

# Using Public Data Benchmarking for Basel II

It is very difficult to get a handle on the readiness of US banks to comply with Basel II, partly because there is no way for the public to acquire highly detailed financial data for specific banks. **Dennis Santiago** and **Christopher Whalen** examine this problem and explain why the US banking marketplace should establish Basel II benchmarks for probability of default, loss given default, exposure-at-default and economic capital.

One of the impediments to the adoption of Basel II — but by no means the only obstacle — is the lack of a set of public measures by which policy makers, regulators and members of the public can measure and compare how different institutions will look under the new bank capital adequacy regime.

To review, under the Basel II proposal, there are three elements or pillars on which the new capital requirements rest — Pillar 1: minimum regulatory capital requirements; Pillar 2: supervisory oversight of the minimum requirements and other capital issues; and Pillar 3: disclosure requirements providing market discipline on bank capital adequacy.

The three pillars of Basel II ostensibly rest on universal concepts such as transparency, disclosure and validation, yet these measures depend largely on the use of privileged, non-public, analytical assumptions and data. Unlike the measures used in the US to set risk-based capital (RBC) guidelines, for example, Basel II is to be negotiated and supervised in private, away from market scrutiny and public accountability.

Another dimension of the same problem is that virtually none of the banks that are intent upon adopting Basel II calculate basic measures such as probability of default (“P(D)”), loss given default (“LGD”) and exposure-at-default (“EAD”) in the same way, making comparison and validation of the key measures impossible.

The fact that US regulators support such a secretive and closed process is no small irony. Reacting to the banking crises of the 19th Century that led up to the Great Depression, the US Congress created the Federal Reserve System in 1913, mandated Federal Deposit Insurance two decades later and eventually legislated a regime of regula-



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tion and public data benchmarks to ensure the safety and soundness of US banks.

Tools like minimum capital measures, solvency tests and prompt corrective action have been used to restrict business model choices of US banks, but with the result that the US banking system is the most stable and transparent in the world.

A key component of the US regulatory regime has been the collection of highly detailed financial information. For the past two decades, the FDIC and other agencies have collected detailed, portfolio-level information about the operations and condition of US banks. This data is more comprehensive than the financial data submitted to the SEC by publicly owned banks and provides analysts and regulators alike with a structured, machine-readable source for Basel II benchmarks.



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Tools like the FDIC’s Research Information Service (RIS) offer analysts and regulators a very powerful point of departure for Basel II benchmarking, yet to date none of the major federal regulator agencies have attempted to use this unique national resource to advance the adoption of Basel II by publishing institution-specific profiles.

While the FDIC has produced some useful aggregate studies of the effect of Basel II on bank capital levels, as yet none of the major US regulators have opined about how specific banks would look under the new capital accord.

## Subjective Process

The main reason for this is that the bank examination process in the United States is subjective. CAMEL (capital adequacy, asset quality, management, earnings and liquidity) testing for banks and BOPEC<sup>1</sup> testing for bank holding companies remain largely manual and intermittent processes that

are not conducive to direct comparability. Thus, these measures are held as privileged communication between regulator and bank, a barrier that insurers and other interested parties seem perpetually driven to penetrate. This opacity causes markets to falsely assume that banking business model risk is homogeneous and that firm-specific risk is sufficiently approximated using statistical techniques.

Regulators are probably not as well positioned to publicly release comparable estimates of where specific banks would stand under Basel II versus, for example, RBC levels. One reason may be because they fear a political backlash from their constituent banks.

In view of the hearings on Capitol Hill held this year regarding Basel II, such reluctance is understandable, but there are reasons other than political considerations that restrain the regulatory community. For one thing, none of the major regulators wants to be seen publishing official risk ratings of a US bank, fearing an adverse reaction in the financial markets. Yet there are ways for analysts, investors and regulators to benchmark banks under the Basel II proposal using transparent and objective tests.

The Basel II proposal encourages banks to perform their own credit risk calculations and to develop internally the competency to rate the risk of default. This encouragement has a natural methodology consequence. Each institution develops risk analysis methods that reflect the people who perform this work and the broad, non-homogeneous variety of business models they must assess and rank. In a free marketplace, risk professionals and institutions react differently in the way they observe and price risk.

