

Research

S&P Ratio Highlights Disparate Capital Strength Among The World's Biggest Banks

23-Nov-2009

Market attention is focused now more than ever on how much capital banks need and how to measure that. The financial turmoil of the past two years has exposed the shortcomings of the existing regulatory framework, and politicians and market participants worldwide are demanding that banking regulators reshape capital measures. As a result, it is widely anticipated that regulatory capital requirements for banks will increase materially in the next few years.

In this context of profound change, Standard & Poor's Ratings Services is rolling out its new risk-adjusted capital framework (RACF), developed over the past four years in anticipation of Basel II implementation. The RACF aims to provide a measure that is independent from national regulations, Basel II methodological options, and banks' internal risk measurement systems, as well as being consistent across banks and geographic regions.

Here we provide the first global comparison of banks' risk-adjusted capital adequacy as measured by their Standard & Poor's risk-adjusted capital (RAC) ratios compared with regulatory Tier 1 ratios and leverage ratios, using a global sample of 45 large banks.

We found that the average estimated RAC ratio for large international banks was 6.7% as of June 30, 2009, more than three percentage points below their average Tier 1 ratios. As we generate more RAC ratios, the results to date appear to confirm our view that capital is a rating weakness for a majority of banks in our sample. The RAC results also illustrate our qualitative opinion that the Tier 1 and leverage ratios are not sufficient to come up with an informed view about individual banks' capital adequacy. We expect this more than 300-basis-point average gap between ratios to narrow in the future as a result of expected changes in the calculation of regulatory capital ratios, including a more stringent definition of Tier 1 capital and increased capital charges for trading risk.

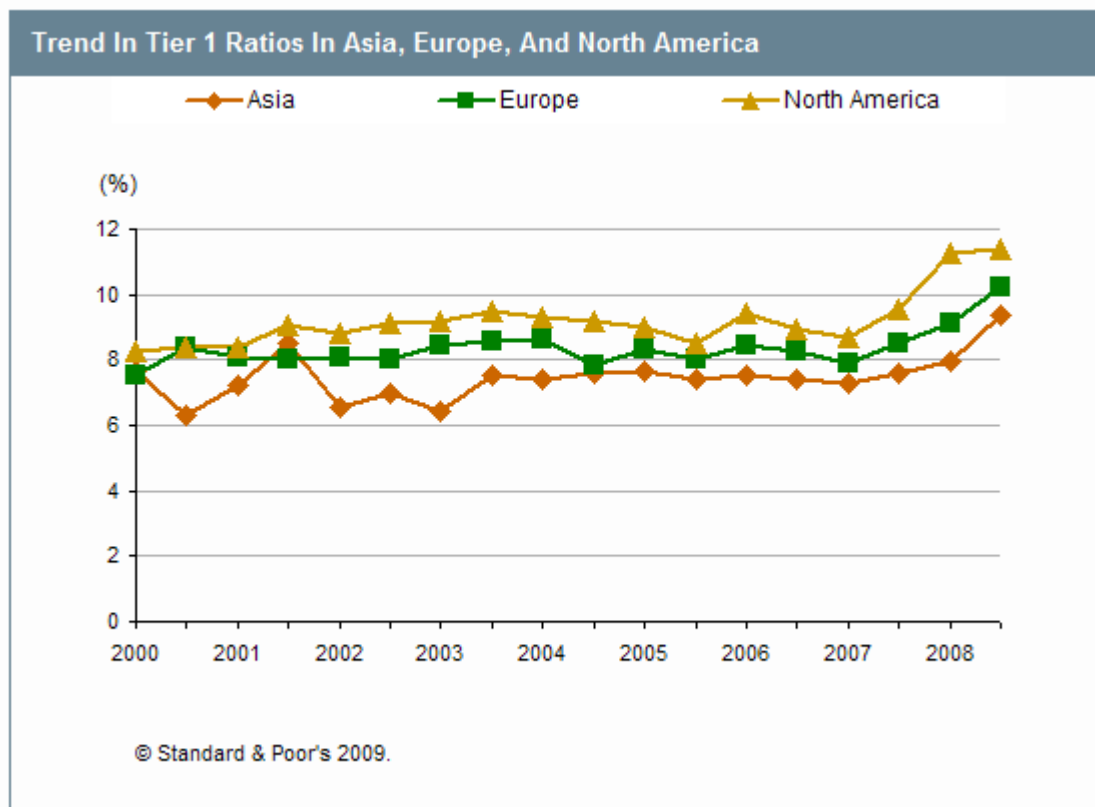
RAC Ratio Levels Confirm Banks' Contrasting Capital Positions

The RACF illustrates our existing opinion that capital remains a neutral to negative rating factor for the majority of banks in our sample. The average estimated RAC ratio in this sample, including capital increases performed up to June 30, 2009, was about 6.7% after diversification/concentration charge and less than 6% before the charge (please see Appendix 2 for details on estimated calculation). A minority of the banks in our sample reached the 8% RAC ratio level which corresponds to full coverage of the level of stress embedded in our ratio.

The RAC ratio, which we developed to facilitate comparisons, is the starting point of our capital analysis. We complement it by qualitative factors, as well as by an analysis of the other existing measures available on the market, such as the Basel II Tier 1 ratio, to reach an informed qualitative opinion about a bank's relative risk-adjusted capital adequacy. (For details on the RACF, see "[Methodology And Assumptions: Risk-Adjusted Capital Framework For Financial Institutions](#)," published April 21, 2009. For our opinion on the strengths and weaknesses of different capital measures see Appendix 1 at the end of this article.)

We are, however, also seeing a clear improvement in banks' risk-adjusted capital positions, compared with the level in 2007. Beyond fulfilling the short-term goals of alleviating market pressure, responding to the uncertain economic environment, and addressing strategic considerations, banks appear to have started to prepare for a future structural increase in regulatory capital requirements as well. Capital raising, conversion of hybrids into common equity, asset disposals, and reduction in risk assets have allowed a number of banks to significantly increase their capital ratios in the past 18 months.

Chart 1



After having reached a low point in 2007, the average Tier 1 ratio of banks in our sample had increased by 250 basis points (bps) as of June 30, 2009, with an acceleration since year-end 2008 (see chart 1). We have observed similar trends for leverage ratios. The average RAC ratio for large banks was about 5.5% in the global case study we performed in 2008, compared with the about 6.7% in the current sample of large banks, including capital raised until June 30, 2009. On June 30, 2009, the bank with the highest estimated RAC ratio was U.K.-based **HSBC Holdings PLC**, with a 9.2% estimated ratio. Japan's **Mizuho Financial Group Inc.** had the weakest, estimated at 2.0% (see table 1). In light of the capital increases and hybrid conversions into common equity performed since June 30, 2009, as well as the asset downsizing exercises of a number of banks, we expect that average RAC ratios at year-end 2009 will have further improved compared with those reported in this research. We currently expect banks to continue strengthening capital ratios over the next 18 months to comply with more stringent regulatory standards. Failure to achieve this could put renewed pressure on ratings.

Capital is, however, just one element in our analysis alongside many other factors, including government support. Our sample includes several banks with ratings factoring in explicit government support. In addition, this sample is not representative of the overall banking universe average. As already highlighted in the global case study we performed in 2008, the average RAC ratio for large banks was less than the overall banking industry average both before and after diversification/concentration adjustments.

Table 1

Standard & Poor's Estimated RAC Ratio For A Global Sample Of 45 Large Banks, Estimated As Of June 30, 2009

(%)	Standard & Poor's RAC estimated	Standard & Poor's RAC estimated (before diversification/concentration)	Diversification impact on risk-weighted assets
Quintile 1			
HSBC Holdings PLC	9.2	6.9	(25)
Dexia S.A.	9.0	7.4	(17)
ING Bank N.V.	8.9	7.0	(22)
Nordea Bank AB	8.8	7.5	(15)

