

# Chicago Fed Letter

## The Cyprus crisis through the lens of bank investors

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Last year, Cyprus joined its neighbor Greece on the list of eurozone countries in financial crisis. Although Cyprus is one of the smallest economies in the euro area, following the announcement of the official financial aid package for Cyprus on March 16, 2013, bank investors in the rest of the eurozone suffered large losses. Our analysis indicates that bank investors interpreted the Cypriot aid package as potentially forming a template for future eurozone bank restructurings, whereby bank investors would bear a higher fraction of the resolution costs.

We find that investors in eurozone banks behaved as if the Cyprus aid package represented a new approach to bank resolutions.

**Because** of the two countries' close economic ties, the government debt crisis in Greece had large negative spillovers on the Cypriot financial sector, prompting Cypriot officials to request official assistance in June 2012 after the country's debt was downgraded to junk status. On March 16, 2013, the Eurogroup (made up of the finance ministers of the eurozone) announced the details of a €10 billion financial aid package for Cyprus. In the days following the announcement, share prices in the euro area declined sharply and the cost of insuring public and private debt rose significantly, raising the cost of funding for some eurozone governments and private companies. The losses were particularly pronounced at large European banks. In the two weeks following the first official aid announcement, the broad EURO STOXX 50 index decreased 3% and the EURO STOXX Financials index declined by more than 8%.

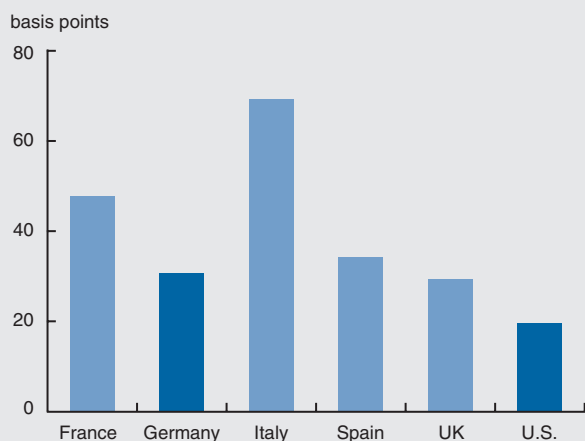
The magnitude of these losses might seem puzzling. The economic problems in Cyprus were well known for some time; the Cypriot economy and financial markets represent a very small fraction of the euro-area economy; and the large European countries have small exposures to Cyprus. The decline in the broad EURO STOXX 50 index suggests that

investors feared some spillover to the rest of Europe. However, investors may also have been reacting to the specific features of the aid package. Under the initial proposal, the resolution of the country's top two banks (Bank of Cyprus and Laiki Bank) would have imposed large losses not only on their shareholders, but also on insured and uninsured depositors at all Cypriot banks. These features represented a significant departure from the previous support programs offered to Greece, Spain, Ireland, and Portugal, where taxpayers bore most of the cost. Despite assurances by European authorities that Cyprus was a unique case, most analysts viewed the Cypriot program as setting a precedent, whereby depositors and senior creditors would be expected to bear more of the costs of future bank failures.

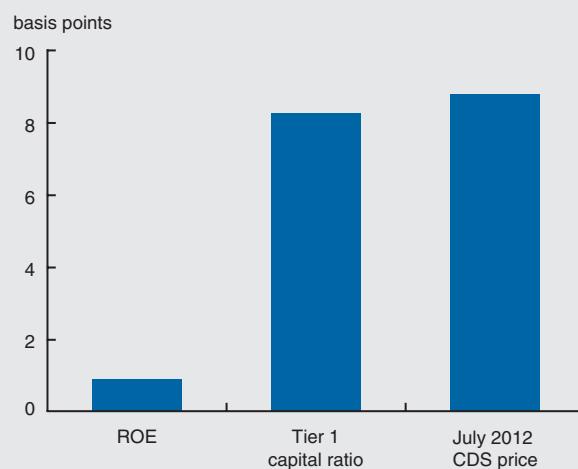
In this article, we examine changes in the security prices of large European banks at the height of the Cypriot crisis. We find that investors in eurozone banks behaved as if the Cyprus aid package represented a new approach to bank resolutions that would shift the cost of future bank failures from taxpayers to bank investors. In the two weeks following the first Cypriot aid announcement, changes in the stock prices and the cost of insuring senior debt of euro-area