While institutional competency and diversity are laudable objectives, these characteristics have the unfortunate consequence of rendering classical bank supervisory rules and measures, such as capital adequacy guidelines, opaque. This effect is illustrated in processes such as the Quantitative Impact Studies (QIS), where institutions go to great lengths to conform to artificial expectations of homogeneity — even though they privately concede that their underlying business models look nothing like the “average case study.”

### Necessary Benchmarks

In our view, for Basel II to be a truly functional, transparent and credible process for all of the communities it serves, global regulators must establish some basic public data benchmarks to serve as the starting point for capital adequacy analysis.

The first step should be a public rating process, with clearly defined metrics for LGD, EAD and P(D) published for all US banks on a quarterly basis. Banks that participate in Basel II — particularly large institutions pursuing the advanced internal ratings-based approach to measuring and estimating discrete obligor default risk and other credit fac-

tors — may then privately present privileged data and mitigating factors to regulators as to why their business deserves different treatment from the public profile.

Earlier this year, we introduced the notion of uniformly computed Basel II benchmarks for LGD, P(D), EAD and economic capital. We also used structured data from the FDIC to generate a methodology (discussed a bit later in this article) for testing all US banks.

Benchmarks would allow analysts to compare the basic Basel II metrics for every bank holding company and subsidiary bank unit in the US market on an “apples to apples” basis. Building and testing these benchmarks convinced us that Basel II has great merit and can indeed achieve the goal of aligning global credit practices to improve systemic safety and soundness.

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The good news is that there are efficient ways to achieve workable comparability. Individual institutions may quibble at the margins about such a regime, but all are still comparable and thus there is a basis for managing their risk uniformly.

Indeed, one of the more exciting aspects of Basel II is that the metrics enable analysts to make observations about the business models of various banks, institutions that might seem at first glance to be peers in terms of product lines and financial performance but that in fact are quite disparate.

In Table 1 (pg. 24), we show the default rates in bond equivalent ratings and basis points and the LGD, EAD and P(D) for some of the largest US bank holding companies (BHCs) as of year-end 2005. These are “bank only” profiles of the BHCs, using a methodology employed internally by federal regulators, sorted by asset size.

One interesting point worth mentioning is the stark difference between Bank of America (NYSE:BAC), JPMorgan Chase (NYSE:JPM) and Citigroup (NYSE:C), three institutions that investors and the media treat as peers but that in fact have different risk profiles. Note that while the default rate of C’s subsidiary banks is almost two times that of BAC and the EAD for C is more than three times that of BAC, the weighted average maturity (WAM) for C’s bank units is a mere 1.6 years

for the entire BHC. BAC, on the other hand, shows far more duration risk, with a WAM of almost seven years. JPM has a relatively short WAM of just over three years for the portfolios of its two subsidiary banks but, as discussed below, has a riskier business model than its two money center peers.

It is also worth noting how low the default rates are for all of the banks in Table 1 — rates well below the 15-year average even though we are now in year three of a Fed interest rate tightening. The low rates of default reported by US banks are due to the Fed’s prolonged policy of easing interest rates between 2000 and 2004.

In our view, the FDIC’s bank data graphically illustrates how the boom-and-bust interest rate policies of the Fed during chairman Alan Greenspan’s tenure distorted the behavior of consumers and thus the risk profiles of US banks; arguably, this biased the results of the QIS 4 survey.

In Table 2 (pg. 25), we computed the controversial dimension of economic capital (EC) estimation and risk-adjusted return on capital (RAROC). EC and RAROC take on a new dimension of difficulty when one attempts to compute it uniformly for all 8,800 FDIC-insured banks, plus another 1,000 holding entities.

Table 2 depicts EC and RAROC calculations for some of the largest US bank holding companies (as of year-end 2005) in a “fully stressed” scenario that assumes significant expected losses to the trading and investment portfolios, but accepts the artificially low rate of defaults visible in loan portfolios.<sup>2</sup>

The results of our simulation revealed a remarkable variation in bank business models, illustrating why such acrimony exists over the adoption of a regime like Basel II and why the solutions to that acrimony will take more than merely homogenizing aggregate statistics.

