

Online Technical Appendix for

“A Structural View of U.S. Bank Holding Companies”

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1. Notes on construction of figures and tables
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1. Notes on construction of figures and tables

Table 1: Distribution of subsidiaries: Top 50 BHCs

This table is constructed from the National Information Center (NIC) (<http://www.ffiec.gov/nicpubweb/nicweb>), FR Y-9C, *Consolidated Financial Statements of Bank Holding Companies*, FR Y-10, *Report of Changes in Organizational Structure*, FR Y-11, *Financial Statements of U.S. Nonbank Subsidiaries of U.S. Bank Holding Companies*, FR 2314, *Financial Statements of Foreign Subsidiaries of U.S. Banking Organizations*, and FFIEC 031 and 041 (Call Reports), *Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices and Domestic Offices Only*.

- We construct the list of top 50 BHCs using the most updated structure data reported as of February 20, 2012. Financial data is reported quarterly, and thus reflects each firm's financial position as of December 31, 2011. Note that two large firms, Taunus Corporation and RBC USA Holding Corporation, lost BHC status in early 2012; while both these firms were amongst the NIC top 50 BHCs as of December 2011, they were not BHCs as of February 20, and thus are not included in our statistics. We include subsidiaries that are controlled and regulated by the BHC, based on the Regulation Y definition of control.
- The FR Y-10 provides a variety of attributes data on BHCs and their subsidiaries, allowing us to obtain information on each subsidiary's primary activity, country, and domestic or foreign classification. Therefore, we use FR Y-10 data to create the "Number" section of this table. We sum the number of entities, by BHC, in each of the four categories shown (domestic commercial bank subsidiaries, other domestic subsidiaries, foreign subsidiaries, and all subsidiaries). We use the commercial banking activity code (52211) in order to identify commercial banks, both foreign and domestic.
- We use the Call Reports to obtain financial data on commercial banks, the FR Y-11 to obtain financial data on large non-bank subsidiaries, and the FR 2314 to obtain financial data on foreign subsidiaries. The financial data is as of 2011:Q4 and includes approximately 3,700 of the over 19,600 subsidiaries belonging to the top 50 BHCs, which met reporting threshold criteria. To construct the "Asset value (in billions USD)" section, we sum the total assets, by BHC, of domestic commercial bank subsidiaries and compute it as a percentage of total assets, by BHC, as reported on the FR Y-9C.

Table 2: Geographic distribution

Panel A: Geographic location of U.S. BHC subsidiaries

This table is constructed from the National Information Center (NIC) (<http://www.ffiec.gov/nicpubweb/nicweb>), FR Y-10, *Report of Changes in Organizational Structure*, FR Y-11, *Financial Statements of U.S. Nonbank Subsidiaries of U.S. Bank Holding Companies*, FR 2314,

Financial Statements of Foreign Subsidiaries of U.S. Banking Organizations, and FFIEC 031 and 041 (Call Reports), Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices and Domestic Offices Only.

- We construct our list of top 50 BHCs using the most updated structure data reported as of February 20, 2012. Financial data is reported quarterly, and thus reflects each firm’s financial position as of December 31, 2011. Note that two large firms, Taunus Corporation and RBC USA Holding Corporation, lost BHC status in early 2012; while both these firms were amongst the NIC top 50 BHCs as of December 2011, they were not BHCs as of February 20, and thus are not included in our statistics. We include subsidiaries that are controlled and regulated by the BHC, based on the Regulation Y definition of control.
- We partition the data into subsidiaries controlled by the seven largest BHCs (Bank of America, JP Morgan Chase, Citigroup, Wells Fargo, Goldman Sachs, MetLife and Morgan Stanley), subsidiaries belonging to the remaining top 50 BHCs, and subsidiaries belonging to all of the top 50 BHCs, and perform the following analysis for each partition.
 - The FR Y-10 provides a variety of attributes data on BHCs and their subsidiaries, allowing us to obtain information on each subsidiary’s primary activity, country, and domestic or foreign classification. Therefore, we use FR Y-10 data to create the “Number” columns of this table. We sum the number of entities, by country, to arrive at country-level number of subsidiaries. We then aggregate by region.
 - We use the Call Reports to obtain financial data on commercial banks, the FR Y-11 to obtain financial data on large non-bank subsidiaries, and the FR 2314 to obtain financial data on foreign subsidiaries. The financial data is as of 2011Q4 and includes approximately 3,700 of the over 19,600 subsidiaries belonging to the top 50 BHCs, which met reporting threshold criteria. To construct the “% Total Assets” columns, we sum the total assets of the subsidiaries, by country, to arrive at country-level total assets. We then further aggregate the data by region. Finally, we take region-specific total assets as a proportion of all total assets to arrive at each region’s percent of total assets.

