

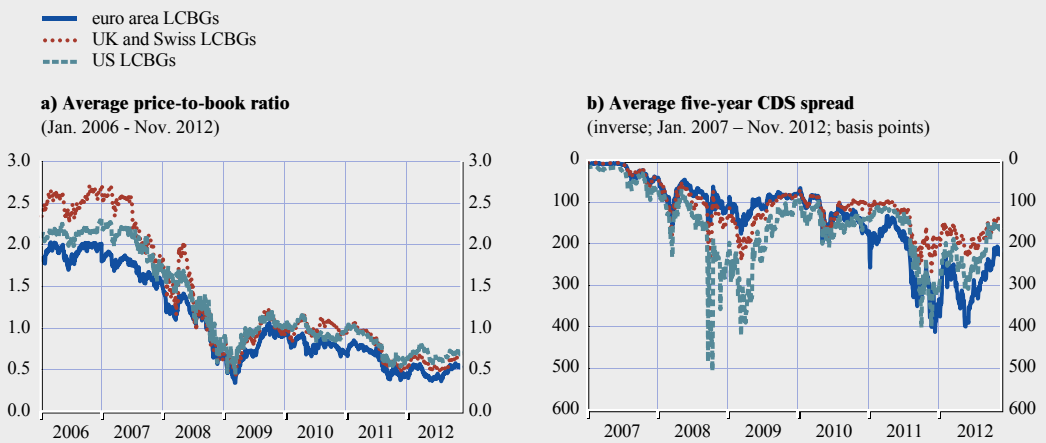
## Box 4

**DEVELOPMENTS IN THE PRICE-TO-BOOK RATIOS OF LARGE AND COMPLEX BANKING GROUPS**

The financial crisis and its consequences, including the deterioration of economic activity, have had a strong impact on the market valuation of financial institutions across the globe – particularly on that of large and internationally active banks. One manifestation thereof has been a considerable drop in the current market price-to-book value ratios of large and complex banking groups (LCBGs) (see Chart A, panel a), to levels below one for all but two institutions. This occurred despite significant efforts by banks to ease investor concerns by strengthening their balance sheets and improving their capital ratios (see Chart B).

A price-to-book ratio of less than one gives rise to concern for a number of reasons. First, it means that it is expensive for the LCBGs to issue equity, which might impinge on their ability to raise capital through financial market channels in a cost-effective way – thereby increasing the potential for asset disposal or lending restrictions. Second, it can indicate that investors believe that the book value of such banks overstates their actual value. This may stem from concerns that banks have not fully recognised losses on certain assets, a fear which may be heightened with respect to banks with operations in euro area countries where asset quality has deteriorated

**Chart A Average price-to-book ratios and credit default swap spreads of selected LCBGs**



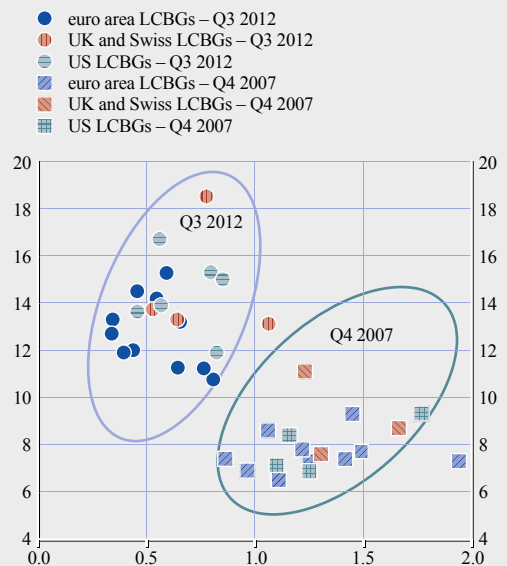
Sources: Bloomberg, Thomson Reuters Datastream and ECB calculations.

significantly or where non-performing loans are rising. Third, a price-to-book ratio of below one can indicate that investors do not believe that LCBGs can generate earnings to meet their required rates of return. Investors may be pessimistic with regard to banks' future earnings, given the weak macro-financial outlook, the outlook for LCBGs' future income from global capital market operations and the fact that necessary regulatory surcharges imposed on most LCBGs under Basel III may temporarily dampen their earnings. Pessimism with respect to future earnings seems to be more pronounced for euro area LCBGs than for their global counterparts (see Chart C). Investors may be concerned regarding the possibility of injections of public capital into banks of certain euro area countries, which could dilute dividend cashflows if they lead to the creation of preference shares. In addition, the rates of return desired by investors may have increased as LCBGs are currently considered to be more risky than they were in the past (see Chart A, panel b).