For example, Table 2 — which relied on data from the

**Table 1: Basel II Benchmarking**

ORGANIZATION	Basel II Rating	Defaults (bps)	LGD (%)	WAM (yrs)	EAD (%)
BANK OF AMERICA CORP	BB	92.1	78.7	6.7	89.3
JPMORGAN CHASE & CO.	BB	107.6	78.4	3.11	189.3
CITIGROUP INC.	BB	175.8	75.5	1.6	243.0
WACHOVIA CORP	BBB	19.9	52.7	5.91	81.3
WELLS FARGO & COMPANY	BBB	46.9	74.4	3.58	56.1
WASHINGTON MUTUAL BANK	BBB	19.7	81.4	NA	47.8
U.S. BANCORP	BB	68.1	72.2	3.85	94.7
SUNTRUST BANKS, INC.	BBB	24.4	63.1	5.25	69.6
ROYAL BANK OF SCOTLAND	BBB	42.8	77.5	6.65	41.9
HSBC HOLDINGS PLC	BB	96.5	70.7	3.11	259.2
NATIONAL CITY CORP	BB	51.8	63.2	4.15	51.7
WORLD SAVINGS BANK FSB	AAA	0.2	35.4	NA	3.0
ABN AMRO HOLDING N.V.	BBB	19.4	60.3	4.02	59.8
BB&T CORP	BBB	29.3	73.9	4.4	38.2
FIFTH THIRD BANCORP	BB	52.4	80.3	3.64	57.1
KEYCORP	BB	58.8	77.1	3.34	56.1
STATE STREET CORP	AAA	0	NA	6.58	600.9
BANK OF NEW YORK COMPANY,	BB	55.8	95.4	4.51	110.3
PNC FINANCIAL SERVICES	BBB	25.4	37	4.57	78.9
REGIONS FINANCIAL CORP	BBB	31.1	67.2	2.24	33.0
CAPITAL ONE FINANCIAL	B	365.5	73.7	2.4	344.0
COUNTRYWIDE FINANCIAL	AA	1.1	94.5	2.74	15.5

Sources: Data from FDIC Research Information Service and calculations by the IRA Bank Monitor.

**Table 1 Legend:**

- **Basel II Rating:** Actual default rate for current quarter expressed as bond rating equivalent using industry break points. Computed and assigned by IRA. This rating should generally align with the “internal target rating” for a bank’s credit operations business model.
- **Defaults:** Observed loan and lease defaults in basis points vs. the reported loan and lease base.
- **Loss given default (LGD):** Percent loss after default per US dollar lent.
- **WAM:** Weighted average maturity in years for the aggregate lending portfolio. Note: the Office of Thrift Supervision does not release portfolio or aggregate maturity data for thrifts to the FDIC.
- **Exposure-at-default (EAD):** Amount in aggregate that obligors could borrow immediately prior to default, expressed as % of existing credit available. Computed by analyzing “as reported,” unused lending commitments.

FDIC’s RIS database and calculations performed by the IRA Bank Monitor model — generated an EC level for JPM that is five times that bank’s current RBC.

This result directly contradicts the results of QIS 4. Simply put, banks with extensive derivatives and trading operations seem to require more capital than community banks, which our model generally assigns lower EC levels than current RBC requirements.

We admit our methodology is arbitrary, but that is precisely the point. We are not suggesting that our methodology is right or wrong, but simply that it is possible to profile US banks using a range of assumptions and thereby allow the analyst to better understand the behavior and business model choices of specific banks.

