

# The Distribution of IPO Holdings Across Institutional Mutual Funds

William C. Johnson  
Jennifer Marietta-Westberg

**ABSTRACT.** We examine initial public offering (IPO) holdings in the mutual funds of four large investment banks and five large non-investment banks during the period 1997 through 2002. Investment banks hold IPOs with different characteristics than IPOs held by non-investment banks, and they also tend to hold IPOs in different types of funds than non-investment banks. We classify holdings as to whether the IPO lies outside or inside the fund's objective. Investment banks hold IPOs outside the fund objective in 27% of the fund/IPO pairs while non-investment banks hold outside their objective in just 5.4% of fund/IPO pairs. We see significant differences in IPO underpricing for both groups as well. For example, when non-investment banks hold IPOs outside a large capitalization fund objective, they select IPOs with 52% higher underpricing as measured by first-day returns.

**KEY WORDS:** IPOs, institutional holdings, mutual funds

## Introduction

This article examines the distribution of initial public offering (IPO) holdings across a select group of fund families. Mutual funds are required to state their objectives in their prospectuses upon registration. The fund's objective should dictate the fund's assets, regions of investments, and investment strategies. Fund objectives are important to investors because they may diversify their portfolios according to the fund's stated objective. Most funds use their objective as part of

their fund name; so investors are easily able to discern the fund's investment goal. If a growth fund is masquerading as a value fund, the fund's investors will have allocated a larger portion of their portfolio to growth stocks than they had intended.

An example of the language used to describe a Fidelity Value fund in the fund's prospectus is:

The investment objective for the Value Fund is to seek capital appreciation. The principal investment strategies are: (1) Normally investing primarily in common stocks, (2) Investing in securities of companies that possess valuable fixed assets or that Fidelity Management & Research Company (FMR) believes are undervalued in the marketplace in relation to factors such as assets, earnings, or growth potential (stocks of these companies are often called "value" stocks), (3) Focusing investments in medium-sized companies, but also may invest substantially in larger or smaller companies, (4) Investing in domestic and foreign issuers, and (5) Using fundamental analysis of each issuer's financial condition and industry position and market and economic conditions to select investments.

The objective states that the fund seeks primarily value securities, but it does provide flexibility with regard to firm size and domestic or foreign status. Statement 5 of the objective appears to give the fund wide latitude to invest in securities outside of the Value objective. The extent to which the fund uses Statement 5 for its investment decisions will determine the extent to which its actual investments deviate from the investments suggested by its name.

While it is not illegal for a fund to deviate from their core objective (especially in light of Statement 5 for the example), it can cause problems for investors who misallocate their portfolio when assuming the fund objective is highly correlated with

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the fund name. Diversification can be a powerful tool for investors portfolios in that they may earn a given level of return for lower risk when they are diversified. But if investors' portfolios are actually misallocated due to funds straying from their stated objectives, then investors may experience poorer returns for a given level of risk, or experience excess portfolio volatility for a given level of returns.

We examine IPO holdings in the mutual funds of four large investment banks and five large non-investment banks during the period 1997 through 2002. We find that investment banks hold bigger IPOs with larger book-to-market (firm's book value divided by its market capitalization) ratios and smaller first-day returns (defined as the return from the initial offer price to the closing price on the first day of public trading). There are statistically significant differences in the types of funds in which investment banks hold IPOs compared to non-investment banks, as measured by fund objective. For example, investment banks are more likely to hold IPOs in international funds while non-investment banks are more likely to hold IPOs in sector funds.

We also classify holdings as to whether the IPO lies outside or inside the fund's objective. Investment banks hold IPOs outside the fund objective in 27% of the fund/IPO pairs while non-investment banks hold outside their objective in just 5.4% of fund/IPO pairs. Finally, we see significant differences in IPO underpricing for both investment and non-investment banks for IPOs held outside of the fund objective. For example, when non-investment banks hold IPOs outside a large capitalization fund objective, they select IPOs with 52% higher underpricing as measured by first-day returns. Underpricing refers to positive first-day returns signifying that the initial offer price is below what the market is willing to pay once the stock trades publicly.

