26.5% to 23.9% (i.e. 2.2% and 9.6% down, respectively).

One-member households: In terms of average annual rates of change, one-member households residing in very small dwellings rose significantly (4.5%), followed by a more moderate increase in those living in small dwellings (1.3%). For large and very large dwellings, the rates of change are -0.7% and 0.8%, respectively. In this case as well, there is a visible shift from larger to smaller dwellings in the year 2010, when the share of households living in very small dwellings rose from 14.1% to 16.9% relative to the previous year (21.1% up), that for small dwellings of 40 to 60 m² rose from 28.8% to 31.1% (9.1% up), whereas that for large dwellings fell substantially from 47.2% to 41.4% (-11.3%) and that for very large dwellings increased from 9.9% to 10.5% (7.3% up).

Table 8 Distribution of households by dwellings' surface area: Greece

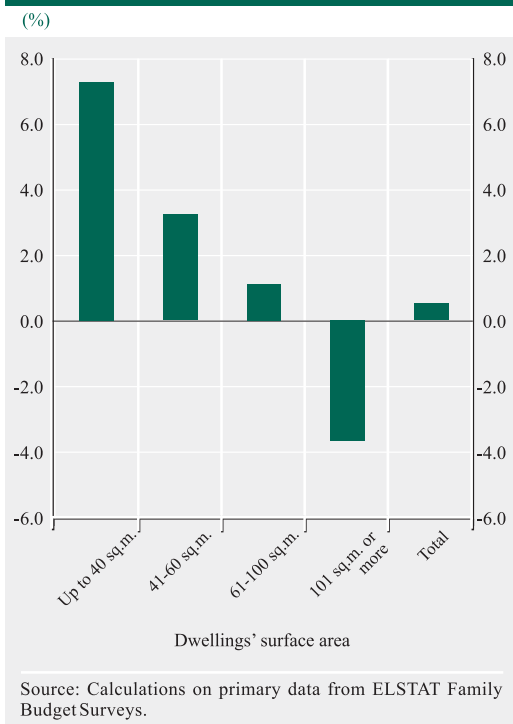
(country total, years 2008-2012)

Surface area of rooms used by the household	All households	Households with					
		1 member	2 members	3 members	4 members	5 members	6 or more members
Absolute numbers							
2008							
Up to 40 sq.m.	185,717	122,828	54,702	7,138	-	550	499
41-60 sq.m.	635,025	249,818	184,594	98,578	90,806	7,192	4,037
61-100 sq.m.	2,137,307	367,766	639,969	476,543	585,383	48,042	19,605
101 sq.m. or more	1,114,125	79,053	268,869	276,736	434,352	38,534	16,580
Total	4,072,174	819,465	1,148,134	858,995	1,110,541	94,318	40,721
2009							
Up to 40 sq.m.	179,407	117,134	44,080	14,085	3,513	595	-
41-60 sq.m.	651,856	239,478	190,393	91,816	123,019	5,140	2,010
61-100 sq.m.	2,193,087	391,919	650,280	499,500	592,616	41,503	17,268
101 sq.m. or more	1,089,801	82,486	276,161	262,684	432,644	26,467	9,358
Total	4,114,151	831,017	1,160,914	868,085	1,151,792	73,705	28,636
2010							
Up to 40 sq.m.	234,208	141,882	57,382	25,721	9,222	-	-
41-60 sq.m.	767,255	261,213	232,368	123,220	143,676	5,452	1,326
61-100 sq.m.	2,144,322	347,618	631,841	487,180	619,974	45,201	12,507
101 sq.m. or more	985,479	88,507	243,471	235,806	379,765	27,406	10,523
Total	4,131,264	839,220	1,165,062	871,927	1,152,637	78,059	24,356
2011							
Up to 40 sq.m.	220,263	137,028	60,375	13,276	9,583	-	-
41-60 sq.m.	699,356	256,872	209,805	107,127	120,503	4,033	1,017
61-100 sq.m.	2,228,542	355,001	658,186	489,273	674,631	38,646	12,806
101 sq.m. or more	1,000,700	91,217	235,682	259,381	383,884	19,305	11,231
Total	4,148,861	840,118	1,164,048	869,057	1,188,601	61,984	25,054
2012							
Up to 40 sq.m.	245,727	146,260	71,042	14,554	13,542	-	328
41-60 sq.m.	721,783	263,264	211,248	98,919	140,212	6,922	1,219
61-100 sq.m.	2,235,027	357,829	653,654	528,100	651,400	31,791	12,254
101 sq.m. or more	960,699	81,679	239,766	236,151	372,375	19,048	11,679
Total	4,163,236	849,032	1,175,710	877,724	1,177,529	57,761	25,480
Distribution (%)							
2008							
Up to 40 sq.m.	4.6	15.0	4.8	0.8	-	0.6	1.2
41-60 sq.m.	15.6	30.5	16.1	11.5	8.2	7.6	9.9
61-100 sq.m.	52.5	44.9	55.7	55.5	52.7	50.9	48.1
101 sq.m. or more	27.4	9.6	23.4	32.2	39.1	40.9	40.7
Total	100	20.1	28.2	21.1	27.3	2.3	1.0
2009							
Up to 40 sq.m.	4.4	14.1	3.8	1.6	0.3	0.8	-
41-60 sq.m.	15.8	28.8	16.4	10.6	10.7	7.0	7.0
61-100 sq.m.	53.3	47.2	56.0	57.5	51.5	56.3	60.3
101 sq.m. or more	26.5	9.9	23.8	30.3	37.6	35.9	32.7
Total	100	20.2	28.2	21.1	28.0	1.8	0.7
2010							
Up to 40 sq.m.	5.7	16.9	4.9	2.9	0.8	-	-
41-60 sq.m.	18.6	31.1	19.9	14.1	12.5	7.0	5.4
61-100 sq.m.	51.9	41.4	54.2	55.9	53.8	57.9	51.4
101 sq.m. or more	23.9	10.5	20.9	27.0	32.9	35.1	43.2
Total	100	20.3	28.2	21.1	27.9	1.9	0.6
2011							
Up to 40 sq.m.	5.3	16.3	5.2	1.5	0.8	-	-
41-60 sq.m.	16.9	30.6	18.0	12.3	10.1	6.5	4.1
61-100 sq.m.	53.7	42.3	56.5	56.3	56.8	62.3	51.1
101 sq.m. or more	24.1	10.9	20.2	29.8	32.3	31.1	44.8
Total	100	20.2	28.1	20.9	28.6	1.5	0.6
2012							
Up to 40 sq.m.	5.9	17.2	6.0	1.7	1.2	-	1.3
41-60 sq.m.	17.3	31.0	18.0	11.3	11.9	12.0	4.8
61-100 sq.m.	53.7	42.1	55.6	60.2	55.3	55.0	48.1
101 sq.m. or more	23.1	9.6	20.4	26.9	31.6	33.0	45.8
Total	100	20.4	28.2	21.1	28.3	1.4	0.6

Source: Calculations on primary data from ELSTAT Family Budget Surveys.

Note: "-" denotes data unavailability.

Chart II Distribution of households by dwellings' surface area: Greece, average annual rate of change, 2008-2012



The positive change observed in the latter category most likely reflects qualitative changes in family life, i.e. movement of younger household members to another residence, marriages of children, divorces and widowhoods.

Two-member households: In this case, changes are more pronounced. The average annual rate of change in the share of two-member households (mostly couples and single-parent families with one child) that live in very small dwellings stands at 6.8%, compared with 3.4% for small, 0.5% for large and -2.8% for very large. Once again it can be seen that the turning point is the year 2010, when the share of households living in very small dwellings rose from 16.4% to 19.9% (30.2% up), that for small dwellings fell from 56.0% to 54.2% and that for very large dwellings declined from 23.8% to 20.9% (i.e. -2.8%). Once again it should be noted that changes in the category of very large dwellings are also partly due to members moving out, while changes in the cat-

egory of dwellings between 60 and 100 m² mask movements within the relevant very broad, surface area band.