Groupe Credit Mutuel	8.6	7.1	(17)
Toronto-Dominion Bank (The)	8.3	7.0	(16)
Goldman Sachs Group Inc. (The)	8.3	7.0	(15)
Morgan Stanley	8.1	6.7	(17)
Standard Chartered Bank	8.1	6.3	(22)
Quintile 1 average	8.6	7.0	(18)
Quintile 2			
Bank of Nova Scotia (The)	7.9	6.8	(14)
Royal Bank of Canada	7.9	6.4	(19)
Bank of Montreal	7.8	6.8	(13)
Cooperatieve Centrale Raiffeisen-Boerenleenbank B.A. (Rabobank Nederland)	7.8	6.6	(14)
KBC Bank N.V.	7.7	6.6	(15)
DBS Bank Ltd.	7.7	7.7	1
Bayerische Landesbank*	7.6	6.7	(12)
BNP Paribas¶	7.2	5.6	(22)
Societe Generale	7.2	5.7	(20)
Quintile 2 average	7.6	6.5	(14)
Quintile 3			
Banco Santander S.A.	7.2	5.4	(25)
Australia and New Zealand Banking Group Ltd.	7.1	6.6	(7)
DnB NOR Group	7.0	6.8	(3)
JPMorgan Chase & Co.	7.0	5.2	(24)
Barclays Bank PLC	6.9	5.6	(19)
Credit Suisse Group AG	6.9	5.7	(17)
National Australia Bank Ltd.	6.9	5.9	(14)
Intesa Sanpaolo SpA	6.8	5.7	(16)
Credit Agricole S.A.	6.6	5.1	(23)
Quintile 3 average	6.9	5.8	(17)
Quintile 4			
Bank of New York Mellon Corp.	6.5	5.5	(15)
Wells Fargo & Co.	6.4	4.9	(24)
Landesbank Baden-Wuerttemberg§	6.4	5.9	(7)
Commonwealth Bank of Australia	6.3	5.6	(11)
UniCredit SpA	6.3	5.1	(19)
Caja de Ahorros y Pensiones de Barcelona	6.2	6.1	(3)
Deutsche Bank AG	6.1	5.1	(16)
Bank of America Corp.	5.8	4.4	(24)
Bank of Ireland	5.7	5.0	(11)
Quintile 4 average	6.2	5.3	(14)
Quintile 5			
Banco Bilbao Vizcaya Argentaria, S.A.	5.4	4.4	(19)

Danske Bank A/S	5.4	4.5	(16)
DZ BANK AG Deutsche Zentral-Genossenschaftsbank	5.3	4.8	(10)
Allied Irish Banks PLC	5.0	4.7	(6)
Mitsubishi UFJ Financial Group Inc.	4.9	4.3	(12)
Sumitomo Mitsui Financial Group Inc.	3.5	3.1	(11)
UBS AG	2.2	1.8	(17)
Citigroup Inc.	2.1	1.7	(20)
Mizuho Financial Group Inc.**	2.0	1.8	(13)
Quintile 5 average	4.0	3.4	(14)
Global average	6.7	5.6	(15)

¶Estimate made with the assumption that Fortis' assets acquired by BNP Paribas have the same risk profile for the RAC ratio as assets owned by BNP Paribas group. *Does not include the second-loss guarantee by the State of Bavaria. §Does not include the guarantee by its owners. **Excluding \$6 billion in common stock issued in August 2009. Source: Standard & Poor's.

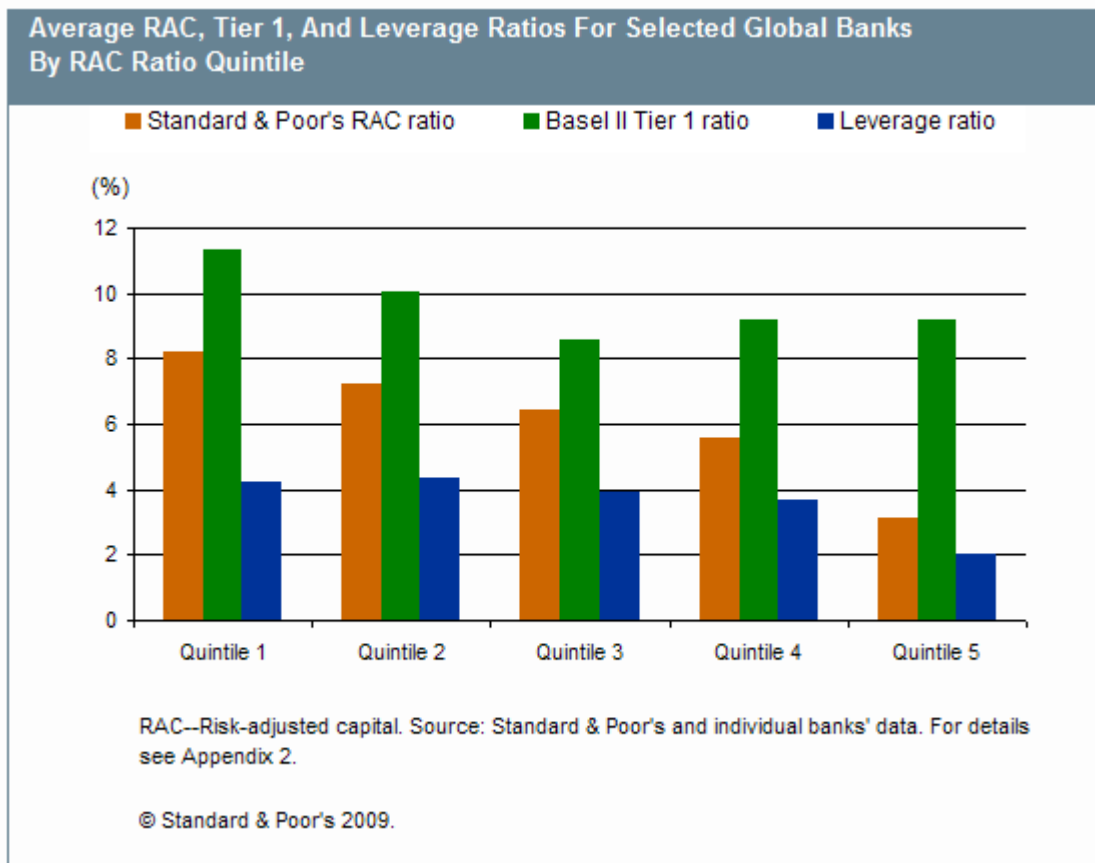
Estimated RAC ratios include a numerator computed at June 30, 2009, but, for disclosure reasons (Pillar 3 availability), the denominators of the estimated RAC ratios at June 30, 2009, for banks in Germany, France, the U.K., Benelux countries, Spain, Italy, Nordic countries, Singapore, Japan, and Australia (with a few exceptions) are based on estimated Standard & Poor's risk-weighted assets at June 30, 2009. We assessed the variation in Basel II risk-weighted assets between the date of calculation with comprehensive Pillar 3 disclosure and June 30, 2009, and applied the same variation to Standard & Poor's risk-weighted assets. As an illustration, a bank like Deutsche Bank AG, as a consequence of an active deleveraging policy during the first half 2009, managed to reduce its Basel II risk-weighted assets by 4%. We applied a pro forma 4% reduction in Standard & Poor's risk-weighted assets computed as of Dec. 31, 2008, to estimate Deutsche Bank's risk-weighted assets at June 30, 2009. We believe that this methodology, although imperfect, should provide a quite precise estimate of the June 30, 2009, RAC ratio.

Tier 1 And Leverage Ratios Don't Tell The Whole Story

Using Tier 1 or leverage ratios for direct comparisons of banks' relative capital positions can be misleading both at the national and the international levels. This is because these measures are not consistently calculated and also, in the case of the leverage ratio, not risk sensitive. (See our views on the strengths and weaknesses of each measure in Appendix 1 at the end of the article.) We do not believe that these two capital ratios, which are the most commonly used by market constituents, are sufficient to assess banks' risk-adjusted capital adequacy.

As shown in chart 1, the Tier 1, leverage, and RAC ratios each give a different picture of banks' capital position. In some instances, there is a huge gap between our RAC ratio and regulatory ratios.