There are a few academic studies analyzing the relationship between fund objective and fund performance. Brown and Goetzmann (1997) find that the current classification system is inefficient in providing benchmarks for evaluating historical fund performance and in explaining differences in future returns among funds. For example, they find that as many as half of funds classified as "growth" in their sample actually fall into different style categories according to their methodological procedure. They

also identify styles not captured by traditional objectives, such as "Trendchasers" and "Glamour Stock" managers. If the objective is not properly assigned, then benchmarking fund performance will be difficult.

DiBartolomeo and Witkowski (1997) find similar results and estimate that as many as 40% of funds are misclassified. Investors do not appear to see through the misclassifications and instead key on the fund name as having a high correlation with the fund objective. Cooper et al. (2005) study mutual fund name changes. A given example is that of "Nuveen Growth and Income Stock Fund" which changed its name to "Nuveen Large Cap Value Fund." Changing a fund from a growth to value perspective is a stark change in investment style – one focuses on companies with high growth potential (e.g., a young biotech company) and the other focuses on firms that may be undervalued in the marketplace (e.g., a large manufacturing firm struggling with a lawsuit). Cooper et al. find that funds that change their name to a current "hot" investment style experience abnormal inflows with no improvement in performance whether their holdings match the fund objective or not.

There is also a strand of literature examining mutual funds and ethics. For example, Ackerman and Loughran (2007) study the practice where mutual fund families create privately subsidized funds not available to the general public called incubator funds. The unsuccessful incubator funds are destroyed, and the successful incubator funds are opened up to the public. These funds can be advertised as well-performing funds, which gives a misleading impression from the firm's actual incubator fund performance. In addition, incubator fund returns do not predict subsequent fund performance.

Houge and Wellman (2007) examine categories of expenses that mutual funds charge their investors. These may consist of one-time up-front sales charges ("loads"), annual operating expenses, and sales distribution charges (12b-1 fees). They find that mutual fund companies who charge one-time up-front sales loads also charge higher annual operating expenses than funds without sales loads. For many load funds, the target investor tends to be less knowledgeable than investors for no-load funds. In all, they find that load fund investors pay higher total expenses and receive lower returns over time. Houge and

Wellman (2005) study the mutual fund companies who came under investigation for illegal trading practices in September 2003. They find that these firms experienced significantly negative returns upon announcement of the investigations. They also discuss several policy suggestions to prevent future trading abuses.

The remainder of this article is organized as follows. Section “Data and institutional IPO holdings” describes our IPO and fund family sample. In Section “The distribution of IPO holdings across sample funds” we examine the distribution of IPO holdings across fund families. Section “Underpricing for IPOs held outside of fund objectives” analyzes the underpricing of IPOs held inside and outside of the fund objective. In this article’s last section, we offer implications of our findings and conclusions.

### Data and institutional IPO holdings

Our data source for IPOs from 1997 through 2002 is the Securities Data Company (SDC) new issues database. We include only common stock IPOs and filter out real estate investment trusts (REITs), American Depository Receipts (ADRs), and any IPOs whose first price is not available within 20 days of its offering date on the CRSP database for securities trading information. From the SDC database, we retain information on the IPO’s offering price, lead investment bank managers and country of incorporation. Market capitalizations, first-day IPO returns (defined as the return from the initial offer price to the closing price on the first day of public trading), and SIC codes for industry classification are also obtained from CRSP. Book values are determined from the first fiscal year-end after the offering as recorded in Compustat. We classify IPOs using an industry technology dummy as outlined in Loughran and Ritter (2004).