Three-member households: Here the changes are even greater, which is explained by the fact that three-member households mostly refer to cases of a couple with one child or single-parent families with two children, i.e. households with increased financial obligations and more strongly affected by the crisis compared with one- or two-member households. Thus, the average rates of change are 19.5% for households living in very small dwellings, a negligible 0.1% for those in small ones, 2.6% for those in large ones, and negative (-3.9%) for those in very large dwellings. In this case, the turning point for those residing in very small dwellings is the year 2009, when the share doubles from 0.8% to 1.6%, while in the immediately next year (2010) it rises further to 2.9%, marking an 82.6% increase. In 2011, it drops to 1.5%, before rebounding to 1.7% in 2012. The share of households living in small dwellings declined from 11.5% to 10.6% in 2009, then rose from 10.6% to 14.1% (i.e. by 34.2%) in 2010, to stand at 12.3% and 11.3%, respectively, in the next two years. The share for large dwellings rose from 55.5% to 57.5% in 2009, fell back to 55.9% in 2010, but increased again in the next two years to 56.3% and 60.2%, respectively.

Four-member households: As already mentioned, this is the largest group of households. In the category of very small dwellings, for which data referring to the year 2008 are not available, the absolute number of households was 3,513 in 2009, rising to 9,222 in 2010, 9,583 in 2011 and 13,542 in 2012. In the category of small dwellings, there is an average annual growth of 11.5% and the peak increase in their share occurs between 2008 and 2009 (35.5% up, from 10.7% to 12.5%), followed by a more moderate increase of 16.8% in 2010 and a decline (-16.1%) in 2011, which is reversed by an increase of 16.4% in 2012. In the next surface area band, the share rises from 51.5% to 53.8% in 2010 and to 56.8% in 2011, before

falling to 55.3% in 2012. Finally, in dwellings of 101 m² or more, there is an annual rate of change of -3.8%, which reflects a diminishing share of households living in such dwellings from one year to the next.

Five-member households: Data show a gradual decrease in their total number, particularly strong in 2009 (followed by a small increase in 2010), and a corresponding gradual decrease in the last three surface area bands (also with a small increase in 2010). This most likely reflects the downsizing and splitting of large households, due to a gradual decline in births and a choice by younger household members to become independent from the parental family.

Six-member households: The observations made for five-member households apply here as well.

Table 8 provides a picture of the shift of households from larger to smaller dwellings, although the 60-100 m² band is too broad to capture movements within this category which is the largest and represents more than 50.0% of all households for all five years. To simplify the analysis, we can see the evolution of the all-households figures as an indicator of deterioration in the housing situation, and the individual figures referring to the various household sizes as aspects of the overall index which further elaborate on the basic trend.

B.3 Occupied regular dwellings by number of household members and by number of rooms, and the relationship between the two

Number of household members: As can be seen in Table 9, the annual rate of change in the number of households for the first three sizes of households (i.e. one-, two- and three-member households) was 0.9%, 0.6% and 0.5%, respectively, while that for the last three sizes (four-, five- and six-member households) was 1.5%, -11.5% and -11.1%, respectively. The number of households with five and six or more members exceeds 135,000 in 2008, before

declining to between 80,000 and 102,000 in the next four years. These declines are relevant, as they probably reflect not only quantitative, but also qualitative changes in the composition of households, obviously due to an increasing trend towards smaller households, as a result of less births or diminishing intergenerational co-residence as evident from Table 4.

Looking at the absolute figures in Table 9, we can see that the two largest categories of households are those of two or four persons. The number of two-member households stands at 1,148,135 in 2008 and reaches 1,175,709 in 2012, while the number of four-member households at 1,110,541 in 2008 and 1,177,529 in 2012. Four-member households represent the fastest-growing category, with their number rising at an annual average of 1.5% or 6.0% between 2008 and 2012. The total number of households, irrespective of size, has risen by 91,061 between 2008 and 2012, with more than two thirds (66,988 households) corresponding to four-member households.

A comparison of the data on household members in Table 9 with the data on household composition in Table 4 reveals a discrepancy that calls for further investigation. The number of four-member households for all five years examined is about 1 million, while the number of couples with two children aged up to 16 (the only type of four-member household identified as such in Table 4) is about 500,000. So, where do the remaining half million hide? Most likely, they are to be found in the category of “couple or one parent with children aged over 16”, which also shows a particularly high increase in absolute numbers (some 1 million), as well as in the category of “other households”, which generally numbers around half a million for all five years. Despite its importance, the category of four-member households cannot be separately examined as to the quality of its housing situation based on data from Table 5, since it is hard to establish direct correlations between the number of household members and the number of rooms in the dwelling.

Table 9 Occupied regular dwellings by number of household members and by number of rooms: regression and correlation coefficients

(country total, years 2008-2012)

Number of persons (members) per dwelling	Total number of occupied regular dwellings	Total number of rooms	Total number of persons	Average number of rooms per person	Average number of rooms per dwelling	Arithmetic mean of the number of household members	Arithmetic mean of the number of rooms per dwelling	Regression coefficient	Number of members and number of rooms correlation coefficient
2008	4,072,175	13,055,205	10,850,800	1.20	3.21				
1 person	819,465	2,070,813	819,465	2.53	2.53				
2 persons	1,148,135	3,624,714	2,296,270	1.58	3.16				
3 persons	858,995	2,939,107	2,576,985	1.14	3.42	3.50	3.37	0.24	0.94
4 persons	1,110,541	3,912,758	4,442,164	0.88	3.52				
5 persons	94,318	351,779	471,590	0.75	3.73				
6 or more persons	40,721	156,034	244,326	0.64	3.83				
2009	4,114,150	13,083,519	10,904,613	1.20	3.18				
1 person	831,017	2,164,195	831,017	2.60	2.60				
2 persons	1,160,914	3,633,127	2,321,828	1.56	3.13				
3 persons	868,085	2,924,952	2,604,255	1.12	3.37	3.50	3.33	0.22	0.96
4 persons	1,151,793	3,988,173	4,607,172	0.87	3.46				
5 persons	73,705	262,662	368,525	0.71	3.56				
6 or more persons	28,636	110,410	171,816	0.64	3.86				
2010	4,131,264	12,879,453	10,932,116	1.18	3.12				
1 person	839,220	2,157,876	839,220	2.57	2.57				
2 persons	1,165,063	3,597,812	2,330,126	1.54	3.09				
3 persons	871,927	2,845,233	2,615,781	1.09	3.26	3.50	3.29	0.23	0.97
4 persons	1,152,638	3,908,463	4,610,552	0.85	3.39				
5 persons	78,059	275,429	390,295	0.71	3.53				
6 or more persons	24,357	94,640	146,142	0.65	3.89				
2011	4,148,860	12,997,413	10,990,025	1.18	3.13				
1 person	840,118	2,177,277	840,118	2.59	2.59				
2 persons	1,164,048	3,547,074	2,328,096	1.52	3.05				
3 persons	869,056	2,906,152	2,607,168	1.11	3.34	3.50	3.26	0.18	0.90
4 persons	1,188,601	4,053,245	4,754,404	0.85	3.41				
5 persons	61,983	225,741	309,915	0.73	3.64				
6 or more persons	25,054	87,924	150,324	0.58	3.51				
2012	4,163,237	12,813,477	10,985,425	1.17	3.08				
1 person	849,034	2,084,247	849,034	2.45	2.45				
2 persons	1,175,709	3,524,771	2,351,418	1.50	3.00				
3 persons	877,724	2,889,903	2,633,172	1.10	3.29	3.50	3.24	0.23	0.95
4 persons	1,177,529	4,017,002	4,710,116	0.85	3.41				
5 persons	57,761	201,173	288,805	0.70	3.48				
6 or more persons	25,480	96,381	152,880	0.63	3.78				

Source: Calculations on primary data from ELSTAT Family Budget Surveys.

(*) To calculate the regression and correlation coefficients we take 6 persons as the maximum number of household members and 6 rooms as the maximum number of household rooms; as a result, total number of rooms and total number of persons are underestimated.

Table 9 also provides a more specific picture of the relationship between the number of household members and the number of rooms in the dwelling, regardless of the rooms' surface area. The relationship between the number of persons and the number of rooms is significant, as it demonstrates the housing situation not with respect to usable space but with respect to the ability of each member to function autonomously within the same dwelling. The table has a small weakness though: the total number of members of all households is derived by multiplying the individual categories of households (based on size) by the number of members in each category. Insofar as "households with six or more members" is an open-ended category, the relevant subtotal – hence the total – is relatively underestimated.

A first observation from the table is a gradual decline in the average number of rooms and a corresponding slight decrease in the average number of rooms per person in the years 2010 and 2012. The same picture emerges when looking at the evolution of the arithmetic means of the two figures. With a constant arithmetic mean of the number of household members, a gradual reduction in the arithmetic mean of the number of rooms is observed.