Panel B: Foreign Exposures of U.S. BHCs

This table is constructed from the E.16 Country Exposure Lending Survey and Country Exposure Information Report, which is in turn based on data from the FFIEC 009 report.

Although the E.16 groups data by country, we aggregate the data by region. We then calculate the world total of exposures, and calculate the domestic, foreign, and total exposures proportion of world exposures.

Chart 1: Number and total assets of BHCs

Financial data in this figure is constructed from quarterly Call Report and Y-9C filings. Organizational information comes from NIC. We do not restrict the sample to Y-9C filers with a domestic high-holder (i.e. the ultimate parent may be either a US firm, or a foreign firm with a US BHC subsidiary).

Panel A

A large BHC is defined as one that files a Y-9C report of its financial activities (in recent years this includes all BHCs with at least \$500 million in total assets, this threshold is lower in earlier years). Commercial bank assets of large BHCs in Panel A are measured as the sum of consolidated assets reported by each banking subsidiary in its Call report filing. This represents a slight overestimate because of double-counting of any related party exposures between banks controlled by the same BHC. Nonbank assets of large BHCs are the difference between total assets as reported in the Y-9C and commercial bank assets as defined above. Assets of small BHCs reflect only their commercial bank subsidiaries. This is likely to be a good approximation to BHC assets for these firms, however. To identify banks that are not part of a BHC, we search in NIC for all banks where the highholder is the same entity as the bank in question.

Panel B

The number of BHCs is a count of Y-9C filers plus the number of distinct high holders of commercial banks filing a Call report, exclusive of banks that are their own high holder or have a Y-9C filer high holder.

Chart 2: Organizational complexity and international reach of large U.S. BHCs

This figure is constructed from the National Information Center (NIC) (<http://www.ffiec.gov/nicpubweb/nicweb>) and FR Y-10, *Report of Changes in Organizational Structure*.

- We construct our list of top 50 BHCs using the most updated structure data reported as of February 20, 2012. Financial data is reported quarterly, and thus reflects each firm's financial position as of December 31, 2011. Note that two large firms, Taunus Corporation and RBC USA Holding Corporation, lost BHC status in early 2012; while both these firms were amongst the NIC top 50 BHCs as of December 2011, they were not BHCs as of February 20, and thus are not included in our statistics. We include subsidiaries that are controlled and regulated by the BHC, based on the Regulation Y definition of control.
- The FR Y-10 provides a variety of attributes data on BHCs and their subsidiaries, allowing us to obtain information on each subsidiary's primary activity, country, and domestic or foreign classification.
 - For the top panel, we sum the number of subsidiaries, by BHC, in 1990Q4 and 2011Q4. We then sort the BHCs by the number of subsidiaries, and rank the BHCs according to this ordering. Note that the sample of BHCs in 1990 differs from the sample in 2011.

- For the bottom panel, we sum the number of countries that the subsidiaries are in, by BHC, in 1990Q4 and 2011Q4. We then sort the BHCs by the number of countries, and rank the BHCs according to this ordering. As noted above, the sample of BHCs in 1990 differs from the sample in 2011.

Chart 3: Industry breakdown of subsidiaries

This figure is constructed from the National Information Center (NIC) (<http://www.ffiec.gov/nicpubweb/nicweb>), and FR Y-10, *Report of Changes in Organizational Structure*. Industry classification is based on the North American Industry Classification System (NAICS) (<http://www.census.gov/eos/www/naics>).

