Greece: Taking stock
Economic and financial changes since the onset of the global and euro area crises

Helen Louri-Dendrinou
Professor, Athens University of Economics and Business
Former Deputy Governor, Bank of Greece
LSE, October 2014
1. THE ECONOMY

The roots of the crisis and developments since programme start
Entry into the euro area was expected to produce a low inflation, low-interest rate environment

Indeed, from 2001 through 2008:

- Average Inflation was in the low single digits.
- Real growth averaged almost 4 per cent.
- Interest rate spreads fell to around 20 bp’s.
Twin deficits

Greece seemed to have found the formula for economic success!

But...beneath the surface
Deep seated problems were left unaddressed.

These problems were the large and growing fiscal and external imbalances.
Unsustainable Fiscal Imbalances

From 2001 until 2009:

Fiscal deficits almost continuously topped 5 per cent of GDP.

The growing deficits were expenditure driven.


Government spending rose significantly, crowding-out the tradeables sector.
Fiscal Imbalances were structural

- Pensions not a funded system.
- Healthcare system not subject to budgetary controls.
- Tax administration weak and collection rates poor.
  - 36% of labour force are self-employed and pay only 6% of total income taxes
- Large underground economy – some estimates put it at 25% of GDP.
- Clientelistic political system with strong political business cycle.
The competitiveness problem grew worse.

- During 2001-2009, Greece’s competitiveness loss against its trading partners was about 30%.
- As ULCs rose, Greek exports lost market share.
- Rising private consumption (peaked at 75% of GDP vs 57% in euro area) sucked in imports.
- The current account deficit widened by 8 percentage points between 2001 and 2008.
• The prices of non-tradeables increased much faster than the prices of tradeables.
• The tradeables sector was shrinking while the non-tradeables sector was growing!
Twin deficits: Greece worst rank in euro area

Greece was the biggest outlier, needed to improve competitiveness and fiscal balances.
Why were Greece’s fiscal and competitiveness problems dangerous?

A well-functioning monetary union ideally requires:

- fiscal integration
- wage and price flexibility
- labour mobility

In the absence of fiscal integration and flexible labour and product markets:

- Fiscal discipline was essential
- Structural adjustment was needed
The break-out of the sovereign crisis

Key Events:

- A succession of fiscal surprises in 2009 and, particularly, after the October elections.
The effect of the crisis on spreads
The sovereign debt crisis

Self-fulfilling Debt Dynamics


103,7 101,7 97,4 98,9 110 107,8 107,3 112,9 148,3 129,7 170,3 157,2 175,1
The first adjustment programme: Why did it go off track?

- The first adjustment program consisted of 4 main pillars:
  - Fiscal adjustment
  - Structural reforms of labour and product markets
  - Effective measures to combat tax evasion
  - Privatization

- The government placed all emphasis on the first pillar. Other pillars were (at best) partially implemented.
- Moreover, fiscal consolidation was to be achieved using a mix of 60 per cent revenue (largely tax) increases, and 40 per cent spending cuts.
- The mix prevented any crowding-in as households and companies cut back on expenditure expecting ever rising taxes.
- And partial implementation of structural reforms raised uncertainty and led to fears of Grexit.
The first adjustment programme

- As a consequence, the recession was much deeper than expected.

Source: IMF, Reinhart and Rogoff (2009) and own calculations
The effects of the crisis

From the onset of the sovereign crisis until 2014:

- **Real GDP has contracted by more than 24%.**
- **The unemployment rate has risen from under 8% to 27%.**
- Is there light at the end of the tunnel?
- During the past few years Greece has made important progress in addressing its fiscal and external imbalances.
- Recession appears to be bottoming out.
- Real GDP growth (%): 2009: -4.4; 2010: -5.4; 2011: -8.9; 2012: -6.6; 2013: -3.3; 2014Q1: -1.1; 2014Q2: -0.3.
From 2009 to 2013:

- Fiscal consolidation has been striking.
- The general government deficit 2013 reduced to 2.1% of GDP (ex banks).
- The primary balance (ex banks) in 2013 was in surplus to the tune of 1.9% of GDP.
- The structural deficit has shrunk from 20% of GDP in 2009 to almost balanced in 2013!
Fiscal adjustment, 2