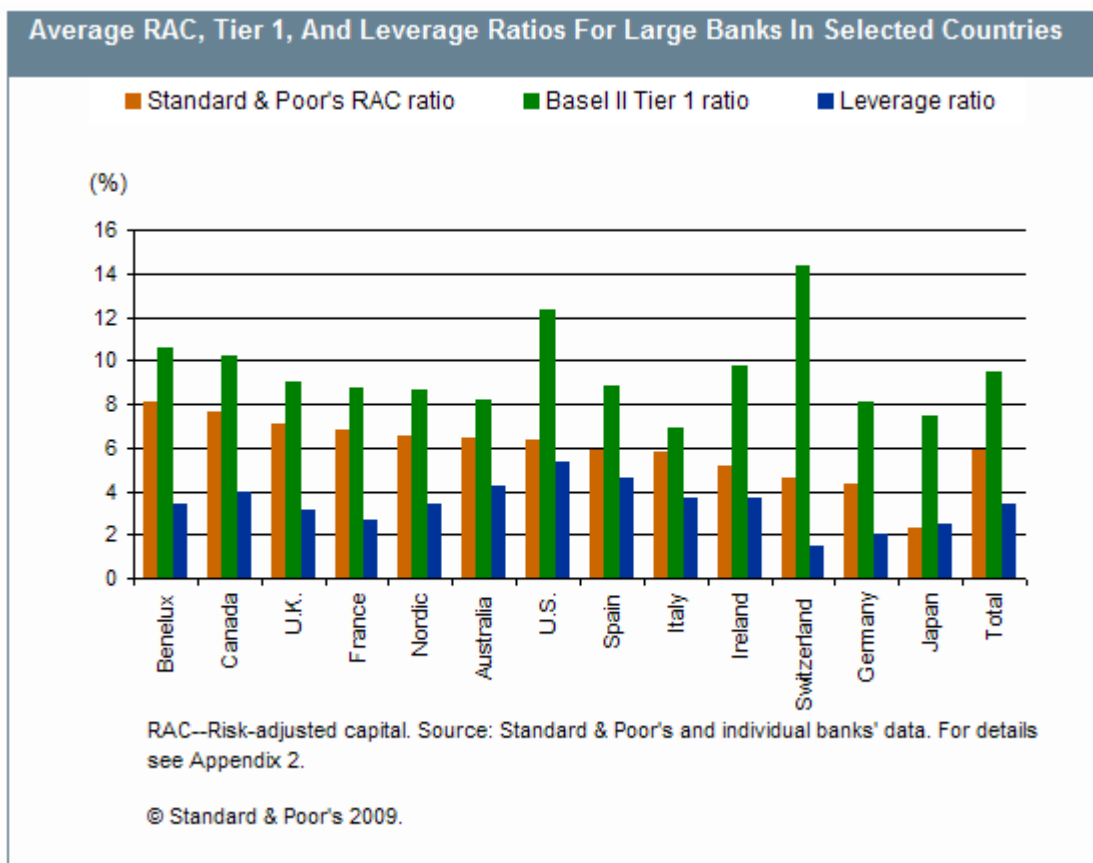
Chart 2



For example, banks in quintile 1 have about the same average leverage ratio as banks in quintile 4, whereas their average RAC ratio is about 30% higher. Conversely, banks in quintile 3 and banks in quintile 5 share similar average Tier 1 ratios but banks in quintile 5 have an average RAC ratio that is almost two times less. (Please see Appendix 2 for detailed figures.) Moreover, the average doesn't tell the full story, as some of the banks in the first RAC ratio quintile have below average Tier 1 ratios and/or leverage ratios. Other banks appear to have among the highest Tier 1 ratios but a below average RAC ratio.

Looking at a breakdown of these large banks sorted by their country of origin, it appears that U.S. banks have the strongest leverage ratios and the second-highest Tier 1 ratios in our sample, but are close to the average in terms of RAC ratio. Conversely, Canadian, Nordic, Benelux, French, and U.K. banks in our sample have much lower leverage ratios than U.S. banks, but have slightly-to-materially higher RAC ratio levels. For German and Japanese banks in our sample, Tier 1 ratios were close to the average but RAC ratios were clearly lower than the average (see chart 2). The two large Swiss banks both had the highest Tier 1 ratios in this sample, but **UBS AG** had one of the lowest RAC ratios on June 30, 2009, and the RAC ratio of **Credit Suisse Group AG** was only slightly above the average.

Chart 3



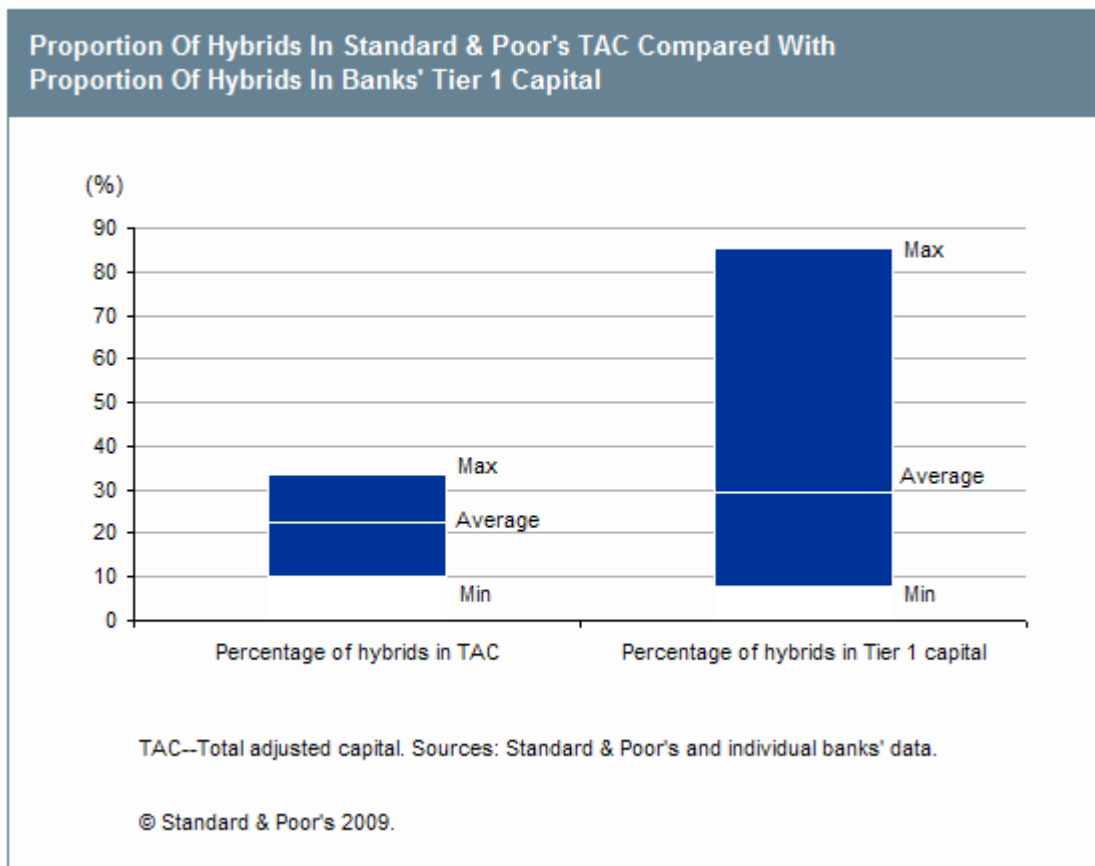
We see strong disparities within countries, however, with banks like **Citigroup Inc.** or **Danske Bank** having below average estimated RAC ratios at midyear 2009, and banks such as **The Goldman Sachs Group Inc.** and **Nordea Bank AB** having relatively stronger RAC ratios. Ongoing capital increases and/or hybrid capital conversions, such as the massive \$64 billion hybrid exchange Citigroup performed the third quarter of 2009, or the conversion of hybrids into common equity UBS performed during the summer, tend to affect the ratio levels quarter after quarter and translate into an upward trend in average RAC ratio levels. Citigroup's low RAC ratio on June 30, 2009, jumped to a relatively more adequate but still below average 5.9% level at end-September 2009. The RAC ratio of **Bank of America Corp.** had improved to 6.7% on Sept. 30, 2009, from 5.8% at end-June 2009.

The RAC Ratio May Differ From Regulatory And Leverage Ratios Because Of Our Stricter Definition Of Capital And Higher Average Risk Weights, In Particular For Market Risks

Standard & Poor's uses its own consistent definition of capital, total adjusted capital (TAC), as the numerator of the RAC ratio, whereas regulators use Tier 1 capital as the numerator for the Tier 1 ratio. The differences observed between numerators reflect in our view primarily our lower acceptance of hybrid capital in TAC compared with Tier 1 capital regulators compute. Other differences include treatment of pension deficits, revaluation reserves, and intangibles.

We believe that the dominant part of capital should remain common equity and reserves, which have stronger loss absorption characteristics and more permanency than hybrid instruments. Given the limits we have for inclusion of hybrid capital instruments, they typically do not exceed 25% of a bank's TAC. In comparison, the proportion of hybrid capital in Tier 1 capital can vary substantially from bank to bank (see chart 4). As of June 30, 2009, hybrid capital instruments reached a high 81% of UBS' Tier 1 capital, subsequently declining in the following quarter. In our opinion, such extreme examples are likely to disappear in the next few years, as we expect regulators will implement a more stringent and globally consistent definition of Tier 1 capital. Transition agreements and grandfather clauses may, however, continue to blur comparability for a number of years.

Chart 4



We apply a higher capital charge for such factors as market risk, insurance risk, and credit risk

The denominator of the RAC ratio is Standard & Poor's risk-weighted assets. Our calculation of risk weights differs significantly from that of banking regulators. For the Basel II banks in our sample, Standard & Poor's risk-weighted assets were on average about 70% higher before diversification and still about 45% higher after diversification benefits than Basel II risk-weighted assets. In our view, several factors contribute to differences between the two types of risk-weighted assets.