- We construct our list of top 50 BHCs using the most updated structure data reported as of February 20, 2012. Financial data is reported quarterly, and thus reflects each firm's financial position as of December 31, 2011. Note that two large firms, Taunus Corporation and RBC USA Holding Corporation, lost BHC status in early 2012; while both these firms were amongst the NIC top 50 BHCs as of December 2011, they were not BHCs as of February 20, and thus are not included in our statistics. We include subsidiaries that are controlled and regulated by the BHC, based on the Regulation Y definition of control.
- Since the FR Y-10 provides a variety of attributes data on BHCs and their subsidiaries, we use the subsidiary's primary activity data, reported as NAICS codes, to create this figure. We sum the number of subsidiaries, by BHC and by industry as defined by NAICS (2007). NAICS codes range from 2 to 6 digits in length, in which 2-digit codes represent the broadest categories, and 6-digit codes represent the most specific categories. The industries displayed in this figure correspond to 2-digit NAICS codes, except for the finance and insurance industry, which we broke out further using 3-digit NAICS codes. We decompose each industry further by differentiating into each of the top 7 BHCs (Bank of America, JPMorgan Chase, Citigroup, Wells Fargo, Goldman Sachs, MetLife, and Morgan Stanley) and the remaining 43 BHCs in our sample.

Chart 4: Industry breakdown by assets

This figure is constructed from the National Information Center (NIC) (<http://www.ffiec.gov/nicpubweb/nicweb>), FR Y-10, *Report of Changes in Organizational Structure*, FR Y-11, *Financial Statements of U.S. Nonbank Subsidiaries of U.S. Bank Holding Companies*, FR 2314, *Financial Statements of Foreign Subsidiaries of U.S. Banking Organizations*, and FFIEC 031 and 041 (Call Reports), *Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices and Domestic Offices Only*. Industry classification is based on the North American Industry Classification System (NAICS) (<http://www.census.gov/eos/www/naics>).

- We construct our list of top 50 BHCs using the most updated structure data reported as of February 20, 2012. Financial data is reported quarterly, and thus reflects each firm’s financial position as of December 31, 2011. Note that two large firms, Taunus Corporation and RBC USA Holding Corporation, lost BHC status in early 2012; while both these firms were amongst the NIC top 50 BHCs as of December 2011, they were not BHCs as of February 20, and thus are not included in our statistics. We Include subsidiaries that are controlled and regulated by the BHC, based on the Regulation Y definition of control.
- Since the FR Y-10 provides a variety of attributes data on BHCs and their subsidiaries, we use the subsidiary’s primary activity data, reported as NAICS codes, to create this figure. We also use the Call Reports to obtain financial data on commercial banks, the FR Y-11 to obtain financial data on large non-bank subsidiaries, and the FR 2314 to obtain financial data on foreign subsidiaries. The financial data is as of 2011Q4 and includes approximately 3,700 of the over 19,600 subsidiaries belonging to the top 50 BHCs, which met reporting threshold criteria. We sum the total assets of the subsidiaries, by BHC and by industry as defined by NAICS (2007). NAICS codes range from 2 to 6 digits in length, in which 2-digit codes represent the broadest categories, and 6-digit codes represent the most specific categories. The industries displayed in this figure correspond to 2-digit NAICS codes, except for the finance and insurance industry, which we broke out further using 3-digit NAICS codes. We decompose each industry further by differentiating into each of the top 7 BHCs (Bank of America, JPMorgan Chase, Citigroup, Wells Fargo, Goldman Sachs, MetLife and Morgan Stanley) and the remaining 43 BHCs in our sample.

Appendix B: Industry breakdown

This table is constructed from the National Information Center (NIC)

(<http://www.ffiec.gov/nicpubweb/nicweb>), FR Y-11, *Financial Statements of U.S. Nonbank Subsidiaries of U.S. Bank Holding Companies*, FR 2314, *Financial Statements of Foreign Subsidiaries of U.S. Banking Organizations*, and FFIEC 031 and 041 (Call Reports), *Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices and Domestic Offices Only*. Industry classification is based on the North American Industry Classification System (NAICS) (<http://www.census.gov/eos/www/naics>).

