

ANALYZING BANK PERFORMANCE: ROLE OF COMPREHENSIVE INCOME

The Need to Increase Investor Attention on Other
Comprehensive Income Statement Items

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Foreword

The information reported on the statement of other comprehensive income (OCI) is an integral part of performance reporting. Yet, there are numerous anecdotal claims of many investors ignoring OCI information. Apart from possible beliefs about limited usefulness of OCI information, investors are likely ignoring OCI due to the tendency among preparers to accord less prominence to OCI information. For example, disclosures related to the OCI statement are inadequate and less comprehensive than those related to the balance sheet and income statement. Concurrently, financial information data aggregators do not provide granular OCI information at the level that they do for income statement and balance sheet line items. In effect, poor disclosures and non-availability of ready-to-use time-series data likely contribute to the underutilization of OCI information by investors.

To elaborate on the usefulness of OCI information, this report reviews existing academic evidence and analyzes net OCI and available-for-sale and cash flow hedge financial instruments' gains or losses from 44 global (US, EU, and Canadian) and mainly large, complex banks over an eight-year reporting period (2006–2013). One of the reasons we focus on banks is that available-for-sale re-measurements, apart from being material, will have increased importance because they will have an effect on regulatory capital in several of the jurisdictions that have adopted Basel III. Linked to the capital implication is the anticipated adverse effect on bank net asset values due to potential interest rate increases if and when there is a reversal of the accommodative monetary policy. Conversely, reduced sovereign debt risk in several European countries could result in available-for-sale gains and increases in bank net asset values and price-to-book ratios.

Our study findings show that OCI information has economic information content and that losses on the OCI statement are more common than losses on the income statement. In this vein, we propose the following measures to enable and encourage investors to increase scrutiny and incorporate OCI in their valuation and performance analysis: (1) enhancement of the presentation and disclosure of OCI line items by financial statement preparers and standard setters, (2) explanation of the purpose of OCI within the conceptual framework and incorporation of enhanced presentation principles into the intended performance reporting project, and (3) incorporation of granular OCI information into data aggregators' electronic databases to facilitate increased investor access.

Though our study is focused on banks, these recommendations are applicable to OCI information for insurance companies (for which there could be expanded use of OCI as a result of proposed standards updates) and non-financial companies. Interestingly, one of the studies reviewed in this report (Nissim 2011) found that models that value insurance companies on the basis of book value multiples (price-to-book ratios, or P/Bs), which include unrealized OCI gains or losses in the book value, are more predictive than valuation models based on earnings-based multiples as well as those based on P/B multiples where book value excludes the balance sheet component of OCI.

Executive Summary

This report assesses and affirms the usefulness to investors of other comprehensive income (OCI) items in financial statements and aims to inform ongoing standard-setter consideration regarding the usefulness and purpose of the OCI statement. The report focuses on reviewing OCI reporting in the banking sector—with data from 44 mostly large, complex banking institutions across the EU, the United States, and Canada—predicated on the view that the information on both the income statement and the OCI statement ought to be made as useful as possible for the benefit of investors. Although the focus of the study is on banks, we believe that the findings and policy recommendations in this paper are applicable to reporting entities across all industries.

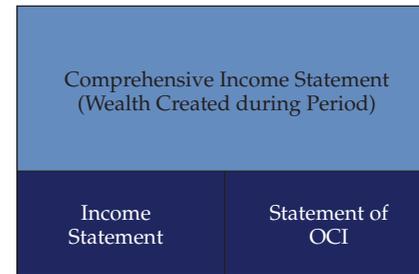
A Tale of Two Income Statements

The economic meaningfulness of the comprehensive income statement is a matter of great debate by stakeholders, including accounting standard setters, academic researchers, investors, and preparers of financial statements. In its entirety, the comprehensive income statement—comprising the income statement and the statement of OCI—reflects the wealth created during a reporting period, including the value added from operating and investing activities and gains or losses from re-measurements of assets and liabilities. **Figure 1.1** shows the key elements of the comprehensive income statement.

Although the statement of OCI is a required financial statement,¹ a perspective that has gained considerable currency

¹Under the International Financial Reporting Standards (International Accounting Standard [IAS] 1, *Presentation of Financial Statements*), the OCI statement can be either a standalone statement or a section within the statement of comprehensive income. Similarly, under US GAAP (Accounting Standards Update [ASU] No. 2013-02), the OCI statement is either part of a single statement or the second part of a two-part comprehensive income statement.

Figure 1.1. Key Elements of Comprehensive Income Statement



in much of the related commentary is that items assigned to OCI are transitory and noisy in nature and are ignored by investors, and thus are of limited relevance for investment analysis. Exemplifying this perspective is the following reader comment made in response to a 2014 *Wall Street Journal* article on OCI:²

I teach intermediate accounting and find it hard to explain exactly what OCI is. I tell my students it's where companies dump gains and losses that they don't want to impact the bottom line.

Effectively, it seems that in the eyes of many, only one portion of the comprehensive income statement (the income statement) is meant to inform readers on performance and the “other” statement seems to hang about as an inconvenient appendage attached to what really matters.

Lack of Defined Purpose of OCI Statement Lowers Its Prominence

Exacerbating the doubts about the usefulness of recorded OCI items is the seemingly ad hoc requirement by standard setters regarding which information should be presented in the OCI statement. Currently, there is no

²Chasan (2014).

clear conceptual distinction between items recognized in the income statement and those recognized in the OCI statement. Current OCI line items include pension-related re-measurements; foreign currency translation adjustments; property, plant, and equipment and intangible revaluations; valuation changes in available-for-sale securities; and cash flow and net investment hedge unrealized gains or losses. Recent accounting standard updates will potentially result in the expansion of OCI items to include the following items:

- International Financial Reporting Standards (IFRS) insurance accounting items (amounts that unwind over time due to discount rate changes)³ and
- own credit risk fair value adjustments of particular financial liabilities (under US GAAP and IFRS).

One other indicator of the absence of a robust conceptual basis of OCI is the difference between US GAAP and IFRS for items that can be reclassified from the OCI statement to the income statement (recycled). US GAAP allow more line items (e.g., pension re-measurements) to be recycled than do IFRS requirements, further signifying what seems to be an ad hoc basis for determining what is recognized in and excluded from the OCI statement.

The use of OCI, in our opinion, can mainly be seen as a pragmatic way of dealing with the varied stakeholder views on how to best measure assets and liabilities. To balance varied viewpoints, standard setters require mixed measurement attributes as a basis for recognizing assets and liabilities.⁴ The OCI statement is used when there is a dual measurement for particular line items (e.g., available-for-sale, or AFS, securities). In these cases, fair value measurement is applied for balance sheet recognition whereas amortized cost measurement is applied for the income statement recognition related to these line items. Concurrent to the mixed measurement attributes, mixed presentation approaches, where there is a split between items reported as income versus those reported in the OCI statement, are the norm.

OCI has also been used as a “bridging mechanism” to manage accounting mismatches, including recognition and measurement mismatches. For example, cash flow hedges recognized on the OCI statement address financial statement recognition mismatches between hedging instruments and hedged items (i.e., the recognition on financial statements occurs during different time periods). The recognition of fair value re-measurements through OCI for AFS securities addresses the measurement mismatches with their related liabilities.

Effectively, when the predominant purpose of OCI is as an accounting “bridging mechanism” to deal with measurement difficulties, it contributes to stakeholders considering the OCI statement to be not as economically meaningful as the income statement. Without any robust conceptual foundation, there is a general perception that standard setters have required the use of OCI principally as a practical expedient to reduce the volatility of net income and as a parking lot for difficult-to-resolve accounting issues.

³International Accounting Standards Board (IASB 2013a, 2013b).

⁴Some assets and liabilities are measured at fair value (e.g., trading book financial instruments), whereas others are measured at historical cost (e.g., land) or modified historical/amortized cost (e.g., loans, goodwill, debt).

Too Important for Investors to Ignore

The perspective of “noisy” OCI items has tended to be backed by several earlier-dated academic studies. However, as we show in Section 3, there is an abundance of recent, robust academic evidence showing that individual OCI items do have economic information content and thus are relevant for performance analysis and valuation. Furthermore, as highlighted by Mulford, Poropatich, and Tang (2013), there is a general need for investors to pay attention to OCI information across all industries owing to the materiality of the related amounts. These amounts represent changes in the values of assets deployed and liabilities/obligations incurred during the course of recurrent business activities (e.g., liquidity management, risk management). Mulford et al. (2013) reviewed the OCI reporting of S&P 100 Index companies in the United States over 2010–2012 and showed that

- OCI losses were incurred more often than gains and
- net OCI was more than 5% of net income in 38.33% of the cases studied, which is indicative of material items being recognized on the OCI statement.

Because OCI losses are more common than gains, Mulford et al. (2013) deduced that it is likely that a two-part comprehensive income statement (OCI statement and income statement) would enable companies to minimize income statement losses. In addition, the authors noted that

these findings should remind analysts and investors that a complete financial analysis should include a careful review of elements of other comprehensive income. (p. 1)

Commendably, during the past few years, both the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) have taken measures to increase the prominence of OCI. Starting in 2012, companies have been required to report OCI items either on a single continuous comprehensive income statement or on a separate statement.⁵ In addition, companies are required to separately classify recyclable and non-recyclable items on the OCI statement. Mulford et al. (2013) spelled out the positive implication of prominent presentation of the OCI statement for investors:

Given the preponderance and significance of losses noted in this study, it would appear that this move on the part of FASB [the requirement of prominent presentation of OCI statement components since 2012] was an important one. Analysts and investors, accustomed to considering other comprehensive income gains or losses as more a part of equity than income, may have been lulled into excluding such items from their analyses. A more prominent display of these items may help them better understand their importance and effect on a company's financial performance. (p. 11)

⁵Previously, companies could report OCI changes in the statement of equity, and in many cases, this requirement made it quite hard for readers of financial statements to readily and precisely identify OCI amounts because there are many other entries (prior-period adjustments, capital issuances, and redemption) reported in the statement of equity. In addition, there was often poor disaggregation of OCI amounts in the statement of equity (e.g., the distinction between unrealized and reclassified-to-income-statement gains or losses was not as common as it is today).

In a similar vein, CFA Institute supported these noted enhancements in the presentation of the OCI statement and related line items.⁶ The need for investors to pay attention to unrealized gains or losses was also highlighted by IASB chairman Hans Hoogervorst in a recent speech:⁷

Unrealised income does not only consist of gains, but also of losses. Downplaying the significance of unrealised losses can be very hazardous.

A very real example of the dangers of relegating unrealised losses to OCI is what happened in the first decade of this century with some big American car manufacturers and airline companies. Their employee benefit schemes had caused huge liabilities to build accumulated OCI. Although unrealised, these deficits were not unreal....

I would conclude that a systematic relegation of unrealised profits or losses to OCI is extremely problematic. Moreover, where OCI is used to capture short-term “market volatility” of long-term assets or liabilities, the information it contains should not be ignored. While income in OCI may be of a less certain nature than income captured in profit or loss, OCI may contain indicators of risk that may materialize sooner than you think. Clearly, ignoring unrealised elements of income may be hazardous to your financial health. (2014, pp. 6–8)

Hoogervorst’s speech emphasizes the economic information content reflected in the OCI statement and the perils of ignoring such information.

Analytical Approach

To assess OCI information content, we reviewed academic literature that presents related empirical evidence (Section 3). Furthermore, we conducted an independent study of OCI information, using data from 44 mostly large, complex banks spread across 15 countries (30 banks from 13 EU countries, 10 from the United States, and 4 from Canada), with a total of 352 bank-year observations.

Similar to two recent CFA Institute publications (Parts 1 and 2 of “Financial Crisis Insights on Bank Performance Reporting”),⁸ the analytical horizon (2006–2013) includes both the pre-crisis and the crisis periods. The focus on these periods allows us to analyze how changes in the values of assets (re-measurements) recognized in the OCI statement could be influenced by changes in the economic environment and thereafter enables us to infer the economic information content of these re-measurements.

⁶See CFA Institute (2010, 2011a); in these comment letters, CFA Institute expressed its support for prominent presentation of OCI. See also Peters (2012), which highlighted the case of Bank of America: For the 2011 reporting period, a contrasting picture of profitability was derived from total comprehensive income (\$3.8 billion loss) and from reported net income (\$1.4 billion profit).

⁷The broader context of the speech was an argument against the systematic relegation of unrealized income to the OCI statement and the need for a high threshold for recognizing items on the OCI statement. The speech also justified the recent IASB decision to accord prominence to the profit and loss account as the principal performance statement, as articulated in its 2013 conceptual discussion paper (IASB 2013c). This decision is likely to be reflected in the Conceptual Framework Exposure Draft expected to be issued in 2015.

⁸CFA Institute (2014a, 2014b).

The coverage of EU and Canadian (post-2011) banks, which are IFRS-reporting banks, allows us to present evidence on OCI reporting under IFRS.⁹ EU banks dominate our sample because of their IFRS reporting and because of similarities in business model and balance sheet structure among many European banks. The analytical period of 2006–2013 allows us to review the period when the related EU banks reported under IFRS. Also, we were most likely to have access to higher-quality OCI reporting from annual reports of recent years compared with older (pre-2006) financial statements. In our study, we principally sought to identify whether and how the economic and information characteristics of selected OCI statement components differ from the selected income statement components.

Why We Focused on Banks

A focus on banks is appropriate because these institutions have large amounts of assets and liabilities whose gains or losses are recorded in the OCI statement. For example, AFS securities are part of the liquidity buffers used to structurally hedge fixed-rate liabilities.¹⁰ In addition, banks use derivatives designated as hedging instruments under cash flow hedges—typically for the purposes of hedging variable interest rate and foreign currency exposures.

Materiality of Changes in the Value of AFS Securities

As can be seen in **Table 1.1**, there are material AFS re-measurements reported on the OCI statement. For example, in 2008, HSBC's AFS unrealized loss (as a percentage of equity) had a greater magnitude than net income (return on equity, or ROE). Furthermore, the decimation of Dexia's book value of equity in 2008 was in large part attributable to the significant AFS unrealized losses (€11.1 billion) that occurred that year.¹¹ Incidentally, notwithstanding those massive losses and the need for a state bailout in 2008, Dexia's regulatory capital, which filters out AFS unrealized gains or losses,¹² portrayed the picture of a healthy bank throughout the 2007–10 periods.¹³ This observation shows that investors should not ignore the unrealized losses that are not reported as part of net income when assessing the solvency and risk of banks. In general, the carrying value of AFS securities can in many cases materially affect the book value of a bank's net assets and, therefore, should be an integral part of investors' bank performance analysis.

⁹Compared with US GAAP-related evidence, there are few studies that evaluate the reporting of OCI under IFRS.

¹⁰An analysis of Bankscope data for 29 European banks for the 2005–11 reporting periods showed that AFS securities represented an arithmetic mean of 9.3% of total assets. Another study that looked at large samples of banks (Barth, Buscari, Kaznik, and López-Espinosa 2014) found that on average, AFS securities amount to 11% of total assets and approximately 95% of non-trading securities.

¹¹Book value of equity dropped from €16.6 billion at the end of 2007 to €5.6 billion at the end of 2008.

¹²Basel II allowed the application of prudential filters on AFS unrealized gains or losses (i.e., eliminating amounts from calculations) when determining regulatory capital.

¹³European Commission (2014, p. 61) showed that Dexia had core Tier 1 capital ranging from 8.2% to 12.1% in the 2007–10 period.

Table 1.1. Illustration of Material AFS Unrealized Losses across Banks

| Company | Country | Year | ROE | AFSUGLE |
|-------------------------------|----------------|------|--------|---------|
| Dexia | Belgium | 2008 | -57.8% | -209.9% |
| Deutsche Bank | Germany | 2008 | -12.2 | -14.1 |
| Intesa Sanpaolo | Italy | 2011 | -17.0 | -5.8 |
| Banco Sabadell | Spain | 2008 | 15.2 | -9.6 |
| Banco Sabadell | Spain | 2010 | 6.7 | -10.6 |
| Banco Santander | Spain | 2008 | 15.6 | -5.9 |
| BBVA | Spain | 2010 | 13.3 | -5.2 |
| BBVA | Spain | 2008 | 20.2 | -7.7 |
| HSBC | United Kingdom | 2008 | -12.2 | -23.7 |
| The Royal Bank of Scotland | United Kingdom | 2008 | -42.9 | -8.5 |
| Wells Fargo & Company | United States | 2008 | 2.7 | -6.7 |
| Bank of New York Mellon | United States | 2008 | 2.4 | -8.1 |
| Toronto-Dominion Bank | Canada | 2008 | 14.9 | -5.4 |

Notes: AFSUGLE = AFS unrealized gains or losses/Equity. In Section 6, we also show the relative magnitude of components of net income (net interest income, fee income, impairments, trading profit) versus AFS and cash flow hedge gains or losses.

Source: Annual reports.

Assessing Asset and Liability Management

As previously noted, AFS assets are an integral part of a bank's asset and liability management (ALM) because these securities provide liquidity buffers and they are used to hedge fixed-rate liabilities. At the same time, a measurement mismatch arises owing to the fair value recognition of AFS assets relative to the amortized cost measurement of liabilities. To avoid earnings volatility due to the noted measurement mismatch, AFS re-measurements are recognized on the statement of OCI, instead of on the income statement. Notwithstanding their recognition on the OCI statement rather than on the income statement, AFS re-measurements can convey the risk (i.e., asset value volatility) associated with ALM choices and potentially inform investors on the effective stewardship of assets by management.

Potential Effect of AFS Re-measurements on Regulatory Capital

Another reason why investors need to pay more attention to securities classified as AFS is that in future reporting periods, related fair value re-measurements will affect the regulatory capital of banks to a greater extent than they have in the past. Prudential regulators, under Basel II, allowed banks to strip out AFS re-measurements when determining regulatory capital. Basel III eliminates the prudential filter, and therefore, AFS unrealized gains or losses will influence regulatory capital.¹⁴ The requirements of the newly issued IFRS 9, *Financial Instruments*—which replaces International Accounting Standard (IAS) 39, *Financial Instruments: Recognition and Measurement* effective 1 January 2018—are unlikely to neutralize the impact of unrealized gains

¹⁴Some countries (e.g., most EU countries, including Italy and Ireland) have decided to continue to apply the prudential filter, and therefore, for banks in these countries, AFS unrealized gains or losses will not affect regulatory capital in the foreseeable future.

or losses of securities on regulatory capital. Under IFRS 9, many securities currently classified as AFS will likely be reported under the “fair value through OCI” category. As a result, unrealized gains or losses of equity and debt securities will still be expected to affect regulatory capital for banks in countries that will strictly follow Basel III and not apply the prudential filter toward such re-measurements.

Without prudential filters, the link between bank regulatory capital and the economic environment (e.g., interest rate changes) will become more pronounced because the values of AFS debt securities are sensitive to interest rates. As pointed out by Papa (2014),¹⁵ there could be significant decreases in bank balance sheet net asset values and regulatory capital if and when there is a reversal in the accommodative monetary policy and a corresponding increase in interest rates. Conversely, the relatively reduced European periphery sovereign debt risk should increase the values of AFS European periphery sovereign debt holdings, and the banks holding these securities should have higher net asset values and regulatory capital levels.

Potential Smoothing of Income through Timing When to Realize Gains or Losses

As highlighted by Barth, Buscari, Kaznik, and López-Espinosa (2014), AFS securities could be used to manage earnings and regulatory capital.¹⁶ Using data from over 6,000 listed and unlisted US banks covering the 1996–2011 period, the authors showed that AFS realized gains or losses are used to smooth earnings and regulatory capital. The study found that if the earnings before adjusting for AFS realized gains or losses were positive (gain), then an AFS realized loss was typically recorded. Conversely, if the earnings before adjusting for AFS realized gains or losses were negative (loss), then an AFS realized gain was typically recorded. These findings are indicative of AFS realized gains or losses being used to smooth earnings across reporting periods and the need for investors to monitor the management of AFS securities.

Summary of Key Findings and Policy Recommendations

The central proposition of this paper is that OCI statement information is decision useful and should therefore be accorded prominence, enhanced, and made more readily accessible so as to encourage increased utilization of this information by investors. This proposition is backed by the following key findings, discussed in Section 2 and derived from the analysis of bank data (Sections 4, 5, and 6) and academic evidence (Section 3):

¹⁵Papa (2014) discussed the effects of unwinding low interest rates on bank risk exposures and highlighted the effect of interest rate increases on Barclays' AFS reserve (i.e., part of the accumulated other comprehensive income account). A 100 bp rise in interest rates would result in a GBP863 million unrealized loss for the year ended 2013 (i.e., 1.35% of equity). Incidentally, cash flow hedges, which are another OCI statement line item, also exhibit significant interest rate sensitivity—a 100 bp increase would result in an additional unrealized loss of GBP2.831 billion for Barclays for the year ended 2013 (4.42% of equity).

¹⁶Items recognized on the income statement, including realized gains or losses, affect regulatory capital. Under Basel II, however, unrealized gains are excluded from the regulatory capital calculation (i.e., prudential filters are applied).

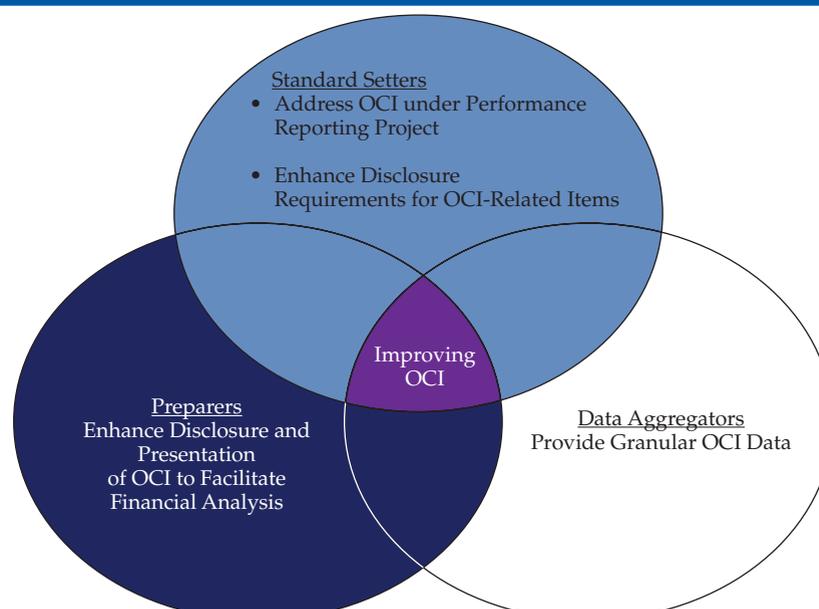
- There are distinctive patterns of net OCI versus net income gains/losses for the sample banks that we analyzed. Net comprehensive income and net OCI losses tend to be more common than net income statement losses. In addition, reclassified amounts had smoother period-to-period variation than re-measurements had. These distinctive patterns point to the need for ongoing OCI scrutiny by investors.
- AFS and cash flow hedge re-measurements have economic information content and are predictive of future cash flows.

Notwithstanding the economic information content and patterns that warrant investor scrutiny of OCI information, there are structural impediments to investors accessing and thereafter using such information for financial analysis. These impediments include (1) poor presentation and disclosure of OCI items by financial statement preparers and (2) financial information data aggregators' failure to provide granular OCI data (many do not provide any OCI statement information).

As depicted in **Figure 1.2**, we propose recommendations that need to occur concurrently to ensure improvement in OCI reporting and more readily accessible OCI information. These recommendations, which we elaborate on in Section 2, include the following.

- Enhancement of the presentation and disclosure of OCI line items by financial statement preparers. This requires preparers to provide disclosures that disaggregate line items as well as disclosures that shed light on economic factors that influence AFS and cash flow hedge re-measurements reported on the OCI statement.
- Enhancement by standard setters of disclosure requirements pertaining to OCI line items and other related line items (e.g., AFS re-measurements, hedged items for cash flow hedges).

Figure 1.2. Framework for Making OCI Useful for Investors



- Standard setters should provide an explanation of the purpose of the OCI statement within the conceptual framework. This explanation should describe any distinguishing or even overlapping economic characteristics of items reported on the OCI statement relative to the income statement to help stakeholders move away from the generalized and, in our view, misleading characterization of OCI items as “noisy” and “transitory.”
- Inclusion by standard setters of enhanced presentation principles into presentation standards (e.g., IAS 1) updates as well as within the intended longer-term performance reporting project.
- Incorporation of granular OCI information into data aggregators’ databases to facilitate investor access to electronic (cross-company, time-series) data related to OCI line items. The availability of OCI items in financial statement databases will reduce time spent by investors and lower the costs of acquiring OCI information from financial reports whenever such information is needed for financial analysis.

Though our study is focused on banks, these recommendations are applicable to OCI information for insurance companies (for which there could be expanded use of OCI) and non-financial companies.

1. Overview: Why OCI Information Should Not Be Ignored by Investors

Alongside the income statement, the OCI statement is a key part of the comprehensive income statement. As previously noted, there is a perceived ad hoc approach toward determining which items are reported on the OCI statement. At a fundamental level, the seemingly ad hoc application of the OCI statement reflects the following conceptual problems that have yet to be fully resolved by accounting standard setters:

- *Measurement of assets and liabilities:* How are the assets and liabilities of a business entity best measured? How should related re-measurements be reported?
- *Assessing wealth creation:* How should the value added to the wealth of the owner (current operating performance vs. all-inclusive income) be assessed?
- *Disclosing changes in wealth creation:* Where should the realized and unrealized changes in the wealth of the owner be disclosed (i.e., clean surplus versus dirty surplus accounting)? In other words, should all income and expense flows and valuation changes be reflected through net income or not?
- *Performance definition:* How should financial statements report corporate performance? In other words, what is corporate performance?

Although there is no formal definition of performance in accounting literature, the net income subtotal has been widely accorded prominence as the main performance measure. In a global academic survey of more than 400 chief financial officers (CFOs), a majority indicated that they believe earnings are the most important performance measure for outsiders.¹⁷ That said, there are undesirable behavioral consequences arising from the great importance attached to the net income subtotal, including what is described as the functional fixation phenomenon. For preparers, functional fixation can manifest itself through earnings management behavior—predicated on the belief that net income is the performance metric that matters most to investors. Another academic research paper reported the following findings from a survey of CFOs at 169 global public companies:

- 20% of companies manage earnings during any reported period, and
- 10% of earnings per share (EPS) is misrepresented for companies that manage earnings.¹⁸

The functional fixation phenomenon can also largely explain why preparers would be inclined to present OCI information less prominently than income statement information and why there are often poor accompanying disclosures specified for OCI line items.

¹⁷Graham, Harvey, and Rajgopal (2005) found that 51% of survey participants ranked earnings as the most important performance measure whereas only 12% of respondents ranked revenues, cash flow from operations, or free cash flow as most important. They also found that 97% of respondents prefer a smooth earnings path and that 78% would sacrifice real economic value in order to ensure a smooth earnings path.

¹⁸Dichev, Graham, Harvey, and Rajgopal (2013).

Functional fixation is also evident when investors consider only information that is presented on the income statement and ignore similar information presented elsewhere. A situation in which investors accord greater weight to income statement components relative to OCI statement components (line items and totals) during financial analysis could arise owing to the following reasons.