The correlation coefficient ranges between 0.90 and 0.97 for the entire five-year period, showing a positive and strong correlation between the two figures, i.e. the higher the number of household members, the higher the number of rooms.

The regression coefficient, showing the increase in the number of rooms when the number of household members increases by one, also demonstrates a small decline in 2009 relative to 2008, then increases somewhat in 2010, falls appreciably in 2011, and returns to its 2010 levels in 2012. Overall, it ranges between 0.24 and 0.18 (mean square error between 0.01 and 0.02 for all five years), which is judged to be low and can therefore

be seen as an indicator of overcrowding (i.e. low ability of individual members to function autonomously within the same dwelling). The indicator does not show marked changes from one year to the next, with the exception of 2011; therefore, overall, it does not point to deterioration in the housing situation, but rather an entrenchment in the same negative situation.

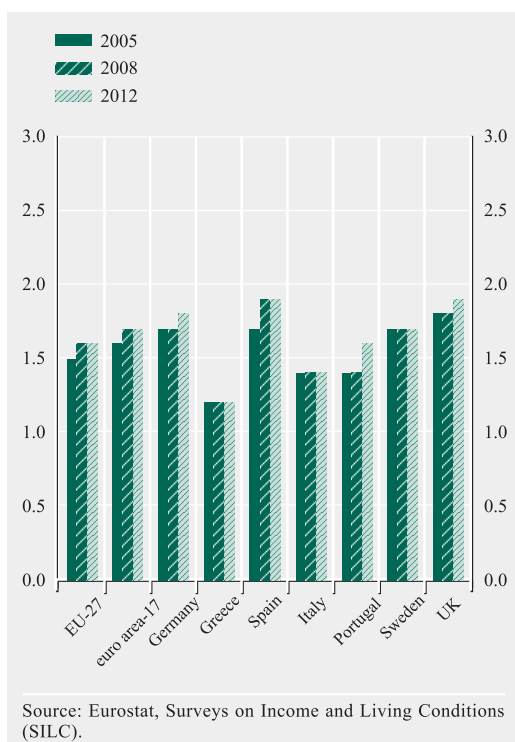
The indicator is judged to be low as, according to the explanatory notes of the SILC, a household is considered to be overcrowded if it does not have a minimum number of rooms equal to: one room for the household; one room per couple in the household; one room for each single person aged 18 or more; one room per pair of single people of the same gender aged between 12 and 17; one room for each single person aged 12 to 17 and not included in the previous category; one room per pair of children under 12 years of age.

Given that the processing of primary data provides information on households by size (number of members) and not by household type, we assume here that four-member, five-member and six-member households include, respectively, two, three and four children aged 18 or over. This means that, based on the EU standards, a four-member household needs at least 4 rooms, a five-member one 5 rooms, and a six-member one 6 rooms. For space to be sufficient for six-member households as well, the regression coefficient – rounded to one decimal digit – must be 0.7 for all years.

Turning to the average number of rooms per person, as can be seen in Chart 12, the EU-27 average is 1.5 for the year 2005 and 1.6 for 2008 and 2012, while the euro area-17 average is 1.6 for 2005 and 1.7 for 2008 and 2012.

Greece ranks last with an average number of rooms per person of 1.2 for all the years examined (there are small differences but these are masked by rounding to one decimal digit), right after Portugal with 1.4, 1.4 and 1.6 and Italy (third to last) with 1.4 for all three years.

Chart 12 Average number of rooms per person in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK



The top positions are occupied by the UK, with 1.8, 1.8 and 1.9, respectively, and Spain with 1.7, 1.9 and 1.9, followed by Germany with 1.7, 1.7 and 1.8 and Sweden with 1.7 for all three years.

B.4 Households by income level

Table 10 allocates all households and households by number of members to eight income brackets. Based on ELSTAT clarifications, income refers to households' disposable income after direct tax and social security contributions.

All households: We can see that in 2008 the largest percentage of households (22.3%) belongs in the highest income bracket of 3,501 euro or more per month, while the smallest percentage (4.8%) is in the lowest bracket of 0 to 750 euro. In 2012, the percentage of the

wealthiest households dropped to 12.2%, while that of the poorest ones rose to 10.6%. In 2012 the largest percentage of households (15.4%) is included in the income bracket of 751 to 1,100 euro. In the years in-between, the percentage of the poorest households rises sharply, from 4.8% in 2008 to 8.6% in 2009 and 20.5% in 2010, before falling to 16.0% in 2011. By contrast, the share of the wealthiest households falls from 22.3% in 2008 to 15.5% in 2009, 13.0% in 2010 and to just 11.8% in 2011. Overall, there is a gradual increase of households included in the lower income brackets and a gradual decrease of those included in the higher ones, while for the two middle income levels the changes are somewhat more moderate (for the first) or marginal (for the second), which can be also seen from the respective average annual rates of change of 5.8% and 0.7%.

Single-member households: It can be seen that in 2008 the largest share of single-member households (32.3%) were included in the second highest income bracket. In 2012 this share dropped to 27.0% and now the majority (34.2%) represents single-member households with a monthly income of up to €750. The shares of the households included in the lowest bracket start from 19.3% in 2008, reach 33.4% in 2009, fall back to 32.0% in 2010, only to rise to 40.5% in 2011.

Two-member households: In contrast with single-member households, in 2008 the allocation of two-member households in the income brackets is somewhat more symmetric, with shares ranging between 10.2% and 17.7%, with the exception of the lowest bracket that represents only 2.3% of all two-member households. In the next years this relative symmetry is overturned, as households included in the low income brackets increase markedly, while the share of richer households falls, but less strongly. More specifically, those included in the top income bracket rise from 2.3% in 2008, to 4.9% in 2009 and 13.0% in 2010, then fall slightly to 12.7% in 2011 and even further to 9.9% in 2012.

Table 10 Households by income level per number of household members

(country total, years 2008-2012)

Income brackets (in euro)	All households	Households with					
		1 member	2 members	3 members	4 members	5 members	6 or more members
0 to 750	4.8	19.3	2.3	0.7	0.2	1.3	0.9
751 to 1,100	10.7	32.3	10.2	3.1	1.8	2.4	4.7
1,101 to 1,450	11.5	20.7	14.8	6.1	6.2	4.4	7.2
1,451 to 1,800	10.9	9.2	16.5	9.1	8.6	4.7	1.2
1,801 to 2,200	13.0	6.7	17.7	13.2	13.6	7.8	5.3
2,201 to 2,800	14.1	5.4	14.2	19.8	15.3	23.1	15.2
2,801 to 3,500	12.8	2.8	10.4	19.4	16.8	20.4	16.7
3,501 or more	22.3	3.6	14.0	28.6	37.6	36.0	48.8
Total 2008	100	20.1	28.2	21.1	27.3	2.3	1.0
0 to 750	8.6	33.4	4.9	1.6	0.2	1.4	-
751 to 1,100	15.4	35.5	18.6	7.8	4.3	5.1	-
1,101 to 1,450	13.7	12.5	19.8	9.1	12.4	8.4	9.8
1,451 to 1,800	12.1	6.7	17.4	12.6	10.5	8.9	14.5
1,801 to 2,200	10.7	4.3	12.2	13.2	11.8	15.3	5.5
2,201 to 2,800	12.8	3.4	11.9	19.5	15.1	16.9	12.7
2,801 to 3,500	11.3	2.4	6.1	17.0	17.7	19.9	24.3
3,501 or more	15.5	1.8	9.1	19.2	27.9	24.0	33.3
Total 2009	100	20.2	28.2	21.1	28.0	1.8	0.7
0 to 750	20.5	32.0	13.0	19.3	21.0	18.7	14.8
751 to 1,100	15.9	28.3	13.4	11.9	12.7	12.5	8.0
1,101 to 1,450	15.2	15.6	20.4	11.5	12.7	11.3	9.4
1,451 to 1,800	11.2	9.6	14.6	9.2	10.5	9.2	12.9
1,801 to 2,200	8.4	5.1	11.9	8.5	7.2	9.3	8.3
2,201 to 2,800	9.7	4.5	10.6	13.8	9.3	11.3	10.1
2,801 to 3,500	6.1	1.8	6.7	8.5	6.7	9.1	13.9
3,501 or more	13.0	3.2	9.4	17.3	19.9	18.6	22.7
Total 2010	100	20.3	28.2	21.1	27.9	1.9	0.6
0 to 750	16.0	40.5	12.7	7.1	9.2	4.9	6.9
751 to 1,100	16.5	29.3	18.3	10.0	10.9	11.2	11.1
1,101 to 1,450	14.5	15.1	20.9	11.4	10.7	7.7	11.5
1,451 to 1,800	12.4	6.6	14.6	15.9	12.0	9.1	4.7
1,801 to 2,200	9.5	2.8	10.1	13.4	10.7	11.0	6.5
2,201 to 2,800	10.1	2.8	10.3	14.1	11.6	18.5	14.0
2,801 to 3,500	9.1	0.9	7.5	13.2	13.1	15.0	17.1
3,501 or more	11.8	1.8	5.6	14.8	21.9	22.6	28.2
Total 2011	100	20.2	28.1	20.9	28.6	1.5	0.6
0 to 750	10.6	34.2	9.9	2.0	1.5	0.5	2.6
751 to 1,100	15.4	27.0	21.4	10.2	5.9	4.9	2.2
1,101 to 1,450	15.2	14.4	21.8	11.9	12.1	6.2	9.3
1,451 to 1,800	13.3	8.6	15.9	16.1	12.1	12.6	13.4
1,801 to 2,200	13.1	7.0	12.1	18.1	14.3	17.8	22.8
2,201 to 2,800	11.7	4.6	8.7	14.8	17.2	19.8	13.0
2,801 to 3,500	8.4	1.7	5.0	9.3	15.6	12.2	13.4
3,501 or more	12.2	2.5	5.2	17.6	21.3	26.0	23.3
Total 2012	100	20.5	28.3	21.2	28.4	1.4	0.6