- The degree of adjustment led to a **sharp fall in spreads**.
- In April 2014, these developments facilitated the **return of the Greek sovereign to global capital markets**.
- €3 billion was raised through the sale of a **5-year bond** at a coupon rate of 4.75%. The sale was almost seven times oversubscribed.
- On 10 July 2014, the Greek government issued a **3-year bond** raising an amount of €1.5 billion at a coupon rate of 3.375%.
- On 6 May the PDMA issued **6-month Tbills** at 2.70%, while on 8 October it issued 6-month Tbills at 2.00%.
- On 15 April the PDMA issued **3-month Tbills** at (a sharply lower rate) 2.45% than previous TBill placements (3.10%). On 16 September it issued 3-month Tbills at 1.70%.
Fiscal adjustment, 3

Change in the cyclically-adjusted primary balance 2009-2012 (% GDP)

-12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16

2012-2009 change in c.a. primary balance

Cyclically-adjusted primary balance 2009

GRC, IRL, ESP, SLK, CYB, SLV, FRA, NLD, AUT, PRT, BEL, DEU, ITA, FIN, LUX
However, the gap between fiscal “effort” and “outcome” has raised a question about the size of the “fiscal multiplier”

Fiscal multiplier appears higher in Greece because of:

- low savings rate
- closed nature of economy
- liquidity/funding constraints
- fiscal consolidation biased in favour of taxes (higher tax multiplier than gov expenditure multiplier)
But debt remains high...
**Greece’s Internal Devaluation**

- Significant reduction in the current account deficit
- Significant improvement in cost competitiveness

External adjustment, 1
Current account adjustment mainly result of decline in imports
Over the long run, changes in ULCs are strongly negatively correlated with export shares.
Competitiveness is being promoted through structural reforms.

Labour market reforms have increased the ease of hiring and firing, and decentralised the system of collective bargaining, increasing the flexibility of labour markets.

Progress has also been made in reducing bureaucracy, making it easier to start a business, reducing the administrative burden on exporters, and simplifying procedures for investment in tourism.

Further important measures to liberalise product and labour markets are being taken, along with privatisations.

As a result, rebalancing is taking place. The non-tradeables sector is shrinking; this is leaving space for a larger tradeables sector to flourish.
Economic Sentiment Indicator above 90 after 4 years
PMI: general index, new orders and export orders
The medium-to-long-term outlook, 1

- Positive growth expected to return in 2014
  - fiscal drag will decline
  - competitiveness gains will further affect export performance
  - liquidity constraints likely to be loosened
  - supply-side effects of structural reforms will be evident
- Growth will initially come from a rebound in fixed capital investment and exports:
  - negative net investment of greater than 10% of GDP has reduced the capital stock considerably.
- Given cumulative reduction in GDP during the recession, prospects for a growth rebound above potential are strong.
The medium-to-long-term outlook, 2

- Studies of long-term growth suggest it depends on:
  - openness (+)
  - Inflation (-)
  - Investment (+)
  - government consumption (-)
  - institutional characteristics (+)

- The emphasis of current policy on increasing the openness of the economy, reducing the size of government consumption and improving institutional characteristics (such as public administration, bureaucracy, etc) will contribute to higher long-term potential growth rate.
  - Some estimates suggest potential growth of 3% per annum.
The banking system on the eve of the crisis, programme strategy and future prospects

2. THE BANKING SYSTEM
Greek banks sound during pre-crisis years

- Contrary to other countries’ experience, it was the sovereign’s weakness that caused problems in the domestic banking sector.
- Prior to the outbreak of the crisis, the banking sector had sound fundamentals (consolidated level - 2009):
  - The average capital adequacy ratio (CAR) was 12%
  - The aggregate loan-to-deposit ratio was 104%
  - Net interest income to risk-weighted assets (RWA) was 4.4%
- Banks held essentially no toxic assets and so remained unaffected by the US subprime crisis.
- They were highly competitive by international standards while Private Debt to GDP was significantly lower than the EU average.
- They had expanded into the South Eastern Europe (SEE), becoming a major player in the Balkans.

![Graph showing Private Debt to GDP (2008)]

The Greek banking system under stress

With the outbreak of the sovereign crisis, Greek banks:

- were hit by a series of downgrades
- experienced substantial deposit withdrawals
  - €88 billion or (-37%) in the period June 2009 to June 2012
- were cut-off from money and capital markets
  - while Greek banks could not borrow, they had to pay back maturing debts (of more than €40 billion).
- In these circumstances, the Bank of Greece stepped in, providing Greek banks with access to Eurosystem funding.