We also use SDC to identify the top four investment banks by number and size of offerings as the lead manager. We total the number of offerings over 1997 through 2002 as well as sum the total proceeds value of all IPOs and group according to their lead managers. According to either criterion, we obtain the same four investment banks according to offering activity. We then check if each investment bank also offers mutual funds. Our selected

investment banks are Goldman Sachs, J.P. Morgan, Merrill Lynch, and Morgan Stanley. These four banks also are perceived as top-tier in underwriting prestige and quality. We group the banks into one category called “investment banks” and report results in aggregate for that group.

Our source for mutual fund data is Thomson Reuters CDA/Spectrum database of mutual fund holdings. We also use the Thomson Reuters database to identify the five largest non-investment bank fund families over the period 1997 through 2002 according to the aggregate value of net assets across their individual funds. Our selected non-investment banks are American, Fidelity, Franklin Templeton, Putnam, and Vanguard. We group these funds into a category called “non-investment banks” and report the group results in aggregate there as well. Our final sample consists of the intersection between the top investment bank holdings, the top non-investment bank holdings, and IPOs issued during the period. For each fund family, we search for funds that hold IPOs within 1 year of the initial offering date. We retain only funds from each family that actually hold IPOs.

Fund objectives are determined manually by inferring the style from the fund’s name and/or via a search for the fund’s prospectus. We classify fund objectives into the following categories: International, Overseas, Emerging Market, Country, Sector, Small Capitalization, Large Capitalization, Value, Growth, Income, and Blue Chip.<sup>1</sup> Out of 467 distinct funds from the selected families that hold IPOs, 76% of them are classified into 1 of the 11 categories. The remaining funds are largely Balanced and Diversified fund objectives. We do not analyze funds with objectives like Balanced or Diversified because it is more difficult to pin down what type of stock should or should not be held in this type of fund.

These categories were chosen for two reasons. First, most IPOs are small, growth firms, and we wanted to see how likely it was that small and/or growth funds actually hold IPOs. Of course, not all IPOs are small, growth firms; so we will need to measure their characteristics before determining if they lie inside or outside the fund objective. Second, we selected fund objectives that at first glance did not seem a good fit for holding IPOs (e.g., small, growth firms would appear unsuitable for large and/

TABLE I  
Distribution of IPO holdings across institution type

Firm type	Number of unique IPOs held	Unique funds holding IPOs	Ratio of unique IPOs held to unique funds	Market value of IPOs held (\$M)
Investment bank	275	79	3.5	\$598,413
Non-investment banks	3,036	388	7.8	\$3,609,096
Total	1,330	467		

We use Securities Data Corporation's (SDC) initial public offerings (IPOs) database to identify IPOs from 1997 through 2002. Over the same time period, we also use SDC to identify the top investment banks by number and size of offerings as the lead manager (Goldman Sachs, J.P. Morgan, Merrill Lynch, and Morgan Stanley). Through Thomson Reuters CDA/Spectrum database we identify the largest non-investment bank mutual funds by net assets (American Funds, Fidelity, Franklin Templeton, Putnam, and Vanguard). We also identify the number and market value of IPOs held in funds managed by the top four investment banks and the top five non-investment banks. Our final sample consists of the intersection between the top investment bank holdings, the top non-investment bank holdings, and IPOs issued during the period.

or value funds). This will allow us to see whether IPOs are ever held outside the fund objective.

We also look for IPOs held outside of the appropriate country classification. Our sample consists of IPOs listed on U.S. exchanges and 93% of them are classified by the SDC database as incorporated in the U.S. These types of firms do not seem a natural fit for international, overseas, emerging markets, or country funds.

### The distribution of IPO holdings across sample funds

The distribution of IPO holdings from 1997 through 2002 across the two institution categories is provided in Table I. We report the number of unique IPOs held by each institution type, the number of unique funds holding IPOs in firm type, and the total market value (as measured by first-day closing price) of IPOs held by the family. Out of 1,330 unique IPOs held by these institutions over our sample period, non-investment banks hold more IPOs. Non-investment banks hold more IPOs than investment banks, largely driven by the fact that they have more funds available for investment. The non-investment bank institutions here are almost exclusively in the fund management business. Investment banks, however, are involved in other activities such as underwriting IPOs, brokering mergers and acquisitions, and proprietary trading.