Source: Calculations on primary data from ELSTAT Family Budget Surveys.

Note: “-” denotes data unavailability.

Three-member households: A sharp increase is observed in the lowest income bracket in 2010, the year of the first memorandum. From 0.7% and 1.6% of all three-member families in the years 2008 and 2009 respectively, the poorest three-member households reach 19.3% and thereafter fall to 7.1% and 2% in 2011 and 2012 respectively. A substantial drop is also observed in the share of the richest ones: from 28.6% in 2008 to 19.2% in 2009, 17.3% in 2010, and 14.8% in 2011, followed by a rise they increase to 17.6% in 2012. A substantial decline can also be seen in the immediately next income category in the year 2010, from 17.0% in 2009 to 8.5%, while in the years 2011 and 2012 their shares stand at 13.2% and 9.3%, respectively.

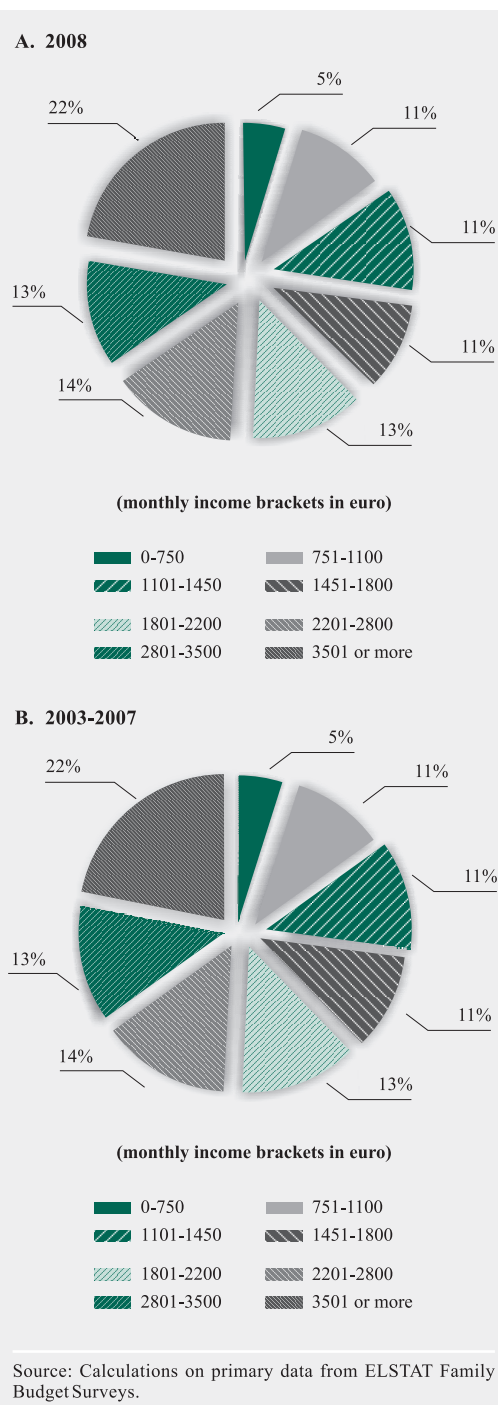
Four-member households: Those included in the lowest bracket increase rapidly: from 0.2% of all four-member households in the years 2008 and 2009 they reach 21.0% in 2010, and then fall to 9.2% and 1.5% in 2011 and 2012, respectively. The richest households also decrease (though less strongly) in 2009 and 2010, while in 2011 and 2012 their shares increase.

Five-member households: The picture is similar to that of four-member households, but their weight is much smaller, given that the number of five-member households ranges between 57,760 to 94,317 and keeps declining, while households with four members exceed 1 million in all five years of the period examined.

Households with six or more members: Here as well, there is an extremely strong growth of those included in the lowest income bracket in 2010, while a large drop is also observed in the bracket of the richest ones, as from 48.8% of all six-member households their share falls to 23.3% in 2012. It should be noted here as well that six-member households represent only 1% of all households in 2008, while in 2012 this percentage drops to 0.6%.

Table 10 points to a considerable income reduction both at the level of all households and at the level of households by size, as there

Chart 13 Distribution of households by income level: Greece



is an increase of the households included in the lower income brackets and a decrease of those included in the higher ones. To simplify

the analysis, we take the all-households index as another (fifth) indicator of deterioration in the households' economic condition, and the individual indices per size of household as aspects of the same indicator, specifying the basic trend. The negative change in the households' economic condition is clearly associated both with their deteriorating housing situation and with their precarious state in terms of their ability to maintain their existing housing situation.

B.5 Income inequality – Mean and median equivalised disposable income

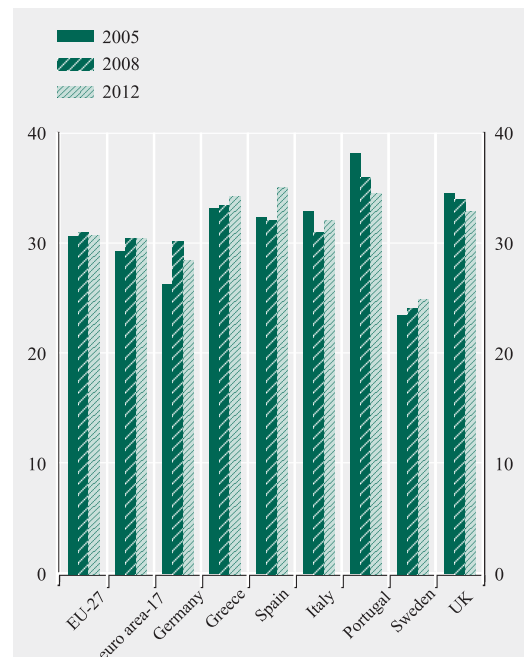
Chart 14 illustrates income inequality based on the Gini coefficient, for the EU, the euro area and the selected countries and for the years 2005, 2008 and 2012.

As is readily visible, Greece's inequality score is one of the highest for all three years examined, rising from 33.2 in 2008 to 34.3 in 2012. Negative developments are also observed in Spain, where the Gini coefficient after falling from 32.2 in 2005 to 31.9 in 2008, soars to 35.0 in 2012. Portugal, on the other hand, starts from a very high inequality score of 38.1 in 2005, which moderates to 35.8 in 2008 and 34.5 in 2012.

Italy's inequality index is quite high and on the rise after 2008 (32.8 in 2005, 31.0 in 2008 and 31.9 in 2012), while a relatively high, albeit declining, coefficient is recorded in the UK (34.6 in 2005, 33.9 in 2008 and 32.8 in 2012). In Germany, income inequality starts from 26.1 in 2005, reaches 30.2 in 2008 and falls to 28.3 in 2012, while in Sweden, which has the lowest inequality score, the coefficient is 23.4 in 2005, and then rises to 24.0 in 2008 and further to 24.8 in 2012.