Private sector deposits (€ billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>230</td>
<td>238</td>
<td>238</td>
<td>238</td>
<td>228</td>
</tr>
</tbody>
</table>

EUROSYSTEM FUNDING (€ billion)

<table>
<thead>
<tr>
<th>Year</th>
<th>Dec07</th>
<th>Dec08</th>
<th>Dec09</th>
<th>Dec10</th>
<th>Dec11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>180</td>
</tr>
</tbody>
</table>
Bank profitability took a huge hit

As a result of these developments Greek banks experienced losses. These losses stemmed from:

- The **deep restructuring of sovereign debt**: - €38 billion
- The significant **increase in the cost of risk**, in light of the deepening economic contraction (NPLs rose from 5% in end-2008 to 24.5% in 2012).
- The marked **deterioration in gross interest expense** (banks were cut-off from money markets, while at the same time the system witnessed massive deposit outflows).
Financial stability was preserved despite solvency issues

- Domestic banks responded by deleveraging – credit to the private sector contracted by 14% between June 2010 - July 2014 (-31% deposits).
- But deleveraging itself contributed to economic contraction and created negative feedback loops between the financial and real sectors.
- What started out as liquidity problems very soon turned into solvency problems.
- The stability of the banking system could have been at risk, with possible implications beyond Greece. Yet, thanks to tight banking supervision, continuous liquidity provision and careful cash management, stability was preserved and all depositors were protected.

**Source:** Bank of Greece
The Bank of Greece’s strategy

- The Bank of Greece set-out to create a viable and well-capitalised banking system, recognizing that it would play a fundamental role in steering the future course of the economy.

- At the same time, we were fully aware that any misstep could trigger a full-scale regional banking crisis. In this fragile financial environment, any loss incurred by depositors could lead to a collapse of the banking system and a systemic crisis that engulfed the entire Balkan region. That was avoided.

- Our strategy aimed at strengthening viable institutions and winding down non-viable institutions, while safeguarding financial stability.

- In this regard we set up two main work-streams -- a capital needs assessment and a viability assessment (i.e. which banks were eligible to receive public funds).
The capital needs assessment 2012

- In early 2012, the Bank of Greece, in cooperation with Bain & Co, undertook the assessment of the capital needs of banks on a consolidated basis (both domestic and foreign units).
- To estimate the losses from domestic assets, in August 2011 we commissioned BlackRock Solutions to carry out a diagnostic assessment of banks’ domestic loan portfolios.
- To estimate losses from foreign assets, we used EBA’s stress test methodology.
- In addition, the potential for internal capital generation was estimated through a conservative adjustment of banks’ 3-year business plans.

Source: Bank of Greece Report on the Recapitalisation and Restructuring of the Greek Banking Sector
The Bank of Greece set out to determine those banks that would be eligible for programme support.
Two sets of criteria were taken into account – regulatory and business performance.

**Regulatory criteria** included:
- Loan-to-deposit ratios
- Eurosystem funding as percentage of total assets
- Core Tier 1 ratios
- Asset quality indicators
- Corporate governance

**Business performance criteria** included:
- Estimated time to repay state aid to be received (potential for capital generation)
- Cost efficiency (e.g., cost to income, staff costs as percentage of total costs)
- Commercial strengths and weaknesses (e.g. market share of deposits, deposit outflows)
- Risk-management excellence (e.g., risk-management controls)
On the basis of these two workstreams, we were able to determine:

- which **banks were eligible for public support** (core banks) as well as their **capital needs**.
- which banks were **not eligible for public support**, and their **resolution costs** (should they fail to recapitalize through private investors).

According to the MoU, banks needed **Core Tier 1 CAR above 9 % by 2014**.

Four banks were assessed suitable for recapitalisation - Alpha Bank, Eurobank, National Bank of Greece, and Piraeus Bank. These are the largest banks, that also have activities abroad.

The capital needs of the core banks and the resolution costs of non-viable banks **€50 billion** were secured from the official lenders.
The crisis acted as a **catalyst for consolidation**:

- Entering the crisis in 2009, the Greek banking system comprised 65 financial institutions (19 commercial banks, 30 foreign banks and 16 cooperative banks).
- In December 2013 it comprised 39 financial institutions (10 commercial banks, 19 foreign banks and 10 coops); the 4 core banks controlled 92% of total assets.