The ratio of unique IPOs held to unique funds offered can provide a measure of the concentration of IPO holdings across funds. Non-investment banks have the higher ratio at 7.8 (vs. 3.5 for investment banks) – indicating that a typical fund holds approximately 7.8 IPOs. In total, investment banks hold IPOs worth \$598.4 billion in market capitalization and non-investment banks hold IPOs worth \$3,609.1 billion in market capitalization. The market value is measured according to the first-day closing price.

Table II provides information on the characteristics of IPOs held and not held by the nine selected fund families. Over the sample period, 1,330 IPOs are held by these institutions and 388 are not held. IPOs held are about five times larger in terms of market capitalization on the close of the first trading day versus IPOs that are not held by these families (\$1,271 million vs. \$203 million). IPOs held by these institutions also have lower book value to market capitalization (B/M) ratios (0.37 vs. 0.44) and higher first-day returns (54% vs. 10%). Finally, IPOs held are more likely to be in the tech industry than another industry (48% vs. 27%). All differences between held and not held IPOs are statistically significant at the 5% level. While there are 1,330 unique IPOs held, some are held in more than one fund within a fund family, resulting in 3,311 fund family/IPO paired observations.

We also provide a breakdown of IPO characteristics in Table II according to whether the fund

TABLE II  
IPO characteristics

Average	All IPOs held	All IPOs not held	<i>t</i> -Test ( <i>p</i> -value)	IPOs held by non-inv. banks	IPOs held by inv. banks	<i>t</i> -Test ( <i>p</i> -value)
IPO first-day market value (millions)	\$1,271	\$203	0.00	\$1,189	\$2,176	0.00
B/M	0.37	0.44	0.02	0.35	0.55	0.00
First-day return	54%	10%	0.00	56%	37%	0.00
% Tech	48%	27%	0.00	49%	35%	0.00
Unique <i>N</i>	1,330	388		1,323	233	
Fund family/IPO pairs	3,311			3,036	275	

We use Securities Data Corporation's (SDC) initial public offerings (IPOs) database to identify IPOs from 1997 through 2002. Over the same time period, we also use SDC to identify the top investment banks by number and size of offerings as the lead manager (Goldman Sachs, J.P. Morgan, Merrill Lynch, and Morgan Stanley). Through Thomson Reuters CDA/Spectrum database we identify the largest non-investment bank mutual funds by net assets (American Funds, Fidelity, Franklin Templeton, Putnam, and Vanguard). We also identify the number and market value of IPOs held in funds managed by the top four investment banks and the top five non-investment banks. Our final sample consists of the intersection between the top investment bank holdings, the top non-investment bank holdings, and IPOs issued during the period. IPOs are assigned to the tech industry as outlined in Loughran and Ritter (2004). Book values are determined from the first fiscal year-end after the offering as recorded in Compustat.

family is an investment bank or not. IPOs held by investment banks tend to be larger (\$2,176 million) than those held by non-investment banks (\$1,189 million). In addition, they have higher B/M values (0.55 vs. 0.35) and lower first-day returns (37% vs. 56%) than holdings by non-investment banks. Lastly, they are less likely to be classified as a tech firm (35% vs. 49%). All differences between investment bank and non-investment bank holdings of IPOs are statistically significant at the 1% level. Non-investment banks hold a much larger number of unique IPOs than investment banks do (1,323 vs. 233). An investment bank holding an IPO within the first year of the offering is a somewhat rare event. But when they do hold, they choose IPOs with distinctly different characteristics than non-investment banks choose.