## 1. Comparing excess price movements in bank CDS

### A. Price movements by country



### B. Price movements by banks' financial condition



NOTES: In panel A, the excess price movements are calculated as the cumulative change in bank credit default swaps (CDS) prices in each country from March 15, 2013, to March 29, 2013, that are greater than historical correlations between bank and sovereign CDS prices. The dark blue bars represent price changes that are statistically significant at the 5% level. The light blue bars indicate price changes that are significantly different from zero and from the changes in the CDS prices of U.S. banks at the 5% level. For details of the methodology, see our online appendix, available at [www.chicagofed.org/digital\\_assets/others/people/research\\_resources/genay\\_hesna/cfoctober2013\\_315\\_appendix.pdf](http://www.chicagofed.org/digital_assets/others/people/research_resources/genay_hesna/cfoctober2013_315_appendix.pdf). Panel B shows the cumulative excess change in the CDS price of a bank that has, relative to its peers: 1) 1 percentage point lower return on equity (ROE); 2) 1 percentage point lower tier 1 capital ratio; and 3) 100 basis points higher average CDS price in July 2012. The dark blue bars indicate changes in CDS prices that are significantly different from zero at the 5% level.

SOURCE: Authors' calculations based on data from Bloomberg.

banks were larger than one would have expected based on their historical behavior. Moreover, these excess price movements at eurozone banks were significantly greater than those at large banks outside the eurozone, indicating that the events in Cyprus had greater negative spillovers to eurozone banks. Our results also show that the reactions of bank investors were systematically related to the financial condition of the banks. Banks in relatively weak financial condition experienced larger increases in funding costs than banks in better financial condition. Similarly, investors in Spanish banks suffered relatively large losses, but investors in German banks fared better.

### Events in Cyprus

The financial sector in Cyprus, with significant exposure to Greece, suffered large losses during the Greek crisis. Cyprus was denied access to private debt markets as early as 2011 and saw its sovereign debt downgraded to junk status in June 2012. In the months leading up to the first official announcement of financial aid on March 16, 2013, there were scattered reports that depositors might be asked to “bail in” and fund the restructuring of the most troubled

Cypriot banks. However, most analysts noted that authorities would not risk undermining depositor confidence in the rest of Europe with such a departure from previous restructurings. Nonetheless, the Eurogroup announced that the €10 billion aid package to Cyprus included, among other measures, levies on insured and uninsured depositors. In the following days, Cypriot banks were closed temporarily to prevent flight by depositors and there were widespread protests in Cyprus against proposed depositor losses. On March 19, the Cypriot parliament voted down the initial agreement. On March 25, 2013, eurozone and Cypriot officials announced a new plan that did not impose losses on insured depositors. The country's two largest banks would be restructured, with the second largest (Laiki Bank) separated into a “good” and a “bad” bank and eventually wound down. Investors with more than €100,000 on deposit at either of the two banks would bear the cost of restructuring, along with shareholders and bondholders (including senior bondholders). Cypriot banks reopened on March 27, with capital controls for both domestic and international transactions that remain in effect today.

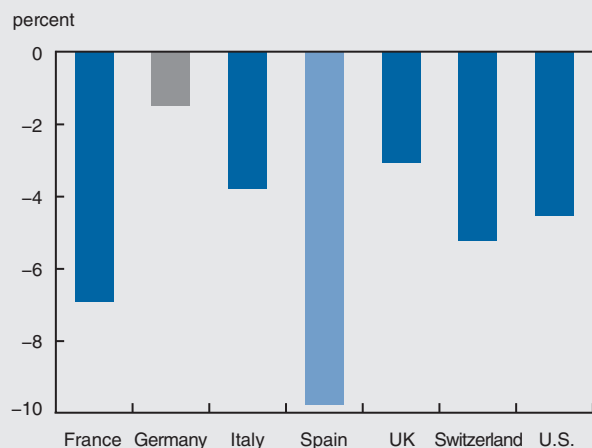
### European investors' reaction

In the two weeks following the first announcement on March 16, European equity prices declined and the cost of insuring public and private debt rose. The eurozone's broad stock market index fell by 3%, while stock market indexes in some of the peripheral countries, such as Spain, declined by over 9%. At the same time, prices of credit default swaps (CDS) on European sovereign debt rose 12 basis points. Losses for bank investors were even larger. European bank shares fell nearly 11%, and bank CDS prices rose on average by 30 basis points.