- *Easier to predict net income:* Many investors desire to have a steady, predictable, and comparable performance metric across reporting periods (i.e., sustainability) and consider net income to possess these desired characteristics to a greater degree than would be the case with a full comprehensive income total. For example, a recent literature review on the use of financial statements highlighted viewpoints from interviews with 40 Sweden-based analysts expressing a preference for easy-to-predict income statement components.¹⁹
- *An assumption of primacy of operating activities for performance analysis:* Furthermore, investors may prefer net income and its derived metrics, such as EPS, over comprehensive income because they consider net income to be a close proxy of the core earnings derived from business activities or operations rather than a reflection of holding gains or losses. The following reader comment about a *Wall Street Journal* article on OCI expressed reasons why many investors might see net income as the most important performance statement as well as the expected attributes of what goes into the net income statement:

What matters is what investors need to see in income. Investors buy multiples of operating earnings, plus other non-operating assets (excess cash is best example). If fluctuations of balance sheet accounts are not caused by operations, then the investor does not want them to be on the P&L to complicate their valuation.²⁰

At the very least, this comment reflects a yearning by some investors for reporting companies to keep net income simple and focused on operating activities and for it to exhibit minimal volatility. Another manifestation of the desired preeminence of performance metrics that principally reflect operating activities is the proliferation and popularity of non-GAAP measures. However, one of the responses to the comment above provided an alternative perspective to the notion of needing to limit net income volatility:

If investors use raw earnings and a multiples-based approach such as P/E ratios, then we have a bigger problem than just what goes into that earnings number. Valuation requires understanding the operations, digging through footnotes, making adjustments, and a good deal of intuition.

Investors may not want the P&L to complicate their valuation, but the fact is that valuation is inherently complicated. This is especially true when the business is exposed to currency fluctuations, hedges, pension plans, etc.

I'd be wary of any changes that result in accounts appearing simple, as it means the true complexity has been hidden. The last thing we need is simple accounts for complex companies.²¹

¹⁹Cascino, Clatworthy, Osma, Gassen, Imam, and Jeanjean (2013).

²⁰Chasan (2014).

²¹Chasan (2014).

We do not dispute the usefulness of clearly earmarking performance attributable to operating activities, but we concur with the view that any performance reporting statement should appropriately reflect the entirety of the underlying business model's complexity, especially because the boundaries between operating and investing activities can be blurred for many business models (e.g., those that offer financial services)—not to mention that operating, investing, and risk management activities are in many cases an integral part of the execution of several business models. For example, it is hard to see how the performance of an airline company can be thoroughly assessed while ignoring the effects of its hedging strategy for jet fuel exposure.²²

There are other counterarguments that can be made for according greater prominence to the OCI components, including the following.

- *Net income is not an economically defined concept:* Net income is not an economically defined concept; rather, it represents an ad hoc amalgamation of items with varied economic characteristics (e.g., gains or losses from trading financial instruments, one-off special items, and core earnings from operating activities).
- *Both balance sheets and income statements are important for valuation:* The primacy of the income statement over other financial statements is articulated by proponents of the earnings-based valuation approach, with an emphasis on core earnings being the key input required for the prediction of future cash flows and for valuation purposes.²³ A corollary to this viewpoint is that periodic changes to the balance sheet, which happen to be an important component of the OCI statement, are seen as less relevant for valuation.

However, valuation approaches based on the primacy of the income statement are just a subset of the overall fundamental valuation approaches. For example, in contrasting fashion to a core earnings-based valuation approach, the residual income valuation approach would place importance on net comprehensive income (an OCI statement total) as a valuation input. The balance sheet also conveys key information about the prospects of reporting companies—especially for banks, for which price-to-tangible equity per share is a frequently used valuation metric. In analyzing the valuation of insurance companies over a 10-year horizon, Nissim (2011) found that book-value-based valuation multiples (e.g., P/Bs) performed relatively well and better than earnings-based multiples for the purposes of valuing insurance companies. The author found that excluding accumulated other comprehensive income (AOCI) from book value resulted in worse predictions of insurance company valuation. Therefore, to ignore period-to-period balance sheet changes is to ignore key information about these reporting entities.

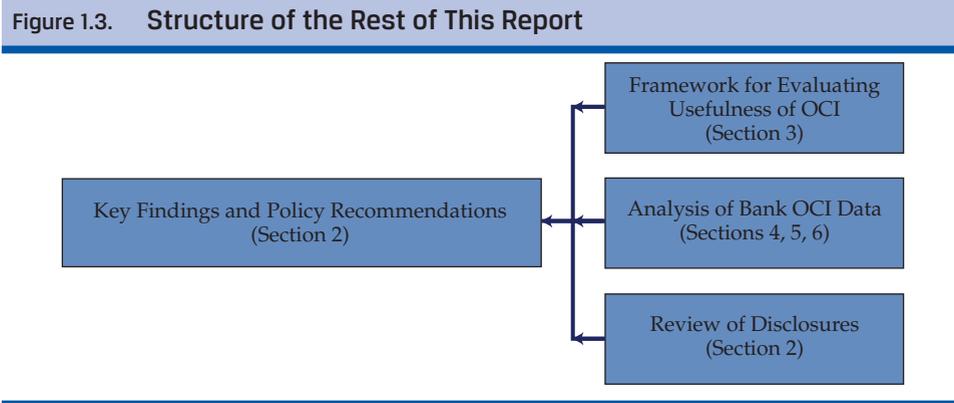
- *There is a risk of ignoring the core part of a business model in valuation analysis:* The statement of OCI reports on recurrent business activities in which management makes purposeful choices on the nature of assets and liabilities held. For example, the holding of AFS securities is a core part of balance sheet management,²⁴ cash flow hedges are part of the risk management strategy, and defined benefit pension schemes reflect employee-related economic obligations. Investors need to monitor the economic impact of these recurrent business activities.

²²Exposure arises owing to the volatility of jet fuel prices.

²³Dichev and Penman (2007).

²⁴As noted in Sections 2 and 5, the AFS portfolio of banks can be used by banks for the purpose of smoothing regulatory capital, and therefore, the pattern of realized and unrealized gains or losses should not be ignored by investors.

Consequently, the central proposition of this study is that OCI statement information should be accorded prominence, enhanced, and made more readily accessible to facilitate greater use of such information by investors. As delineated in **Figure 1.3**, our central proposition is informed by a review of academic studies (Section 3) and our analysis of OCI data and accompanying disclosures for the selected banks, as reported in Sections 4, 5, and 6. The review of academic studies and our analysis of bank OCI data are also the basis on which we formulated our policy recommendations (Section 2).



2. Key Findings and Policy Recommendations

There is a significant body of empirical evidence (see Section 3) on the information content of OCI information that informs our key findings and policy recommendations. We contribute to the current body of evidence by conducting an independent analysis of OCI reporting for a sample of large, complex banks from 15 countries (the detailed findings are discussed in Sections 4, 5, and 6). This report complements existing evidence by further demonstrating the usefulness of OCI and specific line items (AFS and cash flow hedges).

2.1. Key Findings

The key findings from the bank data analysis and available academic evidence are as follows:

- There are distinctive patterns of net OCI versus net income gains/losses, showing the need for ongoing OCI scrutiny by investors.
- AFS and cash flow hedge re-measurements have economic information content.

Notwithstanding the information content and distinctive patterns that warrant investor scrutiny of OCI information, there are structural impediments to using OCI for financial analysis. These impediments include (1) poor presentation and disclosure of AFS and cash flow hedge items by financial statement preparers and (2) financial information data aggregators' failure to provide granular OCI data (many do not provide any OCI statement information).

2.1.1. *Distinctive Patterns of OCI vs. Net Income Gains/Losses Show a Need for Ongoing OCI Scrutiny by Investors*

Net OCI and Net Comprehensive Income Losses Are More Common Than Net Income Losses

For the selected banks, we analyzed the pattern of gains or losses over the eight-year time horizon of our analysis. Specifically, we analyzed the frequency of gains or losses for

- ROE,
- net OCI as a percentage of equity (OCIE), and
- net comprehensive income as a percentage of equity (CIE).

The key findings were as follows:

- As **Table 2.1** shows, net OCI losses (52%) were more frequent than gains (48%). In contrast, the aggregate ROE had losses (16%) less frequently than gains (84%).

- The histogram-based distribution profile in Section 4 shows that net income is skewed toward gains to a greater extent than net OCI is.
- Appendix D shows that the eight-year average CIE is less than the corresponding average ROE for 37 of the 44 sample banks (i.e., 84.1% of the sample banks).

Effectively, our analysis shows that banks are more likely to be less profitable and more commonly in a loss position when performance is measured by net comprehensive income for the year than when measured by net income.

Table 2.1. Distribution Profile: Subtotal Gains vs. Losses

| | ROE | OCIE | CIE |
|------------------------|-----|------|-----|
| Bank-year observations | 352 | 346 | 346 |
| Gains | 84% | 48% | 77% |
| Losses | 16% | 52% | 23% |

Note: Appendix D outlines the eight-year average of ROE and CIE per bank and shows that CIE is lower than ROE for 84% of the banks (37 of 44).

The finding that net comprehensive income and net OCI are in a loss position more often than net income is can be explained by the following reasons.

- **Nature of OCI statement line items:** The statement of OCI is mainly used to report changes in the value of certain assets and liabilities (holding gains or losses), whereas the income statement also includes operating activities—revenue streams (e.g., net interest income, fee income) and expenses. Not only are operating revenue and expenses relatively less volatile on a year-to-year basis than holding gains or losses, but it is also likely that an operating profit (operating revenues > expenses) should be expected on average. In contrast, the value of financial assets fluctuates in such a manner that for any reporting period, holding losses are as likely to occur as holding gains. The statistics (mean, median) in Section 4 (Table 4.2) show near-zero means for OCI statement line items (but not so for income statement line items). These statistics are indicative of OCI line items being more spread between gains and losses compared with income statement line items.
- **Reclassification from OCI to income statement:** Reclassification from the OCI statement to the income statement occurs when AFS securities are sold. Correspondingly, bank management has discretion in the timing of AFS security sales. Hence, it is possible for there to be a systematic bias toward making sales such that gains are reclassified from the OCI statement to the income statement more frequently than is the case for losses. Reclassified gains reduce net OCI. Therefore, a systematic bias toward reclassifying gains to the income statement will increase the likelihood of net OCI being in a loss position.²⁵

In this respect, our analysis of the frequency of reclassified AFS gains and losses for the sample banks (Section 5, Table 5.5) shows that gains were more common than losses in six of the eight years that we analyzed. The exceptions were in 2008 and 2009, where it is likely that there were significant AFS impairments.

²⁵As noted in Appendix C, reclassification affects net OCI but not net comprehensive income.

A valid argument could be made that our bank analysis results (i.e., net OCI losses being more common than income statement losses) simply reflect the outcomes of banks' compliance with existing accounting standard requirements rather than reflecting a pattern of discretionary avoidance of recognizing losses on the income statement by bank management. However, if items designated for OCI statement recognition were to, on a systematic basis, always result in net OCI and net comprehensive income losses being more common than net income losses, then it would support the viewpoint that OCI requirements are guided by the objective of minimizing losses on the income statement.

In general, our findings resonate with those of Mulford et al. (2013), who found that net OCI losses were more common than net OCI gains. Effectively, both our bank study findings and those of Mulford et al. (2013) indicate that losses are more likely to be recognized on the statement of OCI than on the income statement. Our findings also inform on the following questions related to the OCI statement as articulated by Mulford et al. (2013):

While elements of other comprehensive income are clearly known, little is known about their significance. For example, what are the more significant elements of other comprehensive income? Are they more likely to be losses or gains? Finally, to what extent would traditional measures of financial performance be affected if analysts focused on total comprehensive income as opposed to net income? (p. 7)

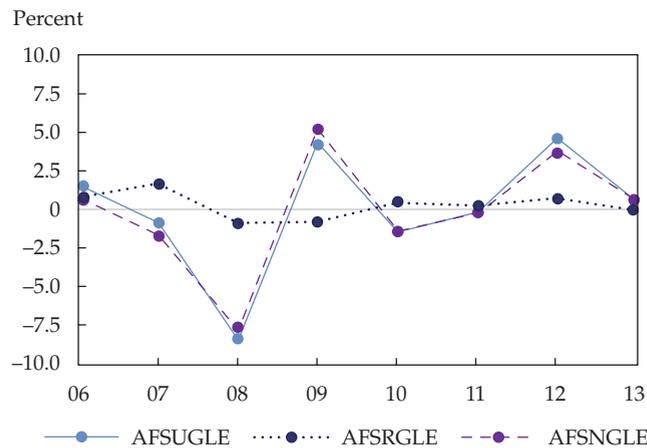
In other words, this study contributes to the understanding of the profile of OCI and income statement components. In addition to losses being more common on the OCI statement than on the income statement, our analysis of bank data in Section 4 also shows that OCI components (line items and totals) have greater sign-varying volatility (as reflected by the coefficient of variation) than income statement components.²⁶

Reclassified AFS Amounts Have Smoother Periodic Variation Than AFS Re-measurements

We also analyzed the year-to-year patterns of AFS unrealized versus reclassified-to-income-statement gains or losses (Section 5.1). As depicted in **Figure 2.1**, the reclassified AFS amounts, which affect net income and regulatory capital, generally have a lower magnitude and a smoother (i.e., less volatile) year-to-year trend than the unrealized amounts, which do not affect net income. The observed data trends for reclassified AFS amounts relative to unrealized AFS amounts would seem to support the notion that AFS security gains or losses are realized (i.e., bought and thereafter sold) in a manner that contributes to smoother multiperiod earnings than would be reflected by any aggregate income representation that is based on re-measurements of these securities.

²⁶Greater sign-varying volatility means a higher degree of fluctuation between gains and losses.

Figure 2.1. AFS Unrealized vs. Reclassified Gains or Losses



Notes: AFSUGLE = AFS unrealized gains or losses (re-measurements)/Equity; AFSRGLE = AFS reclassified-to-income-statement gains or losses/Equity; AFSNGLE = AFS net unrealized gains or losses/Equity. Net unrealized gains or losses represent re-measurements after offsetting reclassified-to-income-statement gains or losses.

As discussed in the Executive Summary section, the notion of AFS securities being used to smooth²⁷ income and regulatory capital,²⁸ by banks timing when they buy and sell these securities, is empirically supported by Barth et al. (2014). The potential smoothing of income and regulatory capital by timing the realization of gains or losses is a further argument for investors to accord greater scrutiny toward both OCI and net income AFS-related gains or losses.

2.1.2. AFS and Cash Flow Hedge Re-measurements Have Information Content

AFS Re-measurements Have Economic Information Content

Studies show that AFS unrealized gains or losses reported on the OCI statement are relevant for valuation purposes (see Section 3).²⁹ A multiperiod analysis of AFS re-measurements seems to indicate that changes in the economic environment (e.g., increased credit risk due to the global financial crisis and eurozone sovereign debt crisis) have an effect on the values of AFS securities. In addition, the regression analysis of the relationship between AFS gains or losses and market-based indicators of value (price-to-book ratio, or P/B) in Section 6 affirms the usefulness of such information.

²⁷Smoothing could mean ensuring that reclassified-to-income-statement AFS line items have low volatility so as to help sustain a smooth net income pattern across periods. In other words, ensuring that the individual elements of net income do not have volatile trends also ensures smooth net income (i.e., the whole reflects characteristics of the parts). As Barth et al. (2014) found, smoothing can also occur by timing reclassified gains (losses) such that they offset losses (gains) in earnings before adjusting for the reclassified gains (losses).

²⁸As discussed in the Executive Summary, under Basel II, owing to the application of prudential filters, AFS realized gains or losses affect regulatory capital but AFS re-measurements do not.

²⁹Evans, Hodder, and Hopkins (2014); Jones and Smith (2011).

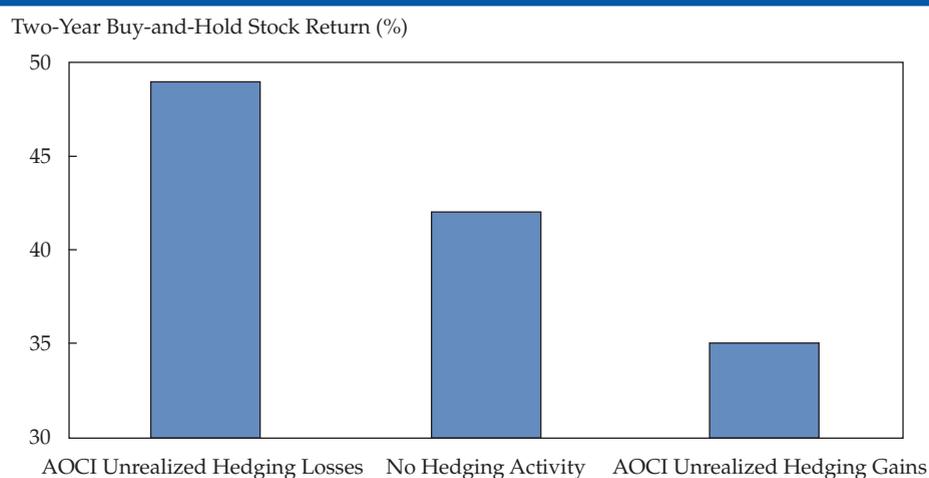
Cash Flow Hedge Re-measurements Have Economic Information Content

Studies show that cash flow hedge gains or losses are relevant for valuation purposes (see Section 3).³⁰ Cash flow hedge gains or losses can signal the future cash flow patterns of forecasted transactions (off-balance-sheet exposures). For example, current cash flow hedge gains can signal a high likelihood of shrinking future-period profit margins if the forecasted transactions that were hedged relate to the cost of sales or operating costs. Campbell (2013) showed that an investment strategy crafted on the basis of companies having either accumulated unrealized cash flow hedge gains or losses would have an impact on their returns (**Figure 2.2**). The study effectively showed that companies with unrealized cash flow hedge losses exhibit future increased profitability compared with those that report unrealized gains.

However, in the context of our study design, we were unable to discern any relationship between cash flow hedge re-measurements and the market-based indicators of value (P/Bs) and risk (credit default swap [CDS] spreads). The lack of a discernible relationship could result from the fact that cash flow hedge gains or losses tend to be significantly lower in magnitude compared with other key income statement items and with AFS gains or losses. As such, any incremental impact of relatively immaterial cash flow hedge re-measurements on value would be hard to discern.

That said, as discussed in Section 5, individual banks had material cash flow hedge re-measurements (e.g., UBS had a cash flow hedge gain equal to 5.8% of equity in 2011, Barclays had a gain of 3.8% of equity in 2011, and Toronto-Dominion's cash flow hedge gain was greater than 4% of

Figure 2.2. Comparing Changes in Two-Year-Ahead Stock Returns for Sample Firms with Unrealized Cash Flow Hedge Gains or Losses or No Hedging Activity



Notes: The amounts in the figure represent the change in stock price from year $t - 2$ to year t for sample firms with stock return data during the years 2003–2007. Three sets of returns are presented. The first bar represents the mean two-year buy-and-hold return for sample firms with unrealized hedging losses in accumulated other comprehensive income (AOCI). The second bar represents the mean two-year buy-and-hold return with no hedging activity. The third bar represents the mean two-year buy-and-hold return for sample firms with unrealized hedging gains in AOCI.

Source: Campbell (2013, p. 37).

³⁰Kanagaretnam, Mathieu, and Shehata (2009); Jones and Smith (2011); Campbell (2013).

equity from 2008 to 2010). In addition, the interest rate sensitivity analysis highlighted in Barclays' 2013 annual report showed that a 100 bp interest rate increase could result in a cash flow hedge reserve decrease of 4.4% of equity.³¹ These material cash flow hedge re-measurement impacts for individual banks show the need for investors to monitor these amounts in bank financial reports.

2.1.3. Shortcomings in the Presentation and Disclosure of AFS and Cash Flow Hedge Re-measurements and Reclassified Amounts

We found that there has been an improvement in recent years (2011, 2012, and 2013) as a result of IASB and FASB requirements for increased prominence in the presentation of the statement of OCI and for an increased level of disaggregation of line items, but varied levels of useful disaggregation of these OCI amounts still remain a problem.

Need for Improved Quantitative Disclosures Related to AFS Re-measurements and Reclassified Amounts

A lack of adequate disclosures for OCI line items can be observed even when there are material reported amounts. For example, **Table 2.2** and **Table 2.3** present excerpts of OCI statements from Barclays and HSBC, which show some material AFS gains/losses, but unlike the income statement line items, these items have no accompanying quantitative footnote disclosures or explanations as to what economic factors drove the re-measurements (e.g., changes in interest rates, prepayment patterns). US and Canadian banks generally provided disclosures for their accumulated unrealized gains or losses (i.e., disaggregated by asset class, maturity analysis breakdown). However, many European IFRS-reporting banks did not provide this type of disclosure.

AFS amounts that are reclassified from the OCI statement to the income statement could be attributable to AFS security gains or losses on (1) disposal, (2) impairment, or (3) fair value hedging,³² as can be seen in the Barclays excerpt.

- However, not all banks disaggregated the reclassified amounts by the nature of the items (e.g., impairment versus disposal).
- For some years, some banks (e.g., Citigroup before 2013 and Goldman Sachs) did not even distinguish between unrealized gains or losses and reclassified amounts (i.e., they provided only the net AFS gains or losses on the OCI statement).
- Disaggregation disclosure of unrealized gains or losses of AFS securities that are part of a fair value hedge was not common (Barclays was the only bank that did so).³³ However, there was no disclosure to better inform investors about fair value hedge risk management strategy (e.g., explaining whether it is interest rate or foreign currency exposure being hedged, linking reclassified hedged AFS re-measurements to the gains or losses of the derivative instruments).

³¹Papa (2014).

³²Unrealized gains or losses (i.e., re-measurements) of AFS securities that are part of fair value hedges are reclassified from the OCI statement to the income statement.

³³It is hard to judge whether the lack of disaggregated fair value hedge line items on the OCI statement simply reflects that AFS securities are not hedged or whether it reflects that reporting entities have aggregated this line item with other line items.

Table 2.2. Barclays 2013 Annual Report Excerpt (p. 278): Changes in AFS Values Presented on the OCI Statement

| Available for Sale (GBP millions) | 2013 | 2012 | 2011 |
|--|---------|-------|---------|
| Net (losses)/gains from changes in fair value | (2,734) | 1,237 | 2,742 |
| Net gains transferred to profit on disposal | (145) | (703) | (1,614) |
| Net (gains)/losses transferred to profit due to impairment | (7) | 40 | 1,860 |
| Net losses/(gains) transferred to net profit due to fair value hedging | 2,376 | 474 | (1,803) |

Notes: Note 16 (p. 303) in the 2013 annual report explains the composition of AFS securities (i.e., £91.8 billion in 2013) and also discusses valuation uncertainty related to AFS securities that were part of the Lehman Brothers acquisition. However, there are no note disclosures either on the re-measurements reported on the statement of OCI or for the accumulated unrealized gains or losses. As noted earlier, there was no disclosure explaining the reclassification related to fair value hedging. In the navigation-guiding index summary of footnotes at the beginning of the financial statements, there is a section for notes to the balance sheet and the income statement but there is no section for notes to the statement of OCI. The line items presented on the face of the income statement and balance sheet provide a reference to the relevant notes to the account, but there is no reference information for related notes on the OCI statement. The lack of clear signposting (e.g., highlighting location details) for any existing related disclosures also contributes to readers not being aware of disclosures that might explain the OCI line item amounts.

Table 2.3. HSBC 2013 Annual Report Excerpt (p. 418): Changes in AFS Values Presented on the OCI statement

| Available for Sale (USD millions) | 2013 | 2012 | 2011 |
|--|---------|---------|-------|
| Fair value (losses)/gains | (1,787) | 6,396 | 1,279 |
| Fair value gains transferred to profit on disposal | (1,277) | (1,872) | (820) |
| Amounts transferred to income due to impairment losses | 286 | 1,002 | 583 |

Notes: We were unable to identify disclosures that either explain the AFS re-measurements reported on the statement of OCI or provide details of the accumulated unrealized AFS gains or losses. A footnote at the bottom of OCI statement refers readers to page 427 and to the rest of the note disclosures (pages 428–564) for accompanying disclosures. However, we found only some qualitative descriptions of methods of accounting for AFS re-measurements and reclassified items (i.e., under the description of critical accounting policies). Similar to the Barclays annual report, there are shortcomings in the information content and signposting of OCI disclosures.

Need for Improved Quantitative Disclosures Related to Cash Flow Hedge Re-measurements and Reclassified and Related Hedged Item Amounts

Adequate disclosures on (1) the nature of economic transactions and (2) the linked items related to the reported gains or losses are necessary to provide context and to make financial statement information more useful for predicting future cash flows. However, we found that there are

inadequate details about the cash flow hedging instruments and related items (e.g., hedging strategy and hedged items) to better inform on the economic meaning of the re-measurements and reclassified amounts that are reported on the statement of OCI and the income statement. Existing cash-flow-hedge-related disclosures have the following shortcomings.

- *Hedging instrument gains or losses are not always disaggregated by risk type:* Similar to the findings of a 2013 CFA Institute report on risk disclosures,³⁴ we found that most banks fail to disaggregate reported cash flow hedge OCI amounts by risk type.³⁵ The aggregated amount that is normally reported by banks conceals information on how various risk factors (e.g., interest rate, foreign currency fluctuation) individually affect the cash flow hedge gains or losses. In so doing, the aggregated amounts limit the ability of investors to observe how period-to-period patterns of cash flow hedge gains or losses vary relative to period-to-period changes in macroeconomic factors (e.g., interest rate, foreign currency).
- *There is limited information on hedging strategy:* To be fully informative, cash flow hedge disclosures should describe the hedging strategy and show how the maturity of the cash flow hedging instrument matches the maturity of the hedged item expected cash flows. Such disclosures, which link the maturity of the cash flow hedging instrument to that of the hedged item, are currently not provided.
- *Forecasted cash flows (i.e., of hedged items) provide only partial information:* For floating-rate exposures, it is informative for readers of financial statements to know (1) the forecasted cash inflows/outflows, as reported by Deutsche Bank (**Table 2.4**), and (2) the forecasted principal balances of assets/liabilities, as reported by HSBC (**Table 2.5**). However, HSBC and Deutsche Bank have each disclosed the future cash flows of only one of these key line items; disclosing both line items would help to more fully inform readers about the nature and future cash flows of the hedged items. In general, we found that the lack of comprehensive forecasted cash flow maturity analysis related to cash flow hedges is an issue across US, EU, and Canadian banks.

Table 2.4. Deutsche Bank: Cash Flows Expected to Occur and When They Are Expected to Affect Income Statement, as of 31 December 2013 (€ millions)

| | Within 1 Year | 1-3 Years | 3-5 Years | Over 5 Years |
|--------------------------------|---------------|-----------|-----------|--------------|
| Cash inflows from assets | 80 | 110 | 53 | 136 |
| Cash outflows from liabilities | -25 | -37 | -37 | -36 |
| Net cash flows 2013 | 55 | 73 | 16 | 100 |

Source: Excerpt from 2013 annual report (p. 399).

³⁴CFA Institute (2013) studied derivatives and hedging disclosures under IFRS and found that only 20% of 20 EU banks analyzed disaggregated cash flow hedge gains or losses by their nature.

³⁵There were a few exceptions in our sample that disaggregated cash flow hedge re-measurements by risk type on the OCI statement (e.g., Toronto-Dominion).

Table 2.5. HSBC: Forecasted Principal Balances on Which Interest Cash Flows Are Expected to Occur, as of 31 December 2013 (\$ millions)

| | 3 Months or Less | >3 Months and <1 Year | >1 Year and <5 Years | >5 Years |
|---------------------------------------|------------------|-----------------------|----------------------|----------|
| Assets | 135,857 | 124,670 | 89,405 | 2,156 |
| Liabilities | (60,402) | (46,990) | (38,406) | (10,221) |
| Net cash inflows/ (outflows) exposure | 75,455 | 77,680 | 50,999 | (8,065) |

Source: Excerpt from 2013 annual report (p. 503).