Next, we determine the type of funds that hold IPOs as measured by the fund objective. Table III, Panel A provides information on the percent of unique funds that hold *at least one IPO* and which can be classified into 1 (or more) of 11 categories: International, Overseas, Emerging Market, Country, Sector, Small Capitalization, Large Capitalization, Value, Growth, Income, and Blue Chip. For example, 10% of the 467 funds that hold IPOs can

be classified as International funds, 18% as Sector funds, and 17% as Growth funds. Few of the funds that hold IPOs can be classified as Emerging Market funds (1%) or Blue Chip funds (1%).

Table III also reports the percent of unique funds that hold IPOs as classified by non-investment bank or investment bank. Non-investment banks have 388 unique funds holding IPOs, and investment banks have 79 unique funds holding IPOs. For each group, we were able to classify approximately the same percentage of their unique funds into the 11 categories (76% of non-investment bank funds vs. 75% of investment bank funds). However, the percentage of funds holding IPOs across each group shows some distinct differences across certain fund objectives. For example, when an investment bank holds an IPO, it is more likely to hold it in an international fund.

Of the 79 unique investment bank funds which hold IPOs, 23% of them are classified as international. For non-investment banks, only 8% of their unique 388 funds hold IPOs. The difference is statistically significant at the 1% level. Another stark contrast is that 21% of non-investment banks hold IPOs in their sector funds, but only 6% of investment bank sector funds hold IPOs (statistically significant at the 1% level).

TABLE III  
Distribution of IPO holdings across fund objectives

Panel A: Percent of funds holding at least one IPO				
Objective	Percent of all funds	Percent of all funds by non-inv. banks	Percent of all funds by inv. banks	<i>t</i> -Test ( <i>p</i> -value)
International	10%	8%	23%	0.00
Overseas	4%	4%	6%	0.39
Emerging market	1%	1%	4%	0.07
Country	2%	2%	3%	0.67
Sector	18%	21%	6%	0.00
Small cap	8%	8%	9%	0.74
Large cap	2%	3%	1%	0.48
Value	6%	5%	10%	0.05
Growth	17%	18%	10%	0.09
Income	6%	6%	3%	0.18
Blue chip	1%	1%	0%	0.31
Percent classified	76%	76%	75%	
Unique funds	467	388	79	

  

Panel B: Percent of fund/IPO pairs				
Objective	Percent of all fund/IPOs	Percent of all fund/IPOs held by non-inv. banks	Percent of all fund/IPOs held by inv. banks	<i>t</i> -Test ( <i>p</i> -value)
International	4.8%	4.5%	11.1%	0.00
Overseas	0.5%	0.4%	1.6%	0.00
Emerging market	0.2%	0.2%	1.0%	0.00
Country	0.2%	0.2%	0.5%	0.14
Sector	13.5%	13.8%	9.0%	0.01
Small cap	19.8%	19.7%	21.4%	0.41
Large cap	0.7%	0.7%	0.3%	0.31
Value	1.7%	0.5%	25.3%	0.00
Growth	17.1%	17.6%	9.0%	0.00
Income	1.2%	1.2%	1.6%	0.48
Blue chip	0.2%	0.3%	0.0%	0.31
Percent classified	60%	59%	81%	
Unique fund/IPO pairs	7,668	7,281	387	

We use Securities Data Corporation's (SDC) initial public offerings (IPOs) database to identify IPOs from 1997 through 2002. Over the same time period, we also use SDC to identify the top investment banks by number and size of offerings as the lead manager (Goldman Sachs, J.P. Morgan, Merrill Lynch, and Morgan Stanley). Through Thomson Reuters CDA/Spectrum database we identify the largest non-investment bank mutual funds by net assets (American Funds, Fidelity, Franklin Templeton, Putnam, and Vanguard). We also identify the number and market value of IPOs held in funds managed by the top four investment banks and the top five non-investment banks. Our final sample consists of the intersection between the top investment bank holdings, the top non-investment bank holdings, and IPOs issued during the period. Fund objectives are determined manually by use of fund name and/or a search for the fund prospectus.