During the past couple of years, we have seen a rapid transformation of the banking system.

**Twelve banks have been resolved:**

- **Six commercial banks** -- Agricultural Bank, Hellenic Postbank, Proton Bank, T-Bank, Probank and FBB. And **six cooperative banks**.

**The four systemic banks have acted as consolidators:**

- Piraeus absorbed Agricultural Bank and the activities of the **three Cypriot banks** operating in Greece; it also acquired Geniki Bank and Millennium Bank.
- Alpha Bank absorbed Emporiki Bank and 3 coops.
- Eurobank absorbed New Proton and New Hellenic Postbank
- The National Bank of Greece absorbed FBB, Probank and 3 coops.
Recapitalisation of the core banks was completed by June 2013 through a combination of private capital and Hellenic Financial Stability Fund (HFSF) resources.

- Private control of core banks was retained if private investors contributed 10% of new common equity; investors received warrants to acquire all remaining HFSF shares within five years.
- Three banks raised the required 10% from private investors and hence remained in private control: namely Alpha Bank, NBG and Piraeus Bank.
- Eurobank was recapitalised solely by the HFSF.
- Attica Bank was recapitalised without HFSF support, whereas some niche players had no capital needs (e.g. Aegean Baltic Bank, Credicom Consumer Finance).
- Undercapitalised banks not eligible for recapitalisation through the HFSF were resolved and their ‘good’ part absorbed by systemic banks.
### Resolution & Recapitalisation Costs (2011-2014)

<table>
<thead>
<tr>
<th>Amounts in €</th>
<th>Credit Institution</th>
<th>Date of Resolution</th>
<th>Acquirer</th>
<th>Final Funding Gap</th>
<th>Funds to the acquirer to cover capital needs</th>
<th>Funds for share capital</th>
<th>Total Resolution Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non Systemic Banks</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proton Bank</td>
<td>9/10/2011</td>
<td></td>
<td></td>
<td>1.121.621.860</td>
<td></td>
<td>910.000.000</td>
<td>2.031.621.860</td>
</tr>
<tr>
<td>T-Bank</td>
<td>17/12/2011</td>
<td>Hellenic Post Bank</td>
<td></td>
<td>676.956.514</td>
<td></td>
<td></td>
<td>676.956.514</td>
</tr>
<tr>
<td>Hellenic Post Bank</td>
<td>18/1/2013</td>
<td></td>
<td></td>
<td>3.732.554.000</td>
<td></td>
<td>500.000.000</td>
<td>4.232.554.000</td>
</tr>
<tr>
<td>Cooper. of Lamia</td>
<td>23/3/2012</td>
<td>National Bank of Greece</td>
<td></td>
<td>55.493.756</td>
<td></td>
<td></td>
<td>55.493.756</td>
</tr>
<tr>
<td>ATE-Bank</td>
<td>27/7/2012</td>
<td>Bank of Piraeus</td>
<td></td>
<td>7.470.717.000</td>
<td>570.000.000</td>
<td></td>
<td>8.040.717.000</td>
</tr>
<tr>
<td>Cyprus Banks</td>
<td>22/3/2013</td>
<td>Bank of Piraeus</td>
<td></td>
<td>524.000.000</td>
<td></td>
<td></td>
<td>524.000.000</td>
</tr>
<tr>
<td>First Business Bank</td>
<td>10/5/2013</td>
<td>National Bank of Greece</td>
<td></td>
<td>456.970.455</td>
<td>95.000.000</td>
<td></td>
<td>551.970.455</td>
</tr>
<tr>
<td>Probank</td>
<td>26/7/2013</td>
<td>National Bank of Greece</td>
<td></td>
<td>562.733.502</td>
<td>233.000.000</td>
<td></td>
<td>795.733.502</td>
</tr>
<tr>
<td>Cooper. of Western Macedonia</td>
<td>8/12/2013</td>
<td>Alpha Bank</td>
<td></td>
<td>95.244.475</td>
<td></td>
<td></td>
<td>95.244.475</td>
</tr>
<tr>
<td>Cooperative of Evia</td>
<td>8/12/2013</td>
<td>Alpha Bank</td>
<td></td>
<td>105.178.136</td>
<td></td>
<td></td>
<td>105.178.136</td>
</tr>
<tr>
<td>Cooperative of Dodecanisou</td>
<td>8/12/2013</td>
<td>Alpha Bank</td>
<td></td>
<td>258.547.648</td>
<td></td>
<td></td>
<td>258.547.648</td>
</tr>
<tr>
<td><strong>TOTAL RESOLUTION COST FOR NON SYSTEMIC BANKS</strong></td>
<td></td>
<td></td>
<td></td>
<td>14.768.981.753</td>
<td>1.422.000.000</td>
<td>1.410.000.000</td>
<td><strong>18.059.952.012</strong></td>
</tr>
<tr>
<td><strong>Systemic Banks</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Bank of Greece</td>
<td>28/5/2012</td>
<td></td>
<td></td>
<td>9.756.000.000</td>
<td>1.079.000.000</td>
<td>8.677.000.000</td>
<td></td>
</tr>
<tr>
<td>Bank of Piraeus</td>
<td>28/5/2012</td>
<td></td>
<td></td>
<td>7.335.000.000</td>
<td>1.444.000.000</td>
<td>5.891.000.000</td>
<td></td>
</tr>
<tr>
<td>Alpha Bank</td>
<td>28/5/2012</td>
<td></td>
<td></td>
<td>4.571.000.000</td>
<td>550.000.000</td>
<td>4.021.000.000</td>
<td></td>
</tr>
<tr>
<td>Eurobank</td>
<td>28/5/2012</td>
<td></td>
<td></td>
<td>5.839.000.000</td>
<td>0</td>
<td>5.839.000.000</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL RECAPITALISATION COST FOR SYSTEMIC BANKS</strong></td>
<td></td>
<td></td>
<td></td>
<td>27.501.000.000</td>
<td>3.073.000.000</td>
<td><strong>24.428.000.000</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL RESOLUTION &amp; RECAPITALISATION COST FOR BANKS</strong></td>
<td></td>
<td></td>
<td></td>
<td>42.487.952.012</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The stabilisation of the Greek banking system