- *Forecasted cash flows (i.e., of hedged items) are not always disaggregated by risk type:* Banks can apply cash flow hedges to hedge different types of risk (e.g., foreign currency, interest rate). Even in these cases, the forecasted transactions are not always disaggregated by different risk types.

2.1.4. Structural Impediments to Using OCI for Financial Analysis

Throughout this paper, we argue that OCI information is decision useful. As discussed in Section 3, several studies have established the information characteristics of OCI line items (e.g., value relevance, ability to predict future cash flows). That said, other studies³⁶—and anecdotal evidence, including commentary to standard setters and standard-setting-related bodies (e.g., the European Financial Reporting Advisory Group)—suggest that investors ignore OCI information.

On the one hand, it is understandable that some investors ignore OCI information, given that the incorporation of OCI depends on valuation approaches. Investors and analysts who apply fundamental analysis and earnings-based valuation, including the residual income valuation method, should pay closer attention to OCI line items than should those who mainly rely on valuations based on such multiples as the price-to-earnings ratio (P/E) and the price-to-earnings-growth ratio (PEG). On the other hand, it is also likely that many fundamental valuation approach-based investors do not incorporate OCI into their analytical models to the extent that they could.³⁷ Based on our experience in gathering OCI data and on discussions with different types of investors, we believe the following reasons contribute to analysts and investors not incorporating OCI information into their analytical models.

- *Poor presentation and disclosure:* As discussed previously, there are shortcomings, such as poor presentation and disclosure of OCI line items. These shortcomings contribute to investors ignoring OCI information. As Rees and Shane (2012) highlighted (see Appendix B), there are academic studies that show that presentation affects investor use of OCI information (e.g., Hirst and Hopkins 1998).
- *Data aggregators do not provide adequately disaggregated OCI:* Despite the relatively prominent and improved presentation of OCI line items in financial statements in recent years, data aggregators have yet to include these data with the level of granularity that facilitates analysis. Investors typically require ready-to-use electronic time-series data so that they do

³⁶Campbell (2013) found that cash flow hedge gains or losses are ignored in current-period stock returns and are reflected only in future-period stock returns.

³⁷Nissim (2011) found that many insurance analysts exclude AOCI from the book value and P/B multiples used for valuation. Incidentally, the study found that exclusion of AOCI only lessens the predictive power of valuation models that are based on P/B multiples.

not have to dedicate significant resources to acquire these data from financial statements. Data-acquisition difficulties likely contribute to investors ignoring OCI information.³⁸

2.2. Policy Recommendations

In general, standard setters, reporting companies, and all others involved in the supply of financial reporting information should avoid forming generalized views about the importance of OCI on the basis of investors' current tendency to not factor such information into their valuation models as much as they could. As we have argued, there are structural impediments to the acquisition and analysis of OCI by investors, and *it is the duty of standard setters, reporting companies, and data aggregators to eliminate, rather than entrench, these impediments.*

2.2.1. Recommendation 1. Enhancement of the Disclosure and Presentation of OCI Items

The enhancement of disclosures related to OCI line items needs to occur even in a world where two separately presented components of the comprehensive income statement (the statement of OCI and the income statement) remain. One way of signaling the importance of OCI information is enhanced presentation and disclosure. Conversely, reporting entities encourage investors to ignore OCI items with poor presentation and by having no or only limited accompanying disclosures related to OCI line items. Financial statement preparers should aim to conform to the communication principles and disclosures outlined below.

Adequate Signposting and Cross-Referencing across Financial Statements

A lack of clear signposting contributes to the obscurity of any available statement of OCI note disclosures. Hence, we recommend that each material item reported on the OCI statement with accompanying disclosures have a reference note presented on the face of the financial statement to facilitate easier investor access. In addition, the note index should have a category called "Notes to Statement of OCI," similar to the "Notes to Balance Sheet" and "Notes to Income Statement" categories.

Effective Accompanying Disclosure of Material AFS Line Items

Regardless of the economic information content inherent in AFS gains or losses, reporting these amounts in isolation without adequate accompanying disclosures limits the ability of investors to interpret such information and to incorporate it into financial analysis (i.e., predicting future cash flows, assessing the risk profile). Consequently, we recommend the following:

- There should always be disclosures on the key economic factors influencing material gains or losses of AFS securities. For example, the disclosures should communicate whether and how the gains or losses of AFS debt securities are related to changes in interest rates, sovereign debt credit risk, and prepayment rates. As discussed in Section 6, the economic environment can cause changes in the values of AFS securities. Entity-specific disclosures of value drivers

³⁸In our study, we reviewed data from Bloomberg, for which there was only a breakdown of the OCI subtotal and aggregate unrealized gains or losses (i.e., there was no disaggregation of unrealized gains or losses by the nature or type of accounting line item—e.g., AFS, cash flow hedge, pension re-measurements). We also reviewed data from Bankscope, but the AFS gains or losses were not disaggregated to separately show re-measurements versus reclassified-to-income-statement amounts.

can help investors better understand and evaluate the balance sheet management of AFS securities. In a similar vein, Joseph (2014) highlighted that interest rate risks are commingled with other effects in OCI and proposed the following recommendation:

Provide separate details of the nature of interest rate volatility that is embedded in the recognition of OCI. This should include factors that could cause OCI to fluctuate and the likelihood of change. (p. 62)

- If AFS securities are being hedged (e.g., to manage interest rate or foreign currency risk), there should always be a disaggregation of AFS re-measurements that reclassified items from the OCI statement to the income statement. Crucially, there should be accompanying disclosures that can help investors assess the effectiveness of AFS security hedging strategies (e.g., link or cross-reference hedged AFS re-measurements to hedging instrument gains or losses).
- There should always be disaggregated disclosures of accumulated unrealized AFS gains or losses and the maturity analysis of these gains or losses, as provided by US and Canadian banks. **Table 2.6** is an excerpt from J.P. Morgan's 2013 annual report, with details of AFS securities unrealized gains and losses. As noted in Sections 3 and 5, academic evidence shows that accumulated AFS and cash flow hedge unrealized gains or losses can help predict future cash flows.³⁹

Table 2.6. Excerpt from the 2013 J.P. Morgan Annual Report (p. 250) (\$ millions)

| | Amortized Cost | Unrealized Gains | Unrealized Losses | Fair Value |
|---|----------------|------------------|-------------------|----------------|
| Total mortgage-backed securities | 153,419 | 4,322 | 1,032 | 156,709 |
| US Treasury and government agencies | 21,310 | 385 | 306 | 21,389 |
| Obligations of US states and municipalities | 29,741 | 707 | 987 | 29,461 |
| Certificates of deposit | 1,041 | 1 | 1 | 1,041 |
| Non-US government debt securities | 55,507 | 863 | 122 | 56,248 |
| Corporate debt securities | 21,043 | 498 | 29 | 21,512 |
| Asset-backed securities | 40,192 | 422 | 139 | 40,475 |
| Total available-for-sale debt securities | 322,253 | 7,198 | 2,616 | 326,835 |
| Available-for-sale equity securities | 3,125 | 17 | | 3,142 |
| Total available-for-sale | 325,378 | 7,215 | 2,616 | 329,977 |

Notes: This table is an excerpt from the accumulated unrealized gains and losses in the 2013 J.P. Morgan annual report. The full disclosure further disaggregated mortgage-backed and asset-backed securities. J.P. Morgan also provided a maturity analysis of the unrealized gains or losses. US and Canadian banks typically provide detailed disclosures of accumulated unrealized gains or losses.

Enhance Disaggregation of Items That Are Reclassified from OCI to the Income Statement

As expressed in comment letters from CFA Institute, there is a need to enhance the presentation and disclosure of items that are reclassified from accumulated other comprehensive income (AOCI) to the income statement (i.e., recycled items).⁴⁰

³⁹Campbell (2013); Evans et al. (2014).

⁴⁰CFA Institute (2010, 2011a).

For example, income statement recognition of cash flow hedging instrument gains or losses occurs owing to the reclassification of these amounts from OCI whenever the settlement of the hedging strategy or the selling of the hedging instrument occurs. When the reclassified gains or losses are related to hedging interest rates, foreign currency, or commodity prices, there should be a disaggregated presentation of the related income statement line items (e.g., the related net interest income or trading income line item).

Table 2.7 is an example of a useful disaggregated presentation of reclassifications out of AOCI into the income statement. The reclassified-out-of-OCI-to-income-statement disclosure could be even further enhanced if the disaggregated gains or losses for the hedging instrument were cross-referenced or linked to the gains or losses of the related hedged items that are reported on the income statement.

| Table 2.7. Bank of America Reclassifications Out of AOCI (Excerpt from 2013 Annual Report, p. 235) (\$ millions) | | | | |
|---|--|-------------|-------------|-------------|
| Accumulated OCI Components | Income Statement Line Item Impacted | 2013 | 2012 | 2011 |
| Available-for-sale debt securities: | Gains on sales of debt securities | 1,271 | 1,662 | 3,374 |
| | Other-than-temporary impairment | (20) | (53) | (299) |
| | Income before income taxes | 1,251 | 1,609 | 3,075 |
| | Income tax expense | 463 | 595 | 1,138 |
| | Reclassification to net income | 788 | 1,014 | 1,937 |
| Available-for-sale marketable equity securities: | Equity investment income | 771 | 19 | 6,501 |
| | Income before income taxes | 771 | 19 | 6,501 |
| | Income tax expense | 285 | 7 | 2,384 |
| | Reclassification to net income | 486 | 12 | 4,117 |
| Derivatives: | Interest rate contracts | | | |
| | Net interest income | (1,119) | (956) | (1,393) |
| | Commodity contracts | | | |
| Trading account profits | (1) | (1) | 7 | |
| Interest rate contracts | Other income | 18 | — | — |
| Equity compensation contracts | Personnel | 329 | (78) | (231) |
| | Loss before income taxes | (773) | (1,035) | (1,617) |
| | Income tax benefit | (286) | (383) | (599) |
| | Reclassification to net income | (487) | (652) | (1,018) |

Notes: Table 2.7 shows a disaggregated breakdown of items reclassified from OCI to the income statement. For example, in 2013, for derivatives contracts, a loss of \$487 million after tax was reclassified to the income statement. This amount is broken down into a loss of \$1.119 billion reflected in net interest income, a loss of \$1 million reflected in trading account profits, a gain of \$18 million reflected in other income, a gain of \$329 million reflected in personnel expense, and an income tax benefit of \$286 million. The disclosure provides a link between the type of contracts (e.g., a derivative commodity contract) and the affected income statement line item (e.g., trading accounting profits). This disclosure was available for most US banks but not for IFRS-reporting banks.

Disaggregation of Cash Flow Hedge OCI Re-measurements and Reclassified Amounts by Risk Type

In addition to the previously recommended disaggregated disclosure showing the income statement effects of reclassified OCI items, there should be sufficient disaggregation of the cash flow hedge gains or losses recognized in the OCI statement. Such disaggregation should inform on whether the gains or losses relate to different risk types (e.g., interest rate, foreign currency). **Table 2.8** shows an example of where the disaggregation of cash flow hedges by risk type was presented in the related disclosure. The table shows that the pattern of gains and losses can differ by risk type; therefore, aggregating these amounts results in a loss of information.

Table 2.8. Excerpt from 2013 Toronto-Dominion Bank Annual Report (p. 155)
(C\$ millions)

| | Amounts Recognized in OCI on Derivatives | Amounts Reclassified from OCI into Income | Hedge Ineffectiveness | Amounts Excluded from Assessment of Hedge Ineffectiveness |
|--------------------------------|--|---|-----------------------|---|
| <i>Cash flow hedges (2013)</i> | | | | |
| Interest rate contracts | (197) | 1,167 | (3) | 0 |
| Foreign currency contracts | 962 | 944 | 0 | 0 |
| Other contracts | 305 | 287 | 0 | 0 |
| Total income (loss) | 1,070 | 2,398 | (3) | 0 |
| <i>Cash flow hedges (2012)</i> | | | | |
| Interest rate contracts | 1,263 | 1,611 | 0 | 0 |
| Foreign currency contracts | (28) | (17) | 0 | 0 |
| Other contracts | 108 | 102 | 0 | 0 |
| Total income (loss) | 1,343 | 1,696 | 0 | 0 |

Notes: This disclosure is helpful for two reasons: (1) it shows cash flow hedge by risk type, and (2) it outlines cash flow hedge effects on the OCI statement and income statement in one disclosure (i.e., key information is all in one place, facilitating user access to the information). Toronto-Dominion Bank provided this disclosure when reporting under Canadian GAAP (e.g., 2010, p. 105) and under IFRS (2013).

Enhance Disclosures of Hedged Items Related to Cash Flow Hedge Re-measurements

Cash flow hedge information can be made more useful if disclosures of related items are enhanced to enable readers of financial statements to evaluate the economic actions undertaken by management that prompted the reported cash flow hedge gains or losses (e.g., hedging done as part of risk management). Disclosures of cash flow hedging strategies that link the amounts and maturities of hedging instruments and hedged items should be provided. These disclosure should be cross-referenced to both (1) cash flow hedge re-measurements (effective hedges) and (2) ineffective hedges recognized as income statement gains or losses—to help readers of financial statements evaluate the overall effectiveness of the hedging strategies.

Who Is Responsible for Enhancing Presentation and Disclosure of OCI Line Items, Standard Setters or Financial Statement Preparers?

Notwithstanding the mentioned shortcomings in the presentation and disclosure related to OCI line items, some of the banks had higher-quality disclosures (e.g., those that provide informative disaggregated disclosures) than others. This inconsistency of disclosure quality makes it hard for a reader of financial statements to judge the root causes for the failure by some banks to provide comprehensive and granular disclosures—specifically, whether it is a case of the accounting standard requirements needing to be updated or clarified or whether it is entirely a case of reporting companies needing to better adhere to the letter and spirit of the accounting standard requirements.

Our general message is that financial statement preparers should strive to report with a communication mindset and should aim to facilitate financial analysis. There are also a few areas where the problem is more likely a case of the standards needing enhancement, including the following:

- *Changes in the value of AFS securities (IFRS and US GAAP):* As noted, there is a general lack of disclosures on how changes in macroeconomic factors (e.g., interest rates) affect the values of AFS securities during a particular reporting period. If such disclosures are within the scope of existing standards (e.g., IFRS 7), then accounting standard setters likely need to clarify existing requirements. If not, both US GAAP and IFRS should be updated to require such disclosures.
- *Accumulated unrealized gains or losses of AFS securities (IFRS):* As noted, US and Canadian banks (e.g., J.P. Morgan—see Table 2.6) provide this disclosure, but hardly any EU banks do. If such disclosures are within the scope of existing IFRS standards (e.g., IFRS 7), then the IASB needs to clarify existing requirements. If not, then IFRS should be updated to require such disclosures. The disclosure requirements should include (1) a disaggregated breakdown of unrealized gains or losses by debt and equity security asset classes and (2) maturity analysis of these unrealized gains or losses.
- *Income statement effects of reclassified items (IFRS):* US GAAP-reporting banks (e.g., Bank of America—see Table 2.7) provided a disaggregation of line items that were reclassified out of AOCI into the income statement (i.e., by providing a disaggregation of the affected income statement line items). However, it was hard to find similar disclosures for IFRS-reporting EU banks. Hence, we recommend that IFRS requirements be enhanced or clarified to ensure that companies provide disclosures for items reclassified out of AOCI into the income statement.
- *Disclosures of hedged items related to cash flow hedge re-measurements (IFRS and US GAAP):* As noted, among the analyzed banks, there is a general lack of informative disclosures on hedged items that are related to cash flow hedge re-measurements (i.e., disclosures that adequately communicate risk management). Hence, both the IASB and the FASB should enhance disclosure requirements for hedged items related to cash flow hedges, emphasizing an effective communication of risk management. At this stage, it is unclear the extent to which IFRS 9 will address the noted shortcomings of cash-flow-hedge-related disclosures.

2.2.2. Recommendation 2. OCI Purpose Should Be Explained in the Conceptual Framework

Standard setters should go beyond using the OCI statement as an accounting “bridging mechanism” that deals with measurement difficulties.⁴¹ Both the IASB and the FASB should articulate and better explain the purpose of OCI within the conceptual framework. The articulation of the OCI purpose should describe any distinguishing or even overlapping economic characteristics of items reported on the OCI statement relative to those reported on the income statement. An articulation of purpose that emphasizes the economic characteristics of OCI information can help counter the tendency by preparers to accord less prominence to OCI statement items. It can also encourage investors to pay greater attention to OCI line items because economic characteristics would be ascribed to the items. In other words, an articulation of the economic purpose of OCI could help stakeholders move away from the generalized and, in our view, misleading characterization of OCI items as “noisy” and “transitory.”

2.2.3. Recommendation 3. OCI Improvement Should Be Addressed in Performance Reporting Projects and through Presentation-Standard-Related Projects

As noted earlier, during the last few years, both the IASB and the FASB have taken measures to increase the prominence of OCI. In addition, a 2013 IASB conceptual framework discussion paper included a chapter on the purpose of OCI.⁴² However, *questions remain as to whether these efforts will go far enough to improve OCI reporting and whether they will adequately incorporate the insights drawn from various sources of evidence ascertaining the decision usefulness of information reported on the OCI statement.*

Unfortunately, enhanced OCI reporting initiatives thus far seem to mostly be seen through the lens of viewpoints on the highly polarizing question of whether a single comprehensive income statement with no prominent net income subtotal should be required.⁴³ In other words, the debate often seems to be a matter of standard setters affirming whether the income statement should be the prominent performance measurement statement and whether the net income subtotal should be prominently displayed. *Though these are central questions for any performance measurement framework, disproportionately focusing on them relegates the urgent need to incorporate enhanced presentation principles across all financial statements, even in a world where a two-statement framework (i.e., where the income statement and OCI are separately presented) is retained over the long term.*

It is encouraging that there are indications that both the IASB and the FASB will individually undertake a project on performance reporting in the near future. However, it is unclear the extent to which these projects will integrate enhanced presentation principles for all financial statements, including the OCI statement—as was originally envisioned in the Financial Statement Presentation (FSP) Project. The FSP Project explored the principles of cohesiveness and disaggregation (e.g., allocation of line items to different columns on the basis of distinguishing economic characteristics)

⁴¹See the discussion in the Executive Summary of how the OCI statement helps address mixed measurement of different assets and liabilities as well as measurement and recognition mismatches (i.e., an effective “bridging mechanism”).

⁴²IASB (2013c).

⁴³Stakeholders were sharply divided on this matter when it was posed in the run-up to the Financial Statement Presentation Project proposals (2007–2009).

across financial statements.⁴⁴ Investor representatives, including CFA Institute and the Corporate Reporting Users Forum (CRUF), have consistently expressed strong support for completion of the FSP Project.⁴⁵ If the disaggregation proposals had been implemented, the FSP Project would have potentially addressed the question of how to distinguish OCI and income statement items.⁴⁶

In a more general sense, given that investors have consistently supported the completion of the FSP Project, it is necessary for standard setters to communicate what they have scoped to include and exclude among the ongoing and prospective work streams that address OCI (conceptual framework, performance reporting research project). Communication that ensures that stakeholders have clarity on the scope and extent of presentation enhancement and conceptual development related to OCI will facilitate an assessment of whether investor expectations have been met.

2.2.4. Recommendation 4. Data Aggregators Should Include Granular OCI Information in Their Databases

Data aggregators, such as Bloomberg, SNL Financial, FactSet, and Capital IQ, should collect and make available time-series data on OCI statement line items in an electronic format. The statement of OCI is one of the primary financial statements, as are the balance sheet, the income statement, and the cash flow statement. *Accounting standard setters have determined that it is necessary for companies to report OCI information and that such information should be prominently presented. This alone should be adequate grounds for data aggregators to collect and include such information in their databases.*

When probed, some data aggregators tend to justify the non-collection of granular OCI data on the grounds that there is no demand from investors for such information. That said, there may be a “chicken-and-egg” causality problem with such assertions because investor use of financial information depends on the availability of information. It is unclear how the usefulness of time-series financial information can be meaningfully assessed without investors having had access to and analyzing the properties of such information. Hence, data aggregators should be mindful of how they could be entrenching the suboptimal investor use of OCI information. Failing to make such information readily accessible because of a perception that there is limited current and potential use of such information limits analysts’ use of the information.

For such data aggregators as Bloomberg and Bankscope that currently collect some OCI line items, it is necessary to establish the level of granularity that enables investors to predict future cash flows. For example, insofar as respective information has been either presented or disclosed by reporting companies, it is important to have granular data that distinguish

- line items by nature (AFS and cash flow hedge re-measurements, currency translation, and pension re-measurements), rather than aggregating all items into a single line item of unrealized gains or losses (the aggregated amount has minimal information),

⁴⁴CFA Institute (2007) advocated the disaggregation of the income statement into separate columns.

⁴⁵CFA Institute (2011b); CRUF (2011).

⁴⁶The FSP Project was halted in 2010 owing to competing priorities, such as completion of the four convergence projects (leases, revenue recognition, financial instruments, and insurance accounting). The FSP Project was not resumed after the IASB conducted its 2011 agenda consultation, and according to IASB communication documents, elements of the project are mainly being considered in different projects, including the recently proposed amendments to IAS 1, *Presentation of Financial Statements* (IASB 2014); the potential review of IAS 7, *Statement of Cash Flows*; and the intended performance reporting project.

- between gross and net (i.e., after offsetting reclassified-to-income-statement) unrealized gains or losses,
- between before- and after-tax line items, and
- reclassified amounts into income statement line items, with details on income statement line items affected.

3. Framework for Evaluating Usefulness of OCI (Academic Evidence)

As illustrated in **Figure 3.1**, an evaluation of the usefulness of OCI components (line items and totals) should be guided by academic evidence related to the following questions:

- What is the economic information content of OCI components?
- What are the characteristics of OCI statement line items that distinguish them from those of the income statement?
- How can users of financial statements apply OCI information?

Our framework for evaluating the usefulness of OCI is informed by academic literature.

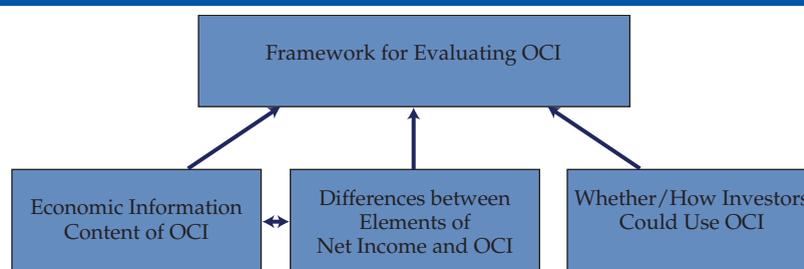
3.1. Information Content of OCI and Net Income Line Items

3.1.1. Framework for Determining Usefulness of Financial Statement Information

The information content of financial statements, including the OCI statement, can be determined on the basis of several key characteristics.

- *Value relevance:* The association between reported amounts and stock returns or stock price.
- *Risk relevance:* The association between reported gains or losses and other market-based measures of risk (e.g., stock price beta). One could argue that risk relevance is another aspect of value relevance because value and risk are inextricably intertwined. Under the financial economic asset pricing theorems, higher risk should lead to higher cost of capital and lower stock prices.⁴⁷

Figure 3.1. Framework for Evaluating OCI Information



⁴⁷Both the capital asset pricing model and the arbitrage pricing theorem illustrate that higher risk equates to higher expected return.

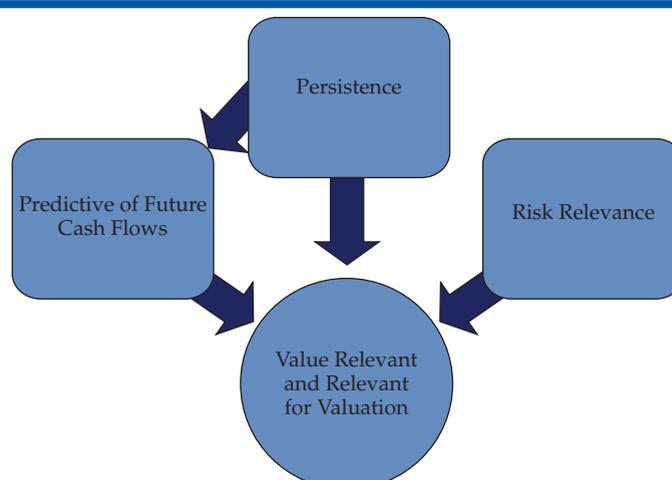
- *Persistence*: The ability of the amount of a financial statement line item to predict future values of itself. In other words, does the amount of a line item reported at a point in time (t) help in predicting the same line item in future periods ($t + 1$, $t + 2$, $t + 3$, etc.)? Persistence effectively reflects how steady or nonvolatile the amounts of a line item are across multiple reporting periods.
- *Predictive value*: The ability of a line item or subtotal, such as comprehensive income, to predict future core earnings and future cash flows. Persistent items usually have predictive value, but that is not to say that all items with predictive value for future cash flows are persistent.

The characteristics of value relevance, persistence, and predictive value for future cash flows were proposed by Ohlson (1999). Ohlson asserted that the presence or absence of any two of these characteristics will automatically imply the presence or absence of the third characteristic. Stated differently, if an item lacks persistence and predictive value for future cash flows, it can automatically be assumed to be value irrelevant. At the same time, if all three characteristics are lacking, then items can be considered transitory in nature and irrelevant for valuation. **Figure 3.2** depicts the interdependency of these attributes.

3.1.2. Key Academic Findings on Economic Information Content of OCI Components

There is a significant body of academic evidence on the economic information content of OCI components (line items and totals). These studies cover various reporting jurisdictions (e.g., the United States, Canada, Japan, the United Kingdom, New Zealand, and the EU). Earlier studies (before 2007) tended to show that OCI items are transitory in nature and have no information content. However, a number of recent studies have shown that both individual line items and the OCI total are decision useful.

Figure 3.2. Attributes That Make Financial Statement Line Items Relevant for Valuation



As noted above, although persistence is usually indicative of predictive ability for future cash flows, persistence and predictive value are terms for distinct attributes and should not be considered synonymous. A line item can be predictive of future cash flows but not persistent.

Across relatively recent studies (published from 2003 onward), there is general supporting evidence of economic information content, including value relevance of OCI line items. However, there is less clear-cut evidence regarding whether the comprehensive income total, which aggregates net income and OCI totals, is incrementally more informative than net income. For example, Choi and Zang (2006) found evidence, based on US data, that comprehensive income can predict subsequent-period net income incremental to current net income. In contrast, Goncharov and Hodgson (2011), in examining data from EU countries, found that there would be a loss of information content if OCI and the income statement were presented in a single statement with a comprehensive income total. The general inconsistency between findings of earlier and later studies can be explained by the following two reasons.

- *Older studies were based on inferred, rather than directly reported, OCI subtotals and line items.* The empirical evidence in older studies was derived on the basis of “as if,” rather than “as reported,” OCI amounts.⁴⁸ *As if* studies inferred OCI amounts from the statement of equity. For example, OCI was in many of these studies derived from the following formula based on inputs from the statement of equity:

$$\text{OCI} = \Delta\text{BV} - \text{NI} + \text{DIV} + \text{NETCAP},$$

where

ΔBV = Change in book value of equity

NI = Net income available to common equity shareholders

DIV = Dividends paid

NETCAP = Net capital contributions

In this respect, older studies were susceptible to data capture and measurement error of OCI amounts. In contrast, recent studies have largely been based on *as reported* amounts.

In addition, EU reporting entities used to report OCI items in the statement of recognized gains or losses (STRGL). The presentation of information in the STRGL was of poorer quality (less consistent, less comparable, and less complete) than it is with current reporting of the comprehensive income statement. Effectively, the findings of earlier studies may simply reflect that owing to either lack of or inadequate presentation of OCI items, investors were more likely to ignore OCI to an even greater extent during previous reporting periods than they currently do.