Panel B of Table III provides similar pieces of information, but classifies the percent of unique fund/IPO pairs for each fund family. A fund may

hold more than one IPO, so we create a unique observation for every fund/IPO combination. There are 7,668 fund/IPO pairs across the 467 unique

funds in our sample. Approximately 60% of these pairs can be classified into the 11 fund objective categories. According to this grouping, almost 20% of fund/IPO pairs belong to small-cap funds. Growth funds (17%) and sector funds (14%) also account for a large number of fund/IPO pairs. The fewest observations belong to the Emerging Market, Country, and Blue Chip categories (all at 0.2%).

We see more stark contrasts between the locations of IPO holdings for non-investment banks versus investment banks in Panel B of Table III. Now that we account for funds that hold more than one IPO, 6 of the 11 fund objective categories show statistically significant differences at the 1% level between the two groups.

For example, 25% of fund/IPO pairs are held in Value funds by investment banks versus just 0.5% for non-investment banks. Investment banks hold higher percentages in International, Overseas, and Emerging Market funds as well. Non-investment banks hold a higher percentage of their IPOs in Sector funds (13.8% vs. 9.0%) and Growth funds (17.6% vs. 9.0%). Note also that, accounting for fund/IPO pairs, we are able to classify a higher percentage of investment bank funds into the 11 objectives (81%) than we are for non-investment banks (59%). This implies that non-investment banks are more likely to hold IPOs in funds outside of these 11 categories.

### Underpricing for IPOs held outside of fund objectives

Our final table, Table IV, analyzes occurrences where one of the sample funds holds an IPO that is outside the fund's objective. From our initial 11 categories, we select five where we feel comfortable sorting IPOs according to their suitability for the fund's objective. For International, Overseas, and Emerging Market fund objectives, we classify their IPO holding as "outside" if the IPO is incorporated in the U.S., Canada, the British Virgin Islands, Bermuda, or the Cayman Islands.<sup>2</sup> For example, a few Emerging Market funds in our sample hold technology stocks that are U.S. incorporated, headquartered in California, and whose primary sales are in the U.S.

For Large Cap funds, we classify their IPO holding as "outside" if the IPO has a market capitalization of less than \$10 billion at the reported time of the holding.<sup>3</sup> Our data shows one Large Cap fund holding an IPO with a market capitalization of \$415 million at the time of the reported holdings. For value funds, we classify their holding as "outside" if the IPO's B/M ratio is more than two standard deviations away from the B/M value of the funds other holdings on the report date. Using the outside classifications, we compute that 6.5% of total fund/IPO pairs are held outside the fund objective. There is a large difference in the outside classification percentage for non-investment banks versus investment banks. Investment banks hold IPOs outside the fund objective in 27% of the fund/IPO pairs. Non-investment banks hold outside their objective in 5.4% of fund/IPO pairs.

After we classify IPOs held in each of the five categories as outside or inside the fund objective, we next determine the difference in underpricing across the inside and outside groupings. Our goal is to determine what IPO characteristics may attract a fund to hold outside of their objective. Anecdotal media evidence often cites funds as trying to "juice" or improve their returns by holding hot IPOs. IPO first-day returns can be high, and their inclusion in the portfolio, even for a short period, may help to improve the fund's overall return for the period. Loughran and Ritter (2004) provide evidence that IPO first-day returns range from a low of 9% (2002) to a high of 72% (1999) during our sample period. One way to measure hot IPOs is through the level of their first-day underpricing. Our hypothesis is that a fund may be more likely to hold outside its area if it thinks a hot IPO would boost the fund return.