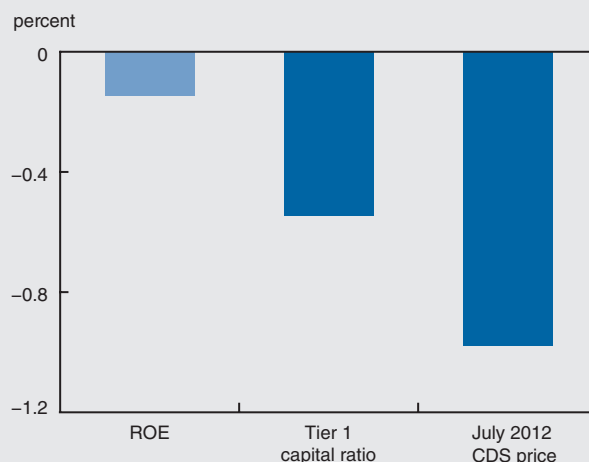
If the events in Cyprus had negative economic implications for countries in the rest of the eurozone, we would expect the changes in major stock market indexes and CDS prices on sovereign debt to reflect these broader effects. Therefore, to isolate the implications of the Cypriot package on the large eurozone banks, we compare movements in bank shares and CDS prices during the two weeks following the March 16 announcement to their typical correlations with the broad stock market indexes and sovereign CDS prices. We then pose the following questions:<sup>1</sup> Did stock and CDS prices of large European banks move more than would seem to be justified by

## 2. Comparing excess bank stock returns

### A. Excess returns by country



### B. Excess returns by banks' financial condition



NOTES: In panel A, the excess returns in bank shares during the March 15, 2013, to March 29, 2013, period are calculated as the return on each bank's shares that are greater than the return that would be expected given historical correlations between the bank's share prices and the broad euro-area stock market. The dark blue bars indicate excess stock returns that are significantly different than zero. The light blue bar indicates excess stock returns that are statistically different from the stock returns of U.S. banks. The gray bar indicates stock returns that are statistically indistinguishable from zero. For details of the methodology, see our online appendix, available at [www.chicagofed.org/digital\\_assets/others/people/research\\_resources/genay\\_hesna/cfoctober2013\\_315\\_appendix.pdf](http://www.chicagofed.org/digital_assets/others/people/research_resources/genay_hesna/cfoctober2013_315_appendix.pdf). Panel B shows cumulative excess stock returns of a bank that has, relative to its peers: 1) 1 percentage point lower return on equity (ROE); 2) 1 percentage point lower tier 1 capital ratio; and 3) 100 basis points higher average CDS price in July 2012. The dark blue bars indicate stock returns that are significantly different from zero at the 5% level; the light blue bar shows returns that are statistically indistinguishable from zero.

SOURCE: Authors' calculations based on data from Bloomberg and The University of Chicago Booth School of Business, Center for Research in Security Prices.

the movements in broad stock market indexes and sovereign CDS prices? If there were such excess movements in prices of bank securities, how did they compare with the reactions of bank investors outside the eurozone—such as in the United States, the UK, and Switzerland—that would not be affected by potential changes in the eurozone resolution process? And, were investor losses greater for banks in a more fragile financial condition?

First, we estimate the typical relationship between the share and CDS prices of the 15 large eurozone banks and broad stock market indexes and sovereign CDS prices, using data prior to the March 16 announcement. We then calculate excess price movements in bank securities as the difference between actual changes in bank share and CDS prices from March 15, 2013, to March 29, 2013, and changes that would have been expected based on their historical correlations with broad stock indexes and sovereign CDS prices. Then, we compare these excess movements in eurozone security prices with changes in the share and CDS prices of large banks in the United States, the UK, and Switzerland.

If the events in Cyprus represented bad news for banks in the eurozone

particularly, we would expect euro-area banks to have larger declines in their share prices and greater increases in their CDS prices than typical. Moreover, we would expect these losses to be larger than those at non-eurozone banks.