- *Older studies focused on assessing the OCI total, rather than line items.* A significant proportion of earlier evidence was based on assessing the economic attributes of aggregate OCI amounts rather than on the components of OCI. The OCI total can mask the information content of individual line items. The combination of loss of information content owing to aggregation and measurement error during OCI data capture, as described above, likely contributed to the conclusions of earlier studies that OCI is not decision useful.

⁴⁸*As if* amounts were based on OCI information prior to the requirements for recognition through the comprehensive income statement (i.e., under Statement of Financial Accounting Standards (SFAS) No. 130, *Reporting Comprehensive Income* and US GAAP). *As reported* amounts are presented on the statement of OCI. The statement of OCI has been more commonly reported since 2007 under both US GAAP and IFRS.

Findings from Recent Evidence Supporting the Valuation Relevance of OCI Line Items

Jones and Smith (2011) conducted an OCI information content assessment after decomposing OCI into key line items—namely, AFS re-measurements, cash flow hedge re-measurements, pension expenses, and foreign currency translation adjustments. Correspondingly, to compare the information content of different income statements, they decomposed net income into special items, net income before special items, cash flows, and accruals. Their study highlighted the following findings with respect to information content characteristics:

- *Value relevance*
 - ▲ OCI, special items in the income statement, and net income before special items are *all value relevant*.
- *Persistence*
 - ▲ Net income before special items is persistent.
 - ▲ Special items reported as net income are *not persistent*.
 - ▲ OCI items have *negative persistence* (i.e., they are recurrent, but the amounts reverse over time). In other words, they have mean-reverting characteristics and fluctuate between positive and negative amounts over multiple reporting periods.
- *Predictive value*
 - ▲ Net income before special items has strong predictive value.
 - ▲ Special items have strong predictive value (an association with future net income and with future cash flows for at least the next five years).
 - ▲ OCI items have *shorter predictive power than net income items* (a strong association with net income before special items for only one year ahead).

A number of other studies support the conclusions of Jones and Smith (2011). These studies demonstrate the valuation relevance of OCI reported line items, such as AFS and cash flow hedge unrealized gains or losses. Descriptions of some of these studies follow.

Evans, Hodder, and Hopkins (2014) reviewed banks with data from 1994 to 2008 and found that AFS re-measurements are predictive of future interest income and future total realized income from these securities. In Section 5, in our discussion of the information content of AFS securities, we expand on the reasoning behind why AFS debt security re-measurements can help predict future total realized returns.

Kanagaretnam, Mathieu, and Shehata (2009), using data from a sample of Canadian companies for the 1998–2003 period, found AFS and cash flow hedge unrealized gains or losses to be value relevant (i.e., contemporaneously associated with stock prices) and predictive of

future cash flows. In contrast to Kanagaretnam et al. (2009), Campbell (2013) found that cash flow hedges had an association with future-period stock returns but not with contemporaneous stock returns.

At face value, the findings of Campbell (2013) seem to be inconsistent with those of Kanagaretnam et al. (2009) as far as when cash flow hedge re-measurements are reflected in stock prices and returns (i.e., Campbell found that cash flow hedge re-measurements are associated with only future-period returns and not with current-period returns). However, in their essence, both studies provided evidence supporting the economic information content of cash flow hedge re-measurements.

More pointedly, Campbell (2013) established the ability to predict future cash flows by showing that unrealized cash flow hedge gains/losses are negatively associated with the future gross profit margins of companies that are in competitive industries.⁴⁹ He also found that a zero net investment strategy that is long (short) companies with reported cash flow hedge accumulated unrealized losses (gains) yielded a positive return ranging from 6% to 10%.⁵⁰ Campbell interpreted the combination of these findings to mean that investors do not price current-period unrealized gains and losses but do price gains and losses during their realization during future reporting periods.⁵¹

Why do cash flow hedge re-measurements have predictive ability for future cash flows? The argument put forward by Campbell for why cash flow hedge gains or losses convey information regarding the future cash flow prospects of the reporting firm is that cash flow hedge gains (losses) signal that the underlying hedged item has experienced unrecognized losses (gains).⁵² In the event that the underlying exposure has been only partially hedged or should the maturity of hedging instrument be shorter than that of the hedged exposure, then a reported cash flow hedge gain can be indicative of likely future losses. The assertion of possible future expected losses is easy to appreciate for business models in which cash flow hedges are used to hedge export revenues/import expenses and there are accounts receivable and payable.

When cash flow hedge re-measurements relate to hedging unrecognized commitments (e.g., capital expenditure commitments), it becomes less straightforward to infer that cash flow hedging instrument gains could signal possible future losses if they are related to partially hedged items, simply because the hedged items are not reflected as assets or liabilities on the balance sheet and the notion of gain or loss is normally applied with respect to recognized

⁴⁹Companies in competitive industries are constrained in their ability to pass through incurred additional expenses to their customers by increasing product prices. Therefore, these companies are more susceptible to shrinking margins that are attributable to the external economic environment risk factors (e.g., commodity price, currency, interest rate).

⁵⁰A *zero net investment strategy* is one in which, rather than investing one's own funds, an investor borrows a stock (short position), sells the stock, and uses the sale proceeds to buy a stock (long position). In effect, there is no initial investment—hence, the term *zero net investment*.

⁵¹As alluded to in Section 2 (regarding cash flow hedge disclosure shortcomings), the failure to price current-period gains or losses in current-period stock prices can be explained by the limited disclosures regarding hedged item exposure (i.e., percentage of future transactions hedged) and the duration of hedges (i.e., length of time over which the hedging position provides protection).

⁵²For example, a loss on a foreign exchange forward contract used to hedge accounts receivable associated with export sales would mean that the value of expected receivables also likely increased during the period that the forward loss occurred.

assets and liabilities. Therefore, an increase in a contingent, unrecognized liability is not treated as an accounting loss, although it is, in fact, an economic loss (i.e., a reduction in the economic value of the firm occurs).⁵³

How would cash flow hedge re-measurements inform on variable interest rate exposures? The assertion that cash flow hedge gains are indicative of likely future losses of hedged items cannot be readily extended to banks that use cash flow hedging instruments to hedge variable interest rate exposures (floating-rate assets and liabilities). There is no future loss or gain for the underlying balance sheet line item exposures. That being said, in the event that interest rate hedges are partial or the hedging instrument has a shorter maturity than the hedged exposure, a cash flow hedge re-measurement gain can signal that the future interest revenue will be lower than the forecasted amounts or that future interest payments will be greater than forecasted amounts. Hence, at face value, a bank may seem to be hedged, but investors would need to be aware that the future interest revenue or payment amounts may not match those being forecasted under the assumption that an effective hedging strategy is in place.

Put very simply, if and when investors are forecasting the future earnings of different banks, they need to forecast interest revenue and expenses. To that effect, they need to know the consequences of hedging strategies for future interest cash flows. For example, all else being equal, a bank with fully hedged variable interest exposure, a bank with unhedged interest rate exposure, and a bank with partially hedged interest rate exposure should have different earnings forecasts. However, differentiated forecasts can be made only if there are adequate disclosures regarding the hedging strategies, hedged items, and hedging instruments. As a result, in Section 2, we proposed enhanced disclosures (e.g., linked maturity analysis of the hedging instrument and the hedged item) to help investors assess the forecasted interest-related cash flows. Such disclosures will also make reported cash flow hedge re-measurements (gains or losses) more meaningful for analytical purposes.

The conclusions from the above studies, which focused on US and Canadian companies, are consistent with evidence from EU companies that shows that individual OCI line items are value relevant (Goncharov and Hodgson 2011).

In addition to the aforementioned studies, Hodder, Hopkins, and Whalen (2006) presented evidence on the risk relevance of OCI information. They studied US commercial banks and found that comprehensive income (OCI + Net income) volatility contains incremental information on risk relative to net income volatility.

Exhibit 3.1 highlights the main results of a selection of studies supporting the valuation relevance of OCI line items.

⁵³All things being equal, if two firms have unrecognized future purchase commitments, one firm is hedged and the other is only partially hedged or not hedged at all, and, owing to risk factors (e.g., the foreign currency exchange rate), the magnitude of purchase commitments increases, then the hedged firm is economically better off than the firm that is only partially hedged or not hedged.

Exhibit 3.1. Key Studies Supporting the Valuation Relevance of OCI Line Items

| Reference | Country | Research Question | Data | Key Results |
|---|-----------------|--|---|---|
| Jones and Smith (2011) | US | Comparison of the value relevance, predictive value, and persistence of OCI and special (irregular or extraordinary) items | 236 companies reporting non-zero OCI for each year from 1985 to 2005 (4,720 observations) | <ul style="list-style-type: none"> • OCI is value relevant, but less so than continuing net income or even special items. • OCI is negatively persistent, at least for three years. • OCI has incremental ability to predict future continuing net income for one year, as well as future cash flows. |
| Evans, Hodder, and Hopkins (2014) | US | Assessment of predictive value of AFS accumulated fair value gains or losses | 1994–2008 | <ul style="list-style-type: none"> • AFS accumulated fair value gains or losses have predictive value for future total realized income. |
| Campbell (2013) | US | Assessment of predictive value of cash flow hedge gains or losses | 2001–2007 (5,976 observations) | <ul style="list-style-type: none"> • For firms in competitive industries, a one standard deviation increase in unrealized accumulated cash flow hedge gains was associated with a 147 bp shrinkage of gross margin. • Long (short) investment in the firms in competitive industries with accumulated losses (gains) yields a return of 6%–10% over a two-year period. This finding indicates underlying hedged exposures crystallized and that cash flow hedge gains were indicative of the potential for future losses. |
| Kanagaretnam, Mathieu, and Shehata (2009) | Canada | Usefulness of comprehensive income reporting in Canada | 228 firm-year observations for 75 Canadian firms cross-listed on US stock exchanges | <ul style="list-style-type: none"> • Unrealized gains and losses on AFS securities and on cash flow hedges are value relevant. • Comprehensive income is more strongly associated with stock price and returns than is net income and is also a better predictor of future cash flows. |
| Goncharov and Hodgson (2011) | 16 EU countries | Whether comprehensive income (or its components) is more useful in some countries than others | 56,696 observations in the value relevance analysis, 29,489 observations in the prediction of future cash flows | <ul style="list-style-type: none"> • AFS re-measurements, foreign currency translations, and asset revaluations are value relevant. • Comprehensive income is less useful than net income. |

Notes: Exhibit 3.1 reflects only a selection of recent studies showing the decision usefulness of OCI line items, including AFS and cash flow hedge re-measurements. Rees and Shane (2012) and Harjinder (2013) provided a comprehensive and relatively more exhaustive description of OCI-related academic studies.

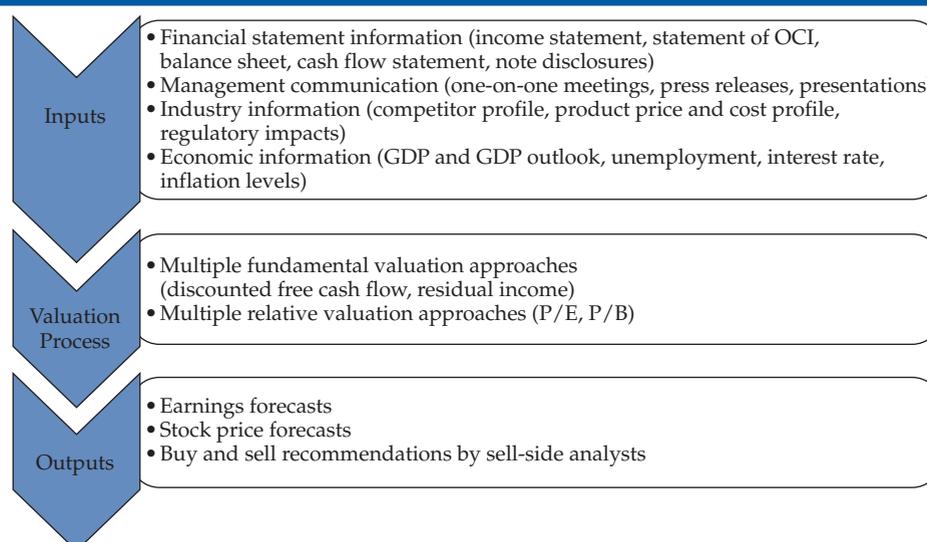
3.2. Do Investors Incorporate OCI into Valuation Models?

Another way of validating the usefulness of information is to address the question of whether OCI line items are incorporated into valuation models. For the following discussion there is a caveat: Though the current application of information reported under current requirements is important, a more fundamental consideration for policymakers has to be *whether enhanced OCI-related disclosures and presentation can result in more widespread use of OCI. As highlighted in Section 2, there are shortcomings with AFS and cash flow hedge disclosures, and enhancing these disclosures will allow investors to better interpret the economic meaning of these OCI statement line items and apply them for financial analysis.*

3.2.1. Investor Valuation Practices: A "Black Box" for Policymakers

As depicted in **Figure 3.3**, financial statement information is one of the key inputs used by investors in valuing companies. Correspondingly, a key question posed by policymakers is whether and how investors incorporate OCI information into their valuation models. This question about the actual application of specific information is important because key actors outside the investment industry, including academic researchers and accounting standard setters, tend to have an incomplete and imperfect understanding of investors' valuation practices (i.e., how and why different kinds of investors and information intermediaries apply available information during valuation).⁵⁴ In fact,

Figure 3.3. Effect of Financial Reporting Information on Valuation



⁵⁴In general, though there is an abundance of academic empirical evidence on outputs from sell-side analysts' use of financial statement information (e.g., earnings forecasts), there is limited documented evidence on actual analytical and valuation practices by diverse investors and information intermediaries (e.g., buy-side analysts, credit analysts). As a result, there is always the risk of inconsistencies between general beliefs about what investors should do (aspirational beliefs), what others assume investors currently do, what investors say they do, and what they actually do. In other words, there can be gaps and inconsistencies between perceived, actual, and normative investor valuation approaches. Thus, to illuminate whether any such inconsistencies exist, it is necessary for future researchers to identify and understand investor analytical practices and corroborate them with findings from empirical research focusing on information characteristics. This analysis should include direct input from investors (via investor surveys and interviews) and should incorporate observations from behavioral studies. Insights from such studies will complement approaches that largely infer investor decisions and investor inputs to valuation from external data (stock prices, earnings forecasts, etc.).

some academic researchers have gone as far as describing what investors do as a “black box” that warrants further scholarly enquiry.⁵⁵

3.2.2. Value Relevance Studies: Indirect Evidence of Investor Use

Evidence that is focused on the properties of financial statement information—including OCI line items (e.g., whether financial statement information is persistent or has predictive value for future cash flows) and capital market outcomes (e.g., value relevance, or the relationship between financial statement information and share prices/returns)—is certainly useful for financial reporting policymakers because such evidence helps build a picture of the decision usefulness of the analyzed information.⁵⁶ That said, such evidence is indirect (i.e., investor use is inferred owing to the relationship between inputs and outputs of the valuation process, as depicted in Figure 3.3) and does not necessarily conclusively prove investor use of OCI during valuation.

Demonstrated value relevance of information allows the inference of the likelihood that investors included such information during valuation. However, value relevance of information could also mean that such information is influenced by the same factors that influence stock prices. In addition, it is possible that financial statement line items are inherently informative (e.g., potentially predictive of future cash flows) and yet are generally ignored by investors for the various reasons that we discussed in Section 2, such as (1) information processing constraints (e.g., difficulties and time constraints in gathering data not provided by data aggregators) and (2) poor accompanying disclosures. Consequently, although empirical evidence on financial statement information’s capital market–related properties (value relevance, risk relevance, persistence, and predictive value) proves that such information is decision useful, it does not provide direct evidence of whether such information is used by investors.

3.2.3. Evidence of OCI Effects on Earnings Forecasts

To complement value relevance research, a relatively more direct way of making inferences about investor use of OCI information is to analyze whether OCI information is factored into sell-side analysts’ future earnings forecasts. In this spirit, a number of recent papers have focused on analysts’ earnings forecasts, predicated on the role of sell-side analysts as information intermediaries for institutional investors.⁵⁷ These studies have found that there is a correlation between OCI and consensus earnings forecasts, suggesting that analysts must have incorporated OCI gains or losses into their earnings forecasts and implying that OCI is reflected in current-period stock prices. They are summarized in **Exhibit 3.2**.

That said, this evidence of OCI being included in earnings forecasts seems to contradict the widespread anecdotal claims of investors broadly ignoring OCI information during valuation. These findings also contradict those of Campbell (2013), who showed that cash flow hedges are associated with future-period stock returns but not with contemporaneous stock returns. Campbell interpreted his findings as evidence that investors do not price current-period cash flow hedge unrealized gains and losses but do price realized cash flow hedge gains and losses in future reporting periods.⁵⁸

⁵⁵Cascino et al. (2013); Ramnath, Rock, and Shane (2008).

⁵⁶Barth, Beaver, and Landsman (2001).

⁵⁷Harjinder (2013); Choi and Zang (2006).

⁵⁸Poor accompanying disclosures on cash flow hedges (e.g., risk type, hedged items) explain why investors could be ignoring this information.

Furthermore, there is a need for an illustration of the asserted relationship between earnings forecasts and OCI across multiple jurisdictions⁵⁹—in order to be comfortable in generalizing these findings. Hence, these findings, which seem to suggest that investors incorporate OCI information into their earnings forecasts, need to be interpreted with caution—especially because this line of research is in its early stages.

Exhibit 3.2. Summary of Two Key Studies on the Relationship between OCI and Earnings Forecasts

| Reference | Country | Research Question | Data | Key Results |
|----------------------|---------|--|--|--|
| Harjinder (2013) | Canada | What is the relationship between OCI numbers and analysts' earnings forecasts? | 411 companies listed on the S&P/TSX Composite Index 1,464 firm-year observations | <ul style="list-style-type: none"> • Some items of OCI are significantly correlated with analysts' forecasts of EPS. • Two components of OCI are correlated with forecast error. This finding implies that when OCI is used in forecasting models, there is increased forecast accuracy. |
| Choi and Zang (2006) | US | Is comprehensive income associated with subsequent-period net income and with analysts' earnings forecasts/forecast revisions/forecast errors? | Assumes that OCI helps managers in the timing and recognition of unrealized gains and losses Approximately 5,200 observations obtained from I/B/E/S | <ul style="list-style-type: none"> • Comprehensive income can predict subsequent-period net income incremental to current net income. • If comprehensive income is less than net income, analysts revise their forecasts downward more than when the opposite situation holds. |

3.3. Putting It Together (Conclusions from Academic Guidance)

In this section, we review a number of recent academic studies that showed the economic information content (value relevance, risk relevance, persistence, and predictive value) of OCI line items, similar to the case of net income line items. In a similar vein, Linsmeier (2014) observed that there is no uniquely identifiable economic characteristic of OCI versus income statement line items.⁶⁰ In other words, the evidence shows that OCI line items are inherently informative and warrant investor attention similar to that accorded to income statement line items. Our analysis of bank data in Sections 4, 5, and 6 builds on the findings in existing literature by further establishing the information content of specific OCI statement and income statement line items.

⁵⁹Harjinder (2013) focused only on Canadian companies.

⁶⁰FASB member Tom Linsmeier presented a discussion paper titled "A Revised Model for Presentation in the Statement(s) of Financial Performance: Potential Implications for Measurement" to the March 2014 Accounting Standard Setters Forum. His observation on the lack of distinguishing characteristics between OCI and income statement items was drawn from an engagement exercise between the FASB and several of its stakeholders (60 participants from user, academic, preparer communities).

Another way of validating the usefulness of OCI information is to address the question of whether OCI line items are incorporated into valuation models. In this respect, we recognize that proof of value relevance and predictive value of OCI line items (Jones and Smith 2011; Kanagaretnam et al. 2009; Evans et al. 2014; Campbell 2013), albeit an important indicator, does not necessarily conclusively establish that investors have used such information in their valuation models.

Hence, we examine the evidence on whether OCI is factored into analysts' earnings forecasts. The focus on this strand of evidence is based on the fact that an established relationship between OCI and earnings forecasts would strengthen the inference from value relevance studies that OCI information is incorporated during valuation. To that effect, there is some evidence (Harjinder 2013; Choi and Zang 2006) that OCI line items may be reflected in sell-side analysts' earnings forecasts. However, we believe that there is a need for more widespread, similar evidence (e.g., as provided by studies focused on the value relevance of OCI line items) before general conclusions can be made regarding whether investors or information intermediaries (sell-side analysts) incorporate OCI into valuation models.

Although we acknowledge the need for more evidence on the relationship between OCI line items and earnings forecasts, we contend that the fundamental question for policymakers, rather than whether investors currently incorporate OCI into valuation, ought to be *whether enhanced OCI-related disclosures and presentation can result in more widespread use of OCI. We believe the answer to this key question is yes.*

Our contention is based on the observations of shortcomings in the disclosure and presentation of OCI line items and OCI data-acquisition difficulties, as discussed in Section 2. We posit that there are structural impediments to the use of OCI for financial analysis beyond currently held beliefs on whether OCI information is useful. In Sections 4, 5, and 6, we take account of these structural impediments, alongside the findings from academic evidence and our own bank data analysis, and show the usefulness of selected OCI line items in order to formulate and propose policy recommendations to improve OCI reporting (Section 2).

Analysis of Bank Income and OCI Statement Data

4. Bank Data Profile

To help build an understanding of the usefulness of OCI line items and supplement the insights from available academic evidence (Section 3), we analyzed OCI data from a sample of selected banks. In Sections 4.1 and 4.2, we provide a profile of the bank data:

- Sample profile (Section 4.1)
- Loss and gain distribution and key statistics on net income and OCI line items (Section 4.2)

4.1. Sample Bank Profile

Sample breakdown: As shown in **Exhibit 4.1**, the sample of 44 banks is drawn from 15 countries (i.e., 30 from EU countries, 10 US banks, and 4 Canadian banks), with the respective financial statements based on differing accounting standards (IFRS, Canadian GAAP, and US GAAP). The OCI totals for US GAAP and IFRS banks are not comparable because IFRS have more restrictions on items that can be reclassified to the income statement. US GAAP allow reclassification of pension expenses, whereas IFRS do not. In addition, Canadian banks began reporting under IFRS in 2012 and reported under Canadian GAAP in the pre-2012 periods.

As can be seen in the overview of academic studies (Section 3 and Appendix B), studies focused on US GAAP tend to dominate the available empirical evidence. Therefore, we purposely biased our sample toward IFRS-reporting companies and, in particular, EU banks. In addition to having similar reporting requirements, many EU banks have relatively similar business model features (universal bank business model with cross-country exposures) and balance sheet structures.

Diverse data sources: Our data come from various sources, as follows.

- Balance sheet and income statement line items are from the Bankscope and Bloomberg databases.
- The OCI statement components were sourced directly from annual reports.
- Cash flow statement data were sourced directly from annual reports.
- P/B data are from Bloomberg.
- The cost of equity data are from Bloomberg.
- CDS spreads are from Markit and Bloomberg.

Analytical horizon: The analysis of the 44 banks is based on data from 2006 to 2013. As noted earlier, we used this sample period because the presentation of OCI subtotal and line items became more detailed starting in 2006 under both US GAAP and IFRS.

Key differences between US GAAP and IFRS: The following are notable differences between US GAAP and IFRS.

- US GAAP allow more items to be reclassified out of OCI into income than IFRS allow. Hence, net OCI and reclassified OCI items for US GAAP-reporting and IFRS-reporting companies are not fully comparable.⁶¹
- There are differences in the financial asset and liability offsetting requirements for US GAAP and IFRS. As a result, total assets on bank balance sheets under US GAAP and IFRS are not comparable. In Section 5, we review AFS assets as a percentage of total assets for a sample of banks—with the caveat that this ratio is not fully comparable.

Exhibit 4.1. Sample Banks Profile

| European Banks (IFRS) | US Banks (US GAAP) | Canadian Banks (Canadian GAAP and IFRS) |
|----------------------------|--------------------------|---|
| <i>United Kingdom</i> | J.P. Morgan | Toronto-Dominion Bank |
| HSBC | Citigroup | Royal Bank of Canada |
| Barclays | Bank of America | Scotiabank |
| The Royal Bank of Scotland | Bank of New York Mellon | Canadian Imperial Bank of Commerce |
| Lloyds Banking Group | Zions Bancorporation | |
| Standard Chartered | Wells Fargo & Company | |
| | Morgan Stanley | |
| <i>France</i> | Goldman Sachs | |
| BNP Paribas | State Street Corporation | |
| Crédit Agricole | Sun Trust Bank | |
| Société Générale | | |
| Natixis | | |
| <i>Spain</i> | | |
| Banco Santander | | |
| BBVA | | |
| Banco Sabadell | | |
| <i>Italy</i> | | |
| UniCredit | | |
| Intesa Sanpaolo | | |
| <i>Germany</i> | | |
| Deutsche Bank | | |
| Commerzbank | | |
| <i>Switzerland</i> | | |
| UBS | | |
| Credit Suisse | | |

(continued)

⁶¹It is important to note that apart from OCI, net income under IFRS, US GAAP, and other countries' GAAP is also not fully comparable, but this fact does not nullify the merits of comparing performance across countries on the basis of reported net income and OCI.

Exhibit 4.1. Sample Banks Profile (continued)

| European Banks (IFRS) | US Banks (US GAAP) | Canadian Banks (Canadian GAAP and IFRS) |
|-----------------------|--------------------|---|
| <i>Belgium</i> | | |
| KBC Bank | | |
| Dexia | | |
| <i>Ireland</i> | | |
| Bank of Ireland | | |
| Allied Irish Bank | | |
| <i>Denmark</i> | | |
| Danske Bank | | |
| <i>Sweden</i> | | |
| Nordea Bank | | |
| <i>Netherlands</i> | | |
| ING | | |
| SNS REAAL | | |
| Rabobank | | |
| <i>Austria</i> | | |
| Erste Bank | | |
| Raiffeisen | | |
| <i>Portugal</i> | | |
| Millennium BCP | | |

Notes: Canadian companies began reporting under IFRS starting in 2012. They reported under Canadian GAAP in the pre-2012 periods. Credit Suisse reports under US GAAP.

4.2. Loss and Gain Distribution and Key Statistics on Income and OCI Statement Components

As noted in Section 3, it is important to identify any distinguishing information characteristics for income and OCI statement components. Evaluating the respective data properties of OCI and net income line items can help build a profile of the inherent information characteristics (e.g., volatility) of these line items. Hence, we analyze the following:

- Distribution of gains and losses—net income and net OCI (Section 4.2.1)
- Distribution histograms (Section 4.2.2)
- Key statistics on OCI and income statement components (Section 4.2.3)

4.2.1. Distribution of Gains and Losses (Net OCI Losses More Common Than Net Income Losses)

For the selected banks, we analyzed the pattern of gains or losses over the eight-year horizon of our analysis. We specifically analyzed the frequency of respective gains or losses of the following:

- ROE
- Net OCI as a percentage of equity (OCIE)
- Net comprehensive income as a percentage of equity (CIE)

As **Table 4.1** shows, we found that OCIE losses (52%) were more common than gains (48%). In contrast, the aggregate ROE had losses (16%) less often than gains (84%). Effectively, our bank study findings indicate that if measured by net comprehensive income for the year, banks would be seen as less profitable than they would be if measured by net income. As argued in Section 2, this finding supports the need for greater investor attention to statements of OCI items and is consistent with the findings of Mulford et al. (2013).

| | ROE | OCIE | CIE |
|--------|-----|------|-----|
| Number | 352 | 346 | 346 |
| Gains | 84% | 48% | 77% |
| Losses | 16% | 52% | 23% |

Note: OCIE = Net OCI/Equity; CIE = Net comprehensive income/Equity.