The successful implementation of the banking system strategy and the stabilization of the political situation after June 2012:

• Led to a partial return of **private** sector deposits; +€11 bn in the period June 2012 (€150bn) to December 2012 (€161bn) and +€ 14bn to Aug 2014 €164bn).

• Caused dependence on Eurosystem funding to decline by over €100bn (-70%).
Banks under close monitoring but challenges remain

- Banks that received state-aid had to provide restructuring plans including:
  - Operational restructuring
  - Divestment of non-core assets
  - NPL resolution
  - Funding
- Monitoring trustees (on behalf of HFSF) had to submit quarterly reports on governance and operations, as well as ad-hoc reports.
- However, challenges remained.
  - Net interest margin still low
  - NPLs still rising.
- Hence it was judged appropriate to have a **reassessment of capital needs**.
BlackRock Solutions conducted in the second half of 2013 a troubled assets review, a diagnostic study for the domestic loan book and an assessment for loans in foreign branches / subsidiaries.

The 2013/2014 stress test was conducted on a consolidated basis with the technical support of Rothschild; results were published in early March 2014.

Total capital needs of €6.4 billion under the baseline scenario. Adverse scenario results (€9.4 billion) taken into account for backstop measures and facilities.

**Process for calculating capital needs in the Baseline Scenario (€ billion)**

<table>
<thead>
<tr>
<th>Component</th>
<th>Value (€ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference CT1 capital (June 2013)</td>
<td>23.0</td>
</tr>
<tr>
<td>Loan loss reserves (June 2013)</td>
<td>38.4</td>
</tr>
<tr>
<td>CLPs for Greek risk</td>
<td>-50.2</td>
</tr>
<tr>
<td>CLPs for foreign risk</td>
<td>-10.0</td>
</tr>
<tr>
<td>Internal capital generation</td>
<td>10.3</td>
</tr>
<tr>
<td>Capital needs</td>
<td>6.4</td>
</tr>
<tr>
<td>Stress test CT1 capital (Dec. 2016)</td>
<td>17.9</td>
</tr>
</tbody>
</table>
Systemic banks have covered identified capital needs