At the EU level, the coefficient starts from 30.6 in 2005, rises to 30.9 in 2008 and declines somewhat to 30.6 in 2012, while for the euro area the respective values are 29.3, 30.3 and 30.4, trending slightly upwards. In this connection, it should be pointed out once again

Chart 14 Gini coefficient¹ in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK



Source: Eurostat, Surveys on Income and Living Conditions (SILC).

¹ The Gini coefficient is calculated based on the equivalised disposable income, which is weighted for each household as follows: the first person aged 14 or over has a weight of 1 and all other persons aged 14 or over have a weight of 0.5, while persons aged up to 13 each have a weight of 0.3.

that countries in the European South experience much higher income inequality.

Table 11 shows the mean and the median equivalised income for the EU, the euro area and selected countries. As mentioned in the relevant explanatory notes by Eurostat, in order to reflect differences in a household's size and composition, disposable income is weighted based on the household members' age and number according to an equivalence scale, whereby the first adult is given a weight of 1.0, all other persons aged 14 or over have a weight of 0.5 and each child aged under 14 is given a weight of 0.3.

As it can readily be noticed, Greece has the second lowest mean equivalised disposable income, higher only than that of Portugal, while Spain ranks third to last.

Table 11 Mean and median equivalised disposable income in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

A. Mean equivalised disposable income										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU-27	-	-	14,541	14,694	15,889	16,763	16,774	16,908	17,098	17,598
Euro area-17	-	-	16,351	16,321	17,464	18,870	19,254	19,417	19,412	19,676
Germany	-	-	18,214	17,283	20,270	21,086	21,223	21,470	21,549	22,022
<i>Greece</i>	<i>9,675</i>	<i>10,199</i>	<i>11,149</i>	<i>11,666</i>	<i>12,130</i>	<i>12,766</i>	<i>13,505</i>	<i>13,974</i>	<i>12,626</i>	<i>10,676</i>
Spain	-	11,621	12,008	12,643	13,266	14,214	14,483	14,369	13,907	13,885
Italy	-	15,834	16,671	16,648	17,213	17,734	17,963	18,136	18,056	18,204
Portugal	-	8,867	9,392	9,554	9,929	10,288	10,393	10,540	10,405	10,227
Sweden	-	18,452	18,996	18,997	20,205	21,825	22,643	20,932	23,887	26,340
UK	-	-	22,528	22,780	24,822	22,807	19,393	20,518	20,788	22,691
B. Median equivalised disposable income										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU-27	-	-	12,657	12,950	13,898	14,480	14,584	14,714	14,853	15,325
Euro area-17	-	-	14,384	14,459	15,343	16,378	16,777	16,961	16,959	17,202
Germany	-	-	16,393	15,663	17,777	18,309	18,586	18,797	19,043	19,595
<i>Greece</i>	<i>8,206</i>	<i>8,844</i>	<i>9,417</i>	<i>9,850</i>	<i>10,200</i>	<i>10,800</i>	<i>11,496</i>	<i>11,963</i>	<i>10,985</i>	<i>9,513</i>
Spain	-	10,327	10,453	11,138	11,645	12,628	12,856	12,667	12,120	11,970
Italy	-	13,552	14,352	14,524	15,005	15,639	15,637	15,937	15,972	16,029
Portugal	-	6,916	7,195	7,311	7,573	8,143	8,282	8,678	8,408	8,323
Sweden	-	17,396	17,513	17,993	18,860	20,601	21,251	19,729	22,524	24,753
UK	-	-	18,546	19,495	21,143	18,923	16,262	17,101	17,136	19,007

Source: Eurostat, Surveys on Income and Living Conditions (SILC).

Notes: The equivalised disposable income is weighted for each household as follows: the first person aged 14 or over has a weight of 1 and all other persons aged 14 or over have a weight of 0.5, while persons aged up to 13 each have a weight of 0.3; “-” denotes data unavailability.

Chart 15.A shows that the mean equivalised income in Greece grew in the three years from 2005 to 2007 (to enable comparisons with other countries, only the years for which data are available for the entire panel of countries are taken into consideration) at an average annual rate of 4.3%, which was very close to the EU average (4.5%) and one percentage point higher than the euro area average (3.3%). The respective figures were 5.5% for Germany, 5.1% for Spain, 5.0% for the UK, 3.1% for Sweden, 2.8% for Portugal and 1.6% for Italy.

In 2008-2012 the positive growth rates of mean equivalised income follow a downward course or turn negative, except in Sweden, which posts

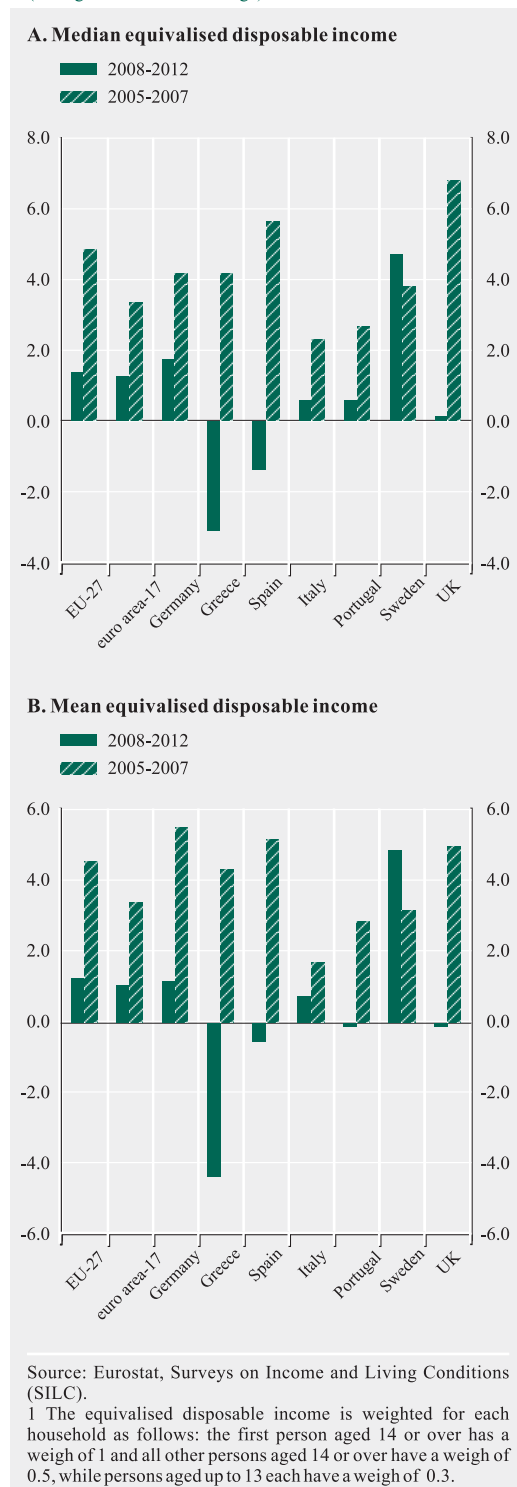
4.8%, well above that in 2005-2007, and in Germany, with 1.1%, equal to the euro area average and somewhat lower than the EU average (1.2%).

Greece is shows by far the largest negative change, with an average -4.4%, followed by Spain with -0.6% and the UK and Portugal with -0.1% each.

As could be expected, a similar picture arises from the analysis of data on the median equivalised income (see Chart 15.B). In the three years from 2005 to 2007, very strong growth in the median equivalised income is observed in the UK (6.8%), which declines to a marginal

Chart 15 Mean and median equivalised disposable income,¹ in the EU-27, the euro area-17, Germany, Greece, Spain, Italy, Portugal, Sweden and the UK

(average annual rate of change)



0.1% in the next five years (2008-2012), and an equally impressive rate in Spain (5.5%), which drops to -1.3% in the years of the crisis. In contrast, an upward trend is recorded in Sweden (from 3.8% to 4.7%).

In Greece, the average annual rate of change in the median equivalised income drops from 4.1% (at the same level as in Germany) in the years 2005-2007 to -3.1% (the most strongly negative among the countries examined) in the years of the crisis, while in Portugal the positive rate of 2.6% drops to 0.5%. In Germany, the rate falls to 1.7%, while the EU and the euro area averages decline from 4.8% and 3.3% to 1.4% and 1.2%, respectively.