4.2.2. Distribution Histograms

Figure 4.1 provides a depiction of the distribution of gains and losses, effectively showing the frequency of different magnitudes of gains or losses for the net income (ROE), net OCI (OCIE), and net comprehensive income (CIE). The distributions of ROE, OCIE, and CIE amounts as represented by the histograms show that net income is skewed toward gains to a greater degree than is net OCI.

4.2.3. Key Statistics on Net Income and OCI Line Items

In this section, we analyze key statistics on net income and OCI totals and line items. The selected items are outlined in **Exhibit 4.2**. Alongside the two OCI items (AFS and cash flow hedge re-measurements and reclassified amounts), we mainly analyze key statistics on trading profits because trading financial instruments are comparable to AFS and cash flow hedge securities (e.g., debt and derivative securities) in nature and are likely to have both gain and loss re-measurements during different reporting periods.

Figure 4.1. Distribution Profiles

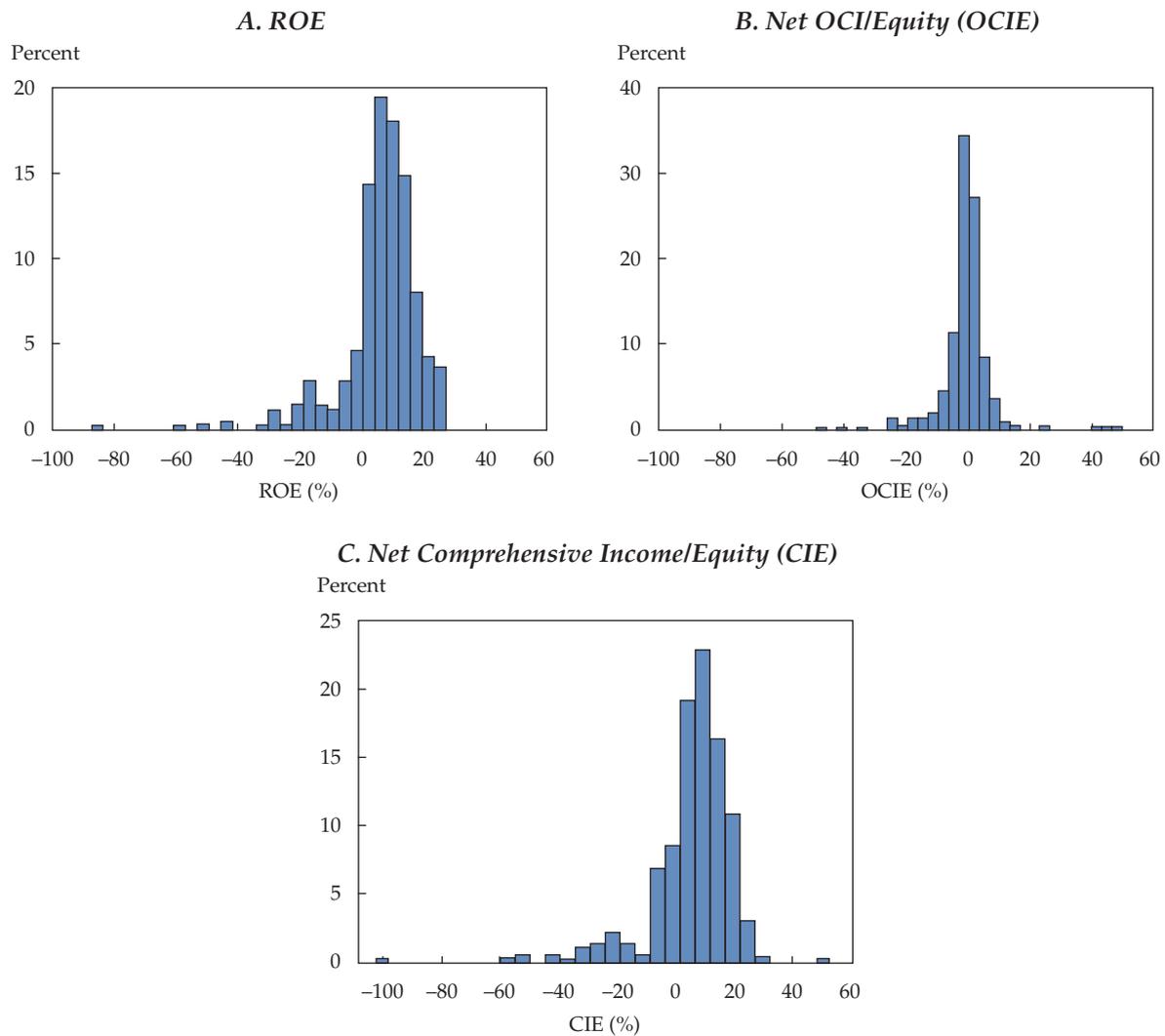


Exhibit 4.2. OCI and Income Statement Components

| Income Statement Components | OCI Statement Components |
|----------------------------------|---|
| Total | Totals |
| Net income/Equity (ROE) | Comprehensive income total/Equity (CIE) |
| | OCI total/Equity (OCIE) |
| Line items | Line items |
| Trading profit/Equity (TRDPROFE) | AFS unrealized gains or losses/Equity (AFSUGLE) |
| | AFS gains or losses reclassified to income statement/Equity (AFSRGLE) |
| | AFS net unrealized gains or losses/Equity (AFSNGLE) |
| | Cash flow hedge (CFH) unrealized gains or losses/Equity (CFHUGLE) |
| | Cash flow hedge gains or losses reclassified to income statement/Equity (CFHRGLE) |
| | Cash flow hedge net unrealized gains or losses/Equity (CFHNGLE) |

Notes: Components represent line items and totals. Net unrealized gains or losses represent unrealized gains or losses after offsetting reclassified-to-income-statement gains or losses.

The results in **Table 4.2** outline key measures of averages (mean and median), standard deviation, and coefficient of variation (Standard deviation/Mean) for selected income and OCI statement components. These measures help convey various data properties (e.g., dispersion, average, sign-varying volatility) and inform on inherent information characteristics of income and OCI statement components.

The results lead to the following conclusions.

- *OCI statement components have greater sign-varying volatility than income statement components:* The magnitude of the mean of net OCI and line items is near zero (e.g., the mean of OCI as a percentage of equity is -0.8%), showing that these line items fluctuate between positive and negative amounts.

In contrast, the average trading profit and ROE have larger magnitudes than the evaluated OCI line items have (e.g., mean ROE is 5.6%). The greater multiperiod mean of net income reflects a lower level of fluctuation between gains and losses for the income statement line items. A similar conclusion is reached when analyzing the coefficient of variation (Standard deviation/Mean). The larger coefficient of variation for OCI statement line items mainly arises because the magnitude of the multiperiod mean of OCI items is near zero, unlike that of income statement line items.

- *AFS re-measurements are more volatile than reclassified amounts:* The standard deviation and coefficient of variation show that AFS re-measurements are more volatile than reclassified-to-income-statement amounts (recycled amounts). In Section 5, we also show that the multiperiod variation of average AFS re-measurement amounts for the selected banks is higher than that of reclassified amounts. As discussed in Section 2, these findings (re-measurements are more volatile than reclassified amounts) are indicative of the likelihood that bank managers time AFS security sales to ensure smoother multiperiod income statement effects relative to those portrayed by OCI statement re-measurements.

Table 4.2. Selected Income and OCI Statement Components: Key Statistics

| | N | Mean | Median | Maximum | Minimum | SD | CV |
|--|-----|------|--------|---------|---------|-------|-------|
| <i>Income statement components</i> | | | | | | | |
| ROE | 350 | 5.6% | 7.8% | 27.1% | -233.7% | 17.9% | 3.2 |
| TRDPROFE | 344 | 4.7 | 4.4 | 59.4 | -120.3 | 12.1 | 2.6 |
| <i>OCI statement components</i> | | | | | | | |
| CIE | 344 | 4.4% | 7.8% | 52.9% | -245.3% | 20.0% | 4.5% |
| OCIE | 342 | -0.8 | -0.1 | 49.7 | -49.0 | 8.2 | -10.4 |
| AFSUGLE | 298 | 0.1 | 0.3 | 35.7 | -63.9 | 8.0 | 60.6 |
| AFSNGLE | 338 | -0.1 | 0.04 | 38.6 | -55.3 | 7.8 | -82.4 |
| CFHUGLE | 300 | 0.2 | 0.04 | 7.5 | -7.8 | 1.6 | 7.9 |
| CFHNGLE | 339 | 0.03 | 0.00 | 7.5 | -4.6 | 1.2 | 45.6 |
| <i>Items reclassified from OCI statement to income statement</i> | | | | | | | |
| AFSRGLE | 259 | 0.2% | 0.3% | 8.1% | -13.6% | 2.4% | 10.3 |
| CFHRGLE | 220 | 0.20 | 0.02 | 8.6 | -10.8 | 1.5 | 7.4 |

Notes: CV = Coefficient of variation; SD = Standard deviation. See Exhibit 4.2 for definitions of terms. We excluded outlier values, including those for Dexia Bank in 2011, because they would have distorted the overall statistics.

5. Information Content of Specific OCI Line Items

5.1. Information Content: AFS Gains or Losses

5.1.1. AFS Securities: A Key Part of Bank Financial Statements

Table 5.1, which profiles the AFS assets held by 15 large banks in the EU and the United States, illustrates that AFS securities can be a significant component of bank balance sheet assets. **Table 5.2** delineates the purchases and sale proceeds of AFS securities as reported on the statement of cash flows and similarly shows that material amounts appear on this statement annually.

Tables 5.1 and 5.2 show that banks have different proportions of AFS assets and that AFS security holdings vary significantly across these banks and across time periods. This demonstrates that there is a purposeful management choice of what level of AFS securities to hold.⁶² These observed trends also show that it is important for investors to monitor the effectiveness of asset utilization and balance sheet management of banks. In addition, they also highlight the importance of monitoring changes in the value of these securities.

| Table 5.1. Balance Sheet Representation: AFS/Total Assets | | | | | | | | |
|--|------|------|------|------|------|------|------|------|
| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| <i>EU banks</i> | | | | | | | | |
| Deutsche Bank | 3.0% | 2.4% | 2.1% | 2.8% | 1.3% | 1.1% | 2.2% | 2.2% |
| HSBC | 15.0 | 14.8 | 14.8 | 15.5 | 14.9 | 11.3 | 11.6 | 10.5 |
| BNP Paribas | 11.3 | 10.1 | 9.8 | 11.0 | 10.8 | 6.3 | 6.6 | 6.7 |
| Crédit Agricole | 17.0 | 16.1 | 5.1 | 6.0 | 5.5 | 3.9 | 12.4 | 4.9 |
| Barclays | 7.0 | 5.0 | 4.4 | 4.4 | 4.1 | 3.2 | 3.5 | 4.9 |
| The Royal Bank of Scotland | 5.3 | 5.7 | 7.3 | 7.8 | 8.6 | 5.8 | 5.4 | 3.8 |
| Banco Santander | 7.5 | 7.3 | 6.9 | 7.1 | 7.8 | 4.7 | 4.5 | 4.6 |
| Société Générale | 10.9 | 10.2 | 10.6 | 9.2 | 8.8 | 7.2 | 8.2 | 8.2 |
| UBS | 5.9 | 5.3 | 3.7 | 5.7 | 6.1 | 0.3 | 0.2 | 0.4 |
| Lloyds Banking Group | 5.2 | 3.4 | 3.9 | 4.3 | 4.5 | 6.8 | 5.7 | 5.6 |
| <i>US banks</i> | | | | | | | | |
| J.P. Morgan | 13.7 | 15.7 | 16.1 | 14.9 | 17.7 | 9.5 | 5.5 | 6.8 |
| Bank of America | 12.8 | 14.1 | 13.0 | 14.9 | 13.6 | 15.2 | 12.4 | 13.2 |
| Citigroup | 15.5 | 15.8 | 14.2 | 14.3 | 12.9 | 9.0 | 8.8 | 13.7 |
| Wells Fargo & Company | 16.5 | 16.5 | 16.9 | 13.7 | 13.9 | 11.6 | 12.7 | 8.8 |
| Bank of New York Mellon | 21.2 | 25.8 | 24.0 | 25.2 | 24.4 | 15.8 | 23.4 | 18.8 |

Notes: This table includes an illustrative sample of the largest banks. Owing to varied financial instrument offsetting requirements, US banks' total assets are not comparable to IFRS-reporting banks' total assets.

⁶²The level of AFS assets could be driven by economic considerations (e.g., liquidity buffers held to structurally hedge fixed interest rate liabilities) and by capital management and accounting considerations (e.g., when reclassification of sovereign debt securities from the AFS category to the "held to maturity" category occurs).

Table 5.2. Cash Flow Statement Representation: AFS Cash Inflow/Outflow as a Percentage of Total Assets

| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 |
|-----------------------------|-------|-------|-------|-------|-------|-------|
| EU Banks | | | | | | |
| <i>Deutsche Bank</i> | | | | | | |
| Purchases | -2.0 | -1.1 | -0.9 | -0.7 | -0.8 | -1.7 |
| Sales and maturity proceeds | 1.8 | 1.0 | 1.5 | 0.8 | 1.2 | 1.7 |
| <i>HSBC</i> | | | | | | |
| Purchases | -13.6 | -12.7 | -12.5 | -13.9 | -12.9 | -11.0 |
| Sales and maturity proceeds | 12.8 | 12.3 | 12.2 | 13.1 | 10.2 | 8.8 |
| <i>Barclays</i> | | | | | | |
| Purchases | -7.0 | -5.4 | -4.3 | -5.1 | -5.7 | -2.8 |
| Sales and maturity proceeds | 5.3 | 5.0 | 4.3 | 4.8 | 6.4 | 2.5 |
| US Banks | | | | | | |
| <i>J.P. Morgan</i> | | | | | | |
| Purchases | -5.4 | -8.0 | -8.9 | -8.5 | -17.0 | -11.4 |
| Sales and maturity proceeds | 6.7 | 8.2 | 6.9 | 10.0 | 9.9 | 6.5 |
| <i>Citigroup</i> | | | | | | |
| Purchases | -11.7 | -13.8 | -16.8 | -21.2 | -15.1 | -17.8 |
| Sales and maturity proceeds | 11.5 | 13.2 | 17.2 | 19.5 | 11.8 | 15.6 |
| <i>Bank of America</i> | | | | | | |
| Purchases | -8.4 | -7.4 | -4.7 | -8.8 | -8.3 | -10.1 |
| Sales and maturity proceeds | 9.7 | 6.6 | 8.3 | 7.5 | 10.0 | 8.1 |

Notes: This table includes an illustrative sample of the largest banks. We also analyzed data from UBS and BNP Paribas, but we did not include their data in the table because they reported cash inflows/outflows only on a net basis.

Illustrative AFS re-measurements reported on OCI statement: **Table 5.3** provides an illustrative breakdown of AFS unrealized gains or losses (re-measurements) reported on the OCI statement for 17 banks. The material magnitudes and the pattern of year-to-year trends of AFS re-measurements show that this reported line item is worthy of investor attention during performance and risk analysis and valuation. For example, in the stressed economic environment during the onset of the financial crisis (i.e., during 2008), most of the selected banks had losses, and some had significant losses of greater than 10% (HSBC, Deutsche Bank, Lloyds Banking Group).

That said, it remains challenging for investors and readers of financial statements to readily identify the entity-specific economic drivers of these re-measurements because of the lack of adequate accompanying disclosures. US and Canadian banks generally provided disclosures for their accumulated unrealized gains or losses. However, as discussed in Section 2, it was challenging to find adequate disclosures on reporting-period-specific unrealized gains or losses and the factors that drove the changes in values of the securities.

Table 5.3. AFS Unrealized Gains or Losses/Equity

| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
|------------------------------|------|------|-------|-------|------|--------|------|------|
| <i>EU banks</i> | | | | | | | | |
| Deutsche Bank | 0.1% | 3.5% | -1.3% | -0.2% | 1.4% | -14.2% | 2.6% | 3.4% |
| BNP Paribas | 1.4 | 5.1 | -3.0 | -2.8 | 3.5 | -7.9 | 0.4 | 2.0 |
| Crédit Agricole | -0.2 | 12.2 | -3.6 | -1.7 | 5.1 | -8.1 | 1.7 | 1.4 |
| Société Générale | 0.2 | 4.8 | -2.3 | 0.9 | 3.2 | -7.2 | -0.7 | 2.5 |
| HSBC | -0.9 | 3.5 | 0.8 | 4.1 | 7.2 | -23.7 | 0.6 | 1.4 |
| Barclays | -4.3 | 2.1 | 4.4 | -0.2 | 2.0 | 3.7 | 1.5 | 0.3 |
| The Royal Bank of Scotland | 1.0 | 2.8 | 2.3 | 0.2 | 1.3 | -8.5 | -0.2 | 10.5 |
| Lloyds Banking Group | -1.7 | 2.0 | 5.4 | 2.6 | 4.6 | -20.9 | -3.5 | -0.1 |
| Banco Santander | 1.4 | 2.1 | 0.3 | -2.3 | 2.9 | -5.9 | 1.5 | |
| UBS | -0.1 | 0.7 | 2.8 | -1.0 | 0.3 | -2.2 | 2.9 | 4.6 |
| <i>US and Canadian banks</i> | | | | | | | | |
| J.P. Morgan | -1.7 | 2.2 | 1.1 | 1.4 | 2.9 | -1.1 | 0.4 | -0.2 |
| Citigroup | -1.0 | NA | NA | NA | NA | NA | NA | NA |
| Bank of America | -3.0 | 1.2 | 0.6 | 3.4 | 3.9 | -5.8 | NA | NA |
| Bank of New York Mellon | -2.3 | 2.7 | 0.9 | 2.3 | 2.6 | -8.1 | -1.2 | 1.1 |
| Wells Fargo & Company | -4.5 | 3.2 | -0.4 | 1.2 | 8.8 | -6.7 | 0.1 | 0.4 |
| Toronto-Dominion Bank | -0.9 | 1.4 | -0.5 | 1.1 | 2.9 | -5.4 | 0.6 | NA |
| Royal Bank of Canada | 0.0 | 0.4 | -0.1 | 1.1 | 1.8 | -4.5 | -0.4 | NA |

NA = Not available.

Notes: This table includes an illustrative sample of the largest banks. Citigroup reported only the net unrealized gains or losses (i.e., unrealized gains or losses after offsetting the reclassified-to-income-statement gains or losses) for the 2006-12 periods. The amounts reported in the table represent re-measurements before offsetting reclassified amounts. They effectively represent the value accretion or value depletion of AFS securities during each reporting period. The EU banks' unrealized gains or losses are not 100% comparable with those of the US and Canadian banks because EU banks often did not provide the after-tax re-measurements whereas US and Canadian banks did.

5.1.2. Predictive Value of AFS Unrealized Gains or Losses

Studies have established the value relevance (association with stock prices and returns) of AFS unrealized gains or losses (see Section 3).⁶³ That said, as Evans et al. (2014) contended, it is necessary to also establish whether these unrealized gains or losses can help predict future cash flows, in order to understand their valuation relevance.

The asset pricing theory in financial economics posits that the prices of financial assets follow a “random walk” path, meaning that today’s security prices should not have any predictive ability for the security prices that will exist at a future date (i.e., when these securities will be sold). This theory raises the question, How could AFS unrealized losses or gains that are reported on the OCI statement have predictive ability for future cash flows and company value?

Predictive power of short-term-held AFS security re-measurements: If securities are held for short-term horizons, their reported unrealized gains or losses will be predictive of the gains or losses that will be realized when these securities are sold. In other words, re-measurements of short-term-horizon securities are indicative of their realized (monetized) gains or losses. In this vein, if we assume that some AFS securities are held for short horizons, their unrealized gains or losses would have predictive value of the realized gains or losses when these securities are sold.

Our analysis of AFS security purchases and sales in the cash flow statement (see Table 5.2) seems to suggest that at least some of these securities are held for short-term horizons. Therefore, one would expect that reported unrealized gains or losses for short-term-held AFS securities have information content regarding the likely near-term future cash flows.⁶⁴

However, some AFS securities are likely to be held for longer time horizons (e.g., greater than two years), and for such securities, the re-measurements during current reporting periods would not be predictive of the gains or losses that will be realized at a future date when these securities are sold.

Predictive of total realized return: Apart from the question of whether unrealized gains or losses actually help predict realized gains or losses, Evans et al. (2014) provided an alternative explanation of why AFS unrealized gains or losses would help predict future cash flows (beyond the idea that banks have short holding horizons for AFS securities). They contended the following.

- Unrealized gains or losses of AFS fixed-rate assets *are predictive of future-period relative total realized return* for banks that hold similar assets. For example, if two banks (A and B) have fixed-income securities with the same credit quality and time remaining to maturity but different coupon rates,⁶⁵ there could be a scenario in which at a particular date, depending on the prevailing market rate, Bank A has an unrealized gain while Bank B has an unrealized loss. For example, this situation could occur if Bank A has a coupon rate of 8%, Bank B’s rate is 6%, and the market rate for the securities at the reporting date is 7%. In this instance, the unrealized gain (loss) represents an opportunity benefit (cost).

⁶³Kanagaretnam et al. (2009); Jones and Smith (2011).

⁶⁴We make inferences on AFS holding horizons only from the cash flow statement and not from the disclosed maturity analysis tables because the latter tend to show only the contractual maturity profile, rather than the expected/behavioral maturity profile, of AFS securities.

⁶⁵Differing coupons could be due to differing dates of acquisition. The coupons present the cost of funding at a particular date.

- Because Bank A has the same asset—although it is higher yielding—that Bank B has, investors analyzing Banks A and B should expect that Bank A has a higher total realized return than Bank B has for this AFS fixed-income security. Effectively, a comparison of both periodic and accumulated unrealized gains or losses can facilitate the comparison of expected total returns of securities if similar securities are held by the banks.⁶⁶

5.1.3. Assessing Unrealized vs. Reclassified-to-Income-Statement Gains/Losses

Table 5.4, Figure 5.1, and Table 5.5 show the year-to-year variation of AFS-related (1) unrealized gains/losses and (2) reclassified-to-income-statement gains/losses. The key conclusions gleaned from the multiperiod trends are as follows.

- *Reclassified amounts have less year-to-year variation than re-measurements:* The reclassified amounts, which affect net income and regulatory capital, generally have a lower magnitude and smoother (i.e., less volatile) year-to-year trend than the unrealized amounts, which affect only the book value of equity and balance sheet. The observed data trends for AFS reclassified amounts relative to unrealized amounts seem to support the notion that AFS securities are often used to smooth income and regulatory capital, as highlighted and empirically supported by Barth et al. (2014).
- *Re-measurements can reflect changes in the macroeconomic environment:* The average magnitude of unrealized gains or losses (re-measurements) for the selected banks varied across the analyzed periods (Table 5.4). In broad terms, we assume that the magnitude of re-measurements is a reflection of changes in the values of debt and equity securities. The value of debt securities is mainly influenced by general interest rate levels (cost of money) and the credit risk spread of the borrowing parties.⁶⁷ Credit risk spread within the observed obligor-specific borrowing rate reflects the risk premium that is added to the general cost of money prevailing in any jurisdiction.

Similarly, the value of equity securities is influenced by an array of composite factors, and these factors are themselves shaped by key macroeconomic factors, including interest rates.⁶⁸ As a result, we would expect the macroeconomic environment to influence changes in the value of AFS securities. Such an impact is observable for 2008, when the financial crisis crystallized and there was a collapse in asset prices, including those of debt and equity securities; these broad macroeconomic trends are reflected in the sharp decline in AFS security values as shown by the large average unrealized losses (−8.3%) in 2008. Declines in the value of securities occurred in 2010 and 2011, and recoveries occurred in 2009, 2012, and 2013. In Section 6, we analyze these trends for the three key regions of our sample (the EU, the United States, and Canada) in order to better discern how the country- or region-specific economic environment could have influenced the changes in the value of AFS securities.

⁶⁶Admittedly, under the current reporting framework, it will be difficult to make the proposed comparison. This comparison can be meaningfully made only if reporting banks provide disclosures that adequately disaggregate AFS accumulated unrealized gains or losses by type of security and provide details of these securities to allow readers to identify which portions of the AFS portfolio are comparable across banks.

⁶⁷The general cost of money is dictated by the central bank monetary policy applied in a particular jurisdiction.

⁶⁸The value of equity is influenced by GDP outlook and industry-specific and business model factors that affect the outlook on company-specific profitability and risk profile.

In contrast to AFS re-measurements, the multiperiod variation is less pronounced for AFS reclassified gains or losses (Table 5.4). With the almost smooth year-to-year trends, it is a bit more challenging at face value to assign economic meaning to the variation in magnitude of reclassified amounts.

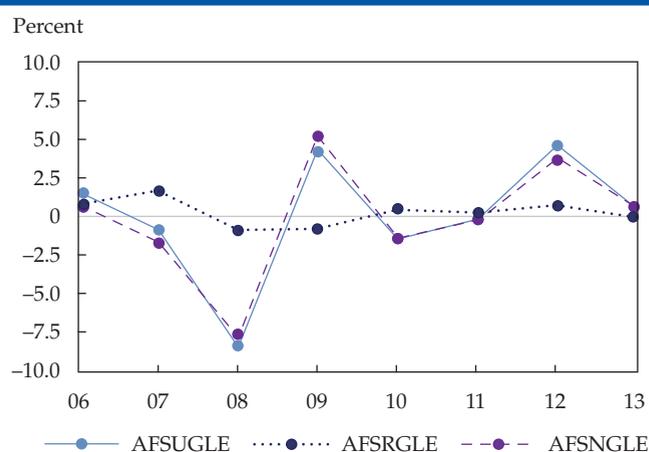
As discussed in Section 2, for our sample banks over the period of analysis, AFS reclassified gains were more common than losses in six of the eight years (Table 5.5). The exceptions were 2008 and 2009, when significant AFS impairments were likely. This finding hints at the likely systematic bias toward reclassified-to-income-statement items being gains. The assessment of frequency of gains or losses also shows that re-measurements had greater multiperiod variation than the reclassified amounts did, which we take to mean that changes in the economic environment are more likely to affect whether a re-measurement gain or loss occurs than whether a reclassification gain or loss occurs.

Table 5.4. Magnitude of AFS Unrealized vs. Reclassified Gains or Losses

| Year | AFSUGLE | N | AFSRGLE | N | AFSNGLE | N |
|------|---------|----|---------|----|---------|----|
| 2006 | 1.6% | 30 | 0.9% | 22 | 0.8% | 37 |
| 2007 | -0.8 | 34 | 1.7 | 26 | -1.7 | 42 |
| 2008 | -8.3 | 36 | -0.9 | 30 | -7.7 | 44 |
| 2009 | 4.3 | 39 | -0.8 | 35 | 5.2 | 44 |
| 2010 | -1.5 | 39 | 0.5 | 35 | -1.4 | 44 |
| 2011 | -0.1 | 41 | 0.3 | 37 | -0.2 | 44 |
| 2012 | 4.6 | 40 | 0.7 | 37 | 3.7 | 43 |
| 2013 | 0.5 | 41 | -0.1 | 39 | 0.6 | 42 |

Notes: N represents the number of sample banks with available data. AFSUGLE = AFS unrealized gains or losses/Equity; AFSRGLE = AFS reclassified gains or losses/Equity; AFSNGLE = AFS net unrealized gains or losses/Equity. Net unrealized gains or losses represent unrealized gains or losses after offsetting reclassified-to-income-statement gains or losses.