Our RAC ratio already integrates a capital charge for trading book market risk that is three to four times higher than current regulatory charges derived from value-at-risk (VAR) models. Even after regulators implement the new trading book regime in 2011, we expect that the capital charge in our RAC ratio will remain 1.5 times higher than the charge under Basel II. We also allocate an equivalent of a one for one capital charge to the capital invested in banks' subsidiaries, compared with a much lower average amount currently deducted from banks' Tier 1 capital in Basel II ratios.

As seen in charts 5 and 6 (which compare for the Basel II banks in our sample the breakdown of aggregated Basel II and Standard & Poor's risk-weighted assets), trading and equity risks accounted for 20% of banks' Standard & Poor's risk-weighted assets against only 9% of Basel II risk-weighted assets. Insurance risk accounted for 3% of banks' Standard & Poor's risk-weighted assets against a very small percentage of banks' regulatory risk-weighted assets, used to calculate banks' current Basel II Tier 1 ratios.

Chart 5

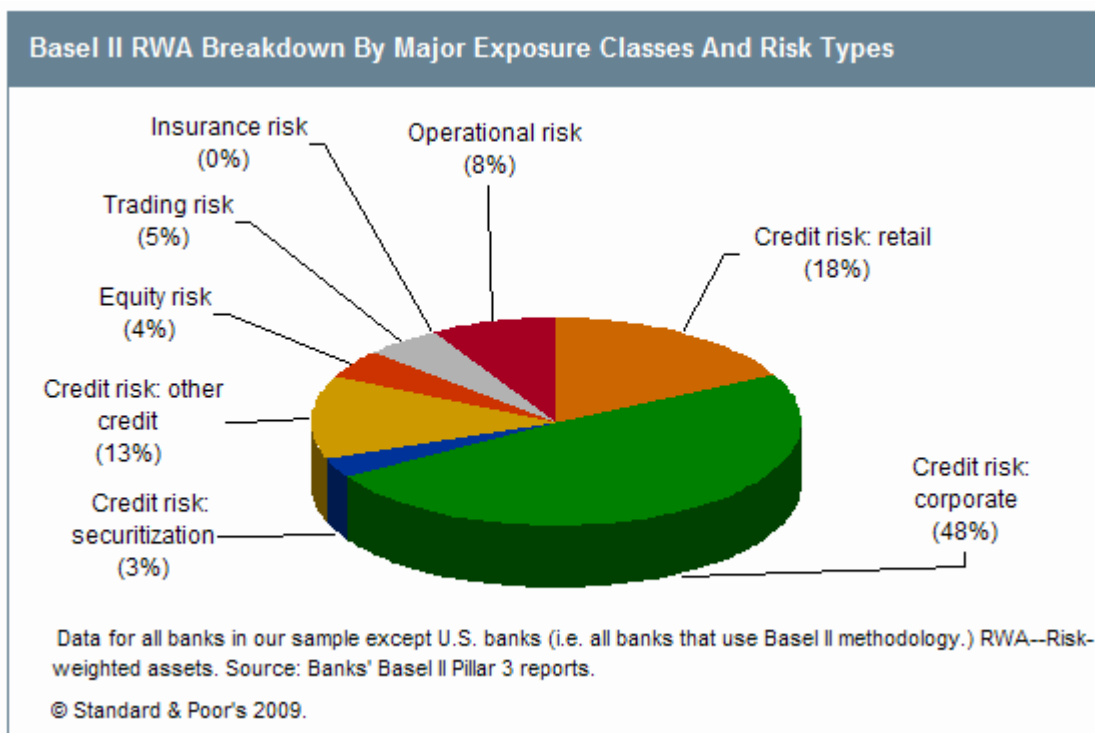
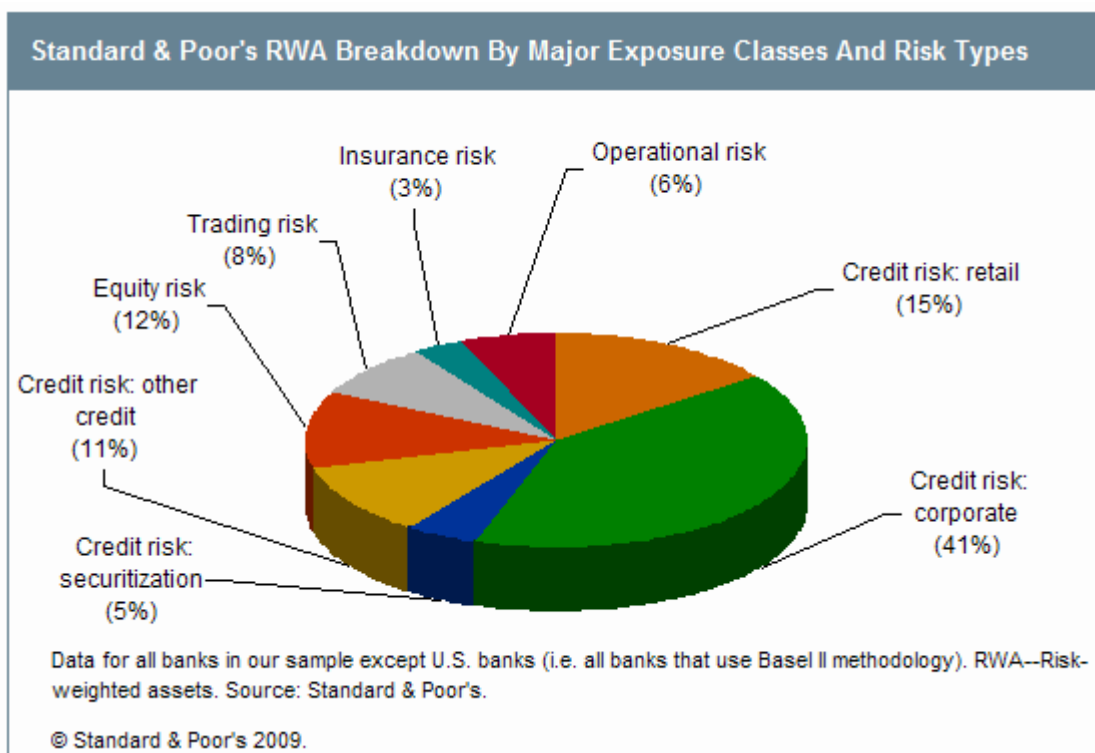


Chart 6



Our risk weights for credit risk are on average higher than Basel II charges. The average masks disparities, though, as our charges can be lower or higher than regulatory risk weights depending on the Basel II methodologies banks use, the conservatism of banks' internal model calibrations, and banks' specific risk profiles compared with the industry average in a given country. As seen in charts 7 and 8, Basel II standardized risk weights, which are not risk sensitive, may appear either higher or lower than the RACF risk weights depending on the bank and the country.

It should be noted that Standard & Poor's risk weights are calibrated at industry level, representative of what we estimate should be the average risk weight assigned to exposure to a given asset class in a given country (see "[Methodology And Assumptions: Risk-Adjusted Capital Framework For Financial Institutions](#)," published April 21, 2009). We use

our Banking Industry Country Risk Assessment (BICRA) scores and economic risk scores as proxies to estimate the amount of credit risk in each economy. We have assigned public BICRA and public economic risk scores to all countries where we rate banks. We update the scores on a timely basis.