Summary of findings

In the period under review, Greece's population (native and immigrant) declined.

From a migrant receiving country, Greece has turned to a migrant sending country, while at the same time experiencing a marked decline in births and marriages and a high increase in the number of deaths. As established by numerous studies and already noted, a smaller or not significantly larger number of births compared to the number of deaths represents a clear indicator of low fertility and population replacement and, coupled with increased life expectancy, an indicator of population ageing.

The downward course of Greece's population, native and immigrant, signals an ongoing process of demographic decline.

This adverse demographic trend is corroborated by developments in household composition, marked by an increase in couples without children and in couples with only one child, with the latter category growing very rapidly, alongside a sharp decrease in couples with three or more children aged up to 16. The decline in couples with two children aged up to 16 is also strong, but less sharp than in the previous category, bringing four-member households in Greece to the first place in absolute numbers.

With respect to the housing situation in the country, both the current housing conditions of Greek households and their ability to maintain the existing housing conditions have worsened in the period under review, as demonstrated by the following indicators:

- An increase in the number of households living in non-regular dwellings, such as huts, shacks and shops.
- An increase in the number of households living in dwellings of one, two, or three rooms, and a decrease in the number of those living in dwellings of four or more rooms. This shift towards smaller dwellings is only partially explained by changes in household composition (e.g. higher numbers of smaller-sized households due to discontinued intergenerational co-residence or divorce, couples with fewer children or single-parent families, etc.), and the remainder is attributable to economic factors.¹¹
- An increase in the number of households living in old dwellings.

- An increase in the number of households living in owner-occupied homes with mortgage or other loan and of households living in conceded dwellings.
- A shift of households towards dwellings of a smaller surface area.
- A quite strong correlation between the higher number of household members and the higher number of rooms in their dwellings; however, the regression coefficient suggests that a less-than proportionate increase in the number of rooms with an increase in the number of household members.
- A decline in income for all households. The number of households in the low income brackets has increased and that of higher-income households has decreased.

¹¹ According to ELSTAT's clarifications, for the purposes of the Household Budget Survey and the EU Survey on Income and Living Conditions, a room is defined as a space of a housing unit with a size large enough to hold a bed for an adult (4 square metres at least), a window and a height of at least two metres. This implies that the actual number of rooms as commonly understood (rather than according to the above ELSTAT definition) is smaller.

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Data sources

- ELSTAT, Statistical Themes: Population, Vital Statistics, Migration Movement, Mid-year Estimated Population.
- ELSTAT, Statistical Themes: Household Income and Expenditure, Family Budget.
- Eurostat, Database by themes: Population.
- Eurostat, Database: Income and Living Conditions.

APPENDIX: LITERATURE REVIEW

1a. Papadakis et al. (2012). The authors analyse raw population data and project that the dependency ratio (the number of non-working-age people per 100 working-age people) will climb from 50% in 2010 to 82% in 2050, a fact they believe will have a negative effect on, among other things, the production process.

1b. Prskawetz and Lindh (eds) (2007). Combining their econometric estimates with the recent EUROSTAT population projections the researchers conclude that it will be hard to avoid a decline in GDP growth rates in the EU and that this decline will be more severe in demographic scenarios that imply slow or even negative rates of workforce growth.

1c. McNicoll (2003). The author argues that the transition from high to low mortality has a positive effect on the development process, while the benefits of a fertility decline are somewhat less obvious, although lower fertility may improve access to health services and education in developing economies.

1d. Cincotta and Engelman (1997). The authors conclude that the growth of gross domestic product can be constrained by high dependency ratios, which result when rapid population growth produces large proportions of children and youth relative to the labor force.

1e. Eurostat (2009a). Statistical tables analysing the population figures for all EU countries for the years 2000, 2007 and 2008.

1f. Eurostat (2013). Statistical tables analysing the population figures for all EU countries for the years 2011 and 2012.

2a. Jimeno (2011). Brief presentation of the Spanish economy, ascertaining a strong decline in production and employment in the construction sector.

2b. Stawinska (2010). Statistical data on the construction sector in the EU countries.

3a. Association of Greek Contracting Companies (SATE) (2012). The report provides statistical data documenting a slump in the Greek construction sector.

3b. Labour Institute of the General Confederation of Greek Workers/Greek Civil Servants' Confederation (INE / GSEE-ADEDY) (2009). Detailed account of the country's economic aggregates and employment, including data showing that in its boom years the construction industry employed more than half of all foreign workers.

4a. Zlotnik (2008). The author, a demographer, analyses the stages of demographic transition and highlights the positive effect of a decline in mortality (first stage of demographic transition) on the population's average age, as it mostly concerns children and thus contributes to an increased share of young people in total population. She then notes the negative effect of a decline in fertility (second stage of demographic transition) on the population's average age, as a reduced number of births increases the share of elderly people in total population.

4b. Skeldon (2008). The author finds that population growth in urban areas since the early 1990s has mainly resulted from immigration rather than higher fertility; however, as he points out, this does not mean that migration can indefinitely counterbalance low fertility rates.

4c. De Haas (2008). The researcher sees migration as an endogenous variable an integral part of the broader development processes, but with its own dynamics, and finds a reciprocal relationship between migration and development processes, instead of the one-way impact of migration on development.

5a. Kikilias et al. (2008). An analysis of the economic and social situation of single-parent families in Greece and a comparison with the situation in Europe.

- 5b. Ambert (2006). A comprehensive overview of single-parent families and their economic and social characteristics.
- 6a. Eurostat (2009b). A statistical portrait of the lifestyle of young people in Europe, focusing on demographics, living conditions, health, education, employment, use of communication tools and participation in cultural activities.
- 6b. Mattila-Wiro (1999). The researcher examines household behaviour and cohesion and argues that a family is not always a group of people harmoniously living together, as she finds that often the economically and socially stronger members behave in a self-interested manner, leading to a tendency of the other members to become independent.
- 7a. Czischke and Pittini (2008). The authors provide statistical data showing that the number of elderly people is growing, while at the same time they identify a shift towards independent living of the elderly at their own homes.
- 7b. Bennett and Dixon (2006). A report on the problems faced by the elderly, finding that there is an increasing proportion of the elderly wishing to live alone, which calls for government action to ensure that their housing needs are met.
- 7c. Stula (2012). The paper investigates the challenges faced by the elderly in Europe, mainly in the field of housing, using data for selected countries.
8. Eurostat (2010). Overview of demographic developments in the EU countries, including data on household structures.
9. Randall (2011). A study of the housing conditions in the UK for the years 2007-2010. It examines the housing stock and new builds against the background of rising population, as well as types of accommodation, tenure status, housing-related costs, energy conditions and problems such as home loss.
11. Pittini (2012). A study of housing costs in the EU countries for the year 2010, finding that poor households are hit harder, as housing costs represent 41.0% of their income, and that the situation for poor households seems to be particularly hard in Denmark, Greece and the UK.
12. Rybkowska and Schneider (2011). A mapping of housing conditions across the EU countries in 2009, with an emphasis on housing deprivation, finding that 30 million people in the EU suffered both lack of space and poor housing conditions.
13. United Nations Economic Commission For Europe (2009). The study investigates the two-sided relationship between housing and population: population growth leads to higher demand for housing, whereas population decline may lead to a decrease in housing demand in the long run, especially in areas with lower-quality housing.

WORKING PAPERS (OCTOBER 2013 - MAY 2014)

This section contains the abstracts of Working Papers authored by Bank of Greece staff and/or external authors and published by the Bank of Greece. The unabridged version of these texts is available on the Bank of Greece's website (www.bankofgreece.gr).

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Linkages between the Eurozone and the south-eastern European countries: a global VAR analysis

Working Paper No. 163

Minoas Koukouritakis, Athanasios P. Papadopoulos, Andreas Yannopoulos

In the present paper we assess the impact of the Eurozone's economic policies on specific South-Eastern European countries, namely Bulgaria, Croatia, Cyprus, Greece, Romania, Slovenia and Turkey. Since these countries are connected to the EU or the Eurozone and economic interdependence among them is continuously evolving, we implemented a Global

VAR model. Our results indicate that all sample countries, except Turkey, react in a similar manner to changes (a) in the macroeconomic policies of the Eurozone, and (b) in the nominal exchange rate of the euro against the US dollar. There is evidence of linkages among the EU or Eurozone members of the region, and between each of them and the Eurozone.