Figure 5.1. AFS Unrealized vs. Reclassified Gains or Losses



Note: AFSUGLE = AFS unrealized gains or losses/Equity; AFSRGLE = AFS reclassified gains or losses/Equity; AFSNGLE = AFS net unrealized gains or losses/Equity.

Table 5.5. Percentage Frequency of AFS-Related Gains or Losses

| Year | Unrealized Gains or Losses | | | Reclassified Amounts | | |
|------|----------------------------|--------|--------------|----------------------|--------|--------------|
| | Gains | Losses | No. of Banks | Gains | Losses | No. of Banks |
| 2006 | 66.7% | 33.3% | 30 | 81.8% | 18.2% | 22 |
| 2007 | 50.0 | 50.0 | 34 | 84.6 | 15.4 | 26 |
| 2008 | 5.7 | 94.3 | 35 | 41.4 | 58.6 | 29 |
| 2009 | 94.9 | 5.1 | 39 | 45.7 | 54.3 | 35 |
| 2010 | 59.0 | 41.0 | 39 | 65.7 | 34.3 | 35 |
| 2011 | 45.0 | 55.0 | 40 | 61.1 | 38.9 | 36 |
| 2012 | 97.5 | 2.5 | 40 | 78.4 | 21.6 | 37 |
| 2013 | 51.2 | 48.8 | 41 | 79.5 | 20.5 | 39 |

Notes: *N* represents the number of sample banks with available data. Frequency percentage is the extent to which either a gain or a loss occurs. For example, for 2013, 21 of 41 (51.2%) banks had unrealized gains. This table shows that there is greater variation in the frequency of gains (losses) for re-measurements than for reclassified amounts.

5.2. Information Content: Cash Flow Hedge Gains or Losses

5.2.1. Illustrative Cash Flow Hedge OCI Re-measurements across Sample Banks

Cash flow hedges typically relate to forecasted transactions (e.g., those pertaining to foreign currency and variable interest rate debt instruments; see Appendix C for details of the accounting approach). **Table 5.6** shows illustrative trends of 17 banks' cash flow hedge re-measurements that are reported on the OCI statement. Banks with unrealized cash flow hedge gains as a proportion of equity of greater than 3% include

- Toronto-Dominion Bank, with gains from 2008 to 2013;
- UBS, with gains in 2008, 2011, and 2012; and
- Barclays, with gains in 2011 and 2012.

As discussed in Section 2, robust disclosures regarding the hedging strategy (i.e., hedging instrument and hedged item details) are necessary in order for investors to be able to project future cash flows associated with the reported cash flow hedge re-measurements.

Table 5.6. Illustrative Cash Flow Hedge Re-measurement Trends of 17 Banks

| | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
|------------------------------|-------|-------|--------|--------|-------|--------|--------|--------|
| <i>EU banks</i> | | | | | | | | |
| Deutsche Bank | 0.17% | 0.08% | -0.26% | -0.15% | 0.31% | -0.82% | -0.05% | -0.21% |
| BNP Paribas | -0.92 | 0.59 | 0.75 | 0.04 | -0.17 | 1.23 | 0.29 | -0.62 |
| Crédit Agricole | -0.68 | 0.44 | 0.35 | -0.19 | -0.16 | 0.93 | 0.23 | 0.30 |
| Société Générale | 0.09 | -0.06 | -0.10 | -0.25 | -0.32 | 0.75 | 0.23 | -0.12 |
| HSBC | 0.41 | 0.30 | -0.35 | -0.11 | 0.35 | -1.72 | 0.46 | 1.35 |
| Barclays | -2.99 | 2.50 | 3.82 | 0.97 | 0.49 | 0.64 | 0.33 | -1.60 |
| The Royal Bank of Scotland | -1.63 | 2.97 | 3.18 | 0.23 | 0.40 | -0.75 | -0.50 | -0.24 |
| Lloyds Banking Group | -3.12 | 0.26 | 1.97 | -2.23 | -1.20 | -0.25 | -0.11 | |
| Banco Santander | 0.58 | 0.15 | -0.13 | -0.11 | 0.22 | -0.80 | -0.30 | |
| UBS | -1.31 | 3.41 | 5.84 | 1.90 | 0.16 | 4.94 | 0.87 | 0.00 |
| <i>US and Canadian banks</i> | | | | | | | | |
| J.P. Morgan | -0.15 | 0.04 | 0.02 | 0.09 | 0.28 | 0.21 | -0.36 | -0.13 |
| Citigroup | 0.25 | NA | NA | NA | NA | NA | NA | NA |
| Bank of America | 0.05 | 0.11 | -0.68 | -0.49 | 0.07 | 0.08 | NA | NA |
| Bank of New York Mellon | 0.02 | 0.01 | 0.01 | 0.04 | -0.06 | 0.08 | -0.05 | 0.03 |
| Wells Fargo & Company | -0.02 | 0.03 | 0.13 | 0.37 | 0.09 | 0.60 | 0.84 | 0.07 |
| Toronto-Dominion Bank | 1.29 | 1.70 | 1.37 | 4.62 | 4.40 | 4.81 | -0.68 | NA |
| Royal Bank of Canada | -0.02 | 0.07 | 0.71 | -0.86 | 0.42 | -1.97 | 0.33 | NA |

NA = Not available.

Notes: This table shows an illustrative sample of the largest global banks. Citigroup reported only the net unrealized gains or losses (i.e., unrealized gains or losses after offsetting reclassified-to-income-statement gains or losses) for the 2006–12 periods. The EU banks' unrealized gains or losses are not 100% comparable with those of the US and Canadian banks because EU banks often did not provide the after-tax re-measurements whereas US and Canadian banks did.

5.2.2. Predictive Value of Cash Flow Hedge Re-measurements

As discussed in Section 3, cash flow hedge unrealized gains or losses reported on the OCI statement can convey information regarding the future profit margins and cash flow prospects of the reporting firm because cash flow hedge gains (losses) signal that the underlying hedged items have experienced unrecognized losses (gains). In the event that the underlying exposure has been only partially hedged or if the maturity of the hedging instrument is shorter than that of the hedged exposure, a reported cash flow hedge gain (loss) is indicative of the possibility of realization of future cash flow reductions from the hedged exposure.⁶⁹

⁶⁹Campbell (2013) found that unrealized cash flow hedge gains/losses are negatively associated with future gross profit margins. Campbell found that a zero net investment strategy that is long (short) companies with reported cash flow hedge unrealized losses (gains) yielded a return of 6%, further showing that investors do not price cash flow hedge gains (losses) when they are reported—even when they are indicative of future losses (gains).

5.2.3. Multiperiod Cash Flow Hedge Re-measurements versus Reclassified Gains or Losses

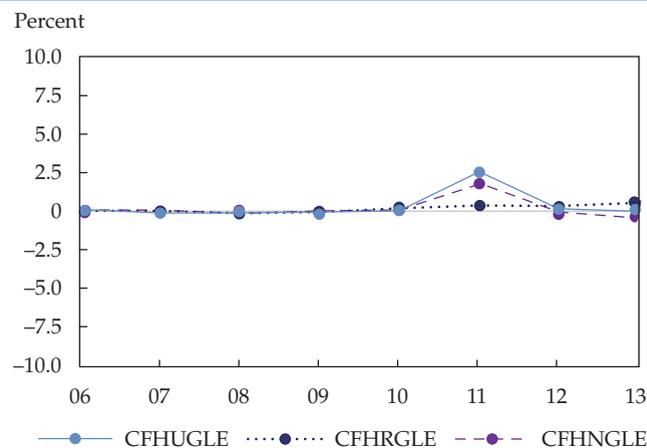
The results in **Table 5.7** and **Figure 5.2** show that there was an average cash flow hedge gain for the selected banks during most of the assessed reporting periods, except for 2008 and 2009. In addition, as can be seen in **Table 5.8**, gains were more frequent than losses for most years, except for 2007. That said, at face value, it is hard to assign any economic meaning to the multiperiod average magnitude and frequency of gains or losses. These findings are understandable because, as we have argued, cash flow hedge re-measurements have signaling value for future gains or losses of underlying exposures (e.g., hedged forecasted foreign currency transactions and interest rate risk exposures).

Table 5.7. Magnitude of Cash Flow Hedge Unrealized vs. Reclassified-to-Income-Statement Gains or Losses

| Year | CFHUGLE | N | CFHRGLE | N | CFHNGLE | N |
|------|---------|----|---------|----|---------|----|
| 2006 | 0.01% | 29 | 0.10% | 17 | -0.07% | 37 |
| 2007 | 0.08 | 35 | 0.02 | 21 | 0.00 | 43 |
| 2008 | -0.16 | 37 | -0.11 | 25 | -0.32 | 43 |
| 2009 | -0.03 | 39 | -0.01 | 28 | 0.05 | 44 |
| 2010 | 0.34 | 39 | 0.35 | 31 | 0.12 | 44 |
| 2011 | 2.50 | 41 | 0.54 | 35 | 1.86 | 44 |
| 2012 | 0.38 | 40 | 0.41 | 32 | 0.04 | 43 |
| 2013 | 0.06 | 42 | 0.65 | 33 | -0.39 | 43 |

Notes: N represents the number of sample banks with related available data. CFHUGLE = Cash flow hedge unrealized gains or losses/Equity; CFHRGLE = Cash flow hedge reclassified gains or losses/Equity; CFHNGLE = Cash flow hedge net unrealized gains or losses/Equity. Net unrealized gains or losses represent unrealized gains or losses minus reclassified gains or losses.

Figure 5.2. Cash Flow Hedge Unrealized vs. Reclassified-to-Income-Statement Gains or Losses



Note: CFHUGLE = Cash flow hedge unrealized gains or losses/Equity; CFHRGLE = Cash flow hedge reclassified gains or losses/Equity; CFHNGLE = Cash flow hedge net unrealized gains or losses/Equity.

Table 5.8. Percentage Frequency of CFH-Related Gains or Losses

| Year | Unrealized Gains or Losses | | | Reclassified Gains or Losses | | |
|------|----------------------------|--------|--------------|------------------------------|--------|--------------|
| | Gains | Losses | No. of Banks | Gains | Losses | No. of Banks |
| 2006 | 52% | 48% | 29 | 53% | 47% | 17 |
| 2007 | 49 | 51 | 35 | 62 | 38 | 21 |
| 2008 | 54 | 46 | 37 | 40 | 60 | 25 |
| 2009 | 54 | 46 | 39 | 57 | 43 | 28 |
| 2010 | 56 | 44 | 39 | 61 | 39 | 31 |
| 2011 | 56 | 44 | 41 | 60 | 40 | 35 |
| 2012 | 80 | 20 | 40 | 69 | 31 | 32 |
| 2013 | 57 | 43 | 42 | 61 | 39 | 33 |

Notes: *N* represents the number of sample banks with available data. Frequency percentage is the extent to which either a gain or a loss occurs. For example, for 2013, 24 of 42 (57%) banks had unrealized gains.

6. Relationship between OCI, Income Statement Components, Value and Risk Measures

As discussed in Section 3, there is a significant body of evidence showing that OCI components, including AFS and cash flow hedge re-measurements, are relevant for valuation. To further evaluate the usefulness of OCI line items, we assessed whether and how banking sector OCI items are different from net income line items in their economic information content. To do so, we carried out the following analysis:

- Multiperiod trend analysis of selected OCI and net income line items (Section 6.1)
- Analysis of the relationship between selected OCI and net income line items and P/B (Section 6.2)

In summary, the following analysis shows that the year-to-year variation of AFS re-measurements reported on the statement of OCI can be seen as roughly reflecting some of the year-to-year changes in the macroeconomic environment. For example, during the beginning of the financial crisis in 2008, there was a significant decline in the value of AFS securities. In addition, for EU banks, there was a decline in the value of AFS securities in 2010 and 2011, during the eurozone sovereign debt crisis. However, it is more challenging to readily discern whether and how the multiperiod variation in the average cash flow hedge gains or losses has depended on cyclical changes in the macroeconomic environment over the period of analysis.

6.1. Multiperiod Trends of OCI and Income Statement Components

The multiperiod trend analysis shows how cyclical changes in the economic environment (before and during the financial crisis) may have influenced various line items presented on the statement of OCI and income statement. We explain the time trends by disaggregating the results by three regions (the EU, the United States, and Canada). A regional distinction makes it easier to identify how variations in the economic environment affected various OCI and income statement components outlined in **Exhibit 6.1**.

| Exhibit 6.1. OCI and Income Statement Components | |
|---|---|
| Income Statement Components | OCI Statement Components |
| Total | Totals |
| Net income/Equity (ROE) | Net comprehensive income total/Equity (CIE) |
| | Net OCI/Equity (OCIE) |
| Line items | Line items |
| Trading profit/Equity (TRDPROFE) | AFS net unrealized gains or losses/Equity (AFSNGLE) |
| Net interest income/Equity (NIIE) | Cash flow hedge net unrealized gains or losses/Equity (CFHNGLE) |
| Fee income/Equity (FEEINCE) | |
| Provision for credit losses charge/Equity (IMPCHGE) | |
| <p>Notes: As discussed in Appendix C, AFS and cash flow hedge net gains or losses (i.e., re-measurements after offsetting reclassified-to-income-statement amounts) have less economic meaning than AFS and cash flow hedge unrealized gains or losses (re-measurements). However, as shown in Section 5, the year-to-year average magnitude of the re-measurements and net amounts is roughly similar. In addition, the net amounts had more observations and can lead to more representative conclusions regarding the sample banks.</p> | |

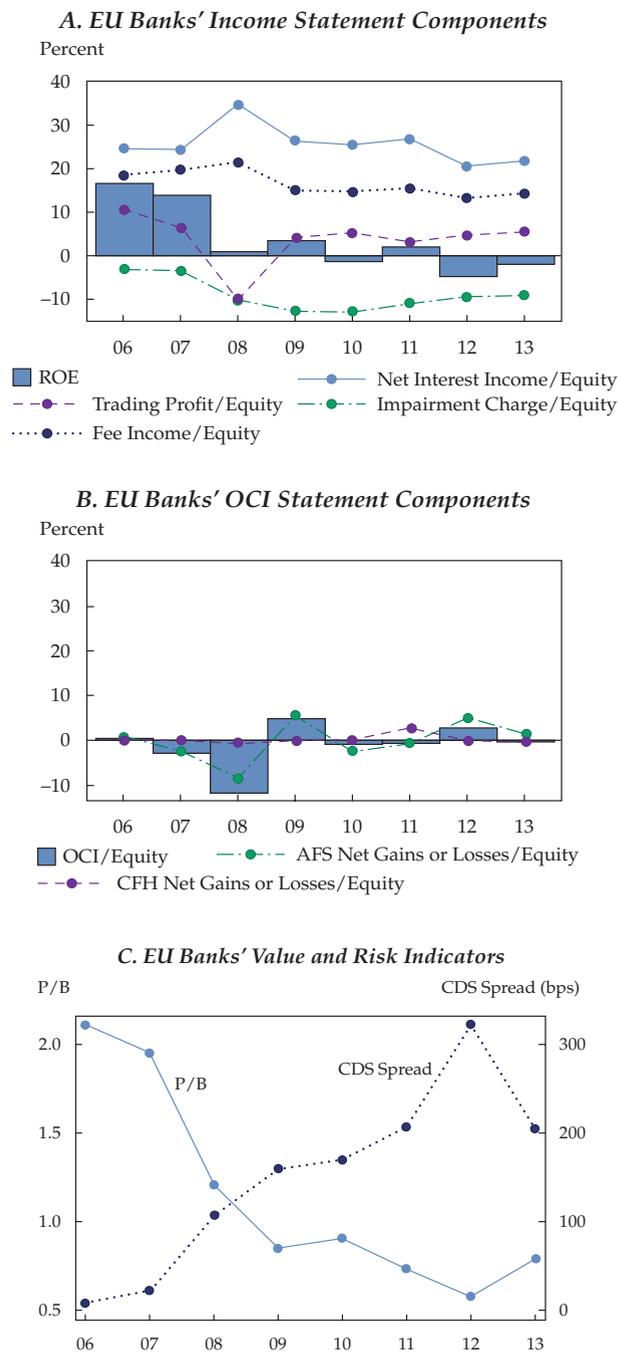
6.1.1. EU Banks: Key Trends

The year-to-year average for income and OCI statement components and capital market indicators of value and risk for EU banks are outlined in **Table 6.1** and **Figure 6.1**.

| Table 6.1. EU Banks | | | | | | | | | | |
|---------------------|-----------------------------|----|------------------|----|---------|----|----------|----|---------|----|
| Year | Income Statement Components | | | | | | | | | |
| | ROE | N | NIIE | N | FEEINCE | N | TRDPROFE | N | IMPCHGE | N |
| 2006 | 16.9% | 30 | 25.0% | 29 | 18.9% | 30 | 10.7% | 30 | -2.8% | 29 |
| 2007 | 14.0 | 30 | 24.7 | 29 | 20.1 | 30 | 6.6 | 30 | -3.3 | 29 |
| 2008 | 1.1 | 29 | 35.1 | 28 | 21.8 | 29 | -9.9 | 29 | -10.5 | 28 |
| 2009 | 3.8 | 30 | 26.8 | 28 | 15.3 | 29 | 4.3 | 29 | -12.6 | 28 |
| 2010 | -1.2 | 30 | 25.9 | 29 | 14.9 | 30 | 5.3 | 30 | -12.8 | 29 |
| 2011 | 2.3 | 29 | 27.1 | 28 | 15.8 | 29 | 3.4 | 29 | -10.8 | 28 |
| 2012 | -4.4 | 30 | 20.8 | 29 | 13.6 | 30 | 4.8 | 28 | -9.3 | 29 |
| 2013 | -1.7 | 30 | 22.1 | 28 | 14.6 | 28 | 5.7 | 27 | -8.8 | 28 |
| Year | OCI Statement Components | | | | | | | | | |
| | CIE | N | OCIE | N | AFSNGLE | N | CFHNGLE | N | | |
| 2006 | 17.7% | 27 | 0.3% | 26 | 0.9% | 27 | -0.12% | 27 | | |
| 2007 | 11.5 | 27 | -2.9 | 26 | -2.5 | 28 | 0.01 | 29 | | |
| 2008 | -10.6 | 29 | -11.6 | 29 | -8.5 | 30 | -0.64 | 29 | | |
| 2009 | 7.9 | 30 | 5.1 | 30 | 5.4 | 30 | 0.09 | 30 | | |
| 2010 | -5.8 | 30 | -1.1 | 30 | -2.7 | 30 | 0.07 | 30 | | |
| 2011 | 1.5 | 29 | -0.6 | 29 | -0.4 | 30 | 2.70 | 30 | | |
| 2012 | -0.7 | 30 | 2.8 | 30 | 5.2 | 29 | 0.04 | 29 | | |
| 2013 | -2.0 | 30 | -0.1 | 30 | 1.5 | 28 | -0.52 | 29 | | |
| Year | Value and Risk Indicators | | | | | | | | | |
| | P/B | N | CDS Spread (bps) | | | | | | | |
| 2006 | 2.1 | 28 | 9 | 28 | | | | | | |
| 2007 | 2.0 | 28 | 23 | 28 | | | | | | |
| 2008 | 1.2 | 27 | 106 | 27 | | | | | | |
| 2009 | 0.9 | 28 | 157 | 28 | | | | | | |
| 2010 | 0.9 | 28 | 167 | 29 | | | | | | |
| 2011 | 0.7 | 27 | 204 | 25 | | | | | | |
| 2012 | 0.6 | 28 | 316 | 27 | | | | | | |
| 2013 | 0.8 | 27 | 200 | 27 | | | | | | |

Notes: N is the number of sample banks with related data observations. For the income statement components, NIIE = Net interest income/Equity, FEEINCE = Fee income/Equity, TRDPROFE = Trading profit or (loss)/Equity, and IMPCHGE = Loan impairment charge/Equity. The income statement component breakdown excludes operating expenses, tax charges, goodwill write-offs, and exceptional items, including litigation risk charges. For the OCI statement components, CIE = Net comprehensive income or (loss)/Equity, OCIE = Net OCI/Equity, CFHNGLE = Cash flow hedge net unrealized gains or (losses)/Equity, and AFSNGLE = AFS net unrealized gains or (losses)/Equity. Net unrealized gains or losses represent the unrealized gains or losses (re-measurements) after offsetting the reclassified-to-income-statement amounts. We analyzed the net unrealized AFS and cash flow hedge amounts even though they are less economically meaningful than the gross unrealized gains or losses (i.e., re-measurements; see Appendix C). We did so because the net and gross amounts are of similar average magnitude for the sample banks. In addition, we had the benefit of analyzing more data points (i.e., more accurately portraying the sample average) by analyzing the net amounts than if we were to analyze the re-measurements. The OCI statement component breakdown excludes pension re-measurements, foreign currency translation adjustments, property revaluation adjustments, and net investment hedges.

Figure 6.1. EU Banks' Income Statement/OCI Components and Value/Risk Indicators



Notes: Panel A shows that ROE was affected by a trading profit decline in 2008, a high impairment charge since the beginning of the crisis in 2008, and shrinking fee and net interest income.

Panel B shows that the year-to-year magnitude of net OCI was significantly influenced by AFS net gains or losses. Cash flow hedge gains were immaterial except for in 2011; net OCI was directionally consistent with net income (ROE) from 2008 to 2010, as shown in Panel A.

Panel C shows CDS spreads widening from 2007 to 2012; CDS spreads' most troubled periods were 2011 and 2012; P/Bs have remained steadily low, between 0.5 and 1.0 since 2009.

Drivers of ROE: EU Banks

The results show that the average ROE for the 30 sample EU banks dropped from 16.9% in 2006 to 1.1% in 2008, experienced a slight recovery in 2009, and has vacillated between losses and gains since. The ROE trends can be explained by changes in the following income statement components.

- A decrease in net interest income as a proportion of equity occurred in 2012 and 2013, reflecting a drop from the prior six years. Unlike for US banks, net interest income is the dominant revenue stream for EU banks (i.e., compared with fee income and trading profit). However, as the 2013 European Central Bank (ECB) financial stability report highlighted, net interest income faced significant headwinds in 2012 and 2013 owing to low interest rates, which affected deposit margins and the lending margins of banks with high proportions of variable-rate mortgages.⁷⁰ Another explaining factor for reducing net interest income could be the deleveraging and reduced bank balance sheets since the financial crisis began. Reduced balance sheets tend to imply reduced loan volumes and interest income.
- A decrease in fee income as a proportion of equity has occurred since 2009, likely reflecting a cyclical shrinkage in banking capital market activities (e.g., security underwriting income, merger and acquisition advisory fees).
- A drop from the hefty pre-crisis trading profits (10.7% in 2006) to an average trading loss in 2008 (-9.9%) occurred, reflecting the sharp drop in asset prices at the beginning of the crisis. There was a recovery from trading losses to a profit position in 2009 but not a return to the pre-crisis levels.
- Since 2008, there has been a significant increase relative to pre-crisis levels in loan impairment charges as a proportion of equity. A recent CFA Institute publication also highlighted the sustained increase in loan impairments for EU banks since the beginning of the financial crisis.⁷¹

Trends of OCI Statement Components: EU Banks

Net OCI as a proportion of equity (OCIE) has fluctuated between losses and gains, with a significant loss in 2008 (-11.6%) followed by a gain in 2009. Notably, in 2008, net comprehensive income as a proportion of equity (CIE) was on average a loss (-10.6%), compared with an ROE of 1.1%. For many of the years, the magnitude and period-to-period variation of net OCI closely mirrored those of AFS net unrealized gains or losses.

The period-to-period trends of AFS security net gains or losses can in part be understood by considering how the value of AFS debt securities could have been influenced by either the low interest rate environment or the rising credit risk premium.⁷² Owing to jurisdictional (e.g., European Central Bank and Bank of England) monetary policy interventions, there was a low interest rate environment in EU countries, which ordinarily would have led to increases in the value of AFS debt securities. However, as evidenced by CDS spreads, there was also a rise in the

⁷⁰ECB (2013).

⁷¹CFA Institute (2014a).

⁷²AFS securities include debt (e.g., government securities, corporate bonds, asset-backed securities) and equity securities, and debt securities usually form the most significant proportion of AFS securities.

credit risk premium and lower expected recoverability of contractual cash flows owing to the sub-prime and eurozone sovereign debt crises. The credit risk would have increased the required yield of individual debt securities, leading to a fall in the value of debt securities, as seen in 2008, 2010, and 2011.

Effectively, the extent to which either the generally low cost of money or the increased credit risk of individual securities dominated the overall required return (market yield) would have affected whether there was an unrealized gain or loss for the debt securities. Which of these two factors actually dominated the overall required return seems to have varied from year to year, which, in turn, affected the varied patterns of observed unrealized gains or losses for the 2006–13 periods.

Also noteworthy is that average cash flow hedge gains were reported during some years with the most stressed economic environments (2011 in particular). As noted previously, cash flow hedge gains could signal a potential reduction in forecasted/expected interest revenue or an increase in forecasted interest expense for the EU banks (i.e., if any of the EU banks were partially hedged and had reported cash flow hedge gains). Because of the relatively immaterial average cash flow hedge amounts, it is hard to discern how changes in the macroeconomic environment translate to either cash flow hedge gains or losses. That said, as discussed in Section 5, individual EU banks had material cash flow hedge re-measurements in some of the years (e.g., UBS had a cash flow hedge gain of 5.8% of equity in 2011; Barclays had a cash flow hedge gain of 3.8% of equity [see Table 5.6]). Furthermore, the sensitivity analysis in the 2013 Barclays annual report shows that cash flow hedge instruments are sensitive to interest rate changes (a 100 bp rise in rates would have resulted in an additional loss of 4.4% of equity).

OCI/Income Statement Components vs. Capital Market Value/Risk Indicators: EU Banks

The sample EU banks experienced a sustained decrease in value, depicted by P/B declines and an increase in risk, as evidenced by the widening CDS spread trends from 2008 to 2012. In 2013, there was a reversal of the low P/Bs and a narrowing of CDS spreads, signaling improving investor sentiment toward EU banks. That said, these measures of value and risk are yet to return to pre-crisis levels.

At the beginning of the crisis, in 2008, there was a readily discernible relationship between the decrease (increase) in the average P/B (CDS spreads) and the following changes:

- A decline in ROE and trading profit
- An increase in impairment charges and AFS net unrealized losses

However, for the other years, it is harder to identify any one-to-one relationship between changes in market-based value, risk metrics, and the selected OCI and income statement components.