Chart 7

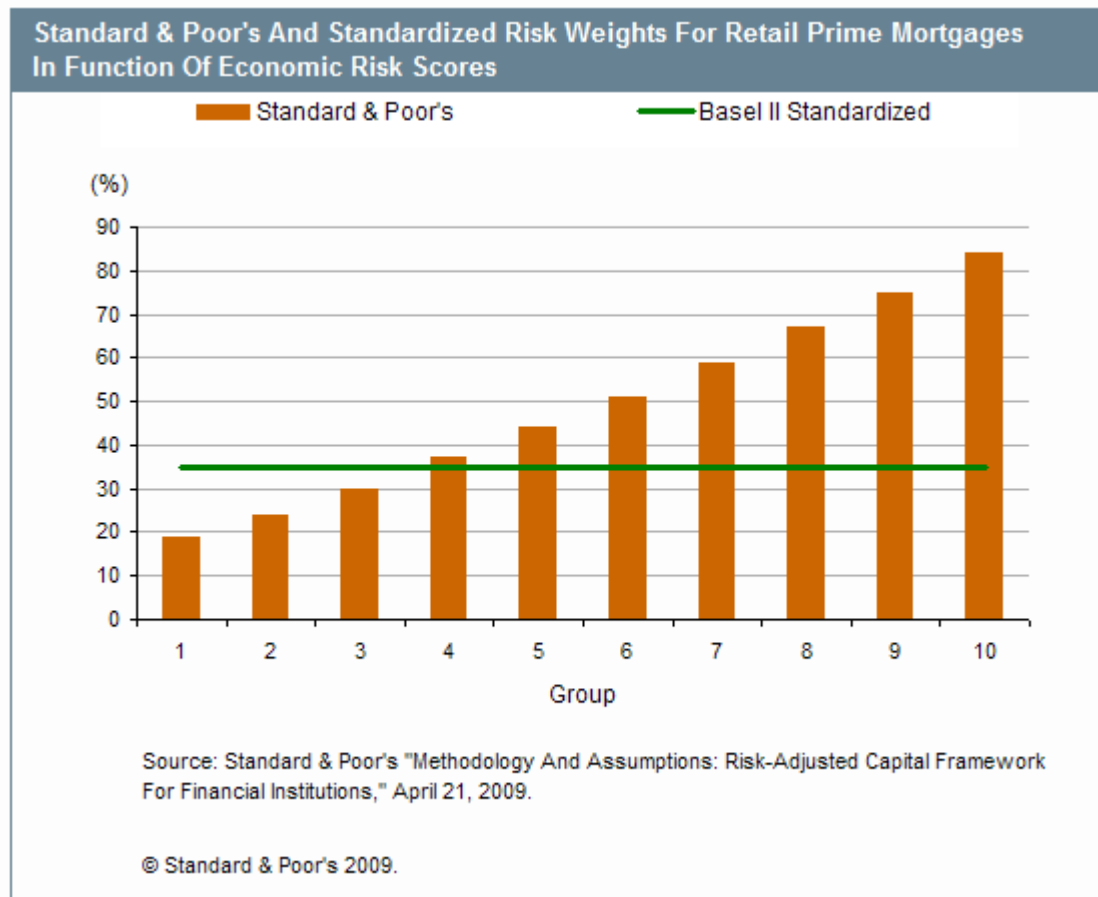
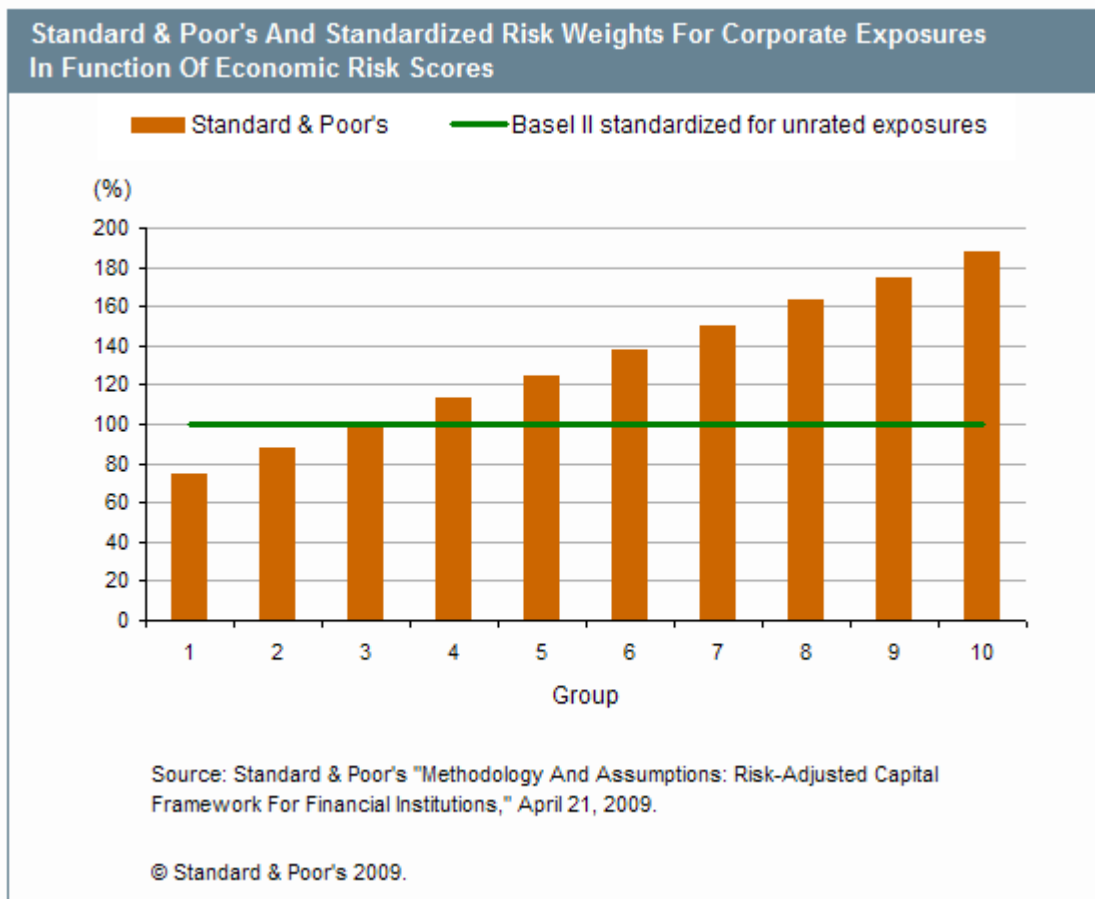


Chart 8



The higher charges on average in our analysis versus the internal ratings-based (IRB) risk weights computed by banks reflect a difference in approach. Our risk weights capture potential charges that may be needed at the bottom of the cycle, whereas the Basel II approach focuses on a one-year horizon. We expect our risk weights to be less procyclical than Basel II IRB risk weights. For example, the charges in our analysis for residential mortgages are less than those computed by Japanese banks and close to those computed by German banks, two countries which experienced difficult real estate cycles in the past 15 years. Our mortgage charges are higher than those computed on average by banks in countries like Spain, the U.K., France, and Canada, which were calibrated based on a benign economic period before 2008. We believe that one of the drivers behind the more than 500-bp difference between our RAC ratio for Danske Bank and its Tier 1 ratio is the bank's low Basel II risk weights for its corporate book at 40%, including a sizable commercial real estate development portfolio, compared to 101% risk weight in our RAC ratio computation.