### Bank creditors' reaction

Figure 1, panel A shows the cumulative excess changes in the CDS prices of banks at the height of the crisis in Cyprus. All large banks—including those in the United States and the UK—had outsized increases in their CDS prices relative to changes in sovereign CDS prices. Hence, the Cypriot events appear to have had negative spillovers for the cost of insuring senior debt of all banks, regardless of location. However, with the exception of Germany, the cumulative increases in the cost of insuring the debt of eurozone banks rose significantly more than the cost of insuring U.S. bank debt. Between March 15, 2013, and March 29, 2013, the excess changes in U.S. bank CDS prices cumulated to 20 basis points. In contrast, the cumulative excess increases in the CDS prices of European banks ranged from 31 basis points for German banks to nearly 70 basis points for Italian banks. CDS spreads indicate the annual cost, as a percentage

of the amount to be protected, of buying protection against the risk of default on a bond for a fixed period. The CDS spreads reported show the annual cost of protection against default of senior debt within five years. Hence, our results

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show that the annual cost for \$10 million of such protection increased by \$20,000 for U.S. banks and by as much as \$70,000 for Italian banks.

Moreover, these changes in bank CDS prices were systematically related to the financial condition of the banks (figure 1, panel B). One measure of banks' financial fragility and sensitivity to European events is the level of their CDS prices during a previous crisis spike, e.g., in July 2012, when European CDS prices surged. We find that banks that faced a higher cost of insuring their debt in July 2012 also saw these costs surge more during the Cyprus events. If a bank's CDS price in July 2012 was 100 basis points higher than its peers', all else being equal, the cost of insuring its senior debt rose 10 basis points more than that of its peers. Similarly, banks that had lower tier 1 capital ratios (a measure of solvency) and lower returns on equity saw the cost of insuring their senior debt rise more than that of their peers. These results suggest that bondholders of more financially fragile banks, which are more likely to be affected by a change in bank resolution practices, reacted more negatively to the Cyprus events.

### **Bank shareholders' reaction**

The reactions of shareholders at European banks were more mixed, ranging from no significant change in the share prices

of German banks to very large losses at Spanish banks. Cumulative excess losses at Spanish banks totaled nearly 10% (figure 2, panel A). Similarly, cumulative losses over the two-week period totaled over 6% for French banks and close to 4% for Italian banks. However, with the exception of Spanish banks, the excess returns at eurozone banks were not significantly different from the 4% decline at U.S. banks.

While the magnitude of stock price losses at most eurozone banks was similar to the losses at U.S. banks, banks in a more fragile financial condition had larger losses than stronger banks (figure 2, panel B). Specifically, banks with lower capital ratios and banks that exhibited more vulnerability during a previous crisis spike saw their stock prices decline more than their peers' and these differences were statistically significant. Less profitable banks also experienced larger stock price losses, but these results were not statistically significant.

Our results suggest that bank investors initially interpreted the aid package offered to Cyprus as potentially forming a template for future eurozone bank restructurings, whereby they would bear a higher fraction of the resolution costs. Moreover, investors in banks in a more fragile financial condition and Spanish banks experienced larger losses than others, while German bank investors

did not react as negatively as those in other eurozone countries.

### **Conclusion**

Currently, European Union leaders are crafting the Bank Recovery and Resolution Directive, which is aimed at harmonizing the principles for bank resolutions across the 27 euro countries and represents a key step in establishing a euro-area banking union. While the directive is still preliminary, it is expected to establish a single resolution authority with access to shared funds and a common hierarchy of how bank investors would fund potential future bank restructurings.<sup>2</sup> For instance, while insured depositors would be shielded from potential losses, large corporate depositors, unsecured senior creditors, subordinated debtholders, and shareholders are expected to share in the cost of funding bank resolutions. Our research suggests that investors at financially more fragile European banks may have anticipated such changes when the Cypriot aid package was announced in March.

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<sup>1</sup> For details of our estimation procedure, see our online appendix, available at [www.chicagofed.org/digital\\_assets/others/people/research\\_resources/genay\\_hesna/cf10october2013\\_315\\_appendix.pdf](http://www.chicagofed.org/digital_assets/others/people/research_resources/genay_hesna/cf10october2013_315_appendix.pdf).

<sup>2</sup> See press release by the European Council, available at [www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ecofin/137627.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/137627.pdf).