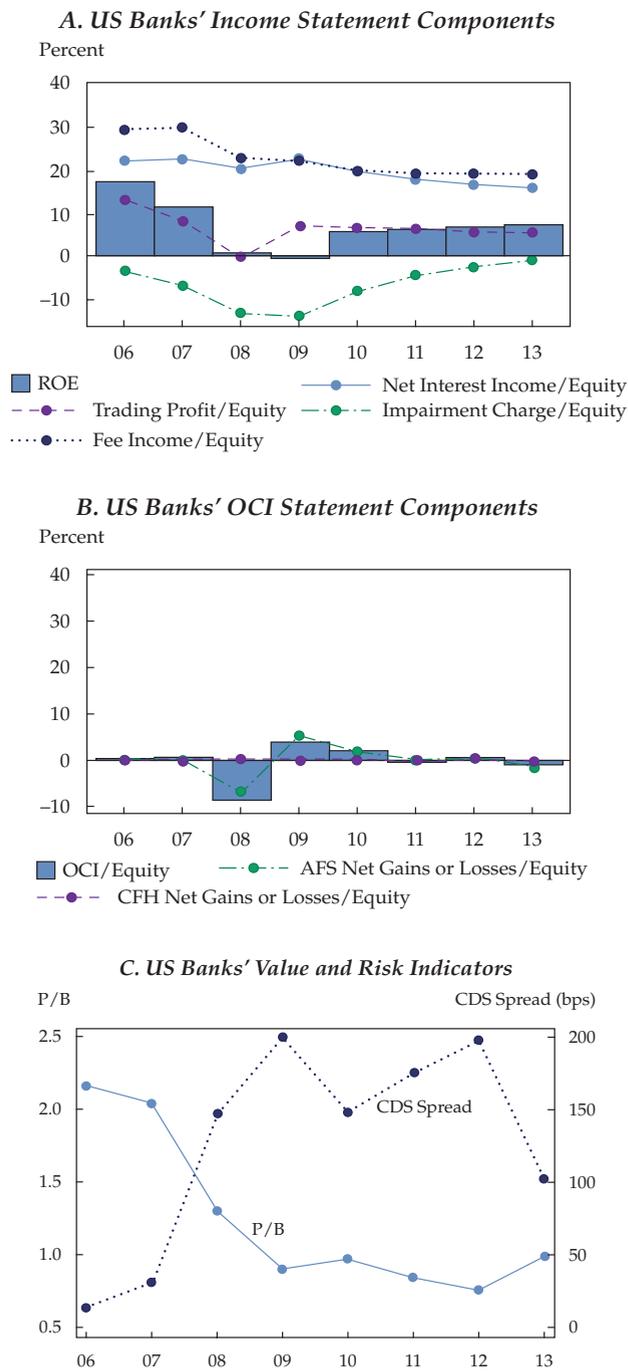
6.1.2. US Banks: Key Trends

The year-to-year averages for income and OCI statement components and capital market indicators of value and risk for US banks are outlined in **Table 6.2** and **Figure 6.2**.

| Table 6.2. US Banks | | | | | | | | | | |
|-----------------------------|-------|----|------------------|----|---------|----|-----------|----|---------|---|
| Income Statement Components | | | | | | | | | | |
| Year | ROE | N | NIIE | N | FEEINCE | N | TRADPROFE | N | IMPCHGE | N |
| 2006 | 17.6% | 10 | 22.4% | 10 | 29.7% | 10 | 12.9% | 10 | 3.4% | 5 |
| 2007 | 11.7 | 10 | 23.0 | 10 | 30.0 | 10 | 8.3 | 10 | 7.3 | 5 |
| 2008 | 1.2 | 10 | 20.6 | 10 | 23.0 | 10 | -0.3 | 10 | 13.5 | 5 |
| 2009 | -0.5 | 10 | 23.1 | 10 | 22.4 | 10 | 7.1 | 10 | 14.4 | 6 |
| 2010 | 5.7 | 10 | 19.9 | 10 | 20.5 | 10 | 6.9 | 10 | 8.3 | 6 |
| 2011 | 6.6 | 10 | 18.1 | 10 | 19.5 | 10 | 6.1 | 10 | 4.4 | 5 |
| 2012 | 7.0 | 10 | 16.9 | 10 | 19.2 | 10 | 5.8 | 10 | 2.5 | 6 |
| 2013 | 7.4 | 10 | 16.0 | 10 | 19.4 | 10 | 5.4 | 10 | 1.1 | 6 |
| OCI Statement Components | | | | | | | | | | |
| | CIE | N | OCIE | N | AFSNGLE | N | CFHNGLE | N | | |
| 2006 | 18.0% | 10 | 0.4% | 10 | 0.34% | 10 | 0.06% | 10 | | |
| 2007 | 12.2 | 10 | 0.5 | 10 | 0.21 | 10 | 0.01 | 10 | | |
| 2008 | -7.2 | 10 | -8.5 | 10 | -6.94 | 10 | 0.51 | 10 | | |
| 2009 | 5.0 | 10 | 4.2 | 10 | 5.50 | 10 | -0.22 | 10 | | |
| 2010 | 7.6 | 10 | 1.9 | 10 | 1.71 | 10 | 0.13 | 10 | | |
| 2011 | 6.1 | 10 | -0.6 | 10 | 0.18 | 10 | -0.07 | 10 | | |
| 2012 | 6.7 | 10 | 0.7 | 10 | 0.68 | 10 | 0.05 | 10 | | |
| 2013 | 6.4 | 10 | -1.1 | 10 | -1.46 | 10 | -0.03 | 10 | | |
| Value and Risk Indicators | | | | | | | | | | |
| Year | P/B | N | CDS Spread (bps) | | N | | | | | |
| 2006 | 2.2 | 10 | 15 | | 7 | | | | | |
| 2007 | 2.0 | 10 | 32 | | 8 | | | | | |
| 2008 | 1.3 | 10 | 147 | | 8 | | | | | |
| 2009 | 0.9 | 10 | 200 | | 8 | | | | | |
| 2010 | 1.0 | 10 | 148 | | 8 | | | | | |
| 2011 | 0.8 | 10 | 176 | | 8 | | | | | |
| 2012 | 0.8 | 10 | 197 | | 6 | | | | | |
| 2013 | 1.0 | 10 | 103 | | 6 | | | | | |

Notes: *N* is the number of sample banks with related data observations. For the income statement components, NIIE = Net interest income/Equity, FEEINCE = Fee income/Equity, TRADPROFE = Trading profit or (loss)/Equity, and IMPCHGE = Loan impairment charge/Equity. The income statement component breakdown excludes operating expenses, tax charges, goodwill write-offs, and exceptional items, including litigation risk charges. For the OCI statement components, CIE = Net comprehensive income or (loss)/Equity, OCIE = Net OCI/Equity, CFHNGLE = Cash flow hedge net unrealized gains or (losses)/Equity, and AFSNGLE = AFS net unrealized gains or (losses)/Equity. Net unrealized gains or losses represent the unrealized gains or losses (re-measurements) after offsetting the reclassified-to-income-statement amounts. We analyzed the net unrealized AFS and cash flow hedge amounts even though they are less economically meaningful than the gross unrealized gains or losses (i.e., re-measurements; see Appendix C). We did so because the net and gross amounts are of similar average magnitude for the sample banks. In addition, we had the benefit of analyzing more data points (i.e., more accurately portraying the sample average) by analyzing the net amounts than if we were to analyze the re-measurements. The OCI statement component breakdown excludes pension re-measurements, foreign currency translation adjustments, property revaluation adjustments, and net investment hedges.

Figure 6.2. US Banks' Income/OCI Statement Components and Value/Risk Indicators



Notes: Panel A shows that net income trends were influenced by a drop in trading profit in 2008, high impairment charges, and a decline in net interest income.

Panel B shows that net OCI movements were significantly influenced by AFS net gains or losses and that cash flow hedge gains/losses were immaterial except in 2011.

Panel C shows that CDS spreads widened most in 2008, 2009, 2011, and 2012, reflecting the high risk aversion toward US banks during these periods; P/Bs have been low since the beginning of the crisis.

Drivers of ROE: US Banks

The results in Table 6.2 and Figure 6.2 show that the average ROE for the 10 sample US banks dropped from 17.6% in 2006 to 1.2% in 2008, further dropped to an average loss in 2009 (−0.5%), and experienced recovery thereafter but not a return to pre-crisis levels (i.e., ROE has remained below 7.4%). The ROE trends can be explained by changes in the following components of income.

- A decrease in net interest income as a proportion of equity occurred from 2009 to 2013.
- Since 2008, a sustained decline in fee income as a proportion of equity has occurred, signaling that the challenging economic environment likely affected the fee-generating activities of banks (e.g., underwriting of newly issued equity and debt securities, merger and acquisition advisory fees). For the sample US banks, fee income was the dominant income stream in the pre-crisis years, and the drop of approximately 10% of equity in fee income can in large part explain the drop in ROE relative to the pre-crisis period.
- A drop from the hefty pre-crisis trading profits (12.7% in 2006) to an average trading loss in 2008 (−0.3%) occurred, reflecting the general drop in financial asset prices at the beginning of the financial crisis. There was a recovery from trading losses to a profit position in 2009 but not a return to pre-crisis levels.
- From 2008 to 2010, there was a significant increase relative to pre-crisis levels in loan impairment charges as a proportion of equity. The impairments began to decline in 2010; US banks' impairment charge reductions occurred much quicker than was the case with EU banks.

Key Trends of OCI Statement Components: US Banks

Concurrently, average net OCI as a proportion of equity (OCIE) has fluctuated between losses and gains, with a significant loss in 2008 (8.5%). Note that in 2008, net comprehensive income as a proportion of equity (CIE) was on average a loss (−7.2%), compared with an ROE of 1.2%. For many of the years, the magnitude and period-to-period variation of net OCI closely mirrored those of AFS net unrealized gains or losses.

Similar to EU banks, the multiperiod trends of AFS net gains or losses for US banks can in part be understood by considering how the value of AFS debt securities could have been influenced by the combination of the low interest rate environment and the rising credit risk premium. Owing to Federal Reserve Board monetary policy interventions, a low interest rate environment existed in the United States, which ordinarily would have led to increases in the value of AFS debt securities, as observed in most years (except for 2008 and 2013). The increased credit risk premium due to the sub-prime crisis in 2008 most likely dominated and led to an increase in the overall required return, which led to a fall in value (unrealized losses) of AFS securities during that year.

Average cash flow hedge gains occurred from 2009 to 2012, with the most significant average gain occurring in 2011, signaling a potential reduction in forecasted/expected interest revenue or an increase in forecasted interest expense for the sample banks (i.e., in the event any US banks

were partially hedged). Owing to the relatively immaterial average cash flow hedge amounts, it is hard to discern a relationship between cyclical changes in the macroeconomic environment and the cash flow hedge gains or losses of US banks.

Income and OCI Statement Components vs. Capital Market Value/Risk Indicators: US Banks

The sample US banks experienced a sustained decrease in value, as represented by P/B declines, and an increase in risk, as depicted by the widening CDS spread trends from 2008 to 2012. There was a slight recovery for these two value and risk measures in 2010 and a narrowing of CDS spreads in 2013, but these measures have yet to return to their pre-crisis levels.

At the beginning of the crisis, in 2008, there was a readily discernible relationship between the decrease (increase) in the average P/B (CDS spreads) and the following changes:

- A decline in ROE and trading profit
- An increase in impairment charges and AFS net unrealized losses

However, for the other years, it is harder to identify any one-to-one relationship between changes in market-based value, risk metrics, and the selected OCI and income statement components.

6.1.3. Canadian Banks

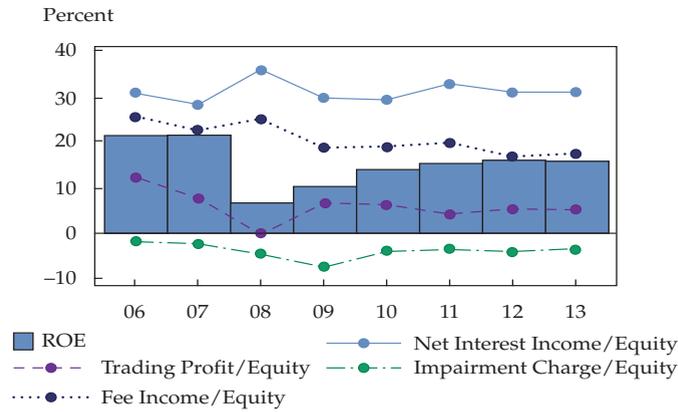
The year-to-year average for income and OCI statement components and capital market indicators of value and risk for Canadian banks are outlined in **Table 6.3** and **Figure 6.3**.

| Table 6.3. Canadian Banks | | | | | | | | | | |
|---------------------------|-----------------------------|---|------------------|----|---------|---|----------|---|---------|---|
| Year | Income Statement Components | | | | | | | | | |
| | ROE | N | NIIE | N | FEEINCE | N | TRDPROFE | N | IMPCHGE | N |
| 2006 | 21.7% | 4 | 31.5% | 4 | 25.4% | 4 | 12.0% | 4 | 2.3% | 4 |
| 2007 | 21.8 | 4 | 28.3 | 4 | 23.0 | 4 | 8.2 | 4 | 2.5 | 4 |
| 2008 | 6.6 | 4 | 36.3 | 4 | 25.4 | 4 | -1.0 | 4 | 4.8 | 4 |
| 2009 | 10.3 | 4 | 29.6 | 4 | 19.1 | 4 | 7.1 | 4 | 7.7 | 4 |
| 2010 | 13.8 | 4 | 29.5 | 4 | 18.8 | 4 | 6.0 | 4 | 4.3 | 4 |
| 2011 | 15.4 | 4 | 32.9 | 4 | 20.0 | 4 | 4.4 | 4 | 4.2 | 4 |
| 2012 | 16.2 | 4 | 31.1 | 4 | 16.9 | 4 | 5.4 | 4 | 4.3 | 4 |
| 2013 | 15.6 | 4 | 31.2 | 4 | 17.7 | 4 | 4.6 | 4 | 3.7 | 4 |
| Year | OCI Statement Components | | | | | | | | | |
| | CIE | N | OCIE | N | AFSNGLE | N | CFHNGLE | N | | |
| 2006 | 20.4% | 4 | -1.3% | 4 | NA | | NA | | | |
| 2007 | 14.8 | 4 | -6.9 | 4 | -0.1% | 4 | -0.08% | 4 | | |
| 2008 | 8.8 | 4 | 2.2 | 4 | -4.1 | 4 | -0.06 | 4 | | |
| 2009 | 11.1 | 4 | 0.8 | 4 | 2.5 | 4 | 0.39 | 4 | | |
| 2010 | 13.4 | 4 | -0.5 | 4 | 0.8 | 4 | 0.45 | 4 | | |
| 2011 | 14.3 | 4 | -1.0 | 4 | -0.5 | 4 | 0.32 | 4 | | |
| 2012 | 16.8 | 4 | 0.6 | 4 | 0.5 | 4 | 0.03 | 4 | | |
| 2013 | 15.9 | 4 | 0.3 | 4 | -0.5 | 4 | -0.35 | 4 | | |
| Year | Value and Risk Indicators | | | | | | | | | |
| | P/B | N | CDS Spread (bps) | | | | | | | |
| 2006 | 2.9 | 4 | 12 | 3 | | | | | | |
| 2007 | 2.8 | 4 | 19 | 3 | | | | | | |
| 2008 | 2.2 | 4 | 73 | 3 | | | | | | |
| 2009 | 1.8 | 4 | 129 | 3 | | | | | | |
| 2010 | 2.2 | 4 | 69 | 3 | | | | | | |
| 2011 | 2.2 | 4 | 59 | 3 | | | | | | |
| 2012 | 2.0 | 4 | 79 | 4 | | | | | | |
| 2013 | 2.0 | 4 | NA | NA | | | | | | |

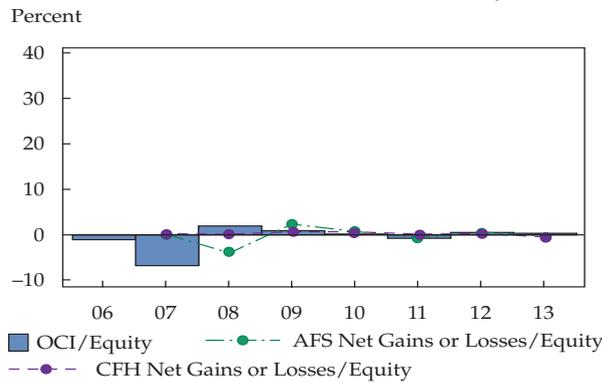
Notes: NA = Not available. *N* is the number of sample banks with related data observations. For the income statement components, NIIE = Net interest income/Equity, FEEINCE = Fee income/Equity, TRDPROFE = Trading profit or (loss)/Equity, and IMPCHGE = Loan impairment charge/Equity. The income statement component breakdown excludes operating expenses, tax charges, goodwill write-offs, and exceptional items, including litigation risk charges. For the OCI statement components, CIE = Net comprehensive income or (loss)/Equity, OCIE = Net OCI/Equity, CFHNGLE = Cash flow hedge net unrealized gains or (losses)/Equity, and AFSNGLE = AFS net unrealized gains or (losses)/Equity. Net unrealized gains or losses represent the unrealized gains or losses (re-measurements) after offsetting the reclassified-to-income-statement amounts. We analyzed the net unrealized AFS and cash flow hedge amounts even though they are less economically meaningful than the gross unrealized gains or losses (i.e., re-measurements; see Appendix C). We did so because the net and gross amounts are of similar average magnitude for the sample banks. In addition, we had the benefit of analyzing more data points (i.e., more accurately portraying the sample average) by analyzing the net amounts than if we were to analyze the re-measurements. The OCI statement component breakdown excludes pension re-measurements, foreign currency translation adjustments, property revaluation adjustments, and net investment hedges.

Figure 6.3. Canadian Banks' Income/OCI Components and Value/Risk Indicators

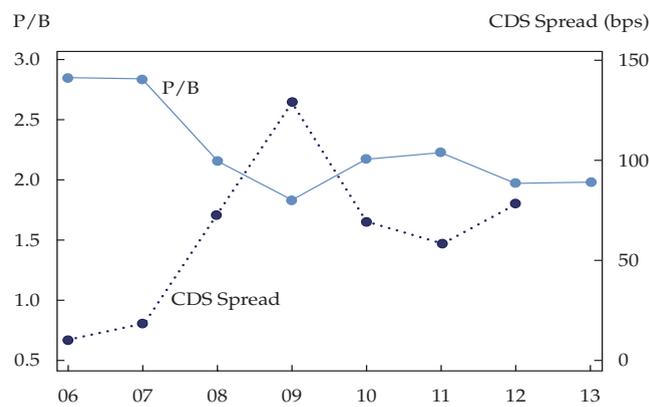
A. Canadian Banks' Income Statement Components



B. Canadian Banks' OCI Statement Components



C. Canadian Banks' Value and Risk Indicators



Notes: Panel A shows that the net income/ROE drop in 2008 was due to a trading profit decline; thereafter, shrinking fee income has kept ROE below pre-crisis levels.

Panel B shows that unlike at US and EU banks, AFS net gains or losses are not the key driver of the OCI total, meaning that other OCI items that we do not analyze (e.g., pension re-measurements) are the key drivers; AFS securities experienced the most significant losses in 2008.

Panel C shows that 2009 was the most troubled period for Canadian banks and that the global financial crisis had an effect on these banks, albeit a less pronounced effect than on EU and US banks. In contrast to EU and US banks, there was relatively strong performance (high P/Bs and low CDS spreads) after 2009.

Drivers of ROE: Canadian Banks

The results in Table 6.3 and Figure 6.3 show that the average ROE for the four sample Canadian banks dropped from 21.7% in 2006 to 6.6% in 2008, with a recovery thereafter to levels much higher than those of EU and US banks (greater than 10%) but not a return to pre-crisis levels. The ROE trends can be explained by changes in the following components of income.

- A decrease in fee income as a proportion of equity occurred in 2009, and this income stream has remained below pre-crisis levels. Similar to EU and US banks, there seems to have been a cyclical shrinkage in fee-generating activities for Canadian banks.
- A drop from the hefty pre-crisis trading profits (12.7% in 2006) to an average trading loss in 2008 (-0.3%). There was a recovery from trading losses to a profit position in 2009 but not a return to pre-crisis levels.
- From 2008 to 2012, there was an increase relative to pre-crisis levels in loan impairment charges as a proportion of equity. There was mainly a spike increase in 2009. However, the increase was not as significant as those for EU and US banks.

Key Drivers of OCI Components: Canadian Banks

Net OCI as a proportion of equity has fluctuated between losses and gains, with a significant loss in 2007 (-6.9%). Unlike for EU and US sample banks, net OCI for Canadian banks does not seem to be predominantly influenced by AFS gains or losses, and it is likely influenced by the OCI statement line items excluded from our analysis. In addition, with the exception of the year 2007, net OCI is relatively immaterial.

Similar to EU and US banks, there were significant AFS losses in 2008, signifying that increased credit risk at the onset of the financial crisis resulted in AFS value declines. Thereafter, these values fluctuated in both directions (gains and losses) in different periods, likely reflecting prevailing interest rate effects.

Because of the relatively immaterial average cash flow hedge amounts, it is hard to discern the relationship between cyclical changes in the macroeconomic environment and the average cash flow hedge gains or losses for the sample banks. However, such a relationship is easier to spot for individual banks. As shown in Table 5.6, Toronto-Dominion Bank had cash flow hedge gains greater than 4% of equity from 2008 to 2010. As noted earlier, cash flow hedge gains signal that there are losses or reduced expected future cash flows from the hedged items.

Income and OCI Statement Components vs. Capital Market Value/Risk Indicators: Canadian Banks

The sample Canadian banks experienced a decrease in value, as depicted by P/B declines and the increase in risk evident from the widening CDS spreads in 2008 and 2009. These two market measures recovered from 2010 onward but have yet to return to pre-crisis levels. The declines in P/Bs and the widening of CDS spreads were much less pronounced for Canadian banks than for EU and US banks, showing that the financial crisis had less severe impacts for the Canadian banks than it had for EU and US banks.

At the beginning of the crisis, in 2008, there was a readily discernible relationship between the decrease (increase) in average P/Bs (CDS spreads) and the following changes:

- A decline in ROE and trading profit
- An increase in impairment charges and AFS net unrealized losses

However, for the other years, it is harder to readily identify any one-to-one relationship between market-based value, risk metrics, and the selected OCI and income statement components.

6.2. Relationship between OCI and Income Statement Components and P/Bs

We analyzed the relationship between OCI and income statement components and bank value by using regression models to determine whether and how OCI and income statement components have an effect on P/Bs. Regression models inform on “many-to-one” relationships (i.e., how several variables all at the same time influence a single variable).

The CFA Institute (2014a) publication “Financial Crisis Insights on Bank Performance Reporting (Part 1)” articulated how changes in financial statement line items affect P/Bs. The report showed that P/B can be decomposed as shown:

$$(P/B) = \frac{(\text{Market valuation of net assets} + \text{Going-concern value})}{(\text{Accounting value of net assets})} \quad (6.1)$$

Effect of ROE line items and AFS and cash flow hedge gains/losses on P/B denominator: By construction, both income statement and OCI line items have an effect on the accounting/book value of net assets, which is the denominator of P/B.

Effect of ROE line items and AFS and cash flow hedge gains/losses on P/B numerator: As Equation 6.1 shows, when determining the value of the stock price, investors independently estimate the value of net assets and the going-concern value.

Market valuation of net assets: Given that AFS and cash flow hedge financial instruments are measured at fair value on the balance sheet, we do not expect investors to make additional balance sheet valuation adjustments beyond the periodic re-measurements because the fair value represents the updated economic value of these financial instruments.

Going-concern value: The going-concern value depends on the following inputs:

- Investor expectations of future profitability (e.g., earnings forecasts)
- Required return or the valuation discount rate that reflects the risk premium

Investors’ and analysts’ predictions of future profitability usually depend on the income statement line items. In theory, owing to their inherent information content, AFS and cash flow hedge gains or losses should also be part of future profitability (and cash flow) forecasting and investors’ judgment on risk (discount rate).⁷³

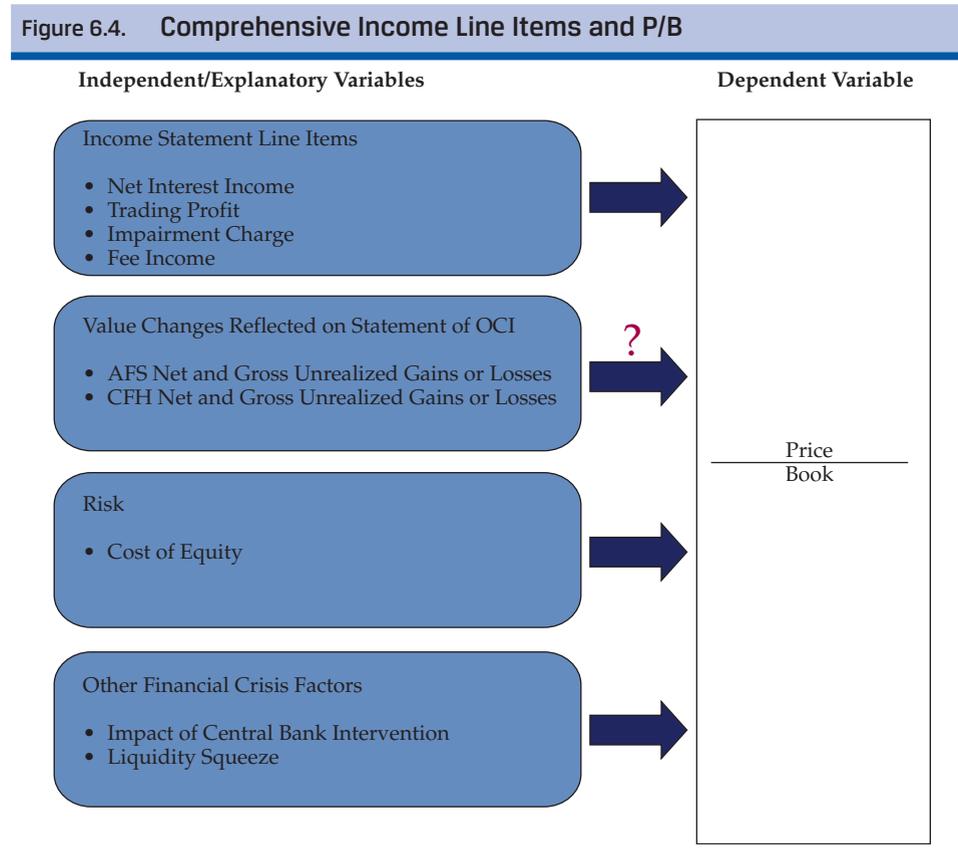
⁷³As shown by academic evidence (see Section 3), OCI line items are predictive of future cash flow and profitability. Evans et al. (2014) showed that AFS gains or losses should predict total realized return of AFS securities. Campbell (2013) showed that cash flow hedge gains or losses can predict future gross profit margins. Hodder et al. (2006) showed the risk relevance of OCI items.

AFS re-measurements and P/B: If reported AFS unrealized gains or losses were incorporated into forecasts of future profitability, then we would expect there to be a positive association with P/B (i.e., an increase in AFS carrying value should result in an increase in P/B) because the changes in AFS carrying value would affect both the market valuation of net assets and the going-concern value. Hence, we assume that the effect of AFS re-measurements on the numerator of P/B would be greater than the effect on its denominator, and this should lead to a positive association.

Cash flow hedge re-measurements and P/B: Although there is academic evidence showing that cash flow hedge gains can signal a likelihood of future losses, owing to inadequate disclosures of hedged items and hedging strategies, it is hard to envision how these cash flow hedge gains could be translated into expected future cash flow projections within valuation models.

Overall, we acknowledge that because of shortfalls in accompanying disclosures under the current reporting regime, it is possible that AFS and cash flow hedge gain or loss items could have no effect on the going-concern value, which makes it difficult to predict the aggregate effect of these items on P/B. In other words, these two items may or may not have a relationship with P/B. The nature of the relationship, if any, can be established only by empirical analysis because it is difficult to predict the relationship on an *ex ante* basis.

Putting it all together, **Figure 6.4** depicts how the various net income and OCI line items can affect P/B. In **Appendix A**, we report results from the empirical test of this relationship (regression test analysis), which show that *both net income line items and AFS unrealized gains or losses have an observable relationship with P/B; however, cash flow hedge unrealized gains or losses have no effect on P/B.*



Appendices

7. Appendix A. Regression Analysis Results

Through regression analysis, we tested the relationship between income statement and OCI statement line items and P/B. The following inferences can be made from the results.

- *Income statement line items (revenue and impairment) can explain P/B variation:* There is a negative association between the impairment measures (IMPCHGE) and P/B and a positive association between revenue components (NIIE, FEEINCE, and TRDPROFE) and P/B. These associations can be seen from the statistically significant regression coefficients for Models 1–4 in **Table 7.1**, where P/B is the dependent variable.