Chart 9

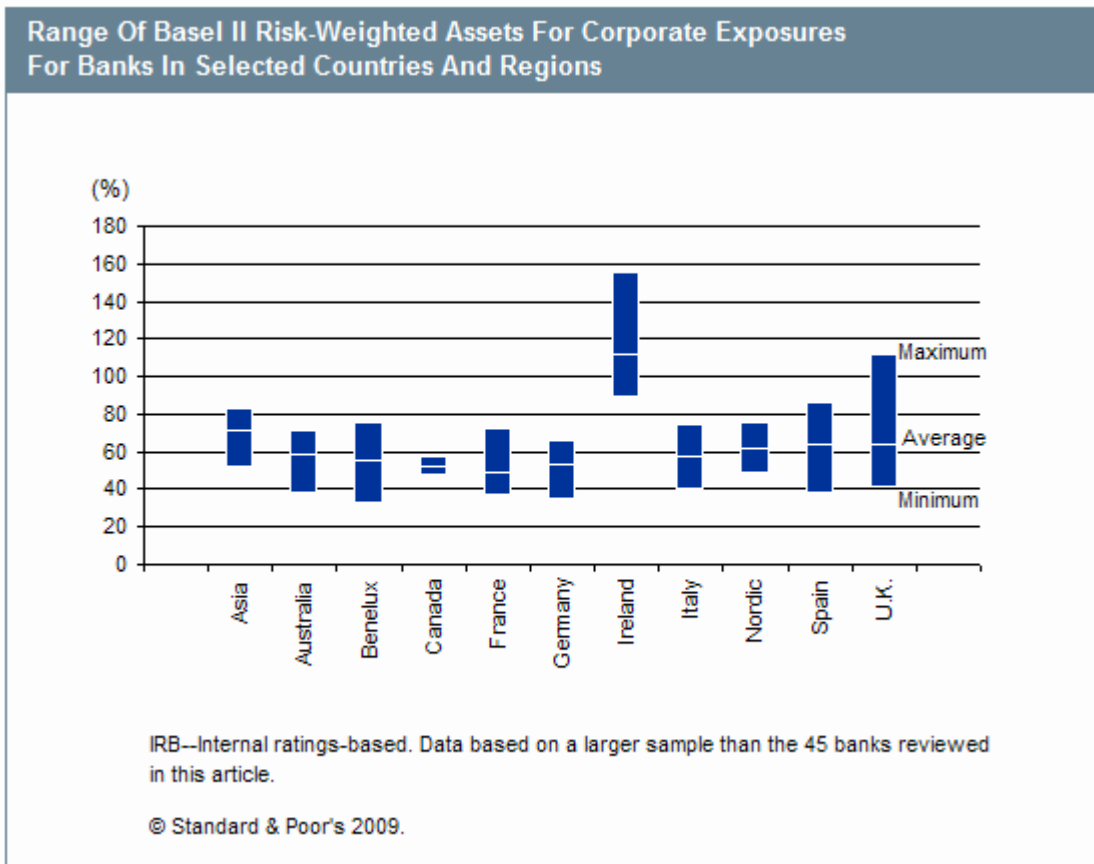
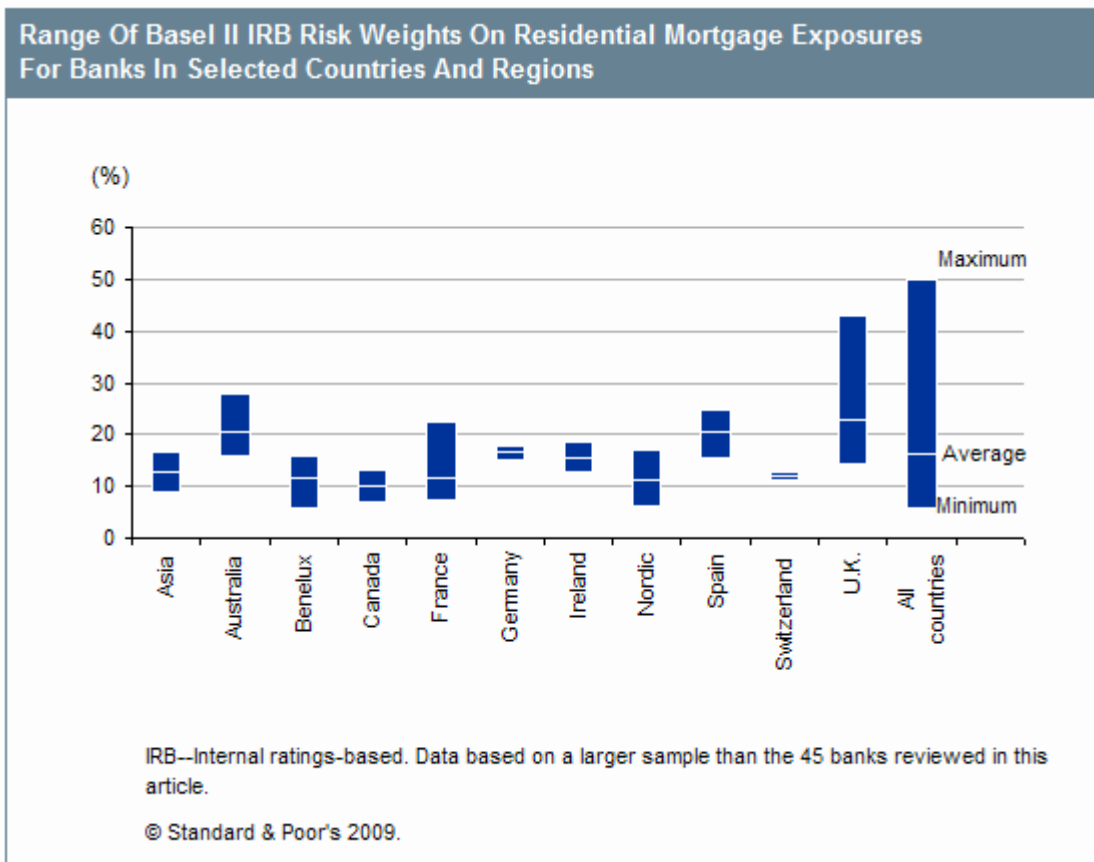


Chart 10



Major differences in risk weights between banks in the same country stem, in our opinion, as much from differences in internal systems and modeling assumptions as from effective underlying risk differences. Chart 9 presents the average

IRB risk weights on corporate exposures for a number of banks in selected countries. For example, in the U.K. **HBOS PLC**'s risk weight is the highest at almost three times that of **The Royal Bank of Scotland Group PLC**, which has the lowest risk weight. In a country like France there is more than a one-to-three gap between the lowest and the highest Basel II IRB risk weight estimate the large French banks assign to domestic residential mortgage portfolios (see chart 10). We believe that this gap stems as much from differences in banks' internal estimates as from differences in underlying residential mortgage risks between the various networks. Our RAC risk weight estimate for French residential mortgages of 18.5% compares with a range between 6% and 24% according to French banks' IRB estimates and 35% for the networks using the Basel II standardized approach.

Countries' discretionary choices affect ratios

National discretionary choices, which in our opinion can have an important impact on both the numerator and the denominator of Basel II ratios, can also explain part of the gap between the Basel II Tier 1 ratio and our RAC ratio. **Commonwealth Bank of Australia** (CBA) is, we believe, an example of this. As seen in table 2, CBA estimates that its Tier 1 ratio would have been almost 300 bps higher if it had been calculated according to British Financial Services Authority (FSA) rules instead of Australian regulations.

Table 2

Commonwealth Bank of Australia Tier 1 Ratio Comparison

(%)

Reported risk-weighted capital ratio under Australian regulation	8.1
Risk-weighted asset treatment: mortgages and margin loans	1.2
Internal ratings-based risk-weighted assets	0.3
Future dividends	0.4
Equity investments	0.3
Other	0.7
Total adjustments	2.9
Risk-weighted capital ratio according to FSA regulations	11.0

FSA--Financial Services Authority. Source: Commonwealth Bank of Australia Basel II Pillar 3 on June 30, 2009.

The most material difference in the two calculations is the 20% floor on residential mortgage loan loss given default (LGD) estimates required by Australian regulators versus a 10% equivalent floor in European countries including the U.K. Interest rate risk in the banking book is included in Australian banks' risk-weighted assets and not in those of U.K. banks. Dividends to be paid are included in U.K. banks' Tier 1 capital and not in that of Australian banks. The treatment of equity investments is also more conservative in Australia.

The RAC ratio factors in banks' diversification

The RAC ratios for large groups in the current sample incorporate an average 15% diversification benefit. This benefit results from concentration and diversification adjustments that Standard & Poor's incorporates into the RAC ratio, which are not incorporated in the regulatory ratios. Those adjustments cover single-name concentration in the corporate portfolio, industry sector concentration or diversification, geographic concentration or diversification, and business line and risk type diversification (see "**Methodology And Assumptions: Risk-Adjusted Capital Framework For Financial Institutions**," published April 21, 2009.). The total risk-weighted asset diversification adjustment ranges from a benefit of 25% for HSBC, the most diversified bank in our sample, down to a concentration charge of 1% for the least-diversified banks in our sample such as **DBS Bank Ltd.** in Singapore. This diversification benefit is, we believe, much lower than the ones usually incorporated in banks' internal economic capital models. We believe that risk correlations can increase significantly in periods of stress, limiting the overall potential diversification benefits. This 15% average risk-weighted assets reduction is not representative of our bank universe, with many banks' RAC ratios bearing an overall concentration charge.

The RAC Ratio Varies By Region And Within Regions

In general we find the average RAC ratios in our sample to be lowest for Japanese banks and highest for banks in Canada and the Benelux countries. The average RAC ratios for banks in Europe as well as in the U.S. appear close to the global average, but with a wide variation around this average. Major Australian banks are also close to the global

average, but with less variation given their more consistent business and financial structures. While banks in Singapore also achieve relatively high RAC ratios, most are outside of the range of our sample of large banks.

Japan

Of the banks in our sample, the three large Japanese banks included in the sample on average have the biggest gaps between RAC ratios and Tier 1 ratios. This, in our view, reflects the high proportion of hybrid instruments in their capital (hybrid capital comprised between one-quarter and one-half of Tier 1 capital for these banks), as well as the size of Japanese banks' equity portfolios held in the banking book, which can account for more than 50% of their capital. Whereas Japanese regulators apply a 100% to 400% risk weight, equivalent to an 8%-32% risk charge range, we apply a multiple of that figure in our RAC calculation.

The treatment of equity exposures under Basel II varies greatly depending on national discretionary options. In particular, a number of countries, such as Japan, grandfather existing exposures, leaving them under the Basel I treatment (100% risk weight) up to Dec. 31, 2014, for Japan and Dec. 31, 2017, for Europe.

Although the three largest Japanese banks have low RAC ratios, their strong franchises, financial flexibility, and strong liquidity support the ratings.