- **The four core banks conducted significant capital increases** (€8.3 bn in total) in a compressed timeframe attracting strong foreign investor interest.
- Alpha Bank and Piraeus Bank raised almost €3 billion in equity – around four times their identified capital needs under the baseline; both banks repaid the preference shares issued to the Greek State in 2009 (€1.7 bn).
- Eurobank completed a €2.9 bn capital increase, returning the bank to private management.
- NBG conducted a €2.5 bn capital increase to be accompanied with additional capital enhancing measures.
- **The HFSF, which has around €11 bn reserves, acted as a backstop for the recapitalisation exercise** but was not used.
- **All four core banks have regained access to the international unsecured debt markets.**

<p>| Capital needs of four core banks (€ mn) |
|-------------------------------|----------------|----------------|</p>
<table>
<thead>
<tr>
<th>Bank</th>
<th>Baseline</th>
<th>Adverse</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALPHA</td>
<td>262</td>
<td>560</td>
</tr>
<tr>
<td>EUROBANK</td>
<td>2,945</td>
<td>4,980</td>
</tr>
<tr>
<td>NBG</td>
<td>2,183</td>
<td>2,502</td>
</tr>
<tr>
<td>PIRAEUS</td>
<td>425</td>
<td>757</td>
</tr>
</tbody>
</table>
EU developments: the Banking Union

- In June 2012 EU Heads of State and Government committed to a Banking Union, towards which progress has been made:
  - CRR / CRDIV, the backbone of the single rulebook, entered into force in January 2014
  - The Single Supervisory Mechanism (SSM) to be launched in November 2014
  - Bank Recovery and Resolution Directive to enter into force in January 2015 – Single Resolution Mechanism
  - Recast Directive on Deposit Guarantee Scheme. Supranational DGS not envisaged to equip banking union at this stage.
- The Single Supervisory Mechanism (SSM) confers new supervision powers on the ECB for the banks of the euro area (the SSM is also open to all non-euro area Member States):
  - The authorisation of all banks in Europe
  - The application of the single rulebook in the euro area
  - The direct supervision of significant banks (assets> €30 billion or constituting at least 20% of their home country's GDP - around 130 banks)
  - The monitoring of the supervision exerted by national supervisors on less significant banks (LSIs). The ECB may at any moment decide to directly supervise them.
- Four Greek Banks (Alpha Bank, Eurobank, NBG and Piraeus Bank) to be directly supervised by the SSM.
The ECB Comprehensive Assessment

• **Deadline:** ECB to conclude its comprehensive assessment of the banking system in October 2014, prior to assuming its new supervisory tasks in November 2014.

• **Coverage:** 130 credit institutions in 18 Member States (approx. 85% of euro area banking sector assets).

• **Objectives:** three main goals, namely:
  - **Transparency** Enhancing quality of information concerning conditions of banks
  - **Repair** Identifying and implementing necessary corrective actions
  - **Confidence building** Assuring all stakeholders that banks are sound and trustworthy

• **Components:** Comprises three parts (see next slide in detail):
  - Supervisory Risk Assessment
  - Asset Quality Review
  - Stress Test
Components of the Comprehensive Assessment

1. Supervisory risk assessment
   - Supervisory judgments on key risk factors, such as liquidity, leverage and funding.
   - Quantitative and qualitative analysis

2. Asset quality review
   - Assessment of data quality, asset valuations, classifications of non-performing exposures, collateral valuation and provisions.
   - Covering credit and market exposures, following a risk-based targeted approach

3. Stress test
   - Forward-looking view of banks’ shock-absorption capacity under stress
   - Conducted in collaboration with the European Banking Authority
The Asset Quality Review (AQR) is risk-based – focusing on elements believed to be most risky or non-transparent.

The AQR has three phases:

- The first phase, *portfolio selection*, is essential in ensuring that exposures with the highest risk are subject to in-depth review (proposals by NCAs subject to the minimum coverage criteria at country and bank level – challenged by the ECB).
- The second phase, *execution*, is the most complex, including data integrity validation, sampling, on-site reviews of files, collateral valuation and the recalculation of provisions and risk-weighted assets.
- The third phase, *collation*, will include a final consistency exercise to ensure the comparability of results across all portfolios for all significant banks.
3rd Component: Stress Test

• Stress test performed in close cooperation with the EBA on a sample of banks covering at least 50% of the national banking sector in each EU Member State.