Table 7.1. Regression Results: Conceptualized Relationship in Figure 6.4

| | Model 1 P/B(t) | Model 2 P/B(t + 1) | Model 3 P/B(t) | Model 4 P/B(t + 1) |
|-----------------------|-------------------|-----------------------|-------------------|-----------------------|
| <i>ROE components</i> | | | | |
| NIIE | 1.47*** | 0.24 | 1.31*** | 0.13 |
| FEEINCE | 1.90*** | 0.81 | 1.71*** | 0.56 |
| TRDPROFE | 0.29 | 0.49*** | 0.13 | 0.21 |
| IMPCHGE | -1.78*** | 0.38 | -1.57*** | 0.48*** |
| <i>OCI components</i> | | | | |
| AFSUGLE | | | -0.06 | 1.07*** |
| AFSNGLE | -0.12 | 0.95*** | | |
| CFHUGLE | | | -0.45 | 0.10 |
| CFHNGLE | -1.11 | -0.08 | | |
| <i>Other factors</i> | | | | |
| COE | -0.04 | -2.17*** | -0.03 | -1.99*** |
| CRISIND | -0.91** | -0.54*** | -0.93*** | -0.55*** |
| CONSTANT | 1.35*** | 1.51*** | 1.43*** | 1.55*** |
| R^2 | 55.0% | 30.1% | 52.8% | 26.3% |
| F -statistic | 71.8*** | 26.9*** | 41.3*** | 19.9*** |
| Number | 270 | 251 | 248 | 229 |

Notes: For the coefficients and F -statistics,

*** shows statistical significance at a 99% confidence level and

** shows significance at a 95% confidence level.

The reported observations (number) reflect the annual bank observations that had data for all the variables being tested in the model.

- *AFS unrealized gains or losses explain next-period P/Bs:* The regression coefficients in Models 2 and 4 show a positive association between AFSNGLE and AFSUGLE and next-period P/Bs.⁷⁴ This finding shows that even if investors ignore this OCI line item during a particular reporting period, these amounts are factored into future-period valuations.

The variables are defined in **Exhibit 7.1**.

The reported regression models in Table 7.1 show adjusted R^2 (i.e., the goodness-of-fit measure) statistics ranging from 26.3% to 55.0%. The reported R^2 s across the models compare well with those of many published finance and accounting empirical studies. The F -test measures whether inferences can be made from the regression model.⁷⁵ The F -statistics show that valid inferences can be made from the reported regression models. The statistical significance of the reported coefficients is based on robust standard errors, clustered around individual banks so as to minimize the risk of wrong inferences being drawn owing to violations of the conditions necessary for linear regression models to produce reliable results.⁷⁶

Exhibit 7.1. Definition of Variables

| Factor | Explaining the Variables Included in the Regression Models |
|----------------------------------|--|
| Net income components | <ul style="list-style-type: none"> •Net interest income /Equity (NIIE) •Fee income/Equity (FEEINCE) •Trading profit or loss/Equity (TRDPROFE) •Impairment charge/Equity (IMPCHGE) |
| OCI components | <ul style="list-style-type: none"> •AFS unrealized gains or losses/Equity (AFSUGLE) •AFS net unrealized gains or losses/Equity (AFSNGLE) •Cash flow hedge gross unrealized gains or losses/Equity (CFHUGLE) •Cash flow hedge net unrealized gains or losses/Equity (CFHNGLE) |
| Risk measure | <ul style="list-style-type: none"> •Cost of equity (COE) represents the market pricing of the risk measure. |
| General financial crisis factors | <ul style="list-style-type: none"> •The crisis indicator variable (CRISIND)^a conveys whether a particular bank's data points relate to the pre-crisis period (with 2006 and 2007 represented by 0) or during or after the crisis (with 2008–2013 represented by 1). The crisis indicator variable is a proxy for macroeconomic and other factors that would have had an effect on the bank stock prices during but not before the financial crisis but that have not been explicitly included in the regression model. |

^aIndicator or dummy variables are applied for factors that may influence the relationship being tested and where the underlying data are categorical in nature (e.g., binary data values, such as male or female). An indicator variable would typically have a value of 1 signifying one category (e.g., female) and 0 signifying the other category (e.g., male).

⁷⁴Owing to differences in the disaggregation of the OCI statement and varied levels of accompanying disclosures for EU versus US and Canadian banks, our measure for AFS re-measurements (AFSUGLE), which is included in the regression model, is not fully comparable across the sample banks. The data include pre-tax amounts (many EU banks) and after-tax amounts (US and Canadian banks). However, we also included in our regression model the net unrealized amounts (AFSNGLE, which reflects re-measurements after offsetting reclassified amounts). AFSNGLE is more comparable across banks because these amounts were usually reported after taxes (after-tax amounts are more predictive of future cash flows). Although AFSUGLE has more economic meaning than AFSNGLE (see Appendix C), we are comfortable using AFSNGLE in our analysis because the magnitude and aggregate statistical properties of AFSNGLE are similar to those of AFSUGLE (see Tables 4.2 and 5.4). Besides, the regression results on the effect of AFS re-measurements on P/Bs lead to the same conclusions regardless of whether we use AFSUGLE or AFSNGLE as the proxy for changes in AFS value.

⁷⁵An F -statistic is a ratio of the explained variability to the unexplained variability. Thus, a larger F -statistic indicates that more of the total variability is accounted for by the model (which is a good thing). The appropriateness of F -statistics is judged in conjunction with the p -value, which indicates whether the F -statistic is statistically significantly different from zero. The F -test is used to assess fixed-effect panel regression models.

⁷⁶One such condition is heteroskedasticity, which is the violation of the condition of homoskedasticity (i.e., same variance of the error term). Heteroskedasticity means that the variance of the error term differs across observations.

We ran a variety of models, as outlined below. In the tested models, P/B is the dependent variable (i.e., the factor being explained) and the comprehensive income line items are the independent variables (i.e., the factors that have an effect on or explain the variation of P/B).

- *Model 1:* Current-period P/B versus components of ROE and the gross unrealized gains or losses of selected OCI line items (i.e., does not offset gains or losses reclassified to the income statement).
- *Model 2:* Next-period P/B versus components of ROE and the gross unrealized gains or losses of selected OCI line items (i.e., does not offset gains or losses reclassified to the income statement). We tested the effect on next-period P/B to discern whether investors would ignore a comprehensive income line item in one period and factor it in the next.
- *Model 3:* Current-period P/B versus components of ROE and the net unrealized gains or losses of selected OCI line items (i.e., offsets gains or losses reclassified to the income statement).
- *Model 4:* Next-period P/B versus components of ROE and the net unrealized gains or losses of selected OCI line items (i.e., offsets gains or losses reclassified to the income statement).

8. Appendix B. Other OCI-Related Academic Evidence

Rees and Shane (2012) provided a comprehensive outline of other key aspects of OCI that should be of interest to standard setters, including the

- implications of prominent OCI presentation and
- usefulness of reclassification of OCI items to the income statement.

Implications of Prominent OCI Presentation

Rees and Shane (2012) outlined the following key questions and empirical evidence or lack thereof related to these questions.

- *Does the form of presentation affect the way investors use OCI information?* Studies generally show that format presentation affects how investors use information. For example, Hirst and Hopkins (1998) showed that presentation of OCI in a performance statement is more effective at revealing earnings management.
- *Does the form of OCI reporting interact with other financial reporting decisions, such as earnings management?* Bamber, Jiang, Petroni, and Wang (2010) showed that firms with incentives to manage earnings tend to avoid the most transparent method of reporting OCI, in a performance statement. Similar conclusions have been derived from other behavioral experimental studies (e.g., Hunton, Libby, and Mazza 2006).
- *Single-statement versus consecutive two-statement presentation approach: Which is preferable for investors?*⁷⁷ There are no known studies assessing the differential merits of these two presentation approaches. There are also no known studies that address the implications of including comprehensive income per share in addition to earnings per share.

Is Reclassification from OCI to the Income Statement Useful?

Accounting standard setters grapple with the question of whether OCI should be forced to run through net income (i.e., recycled) or should the practice of OCI reporting with recycling be eliminated.⁷⁸ Badertscher, Burks, and Easton (2014) provided empirical evidence showing that recycled information is incrementally value relevant relative to OCI gains or losses. They specifically showed that other-than-temporary impairment recognized in the income statement was incrementally priced relative to reported unrealized gains or losses. However, this evidence of incremental value relevance should be interpreted cautiously because it may simply reflect the functional fixation where investors pay attention only to information that is recognized in the income statement (see Section 1).

⁷⁷The FASB and IASB still allow the option of presenting comprehensive income either in a single statement of performance or in two separate but consecutive statements.

⁷⁸IASB (2013c).

9. Appendix C. AFS Security and Cash Flow Hedge Accounting

Accounting for AFS Securities

AFS securities are measured at fair value. The carrying value of these securities on the balance sheet (statement of financial position) is at their fair value. The following is also true of AFS securities.

- The unrealized gains or losses of AFS securities are recognized through the OCI statement and accumulated in equity through the accumulated other comprehensive income reserve. The unrealized gains or losses represent the re-measurements or value changes (i.e., changes in carrying value during a reporting period).
- Amounts are reclassified (or recycled) from OCI to profit or loss when
 - ▲ AFS securities are sold (the reclassified amount is the difference between the *amount at initial recognition and the proceeds from the sale*),
 - ▲ recognizing an impairment or write-down in the carrying value of the AFS security, or
 - ▲ there are unrealized gains or losses (i.e., re-measurements) of AFS securities that are part of a fair value hedge.

Accounting Mechanics Result in Double Counting

As a result of the mechanics of recycling accounting, a gain or loss amount may appear in the statement of OCI and the income statement at different reporting periods, which seems like a form of double counting. The double-counting appearance occurs because a value change can be recorded as an unrealized gain or loss on the OCI statement for one period and the same amount can be recorded as part of realized/reclassified gain or loss on the income statement at a later date. In effect, for AFS securities that are held for more than one reporting period, the related unrealized value changes, which are occurring during different reporting periods, will be reflected in the OCI subtotal and the comprehensive income subtotal for these different reporting periods. However, the income statement subtotal will reflect only the realized gains or losses whenever these AFS securities are sold.

That said, it is worth mentioning that the comprehensive income for the period does not double count value changes of the AFS security because what is reclassified to the income statement is offset from the same period's OCI. Thus, double counting does not occur within the statement of equity on the balance sheet and the comprehensive income subtotal for the period.

Recycling Accounting Mechanics Obscures Economic Meaning of Aggregate OCI

For users of financial statements, the aforementioned appearance of double counting can be a potential source of confusion. In addition, while the gross unrealized and reclassified gains or losses are individually economically meaningful, recycling seems to distort the information content of period-specific aggregate OCI.

The following example illustrates the accounting mechanics.

Illustration of the Accounting for AFS Securities (Assumes No Recognized Impairment)

Consider a scenario where Bank A acquires

- Government Y debt securities on 1 January 2006 at a price of \$1 million funded by equity issuance and
- Government Z debt securities on 31 December 2006 at a price of \$1.1 million funded by equity issuance.

These debt securities are classified as AFS securities. In subsequent years, the following events occur.

- Government Y securities' value rises to \$1.1 million by 31 December 2006 (unrealized gain of \$100,000 for year-end 2006) and to \$1.4 million by 31 December 2007 (unrealized gain of \$300,000 for year-end 2007), and they are sold for \$1.6 million in June 2008.
- Government Z securities' value rises to \$1.5 million by 31 December 2007 (unrealized gain of \$500,000 for year-end 2007) and falls to \$1.4 million by 31 December 2008 (unrealized loss of \$100,000 for year-end 2008).

Table 9.1 represents the effect of these changes on the financial statements.

| Table 9.1. Impact on Financial Statements | | | | |
|--|-----------|-----------|-----------|-----------|
| | 1 Jan 06 | 31 Dec 06 | 31 Dec 07 | 31 Dec 08 |
| <i>Profit or loss</i> | | | | |
| Government Y: Sale of instrument, from OCI | | | | 600,000 |
| Net income/loss | | 0 | 0 | 600,000 |
| <i>Other comprehensive income</i> | | | | |
| Government Y: Re-measurement | | 100,000 | 300,000 | 200,000 |
| Government Y: Reclassification | | | | -600,000 |
| Government Z: Re-measurement | | | 400,000 | -100,000 |
| Net OCI | | 100,000 | 700,000 | -500,000 |
| Net comprehensive income | | 100,000 | 700,000 | 100,000 |
| <i>Statement of financial position</i> | | | | |
| Government Y | 1,000,000 | 1,100,000 | 1,400,000 | 0 |
| Government Z | | 1,100,000 | 1,500,000 | 1,400,000 |
| Cash | | | | 1,600,000 |
| Total assets | 1,000,000 | 2,200,000 | 2,900,000 | 3,000,000 |
| Retained profit | | 0 | 0 | 600,000 |
| AOCI | | 100,000 | 800,000 | 300,000 |
| Issued equity | 1,000,000 | 2,100,000 | 2,100,000 | 2,100,000 |
| Total equity | 1,000,000 | 2,200,000 | 2,900,000 | 3,000,000 |

As shown in Table 9.1, though the accounting mechanics actually ensure there is no double counting in book value of equity and net comprehensive income for the period, the representation of the same gain or loss amounts in multiple time periods can be perceived as double counting. We can also see that for the year ended 2008, it can be challenging to interpret the economic meaning of net OCI.

Year-End 2008: Economically Meaningful Gains or Losses

- The unrealized loss of Security Z (\$100,000) reported gross on the OCI statement has economic meaning.
- The reclassified amount (\$600,000) on the sale of Security Y has economic meaning as a realized gain.

Year-End 2008: Potentially Challenging Amounts to Interpret

- An unrealized gain of \$200,000 for Security Y is reported on the OCI statement. This same amount is reported as part of the realized gains on the income statement (i.e., as part of the realized gain of \$600,000). In effect, during the 2008 reporting period, the same amount is reported as both a realized and an unrealized gain. A less confusing name for OCI re-measurements would be “value accretion” because that term does not connote at any point in time amounts that are classified as both realized and unrealized.
- Though individual OCI line items have economic meaning, the aggregated OCI subtotal loss of \$500,000 has reduced economic meaning owing to the impact of aggregating reclassified and unrealized gains or losses.

Cash Flow Hedge Background

Cash flow hedge accounting is applied to the hedging of forecasted future highly probable transactions and firm commitments (e.g., exports/imports, interest payments/receipts, future capital commitments).⁷⁹ Cash flow hedge accounting eliminates the potential recognition inconsistency that could occur for forecasted transactions and hedging instruments; it does so by deferring the income statement recognition of the gains or losses of an effective hedging instrument so as to match the income statement recognition of the hedged item.⁸⁰ Effectively, the cash flow hedge approach ensures that the recognition of gains or losses of hedging pairs occurs only in the income statement during the same reporting period. Cash flow hedge mechanics are as follows.

⁷⁹Hedge accounting is an approach allowed for financial instruments designated as being part of a hedging relationship for accounting purposes. The main aim of hedge accounting is to avoid reflecting earnings volatility for hedging instruments that are part of an effective hedging relationship. There are two main types of allowed hedge accounting approaches—fair value and cash flow. Net investment hedges, which have similar mechanics to cash flow hedges, relate to foreign subsidiaries but are less common and are less significant in magnitude compared with cash flow hedges.

⁸⁰Recognition inconsistency is a situation where gains or losses of the hedging instrument and hedged item would be recognized on the income statement at different times. Recognition inconsistency would also lead to earnings volatility even in the presence of effective hedging strategies.

- The gains or losses on the hedging instrument that represent the effective portion of the hedge are deferred through the OCI statement and are accumulated in equity. These amounts are then reclassified from OCI to profit or loss during the same period that the gains and losses on the hedged item are recognized in profit or loss. The accounting mechanics for cash flow hedge are the same as the AFS illustration shown above.
- Only the gains and losses on the hedging instrument that relate to the ineffective portion of the hedge are recognized immediately in profit or loss.⁸¹

⁸¹Ineffectiveness recognition is restricted to situations of over-hedging (i.e., where the magnitude of change in the hedging instrument is greater than the magnitude of change of the hedged item).

10. Appendix D. Net Income vs. Net Comprehensive Income

Table 10.1 provides the eight-year averages and standard deviations for ROE and CIE. The findings support the discussion in Sections 2 and 4: a different picture of profitability would emerge if comprehensive income (i.e., OCI and net income), rather than net income, were the performance measure.

| | Table 10.1. Eight-Year Average and Standard Deviation for Each Bank | | | | | |
|------------------------|---|--------|-----------|---------------------------------------|--------|-----------|
| | 2006–13 Eight-Year Average | | CIE < ROE | 2006–13 Eight-Year Standard Deviation | | CIE > ROE |
| | ROE | CIE | | ROE | CIE | |
| <i>EU banks</i> | | | | | | |
| Deutsche Bank | 6.3% | 4.0% | 1 | 10.0% | 15.5% | 1 |
| Commerzbank | -0.1% | -0.2% | 1 | 7.2% | 13.0% | 1 |
| HSBC | 9.9% | 8.3% | 1 | 3.6% | 15.7% | 1 |
| Barclays | 9.9% | 9.3% | 1 | 7.1% | 8.9% | 1 |
| Royal Bank of Scotland | -6.3% | -4.7% | 0 | 17.3% | 16.9% | 0 |
| Lloyds Banking Group | 6.9% | 3.2% | 1 | 12.7% | 15.2% | 1 |
| Standard Chartered | 12.3% | 11.6% | 1 | 2.0% | 7.4% | 1 |
| BNP Paribas | 9.2% | 8.3% | 1 | 3.4% | 5.6% | 1 |
| Crédit Agricole | 2.7% | 2.7% | 1 | 8.3% | 7.5% | 0 |
| Société Générale | 6.5% | 5.5% | 1 | 4.8% | 5.8% | 1 |
| Natixis | 1.7% | 1.8% | 0 | 9.0% | 15.4% | 1 |
| Banco Santander | 11.3% | 7.5% | 1 | 4.8% | 7.9% | 1 |
| BBVA | 14.3% | 11.6% | 1 | 7.0% | 7.5% | 1 |
| Banco Sabadell | 9.8% | 9.2% | 1 | 7.5% | 7.7% | 1 |
| UBS | -2.3% | -4.5% | 1 | 22.6% | 25.7% | 1 |
| Credit Suisse | 7.8% | 3.4% | 1 | 15.2% | 19.5% | 1 |
| ING | 8.8% | 3.2% | 1 | 9.5% | 23.7% | 1 |
| Rabobank | 6.7% | 5.4% | 1 | 1.4% | 2.7% | 1 |
| SNS | -7.7% | -9.6% | 1 | 19.7% | 25.4% | 1 |
| Unicredit | -0.1% | -1.5% | 1 | 14.4% | 15.2% | 1 |
| Intesa Sanpaolo | 2.5% | -0.1% | 1 | 10.9% | 12.8% | 1 |
| Dexia | -17.8% | -48.4% | 1 | 41.1% | 109.7% | 1 |
| KBC | 3.8% | 2.2% | 1 | 13.4% | 16.2% | 1 |
| Erste | 6.0% | 4.3% | 1 | 5.5% | 5.9% | 1 |
| Raiffeisen | 11.2% | 8.6% | 1 | 7.1% | 9.1% | 1 |
| Millennium BCP | -2.6% | -11.1% | 1 | 16.8% | 12.5% | 0 |
| Danske | 5.6% | 5.4% | 1 | 5.5% | 5.8% | 1 |
| Nordea | 13.4% | 13.3% | 1 | 4.1% | 4.2% | 1 |
| Bank of Ireland | 8.8% | 8.1% | 1 | 16.9% | 14.5% | 0 |
| Allied Irish Bank | -33.3% | -35.3% | 1 | 83.3% | 86.6% | 1 |
| <i>US banks</i> | | | | | | |
| J.P. Morgan | 9.3% | 8.2% | 1 | 3.0% | 4.9% | 1 |
| Citigroup | 3.0% | 1.5% | 1 | 10.6% | 15.2% | 1 |
| Bank of America | 4.6% | 4.8% | 0 | 5.6% | 7.7% | 1 |

(continued)

Table 10.1. Eight-Year Average and Standard Deviation for Each Bank (continued)

| | 2006-13 Eight-Year Average | | CIE < ROE | 2006-13 Eight-Year Standard Deviation | | CIE > ROE |
|-------------------------|--|-------|-----------|--|-------|-----------|
| | ROE | CIE | | ROE | CIE | |
| Bank of New York Mellon | 7.0% | 8.0% | 0 | 8.3% | 8.1% | 0 |
| Wells Fargo | 11.8% | 12.1% | 0 | 4.8% | 7.8% | 1 |
| Sun Trust | 4.6% | 4.1% | 1 | 6.0% | 6.3% | 1 |
| Zion Bancorporation | 0.7% | 0.7% | 0 | 10.6% | 12.2% | 1 |
| State Street | 8.3% | 7.7% | 1 | 8.9% | 14.0% | 1 |
| Morgan Stanley | 7.4% | 7.3% | 1 | 6.3% | 6.7% | 1 |
| Goldman Sachs | 14.2% | 14.2% | 1 | 9.0% | 9.1% | 1 |
| <i>Canadian banks</i> | | | | | | |
| Toronto-Dominion | 14.0% | 13.5% | 1 | 4.8% | 3.7% | 0 |
| Royal Bank of Canada | 16.4% | 16.4% | 0 | 4.0% | 2.8% | 0 |
| Bank Nova Scotia | 16.6% | 14.5% | 1 | 2.8% | 2.9% | 1 |
| CIBC | 13.7% | 13.4% | 1 | 12.5% | 10.2% | 0 |
| | Average CIE < ROE (number of banks) | | 37 | Standard deviation CIE > ROE (number of banks) | | 36 |
| | Average CIE < ROE (percentage of banks) | | 84.1% | Standard deviation CIE > ROE (percentage of banks) | | 81.8% |

Notes: 1 = Yes; 0 = No; CIE = Net comprehensive income/Equity. From the full sample of 44 banks, 37 (84.1%) had an average eight-year CIE less than that of the ROE. The eight-year standard deviation of CIE was greater than that of the ROE for 36 banks (81.8%).

Glossary of Selected Terms

Accounting Terms

Amortized Cost of a Financial Asset or Liability. The amount at which the financial asset or liability is measured at initial recognition minus the principal repayments plus or minus the cumulative amortization using the effective interest method of any difference between that initial amount and the maturity amount and, for financial assets, adjusted for any loss allowance.

Mixed Measurement Attribute. This is the prevailing situation where accounting standards permit the application of different measurement approaches during the recognition and measurement of different assets and liabilities. For example, some assets and liabilities are measured at fair value (e.g., trading financial instruments), others are measured at historical cost (land), and others are measured at modified historical/amortized cost (e.g., loans, goodwill, debt).

Fair Value. Both IFRS and US GAAP define fair value on the basis of the notion of an exit price. *Exit price* is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants.

Realized Gain or Loss. Difference between selling and balance sheet carrying value.

Unrealized Gain or Loss. Represents the change in value of an asset during the holding period. Gains represent the value accretion, whereas losses represent the value depletion.

Financial Terms: Financial Information Characteristics

Persistence. The ability of the amount of a financial statement line item to predict future values of itself. Persistence connotes the sustainability or period-to-period smoothness of financial statement line items. High-persistence items are easier to predict than low-persistence items.

Value Relevance. The association between reported amounts and stock returns or stock price.

Risk Relevance. The association between volatility of reported amounts and market measures of risk (e.g., stock price beta).

Financial Terms: Valuation Related

Capital Asset Pricing Model. The CAPM is one of the key asset pricing theorems in financial economics. It posits that investors get rewarded only for taking undiversifiable risk. The formulation determines required return on the basis of determining excess return. Excess required return for an individual stock is determined by considering the risk-free rate, the market risk premium (i.e., the long-term additional return of a diversified index relative to the risk-free rate), and the individual stock price beta.

Efficient Market Hypothesis. The EMH is a key foundational financial economic theorem, and it can be described as one of the key pillars of modern finance. The EMH holds that all available information is reflected in financial asset prices (e.g., equity prices) by rational investors.

Price-to-Book Ratio. The P/B is one of the key valuation metrics (a measure of relative value) and is particularly relevant for the banking industry. Another metric similar to P/B is price-to-tangible book (P/TB). P/B is determined by dividing the current closing price of the stock by the recent closing book value per share.

Credit Default Swap Spread. A CDS is a credit derivative designed to provide credit protection to the buyer or seller of the derivative. The payout is triggered by a credit event (e.g., default by the underlying credit or one of the counterparties). The CDS spread is the premium paid by the buyer to the seller of the CDS and reflects the price of the credit risk for the particular counterparties. CDS spreads are available for reference entities or companies and are indicators of credit market investors' views on credit risk.

Residual Income Valuation Method. This fundamental valuation approach is based on forecasting and discounting future residual income with the company's reported earnings as the starting point. It differs from other fundamental valuation methods, such as the discounted cash flow method, which is based on forecasting and discounting future cash flows.

Going-Concern Value. This is the underlying value of a business as a result of its status as a going concern. In other words, it is the value that will arise as a result of future profitability derived from the company using its assets, including those that are recognized on the balance sheet and those that are not.

Liquidation Value. This is the breakup value of a company, or the value that could be received if the company's assets were sold and its debts were paid. Theoretically, the tangible book value of a bank is supposed to reflect its breakup, or liquidation, value. However, differences between liquidation and tangible book values occur because (1) some assets and liabilities are reported at amortized cost, not at market (or fair) value; (2) book value does not incorporate the costs of liquidation; and (3) there could be assets and liabilities that are off balance sheet (e.g., assets and liabilities related to unconsolidated structured entities or unrecognized intangible assets).

Bank Business Model–Related Terms

Large and Complex Financial Institution (LCFI). A systemically important financial institution that is involved in a diverse range of financial activities and geographical areas. Typically, they are large and interconnected to other financial institutions.

Systemically Important Financial Institution (SIFI). A financial institution that is considered to bear systemic risk.

Statistical Measures

Mean or Arithmetic Mean. The sum total of all observations divided by the number of observations.

Median. A measure of central tendency defined as the point above and below which 50% of observations fall.

Standard Deviation. A commonly used measure of variability whose size indicates the dispersion of a distribution.

Correlation. A measure of the interrelatedness of two or more variables.

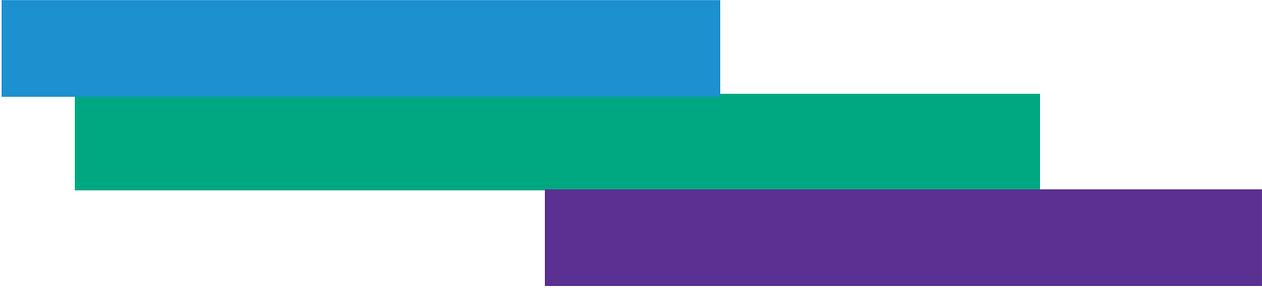
Coefficient of Variation. A measure of volatility that represents the standard deviation normalized by the mean.

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