We also expect some improvements in the average level of Japanese banks' RAC ratios, reflecting common equity issuance and conversion of hybrid securities since June 30, 2009. The anticipated reduction in equity exposures should we believe also have a beneficial effect. For instance, Mizuho has indicated that it aims to cut its equity exposure by 20%, which could mitigate market risk. The FSA and Bank of Japan (BOJ) have encouraged banks to reduce their equity exposure, and the BOJ started to purchase equity from banks in February 2009.

We believe that the low RAC ratios for the three largest Japanese banks are not representative of the level for the overall Japanese banking industry. We expect that regional banks, which generally tend to have higher Tier 1 ratios, limited hybrid capital, and smaller equity exposure, will be likely to have higher average RAC ratios than their largest domestic peers.

Europe

European banks in our sample show what we view as quite strong variations around a 6.7% average RAC ratio. We see significant differences between and within each individual country. Among the banks in large countries, German banks have relatively lower RAC ratios than average, whereas French banks and British banks have slightly above-average ratios. German banks' relatively weaker RAC ratios are in our view partly due to above-average exposure to weakly rated asset-backed securities, relatively large equity portfolios, and large corporate lending books.

Multiple individual factors, such as the size of Irish banks' commercial real estate exposure or the large equity portfolio of Spain's **Caja de Ahorros y Pensiones de Barcelona** (la Caixa), can explain what we view as large gaps between RAC and Tier 1 ratios. UBS is another example of a bank with widely differing ratios. The high proportion of hybrid debt in UBS' Tier 1 capital, combined with its large capital market operations for which we apply a charge in our RAC calculation that is four times higher than regulators', are we believe the most important drivers explaining the gap between our low 2.2% RAC ratio and UBS' 13.2% Tier 1 ratio on June 30, 2009. We expect, however, UBS' RAC ratio to increase steadily in the next few quarters as a result of the Swiss franc (CHF) 6 billion hybrid debt mandatory convertible conversion into common equity the bank already performed in August 2009, as well as of CHF13 billion hybrid conversion planned for March 2010, which are included in Tier 1 capital and largely excluded from our TAC, as they exceed our acceptance level for hybrids.

In other instances, such as for HSBC, the gap between our RAC ratio at 7.9% on Dec. 31, 2008, and the Basel II Tier 1 ratio at 8.3% can be small. For HSBC, we believe this reflects the high diversification benefit as well as a relatively moderate gap between HSBC's own risk weight computations and those embedded in our RAC calibration. Another factor in our view contributing to the relatively small difference between the ratios is that HSBC uses the foundation IRB approach for its corporate portfolio and the standardized approach in some foreign subsidiaries.

North America

U.S. banks' leverage and Basel II ratios are considerably higher than the global average in our sample, but their 6.3% average RAC ratio is slightly less than our sample average. This gap we believe reflects the fact that the Tier 1 ratios in the U.S. include hybrid capital contributed by the government, which we do not include in TAC. We also apply higher risk weights to retail asset classes in the U.S. than to those of most banks in Organization for Economic Cooperation and Development countries. This in our view is having a significant impact on U.S. banks' ratios. Another element that may explain the gap between U.S. banks' RAC ratios and their leverage ratios may be that U.S. banks have been managing to a regulatory constraining leverage ratio for years, unlike their international peers for whom the leverage ratio was irrelevant, at least until recently.

Last, but not least, the difference in accounting standards between International Financial Reporting Standards (IFRS) and U.S. generally accepted accounting principles (GAAP) can cause differences in ratios. This can make a sizable impact on balance sheet size for banks with a similar risk profile. For example **Deutsche Bank AG's** IFRS balance sheet on Sept. 30, 2009, was reported to be €745 billion larger than its U.S. GAAP pro forma equivalent, a 45% difference that would have translated into a 45% lower leverage ratio under IFRS than under U.S. GAAP.

Canadian banks' relatively high RAC ratios reflect what we view as the comparatively low economic risk in the Canadian economy as well as the moderate size of Canadian banks' capital market activities.

Australian banks' average RAC score after diversification of 6.5% is about the average RAC ratio, but before diversification benefit, they achieve higher RAC scores than the average. While the major Australian banks benefit from comparatively low economic risk and a high proportion of lower-risk residential mortgage assets, they do not benefit from wide geographic and business diversity to the same degree as many global peers. Recent capital raising has supported RAC scores but has generally funded business and acquisition growth.

Calculation Of Regulatory Capital Will Change

In September 2009, the Basel Committee on Banking Supervision made a series of major recommendations, which the G20 forum confirmed, including restricting the use of hybrids in Tier 1 capital and implementing contra-cyclical capital buffers and a leverage ratio, as well as possibly requiring regulatory capital add-ons for systemically important banks. Moreover, regulatory capital requirements for the trading book will increase starting Jan. 1, 2011.

While the timing and calibration of these measures remains uncertain, we nevertheless expect that banks' regulatory capital requirements are likely to increase significantly in the next few years and regulators will change the calculation of risk assets as well as of regulatory capital.

We plan to apply the RACF to all rated banking groups worldwide by year-end 2010. We are publishing detailed ratio analysis in our individual bank reports as the framework is applied. Our intention is, within the next few quarters, once we have rolled out the RAC framework worldwide on a large number of banks, to come up with further guidelines on how to link RAC ratios with our opinions on capital adequacy and its impact on ratings.

Appendix 1: Standard & Poor's Views On Various Capital Measures' Strengths And Weaknesses

We believe that over-reliance on one single measure of bank capital may potentially be risky and that a more informed view of banks' capitalization can be achieved by analysis of multiple measures. In our opinion, the perfect capital measure that would reflect exactly the specificities of each individual bank's risk profile and be fully comparable doesn't exist. The RAC ratio is the starting point in our analysis of bank capital and a complement to our more traditional qualitative analysis of the other capital measures available.

Standard & Poor's risk-adjusted capital ratio

Key values of the RAC ratio we believe are its international comparability and consistency, its transparency and simplicity, and its independence from banks' internal risk measurement systems. It also reflects Standard & Poor's opinion, and we expect it to be less procyclical than Basel II measures and banks' economic capital models.

In our view one of the key limitations of the RAC ratio is that we calibrate it at the industry level, without taking into consideration differences in banks' underwriting policies. The RAC ratio factors in banks' risk mitigation efforts, such as credit default swaps, guarantees, and financial collateral, but doesn't differentiate further between banks' underwriting standards. Net of the above risk mitigating factors, we expect to apply the same risk weight to two banks' corporate loan portfolios in the same country. The RAC ratio applies different risk weights to subprime mortgages compared with prime mortgages, but doesn't differentiate between two subprime mortgage books in the same country. This calibration at industry level can, for example, understate/overstate the RAC ratios of banks that have a lower/higher risk appetite and stricter/more lenient underwriting standards than the average. This is in our opinion the case for a bank like [Banco Bilbao Vizcaya Argentaria, S.A.](#), which we view as having more-conservative underwriting standards than the average in the Spanish market. We have deliberately decided to adhere to industrywide calibrations to maintain consistency and transparency of our measure. There is, we believe, a trade-off between transparency, comparability, and being fully issuer specific. We believe that the current calibration at industry and country level, without quantitative issuer specific adjustments, makes the RAC ratio a more comparable starting point for risk-adjusted capital analysis than other available measures. It also means that we need to complement the RAC ratio with an analysis of other existing measures in the market, as well as by our qualitative opinion on banks' risk profiles compared with the industry in which they operate.

One additional limitation of our approach is that we used a different data source for U.S. banks than Basel II banks. In the absence of Basel II implementation in the U.S., we estimated equivalent exposure at default (EAD) for U.S. banks' balance sheet and off-balance-sheet commitments. In the absence of detailed disclosures, such as the Pillar 3 reports, we have also made some estimates regarding for example the geographic breakdown of exposures. This estimation of equivalent Basel II EAD might have led to some under- and/or overestimation of exposures for U.S. banks. We still believe that U.S. banks' RAC ratios remain overall comparable with those of Basel II banks.

Lastly, as a result of inconsistent and sometimes limited Pillar 3 information disclosure, we have had to rely also on confidential information for Basel II banks. The level of supplemental information has varied from bank to bank. We believe that this difference may have affected to some marginal extent the level of the RAC ratios.

(For further details on what we view as RAC ratio limitations, please refer to "[Methodology And Assumptions: Risk-Adjusted Capital Framework For Financial Institutions](#)," published April 21, 2009.)

Basel II measures

We believe that the Basel II capital ratio is a valuable measure. We think it is very important to monitor, as it is the main ratio regulators use. Banks are required to comply with it at all times. Beyond its regulatory status, the Basel II ratio is in our view extremely granular under its most sophisticated options. Banks using the internal rating-based (IRB) approach have to assess one by one each individual balance sheet and off-balance-sheet risk they carry. The validation process by regulators ensures some robustness of the IRB approach. We view positively the principle of Basel II's Pillar 2 discipline, which requires banks to map all their risks, factor in the concentration and diversification effect, implement stress tests, and integrate their strategy into their capital planning.