Regardless of institution or region-specific idiosyncrasies, the observed decline in the price-to-book ratios of LCBGs has largely been a phenomenon shared by all regions (see Chart A, panel a). The average correlation between daily changes in price-to-book ratios of euro area LCBGs and those of global LCBGs – which include banks in the United States, the United Kingdom and Switzerland – increased from 0.45 in the period from January 2007 to April 2010 to 0.50 in the period from May 2010 to November 2012. In addition, cluster analysis on changes in the price-to-book ratios of LCBGs indicates that

**Chart B Price-to-book ratios and Tier 1 capital ratios of selected LCBGs**

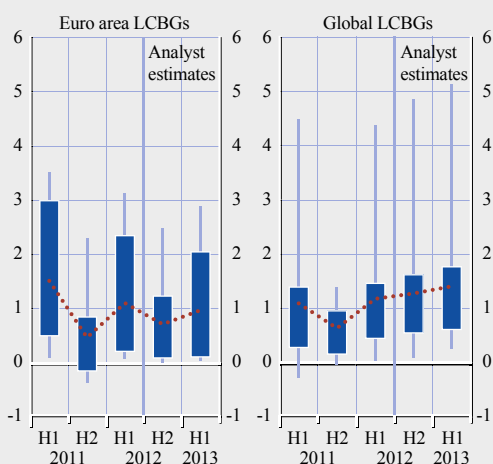
(Q4 2007 and Q3 2012; x-axis: price-to-book ratio; y-axis: Tier 1 capital ratio)



Sources: Individual institutions' financial reports and Bloomberg.

**Chart C Earnings per share of euro area and global LCBGs**

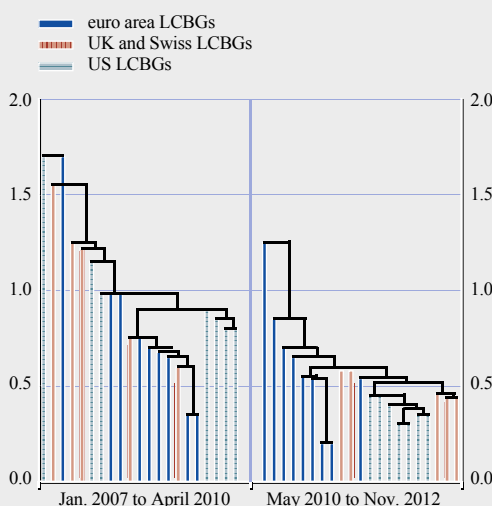
(H1 2011 – H1 2013; EUR; maximum, minimum, interquartile distribution and median)



Sources: Bloomberg and ECB calculations.

**Chart D Clustering of changes in LCBGs' price-to-book ratios before and after the euro area sovereign debt crisis**

(Jan. 2007– Nov. 2012; distance)



Sources: Bloomberg and ECB calculations.

movements have become less dissimilar since the outbreak of the euro area sovereign debt crisis, although it is still possible to distinguish sub-clusters of institutions according to the geographic region (see Chart D). These developments could highlight the aforementioned challenges and/or concerns that are specific to LCBGs.

The most concerning aspect of the currently low level of price-to-book ratios from a financial stability point of view may be the implied challenging environment for LCBGs with respect to raising capital. Against a backdrop of a weakened economic outlook, improving price-to-book ratios will require banks to address investor concerns by recognising losses on troubled assets, improving the transparency of their balance sheets and adjusting their business models to reduce risk and improve their earnings prospects. As banks address these issues, the rate of return required by investors should decline and their views regarding banks' earnings potential should improve, leading to an increased willingness to invest in LCBGs.