On the prediction of corporate financial distress in the light of the financial crisis: empirical evidence from Greek listed firms

Working Paper No. 164

Evangelos C. Charalambakis

This paper evaluates the impact of accounting and market-driven information on the prediction of bankruptcy for Greek firms using the discrete hazard approach. The findings show that a hazard model that incorporates three accounting ratio components of Z-score and three market-driven variables is the most appropriate model for the prediction of corporate financial distress in Greece. This model outperforms a univariate model that uses the expected default fre-

quency (EDF) derived from the Merton distance to default model, a multivariate model that is exclusively based on accounting variables, a model that combines EDF and accounting variables and a multivariate model that uses only market-driven variables. In-sample forecast accuracy tests confirm the main results. The out-of-sample evidence also suggests that the model yields the highest predictive ability during financial crisis when using data prior to the financial crisis.

The credit crunch and firm growth in the euro area: 2005-2011. A quantile panel analysis

Working Paper No. 165

Sophia Dimelis, Ioannis Giotopoulos, Helen Louri

This paper explores the effects of bank credit on firm growth before and after the recent financial crisis outbreak, taking into account different structural characteristics of the banking sector and the domestic economy. The econometric method of panel quantiles is used on a large sample of 2,075 firms operating in the euro area (17 countries) for the period 2005-2011. The

main results of this paper indicate a strong dependence of firm growth on credit expansion before the crisis. However, post-2008, the credit crunch seems to seriously affect only slow-growth firms and especially those operating in domestic bank-dominated economies. Furthermore, the classification of firms in groups by size yields interesting results: the credit

crunch exhibits a strong impact on small firms only. Separate estimates for more and less financially developed economies show that the credit crunch matters mainly in countries with a lower degree of financial development. Moreover, our findings reveal that the degree of

banking concentration affects firm growth in a negative way in most estimates. Finally, risk and financial stability matter for firm growth for the total sample and for domestic bank-dominated economies, while in general they do not matter when markets are dominated by foreign banks.

Return dispersion, stock market liquidity and aggregate economic activity

Working Paper No. 166

Stavros Degiannakis, Andreas Andrikopoulos, Timotheos Angelidis, Christos Floros

This paper examines the effect of return dispersion on the dynamics of stock market liquidity, risk and return. Moreover, the importance of return dispersion in forecasting aggregate economic activity is rediscovered in the context of a regime switching model that accounts for stock market fluctuations and their association with the state of the economy. We find that

there is a bidirectional, Granger-causal association between illiquidity and return dispersion in the US stock market. The empirical results show that stock returns can help us predict both realized volatility as well as return dispersion. We report that there is a significant relation between economic conditions and the risk measures (return dispersion and realized volatility).

The output effects of systematic and non-systematic fiscal policy changes in Greece

Working Paper No. 167

Athanasios O. Tagkalakis

This paper investigates the effects of systematic (or rules-based) and non-systematic (exogenous) fiscal policy changes on output growth in Greece, focusing also on the composition of fiscal policy. Exogenous fiscal policy changes are associated with Keynesian responses (with the exception of net transfers and VAT). Although systematic

government spending cuts aiming at improving fiscal performance tend to have a Keynesian effect on output growth in the short term, they ultimately result in a non-Keynesian response, raising output growth. Systematic direct tax hikes, aiming at correcting fiscal imbalances, can have positive medium to long term growth effects.

Putting the EMU integration into a new perspective: the case of capital market holdings

Working Paper No. 168

George T. Palaiodimos

This article investigates by means of an augmented gravity model, the impact of EMU on financial market integration across time by assessing its effect on capital (equities and

bonds) holdings. We contribute to the respective literature by investigating this effect from a global perspective and also investigate the case of a pre-EMU effect on both equity and

bond markets. Furthermore, we focus on the potential impact of recent financial crisis on international equity and bond holdings. Our estimates indicate that intra-EMU integration effect improved in both equity and bond markets during the period close to the formation of EMU i.e. 1997, 2001 and 2002. In the case of the EMU equity market, this effect is mostly centered on 2001 (18% increase of EMU holdings) reflecting the beneficial impact of EMU and the introduction of the euro, while in the case of bond market this EMU effect is centered on 1997 (50%), reflecting the existence of pre-EMU integration effects. These inte-

gration effects have been also accompanied by increased demand from the side of non-EMU investors in both markets. Lastly, these integration effects weaken significantly after 2007, mainly reflecting a post-crisis disintegration of EMU capital markets both internally and globally. These findings may be regarded as a red flag over the current status quo within EMU which is characterized by low levels of integration. This finding provides support for a push for a new EMU architecture in the form of greater fiscal and financial integration and supervision. Only in this way will EMU become a true currency union.

Discretionary fiscal policy and economic activity in Greece

Working Paper No. 169
Athanasios O. Tagkalakis

This paper investigates the effects of discretionary fiscal policy changes on economic activity and its subcomponents in Greece in the period 2000-2011. Changes in government spending and net taxes have Keynesian effects. An increase in government consumption has the most pronounced positive effects on output growth, private consumption and non-residential investment, while it reduces

residential investment. Cuts in the public investment programme crowd in private investment, but are associated negatively with the net exports ratio. Both indirect and direct tax hikes lower private consumption, private investment and output growth. Additionally, higher direct taxes, by lowering disposable income, reduce import demand, thus, improving the trade balance.

Oil price shocks and volatility do predict stock market regimes

Working Paper No. 170
Stavros Degiannakis, Timotheos Angelidis, George Filis

The paper investigates whether oil price shocks and oil price volatility provide predictive information for the state of the US stock market returns and volatility. The disaggregation of oil price shocks according to their origin allows us to assess whether they contain incremental forecasting power on the state of the stock market returns and volatility, a case that does not hold for the oil price returns. Overall, the results suggest that oil price returns and

volatility possess the power to forecast the state of stock market returns and volatility. The full effects of oil price returns, though, can only be revealed when the oil price shocks are disentangled and as such we claim that the oil price shocks have an incremental power in forecasting the state of the stock market. The findings are important for stock market forecasters and investors dealing with stock and derivatives markets.

Assessing the variability of indirect tax elasticity in Greece

Working Paper No. 171

Athanasios O. Tagkalakis

This paper shows that the variability of indirect tax elasticity relative to GDP has increased significantly in recent years in Greece. Based on this finding we show that the budgetary sensitivity of indirect taxes following a 1% change in real GDP has increased dramatically since 2010. This finding has substantial policy impli-

cations; failure to account for these higher elasticities will lead to recurrent revenue shortfalls requiring new policy measure to meet previously set fiscal targets. This could lead to a downward spiral of continuously declining economic activity, new revenue shortfalls and additional fiscal measures and so on.

Transmission effects in the presence of structural breaks: evidence from south-eastern European countries

Working Paper No. 172

Minoas Koukouritakis, Athanasios P. Papadopoulos, Andreas Yannopoulos

In this paper, we investigate the monetary transmission mechanism through interest rate and real effective exchange rate channels, for five south-eastern European countries, namely Bulgaria, Croatia, Greece, Romania and Turkey. Recent unit root and cointegration techniques in the presence of structural breaks in the data are used in the analysis. The

empirical results validate the existence of a valid long-run relationship, with parameter constancy, for each of the five sample countries. Additionally, the estimated impulse response functions regarding the monetary variables and the real effective exchange rate converge and follow a reasonable pattern in all cases.

Why firms avoid cutting wages: survey evidence from European firms

Working Paper No. 173

Philip Du Caju, Theodora Kosma, Martina Lawless, Julián Messina, Tairi Rõõm

The rarity with which firms reduce nominal wages has been frequently observed, even in the face of considerable negative economic shocks. This paper uses a unique survey of fourteen European countries to ask firms directly about the incidence of wage cuts and to assess the relevance of a range of potential reasons for why they avoid cutting wages. Concerns about the retention of productive staff and a lowering of morale and effort were reported as key

reasons for downward wage rigidity across all countries and firm types. Restrictions created by collective bargaining were found to be an important consideration for firms in euro area countries but were one of the lowest ranked obstacles in non-euro area countries. The paper examines how firm characteristics and collective bargaining institutions affect the relevance of each of the common explanations put forward for the infrequency of wage cuts.