- We construct our list of top 50 BHCs using the most updated structure data reported as of February 20, 2012. Financial data is reported quarterly, and thus reflects each firm’s financial position as of December 31, 2011. Note that two large firms, Taunus Corporation and RBC USA Holding Corporation, lost BHC status in early 2012; while both these firms were amongst the NIC top 50 BHCs as of December 2011, they were not BHCs as of February 20, and thus are not included in our statistics. We Include subsidiaries that are controlled and regulated by the BHC, based on the Regulation Y definition of control.
- The FR Y-10 provides a variety of attributes data on BHCs and their subsidiaries, allowing us to obtain information on each subsidiary’s primary activity, country, and domestic or foreign classification. Therefore, we use FR Y-10 data to create the “Number” section of this table. We sum the number of entities, by industry as defined by NAICS (2007), in each of the three

categories shown (domestic subsidiaries, foreign subsidiaries, and all subsidiaries). NAICS codes range from 2 to 6 digits in length, in which 2-digit codes represent the broadest categories, and 6-digit codes represent the most specific categories. The industries displayed in this table correspond to 2-digit NAICS codes, except for the finance and insurance industry, which we broke out further using 3-digit NAICS codes.

- We use the Call Reports to obtain financial data on commercial banks, the FR Y-11 to obtain financial data on large non-bank subsidiaries, and the FR 2314 to obtain financial data on foreign subsidiaries. The financial data is as of 2011Q4 and includes approximately 3,700 of the over 19,600 subsidiaries belonging to the top 50 BHCs, which met reporting threshold criteria. To construct the “Asset value (in billions USD)” section, we sum the total assets of domestic subsidiaries, foreign subsidiaries, and all subsidiaries, by industry as defined by NAICS (2007) and using the same 2-digit and 3-digit breakout as described above.

2. Industry breakdown based on Capital IQ (CIQ) data

CIQ Figures (shown next page): Industry breakdowns of the top 7 BHCs' subsidiaries by count and total assets (CIQ)

These figures are constructed from Capital IQ (<https://www.capitaliq.com/home.aspx>), which we use as an alternative source of data on large bank holding companies and their subsidiaries.

- From Capital IQ, we obtain the organizational structure for the top 7 BHCs (as of February 20, 2012: these are JPMorgan Chase, Bank of America, Citigroup, Wells Fargo, Goldman Sachs, Metlife, and Morgan Stanley), and the total assets (as of Q4:2011) and primary activities of these subsidiaries, if available.
 - To create the “Count” figure, we sum the number of subsidiaries, by BHC and by industry. We do not display the uncategorized subsidiaries listed in CIQ (i.e. subsidiaries where no industry type is recorded). It is important to note that there are >2,000 of these uncategorized subsidiaries for these 7 firms.
 - The financial data is comprised of a subset of the subsidiaries belonging to the top 7 BHCs. To create the “Total Assets” figure, we sum the total assets of the subsidiaries, by BHC and by industry.

Comparison of Capital IQ to BHC regulatory data

This table compares the asset counts from Capital IQ to those from regulatory data. The final column shows that for 6 of the top 7 BHCs, the reports in Capital IQ capture significantly less than 100% of the individual subsidiary assets reported in these BHCs' regulatory reports (the fraction varies between 4% and 77% across firms). MetLife differs because the majority of its assets are in its insurance subsidiaries, which do not file the Y-11 report.

| BHC Name | Aggregated Subsidiary Total Assets, Thousands USD (CIQ) | Y-9C Total Assets, Thousands USD | Aggregated Subsidiary Total Assets, Thousands USD (Subsidiary-Level Reg. Data) | CIQ Total Assets / Y-9C Total Assets | CIQ Total Assets / Subsidiary-Level Reg.Data |
|-----------------|--|---|---|---|---|
| BAC | 2,228,468,507 | 2,136,577,907 | 3,287,483,134 | 104.30% | 67.79% |
| C | 2,311,946,091 | 1,873,878,000 | 3,367,008,287 | 123.38% | 68.66% |
| GS | 54,298,691 | 923,718,000 | 1,377,017,750 | 5.88% | 3.94% |
| JPM | 1,994,224,337 | 2,265,792,000 | 3,670,870,266 | 88.01% | 54.33% |
| MET | 213,455,022 | 799,625,102 | 109,935,363 | 26.69% | 194.16% |
| MS | 81,147,303 | 749,898,000 | 1,505,959,803 | 10.82% | 5.39% |
| WFC | 1,216,210,058 | 1,313,867,000 | 1,572,221,151 | 92.57% | 77.36% |
| Total | 8,099,750,009 | 10,063,356,009 | 14,890,495,754 | 80.49% | 54.40% |