But Basel II is, and we expect will remain, a very complex regulation, extremely difficult to assess independently by market constituents. The lack of consistency in banks' Pillar 3 disclosure further adds, in our opinion, to an already challenging exercise. In the absence of in-depth analysis, drawing conclusions from direct comparisons between large banks' Basel II ratios can be misleading. Methodological differences, national discretionary choices, and differences in internal model calibrations can lead to very different risk weights for the same underlying risk. Basel II will also remain reliant on banks' internal risk measurement systems. We believe that it is procyclical and may understate certain types of risks. Banks typically don't disclose Pillar 2 calculations and adjustments.

We expect that Basel II will improve in the next few years, but the magnitude of changes is yet unknown. Changes will include "stress VAR," (see "[Proposed Basel II Rules Would Require Banks To Hold More Capital Against Trading Risk](#)," published May 4, 2009), incremental risk charges, and a new securitization framework. They should also encompass contra-cyclical buffers, making Tier 1 capital consist primarily of common equity, and potential add-ons for systematically important banks. However we anticipate that changes are likely to still be gradual, with grandfathering options potentially available.

Leverage ratio

We believe that the leverage ratio, which compares the amount of banks' capital to their balance sheet size, has some value. A high leverage multiple, we believe, informs about potential "model risk." A highly leveraged institution is, all things being equal, we think more vulnerable to any underestimation of its asset risks than a lower leveraged institution. We have seen in recent years many examples of highly leveraged and supposedly very low risk arbitrage strategies, such as negative basis trade, which subsequently proved very costly as a consequence of internal risk assessment failures.

The fact that the current crisis has been preceded by a significant deterioration in many global banks' leverage ratios in the past decade indicates to us that this very simple measure shouldn't be completely ignored.

But the leverage ratio we believe has significant limitations. The fact that the U.S. banking system, where the leverage ratio has been in use for a long time and banks' leverage ratios appear better than average, has been at the epicenter of the financial crisis, in our view illustrates the limitation of that metric.

Among its limitations, in our opinion, the leverage ratio:

- Is not at all risk sensitive (a private equity investment is treated in the same way as a treasury bill);
- Can be circumvented (for example by off-balance-sheet vehicles); the leverage ratio has been used in the U.S. for years but it didn't prevent the U.S. banking system from reaching a high level of risk-adjusted leverage;
- Gives banks the incentive to concentrate on high risk/high return products; and
- Is very sensitive to accounting standards (as evidenced by the example of the lack of comparability between Deutsche Bank's U.S. GAAP and IFRS accounts, see discussion above under the heading North America; when comparing banks using the same accounting standards, accounting efficiency may become a differentiator (such as when a team of advisors is actively managing down balance sheet figures).

We understand that regulators are working to refine the leverage ratio, but results are still unknown at the time of writing.

Banks' internal economic capital models

A number of banks publish the results of their internal economic capital models. Such a capital measure is potentially the most granular, issuer specific, and comprehensive of the available measures. Comparisons are, however, in our opinion difficult given they may be blurred by methodological and risk assessment differences between banks. We see economic capital measures as a useful indicator about the way banks view and manage their risk profile, but we don't think they can be used for direct comparison purposes. They also almost uniformly indicated that banks were overcapitalized, a notion which has been amply discredited in our opinion.

Appendix 2: Comparison of Banks' Ratios By Quintile

Table 3

Comparison Of Banks' RAC, Basel II Tier 1, And Leverage Ratios Based On Most Recent Available Full Information

(%)	RAC ratio	RAC ratio (before diversification/consolidation)	Basel II Tier 1 ratio	Leverage ratio	All ratios calculated as of
Quintile 1					
ING Bank N.V.	8.9	7.0	9.3	3.1	12/31/2008
Dexia S.A.	8.4	7.0	10.6	2.4	12/31/2008
Groupe Credit Mutuel	8.4	6.9	9.9	3.4	12/31/2008
Goldman Sachs Group Inc. (The)	8.3	7.0	13.8	6.8	06/30/2009
Morgan Stanley	8.1	6.7	15.8	6.4	06/30/2009
Toronto-Dominion Bank (The)	8.0	6.7	10.9	3.3	04/30/2009
Bank of Nova Scotia	7.9	6.8	10.4	4.5	07/31/2009
HSBC Holdings PLC	7.9	6.0	8.3	3.6	12/31/2008
Cooperatieve Centrale Raiffeisen-	7.9	6.7	12.7	4.6	12/31/2008

Boerenleenbank B.A. (Rabobank Nederland)					
Quintile 1 Average	8.2	6.8	11.3	4.2	
Quintile 2					
Standard Chartered Bank	7.7	6.0	9.9	4.1	12/31/2008
Bank of Montreal	7.3	6.3	10.7	4.3	04/30/2009
Nordea Bank AB	7.3	6.2	7.4	3.2	12/31/2008
DBS Bank Ltd.	7.3	7.4	10.1	7.4	12/31/2008
KBC Bank	7.2	6.1	9.7	3.5	12/31/2008
Royal Bank of Canada	7.1	5.8	8.9	3.8	04/30/2009
JPMorgan Chase & Co.	7.0	5.2	9.7	5.9	06/30/2009
National Australia Bank Ltd.	6.9	5.9	8.3	4.5	03/31/2009
Credit Suisse Group AG	6.9	5.7	15.5	2.5	06/30/2009
Quintile 2 Average	7.2	6.1	10.0	4.4	
Quintile 3					
DnB NOR Group	6.9	6.6	6.3	4.4	12/31/2008
Societe Generale	6.6	5.2	8.4	2.7	12/31/2008
Bank of New York Mellon Corp.	6.5	5.5	12.5	6.7	06/30/2009
Banco Santander S.A.	6.5	4.8	8.7	3.7	12/31/2008
Wells Fargo & Co.	6.4	4.9	9.8	5.9	06/30/2009
Commonwealth Bank of Australia	6.3	5.6	8.1	3.3	06/30/2009
BNP Paribas	6.3	4.8	7.8	1.9	12/31/2008
Credit Agricole S.A.	6.2	4.8	8.8	2.6	12/31/2008
Intesa Sanpaolo SpA	6.1	5.2	7.1	4.1	12/31/2008
Quintile 3 Average	6.4	5.3	8.6	3.9	
Quintile 4					
Australia and New Zealand Banking Group Ltd.	6.1	5.7	8.2	4.8	03/31/2009
Caja de Ahorros y Pensiones de Barcelona	6.0	5.8	10.1	5.7	12/31/2008
Bank of America Corp.	5.8	4.4	11.9	5.2	06/30/2009
Barclays Bank PLC	5.6	4.5	8.8	1.6	12/31/2008
UniCredit SpA	5.4	4.4	6.7	3.2	12/31/2008
Danske Bank A/S	5.4	4.5	12.2	2.6	06/30/2009
Deutsche Bank AG	5.3	4.5	10.1	1.2	12/31/2008
Allied Irish Banks PLC	5.2	4.9	7.4	4.7	12/31/2008
Banco Bilbao Vizcaya Argentaria, S.A.	5.1	4.2	7.6	4.4	12/31/2008
Quintile 4 Average	5.6	4.8	9.2	3.7	
Quintile 5					
Bank of Ireland	4.8	4.3	12.0	2.6	03/31/2009
Bayerische Landesbank*	4.4	3.9	8.0	2.7	12/31/2008
Mitsubishi UFJ Financial Group, Inc.	4.1	3.6	7.8	3.3	03/31/2009
DZ BANK AG Deutsche Zentral-Genossenschaftsbank	3.8	3.4	7.4	2.0	12/31/2008
Landesbank Baden-Wuerttemberg¶	3.7	3.5	6.9	2.1	12/31/2008
Sumitomo Mitsui Financial Group Inc.	2.5	2.2	8.2	2.5	03/31/2009
UBS AG	2.2	1.8	13.2	0.5	06/30/2009
Citigroup Inc.	2.1	1.7	12.7	0.6	06/30/2009

Mizuho Financial Group Inc.	N/A	N/A	6.4	1.7	03/31/2009
Quintile 5 Average	3.1	2.8	9.2	2.0	
Global Average	6.1	5.1	9.7	3.6	

*Does not include the second-loss guarantee by the State of Bavaria. ¶Does not include the guarantee by its owners. Source: Standard & Poor's. Source: Standard & Poor's and individual banks' data.

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