For all of our fund families with International funds, there are statistically significant differences in IPO underpricing when they hold IPOs characterized as inside or outside the fund objective. Across all families, the level of underpricing is 28 percentage points higher when an IPO is outside the fund objective. For non-investment banks, the difference in underpricing is 24 percentage points and for investment banks, the difference is 75 percentage points. All groups are more likely to select hot IPOs when they choose to hold an IPO outside the fund objective, with all differences significant at the 1% level. With the exception of non-investment banks

TABLE IV  
Difference in underpricing for IPOs held inside and outside fund objective

Objective	All funds: outside–inside underpricing difference ( <i>p</i> -value)	Non-inv. banks: outside–inside underpricing difference ( <i>p</i> -value)	Inv. banks: outside–inside underpricing difference ( <i>p</i> -value)
International	27.8 (0.00)	24.3 (0.00)	74.6 (0.00)
Overseas	−7.7 (0.62)	−3.3 (0.85)	−14.2 (0.67)
Emerging market	37.2 (0.15)	73.1 (0.02)	−11.9 (0.75)
Large cap	50.6 (0.00)	51.5 (0.00)	–
Value	−52.1 (0.00)	−51.4 (0.04)	−31.2 (0.00)
Unique fund/IPO pairs	7,665	7,278	387
% of pairs outside area	6.5%	5.4%	26.9%

We use Securities Data Corporation's (SDC) initial public offerings (IPOs) database to identify IPOs from 1997 through 2002. Over the same time period, we also use SDC to identify the top investment banks by number and size of offerings as the lead manager (Goldman Sachs, J.P. Morgan, Merrill Lynch, and Morgan Stanley). Through Thomson Reuters CDA/Spectrum database we identify the largest non-investment bank mutual funds by net assets (American Funds, Fidelity, Franklin Templeton, Putnam, and Vanguard). We also identify the number and market value of IPOs held in funds managed by the top four investment banks and the top five non-investment banks. Our final sample consists of the intersection between the top investment bank holdings, the top non-investment bank holdings, and IPOs issued during the period. Fund objectives are determined manually by use of fund name and/or a search for the fund prospectus. International, overseas, and emerging market funds are classified as holding IPOs outside their fund objective if the IPO is incorporated in the U.S., Canada, the British Virgin Islands, Bermuda, or the Cayman Islands. Large Cap funds are classified as holding IPOs outside their fund objective if the market capitalization of the IPO is less than \$10 billion. Value funds are classified as holding IPOs outside their fund objective if the B/M ratio of the IPO is more than two standard deviations away from the average B/M value of the funds' other holdings.

who have Emerging Market funds, we do not see any statistically significant differences in underpricing for Overseas or Emerging Market funds. When a non-investment bank holds an IPO outside the objective of its Emerging Market fund, it chooses IPOs that have 73 percentage points higher underpricing than IPOs held within the objective.

From our prior Table III we learned that non-investment banks and investment banks tend not to hold IPOs in Large Cap funds. However, Table IV reports that when non-investment banks choose to hold an IPO that is outside a Large Cap objective, they select IPOs with 52% higher underpricing than IPOs that are within the Large Cap objective. Investment banks appear not to hold IPOs outside their Large Cap funds.

Finally, we examine IPOs held outside of Value fund objectives. Here the underpricing differences reverse. There is a difference of −52 percentage points for IPOs held outside the Value objective across all funds. For non-investment banks the un-

derpricing difference is −51 percentage points, and for investment banks the difference is 31 percentage points. All differences are statistically significant at the 5% level. This clearly does not fit the theory that funds are trying to boost their returns through the inclusion of a hot IPO in their fund because they are choosing cold IPOs with lower levels of underpricing when they hold outside their area. It may be that these IPOs do fit the Value classification, and hence we have somehow mismeasured that the IPO is outside a value objective. Or, there may be differences in firm structure and incentives between investment banks and non-investment banks that would produce the differences.

The differences in firm structure between investment banks and non-investment banks may explain some of the differences we see in Table IV. Recall that our non-investment bank institutions are almost exclusively in the fund management business. They do not have any corporate clients to satisfy – only fund investors. Investment banks, however, are involved in



a variety of activities. They provide equity and bond underwriting for operating companies. They also assist in brokering and valuing mergers and acquisition. They may provide consulting services across a variety of issues for their corporate clients. Investment banks receive fees when performing underwriting, mergers and acquisition assistance or consulting advice for operating companies. The incentives to increase their fees from these activities can provide the potential for a conflict of interest with their asset management business.