Table 2: Economic Capital/RAROC Analysis

ORGANIZATION	Economic Capital	Tier 1 Risk Based Capital	Tier 1 RBC/ Assets	EC to Tier 1 RBC Ratio	RAROC
BANK OF AMERICA CORP	\$130,083,314	\$77,498,271	6.6%	1.679	26.07%
JPMORGAN CHASE & CO.	\$355,059,069	\$70,183,870	6.4%	5.059	2.59%
CITIGROUP INC.	\$232,690,402	\$72,581,756	7.4%	3.206	7.45%
WACHOVIA CORP	\$67,095,332	\$29,193,207	6.1%	2.298	23.75%
WELLS FARGO & COMPANY	\$24,349,220	\$27,479,181	6.4%	0.886	53.11%
WASHINGTON MUTUAL BANK	\$12,026,974	\$21,097,918	6.4%	0.570	89.08%
U.S. BANCORP	\$9,658,666	\$12,576,118	5.9%	0.768	68.56%
SUNTRUST BANKS, INC.	\$8,685,366	\$11,796,956	6.6%	0.736	51.07%
ROYAL BANK OF SCOTLAND	\$5,352,598	\$8,979,032	5.7%	0.596	73.36%
HSBC HOLDINGS PLC	\$29,498,571	\$10,320,226	6.7%	2.858	5.52%
NATIONAL CITY CORP	\$3,619,950	\$9,768,616	6.7%	0.371	85.36%
WORLD SAVINGS BANK FSB	\$1,452,255	\$8,384,582	6.7%	0.173	231.77%
ABN AMRO HOLDING N.V.	\$3,291,495	\$9,424,972	8.6%	0.349	99.64%
BB&T CORP	\$1,494,283	\$7,758,899	7.1%	0.193	215.45%
FIFTH THIRD BANCORP	\$3,756,707	\$10,061,909	9.4%	0.373	69.86%
KEYCORP	\$4,052,141	\$6,754,490	7.6%	0.600	44.14%
STATE STREET CORP	\$37,355,549	\$4,772,506	5.4%	7.827	4.60%
BANK OF NEW YORK COMPANY	\$28,502,512	\$6,190,315	7.1%	4.604	5.32%
PNC FINANCIAL SERVICES	\$15,402,365	\$5,900,672	6.9%	2.610	13.31%
REGIONS FINANCIAL CORP	\$1,607,773	\$6,951,188	8.6%	0.231	129.19%
CAPITAL ONE FINANCIAL	\$5,681,086	\$7,310,523	9.9%	0.777	-25.67%
COUNTRYWIDE FINANCIAL	\$3,465,395	\$5,388,356	7.4%	0.643	39.65%

Sources: Data from FDIC Research Information Service and calculations by the IRA Bank Monitor.

Table 2 Legend:

- **Economic Capital:** Standardized, fully stressed EC computed by IRA to enable direct comparisons between the risk management strategies of different institutions. Includes separate calculations and risk weightings for lending, trading and investment activities.
- **Tier 1 Risk-Based Capital:** The regulatory capital measure as reported by the institution. Based on a regulated formula and reported in Schedule RC-R of the Call/TFR.
- **EC to Tier One RBC:** Ratio of economic capital to Tier 1 capital.
- **RAROC:** Risk-adjusted return on capital. Also known as return on economic capital (ROEC). Computed using IRA's EC estimate.

### Leveraging Public Data

Using public data to conduct consistent tests of Basel II compliance helps to illuminate a broad range of business models and changes in these models, which exist within a regulated environment.

While these paths result in stringently defined accounting outcomes, the risks embedded in the different paths create a plethora of safety, soundness and moral hazard conditions that, when tabulating asset exposures, manifest like the vivid colors of the fish inhabiting a tropical reef. This is, after all, what the risk management process is really about

— i.e., to understand individual subject behavior, not to autocorrelate a notional target point.

Unfortunately, in the most recent Basel II rulemaking proposal issued by the Fed, regulators appear to be in full retreat from requiring obligor-specific risk metrics, preferring instead the comfortable familiarity of VaR models and other essentially useless statistical tools.

This decision by the regulators to embrace statistical generalizations about risk rather than obligor-specific measures has an unfortunate affect, in our view, that does little to add clarity to the increasingly complex risks taken in the global capital markets.

In order to achieve the core goal of Basel II, namely to align global risk and capital measures in a consistent way, there must be a starting point that is uniform and transparent. By calculating Basel II metrics using public data and the same methodology for each institution, analysts and regulators may create a means of comparing different institutions in an “apples to apples” fashion that is fair and easy to evaluate.

As the FDIC and the other major regulators expand the range of data reported by US banks to support the Basel II process and other objectives, we believe that public data benchmarking of US banks will become an increasingly important part of the task of analyzing the risk profiles of US financial institutions.

Imposing a census grade analysis template upon a risk management process places a rationalizing force on the task and enables regulators, who can play no favorites, to see more clearly how and why bank business models and risk profiles differ. ■

#### FOOTNOTES:

1. BOPEC measures the condition of the holding company's bank subsidiaries, other non-bank subsidiaries, parent company, earnings and capital adequacy.
2. In this simulation, EC attributed to trading is sufficient to cover the risk spread from the potential loss of 100% of the non-securitized portion trading book balance. EC attributed to securities investments is sufficient to cover the spread from the potential loss of 90% of the risk rearing securities' book balance. This coverage spread ensures the risk bearing portfolio never falls below investment grade risk.

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