• Key elements:
  • Common baseline and adverse macroeconomic scenario
  • Three-year horizon (2014 – 2016)
  • Capital adequacy thresholds of 8% and 5.5% over CET I for the baseline and adverse scenario respectively

• Focus on key risk drivers on the solvency of banks:
  • Credit risk
  • Market risk
  • Sovereign risk
  • Securitization
  • Cost of funding

• Banks have submitted preliminary bottom-up stress test results to the ECB, the national competent authorities (NCAs) and the European Banking Authority (EBA), in accordance with the EBA methodology, prescribed stress test scenarios and additional ECB guidance.
Disclosure and capital plans

- The ECB has published detailed templates, which will be used to disclose the bank-level results of the comprehensive assessment. The template comprises the following main sections:
  - Main results and overview;
  - Detailed AQR results;
  - Detailed Stress-Test results (identical to the EBA’s disclosure template).
- The results of the comprehensive assessment will be disclosed to the public by the ECB on **26 October 2014**.
- **Banks facing a capital shortfall** will be requested to submit capital plans **two weeks after the public disclosure of the results**, detailing how the shortfall will be covered within:
  - Six months for shortfalls arising from the AQR or the Stress Test baseline scenario;
  - Nine months for shortfalls arising from the Stress Test adverse scenario.
- The ECB-led Joint Supervisory Teams in the context of the Single Supervisory Mechanism (SSM) will be responsible for assessing the capital plans submitted by the banks and for monitoring their implementation.
There are two major preconditions for the restoration of positive financing flows from banks to the real economy:

- The strengthening of the banks’ balance sheets, which will be ensured via the disclosure of the ECB Assessment results and the capital actions to cover any potential losses.

- The effective NPL management:
  - Banks are investing significantly in the management of non-performing loans under the guidance of the Bank of Greece.
  - This process could help significantly in the restructuring of the economy in general as banks’ policy towards loans will effectively amount to a decision as to which companies can stay in business.

Credit growth in the future will favour business loans, in particular in export-oriented manufacturing and service sectors.
## NPLs regression

### Relationship of NPLs’ changes to the economic cycle

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>GDP growth rate (t-1)</th>
<th>Lend. – dep. rate (t-1)</th>
<th>%Δ(unemployment) (t-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-2.836**</td>
<td>1.737**</td>
<td>0.735**</td>
</tr>
<tr>
<td>Std. error</td>
<td>0.764</td>
<td>0.658</td>
<td>0.139</td>
</tr>
<tr>
<td>Adj. R-squared</td>
<td>0.889</td>
<td>Durbin-Watson 0.280</td>
<td>Jarque-Berra 1.285</td>
</tr>
</tbody>
</table>

The dependent variable is annual changes of NPLs (1999-2014). Robust errors’ specification (Newey-West filter) has been used. ** denotes significance at 5% confidence interval.

Source: Asimakopoulos & Migiakis (BoG, Oct 2014)
Alternative non-bank funding sources are developing:

- **Corporate bond markets.** Greek non-financial corporates issued senior bonds of €2.9 billion in January – September 2014, on top of €3.3 billion in 2013 (cumulatively around 4% of GDP since late 2012).

- **European Investment Bank (EIB) initiatives.** The EIB has launched a number of initiatives providing funding for infrastructure projects, SMEs (Hellenic Guarantee Fund, State Guarantee Facility), innovative firms (through Jeremie) and local authorities (Jessica & Greek Local Authorities Framework), as well as providing guarantees for trade credit. In the first 9 months of 2014, new agreements reached €1.4 billion (€1.5 billion for the full year 2013).

- **Absorption of EU Structural Funds.** In the first half of 2014, Greece absorbed €1.4 billion from Structural Funds against a Memorandum target of €1 billion. In 2013, Greece had absorbed €4.6 billion from Structural Funds (around 2.5% of GDP).

- **Foreign Direct Investment (FDI).** As Greece becomes more open, enacts reforms and moves to privatise state assets, it can expect to attract foreign funds in the form of FDI (2009-2014: inflow €7.1bn, outflow €4.3bn, net inflow €2.8bn).
To conclude...

- The Greek banking system is undergoing profound structural change. At the end of the process, it will emerge stronger and better placed to play its role in financing economic growth.
- Reform of euro area architecture is also making a more complete monetary union:
  - considerable progress has been made with banking union (not least under the Greek presidency of the EU);
  - banking union will help to break the connection between sovereigns and their banking sectors.

At the same time, non-bank funding will have to undertake a more active role in financing the economy not only in Greece but in EU as well.