Inequality, poverty and social welfare in Greece: distributional effects of austerity

Working Paper No. 174

Theodore Mitrakos

This paper presents the recent trends and the characteristics of inequality, poverty and living conditions in Greece, emphasising the distributional effects of the austerity measures adopted during the current economic crisis. Moreover, the decomposition analysis of the study examines the structure of inequality and the contribution of various income sources in overall inequality, while the main characteristics of the Greek social solidarity system and the poor distributional impact of social benefits are also discussed. To this end, household income from the Greek Household

Budget and the EU Statistics of Income and Living Conditions surveys are used. The available data indicate that income inequality and relative poverty has increased, yet not dramatically, during the current crisis, although the composition of the poor population changed considerably. However, the sharp decline in disposable income and the dramatic increase in unemployment has led to a significant deterioration in economic prosperity and absolute poverty, i.e. when the poverty line in real terms remains stable in the pro-crisis levels.

The smart economy: cultural and creative industries in Greece. Can they be a way out of the crisis?

Working Paper No. 175

Sophia Lazaretou

The cultural and creative economy is an area increasingly attracting research attention in the last ten years or so and has been at the heart of discussions underway, in advanced (post-industrial) economies and emerging economies alike, on the design of a development and growth strategy. In the Greek context, the sector has shown remarkable resilience during the current debt crisis and recession. Building on this positive development, and in line with the new international growth model whereby the economy of knowledge and technology intertwines with the economy of culture and creativity, Greek policymakers cannot afford to disregard the visible benefits of the smart economy in their quest for a new sustainable growth paradigm. The challenge is therefore to ensure a shift of cultural policy from its current

static approach that focuses on the preservation of heritage to a dynamic one that would encourage the creation of new ideas and forms that will probably become tomorrow's heritage. The main objective of the present study is to advocate this shift and shed light on various policy options for achieving this goal. Specifically, the paper makes a first tentative attempt to delineate the scope of the cultural and creative economy, to map its various components and aspects and to provide a quantitative view of how Greece fares in this new sector of activity. It goes on to outline the specific features of the sector of culture and creativity in Greece and concludes with ten practical recommendations that would foster the emergence of a virtuous circle linking culture, creativity and economic growth.

Déjà vu? The Greek crisis experience, the 2010s versus the 1930s. Lessons from history

Working Paper No. 176

George Chouliarakis and Sophia Lazaretou

The past Greek crisis experience is more or less terra incognita. In all historical empirical studies Greece is systematically neglected or included only sporadically in their cross-country samples. In the national literature too there is little on this topic. In this paper we focus on the Greek experience of the Great Depression and use it as a benchmark against which to assess the policy choices and constraints that Greece faces today, with the ultimate aim to draw policy lessons from history and warn against a repeat of the same outcome. The 1930s crisis episode is used as a useful testing ground to compare the two crises episodes,

‘then’ and ‘now’; detect differences and similarities, discuss the policy facts and assess the impact of policy pursued on output. To the best of our knowledge, this paper is the first attempt to study the Greek crisis experience over the two historical episodes and detect similarities and differences. Comparisons with the interwar period show that the current crisis of the Greek economy should be classified as a great depression rather than a great recession and that the inability of the national authorities to credibly adhere to their commitment to a nominal anchor was at the root of the country’s failure.

In old Chicago: Simons, Friedman and the development of monetary-policy rules

Working Paper No. 177

George S. Tavlas

This paper examines the different policy rules proposed by Henry Simons, who, beginning in the mid-1930s, advocated a price-level stabilization rule, and by Milton Friedman, who, beginning in the late-1950s, advocated a rule that targeted a constant growth rate of the money supply. Although both rules shared the

objective of eliminating the policy uncertainty emanating from discretion, they differed because of the different views of Simons and Friedman about the stability of secular relationships. Simons’ rule relates to modern rules which emphasize the pursuit of price stability as representing optimal monetary policy.

Financing exports of goods: a constraint on Greek economic growth

Working Paper No. 178

Ioanna C. Bardakas

This paper assesses the effect of financing conditions on exports of goods in Greece during the last decade. Controlling for reverse causality which is feasible with the Johansen multivariate cointegration technique (1988) we have adopted, we estimate a reduced form

of exports showing the existence of a relationship between companies’ ability to access bank financing and exports of goods both in the long and in the short-run. Robustness is established by estimating alternative specifications producing comparable results using

absolute or relative prices and allowing for cyclical effects. More specifically, we show that during an economic crisis (given that for large part of the sample period credit has been declining) a 10 percent drop in firm financing leads to a decline in export growth by 6 to 9 percent in the short-run and by 2 to

4 percent in the long-run. Additionally, a similar increase in bank financing during an economic recovery is expected to produce a 6 to 9 percent increase in exports, a result which will lead to an approximate increase of 1 to 2 percent to current GDP and economic growth.

Financial stability indicators and public debt developments

Working Paper No. 179
Athanasios O. Tagkalakis

This paper investigates the inter-linkages between financial stability and fiscal policy. It analyzes the effect of selected financial stability indicators on the probability of future debt deterioration, controlling for several macro-economic variables. We find significant evi-

dence that a fragile banking system can put at risk public finances. Weak bank profitability, low asset quality and a weak capital base increase the fragility of the banking system, thus, raising the probability of future fiscal troubles.

Does fairness matter for the success of fiscal consolidation?

Working Paper No. 180
Georgia Kaplanoglou, Vassilis T. Rapanos and Ioanna C. Bardakas

Does it matter for the success of fiscal consolidation programmes that they are fair? This question has never been empirically addressed despite its profound importance especially since many developed countries have embarked on fiscal consolidation programmes, which in many cases have led to sizeable increases in unemployment and poverty, and are met with public dissatisfaction. Using a data set for 29 OECD countries over the period 1971-2009, we argue that fairness matters, namely that improving the targeting of social transfers and their effectiveness in terms of poverty alleviation, higher public expenditure on training and active labor market policies and programmes like

social housing directed to the poor, even decreasing the VAT rate on necessities, improve the success probabilities of consolidation attempts. Introducing such concerns sheds new light on the prevailing view that the successful fiscal adjustments are those that rely on spending-cuts rather than on tax increases. The results of this paper provide empirical evidence that ameliorating the effects of adjustment, by supporting the weaker parts of society, is crucial for the success of fiscal consolidations and argues that “fair fiscal adjustments” may provide the double dividend of enhancing the probability of success of the adjustment and of promoting social cohesion.

The determinants of VAT revenue efficiency: recent evidence from Greece

Working Paper No. 181

Athanasios O. Tagkalakis

This paper examines the relationship between VAT revenue and economic activity in Greece by estimating the relationship between tax revenue efficiency and real GDP growth rate. We find a positive and significant relationship

between these variables, and show that the responsiveness of tax revenue efficiency to economic activity fluctuations has increased in the recent years. Tax efficiency is affected by changes in the ability to curb tax evasion.

BoGGEM: A Dynamic Stochastic General Equilibrium Model for Policy Simulations

Working Paper No. 182

Dimitris Papageorgiou

This paper presents the theoretical foundations and dynamic properties of a dynamic stochastic general equilibrium (DSGE) model designed for quantitative policy analysis and counterfactual exercises. The approach of the paper can be summarized as follows. First, we present the model's theoretical framework and building blocks. Then, we calibrate the model

to the Greek economy and examine the dynamic properties of the model by inspecting the sample moments produced by the model, reporting impulse response functions to a number of shocks, and by performing variance decomposition analysis. The results indicate that the model performs quite well in these contexts.

On Modeling Banking Risk

Working Paper No. 183

E. G. Tsionas

The paper develops new indices of financial stability based on an explicit model of expected utility maximization by financial institutions subject to the classical technology restrictions of neoclassical production theory. The model can be estimated using standard econometric techniques, like GMM for dynamic panel data and latent factor analysis for the estimation of covariance matrices. An explicit functional form for the utility function is not needed and we show how measures of

risk aversion and prudence (downside risk aversion) can be derived and estimated from the model. The model is estimated using data for Eurozone countries and we focus particularly on (i) the use of the modeling approach as an “early warning mechanism”, (ii) the bank- and country-specific estimates of risk aversion and prudence (downside risk aversion), and (iii) the derivation of a generalized measure of risk that relies on loan-price uncertainty.

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