It is possible that an investment bank may hold a stock in their asset management division in order to please the managers of one of their corporate clients. For example, the investment bank might hold in one of their mutual funds the stock of an IPO they brought public in order to send a signal to the IPO firm that the underwriter is attempting to market the security. In the extreme form, value decreasing activities would include such actions as “stuffing,” where investment banks who underwrite poor quality securities are disproportionately purchasing and holding these low quality stocks in their own asset management division. These activities are all potentially value decreasing from the perspective of an investor who has given assets to the investment bank to manage. However, these activities are all related to the investment bank’s ability to gain future underwriting mandates from its current investment banking clients. In the next section we discuss areas for further research that could test for conflicts of interest.

### **Conclusion and areas of future research**

We examine IPO holdings in the mutual funds of four large investment banks and five large non-investment banks during the period 1997 through 2002. Investment banks tend to hold bigger IPOs with larger book-to-market ratios and smaller first-day returns. There are statistically significant differences in the types of funds in which investment banks hold IPOs compared to non-investment banks, as measured by fund objective. For example, investment banks are more likely to hold IPOs in international funds while non-investment banks are more likely to hold IPOs in sector funds.

Finally, we classify holdings as to whether the IPO lies outside or inside the fund’s objective.

Investment banks are more likely to hold an IPO that is outside the fund’s objective than a non-investment bank. We see significant differences in IPO underpricing for both investment and non-investment banks for IPOs held outside of the fund objective. For example, when non-investment banks hold IPOs outside a large capitalization fund objective, they select IPOs with 52% higher underpricing as measured by first-day returns.

The preliminary evidence in this study produces several other questions. What are the determinants for funds to hold IPOs outside their fund objective? Do those determinants vary by whether the firm is an investment bank or non-investment bank? We examine underpricing in this initial study, but it would be interesting to go further and examine affiliations between investment banks and their IPO holdings. Are the IPOs that investment banks hold outside the fund objective also their underwriting clients? It is possible that investment banks will hold poorly performing IPOs that are their underwriting clients on equity, bond, or merger and acquisition deals. Also, are there other fund objectives which make funds likely to hold IPOs outside their objective? We only examined five of our 11 fund objectives as to whether they held IPOs outside their objective. Follow-up work will identify funds holding IPOs outside of Country, Sector, and Income Funds as well.

Another interesting extension would be to look at firms other than IPOs that are held outside of the fund objective. If funds hold IPOs in these circumstances, it is also possible that they may hold seasoned firms outside their fund objective. We can also study the extent to which the results from this article may be generalized to the universe outside of the nine fund families we select. Are smaller non-investment banks and investment banks more or less likely than our large families to hold IPOs or other stocks outside their fund objective? One other possible extension would be to examine the relationship between fund performance and whether funds hold IPOs outside their objective. Does this practice improve or detract from fund performance?

### **Notes**

<sup>1</sup> The term blue-chip stock usually refers to stock in large, well-established companies that are typically

found in the S&P 500 stock index. These firms tend to be financially sound companies that have demonstrated an ability to pay dividends throughout the phases of the business cycle.

<sup>2</sup> We obtain similar results if we use only U.S. incorporated firms to define the “outside” variable.

<sup>3</sup> Our findings are the same if we classify IPOs as “outside” the fund objective according to whether their market capitalization is more than two standard deviations away from the average market capitalization of their other holdings.

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William C. Johnson  
Department of Accounting and Finance,  
University of New Hampshire,  
Durham, NH 03824, U.S.A.  
E-mail: william.johnson@unh.edu

Jennifer Marietta-Westberg  
Office of Economic Analysis,  
U.S. Securities and Exchange Commission,  
100 F. St. NE, Washington, DC 20549, U.S.A.  
E-mail: westbergj@sec.gov

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