Conflict of Interest in Universal Banking:
Evidence from the Post-Issue Performance of IPO Firms [#]

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Abstract

Using a unique newly constructed data set on Israeli IPO firms in the 1990s, we study costs and benefits of universal banking. The post-issue accounting profitability of firms underwritten by bank affiliated underwriters that were also borrowers from the same bank in the IPO year, is significantly better than average. This is interpreted as evidence that universal banks use their superior information regarding underwritten firms to float the cherries, not the lemons. We also find, however, that the stock price performance of these firms during the first year following the IPO is lower than average. Furthermore, among these firms, the stock price performance of firms whose equity was purchased by an investment fund that is affiliated with the underwriting and lending bank is even lower. We also compute first day returns for the IPO stocks. The first year underperformance is interpreted as IPO overpricing, which is consistent with the first day returns. Thus, bank managed funds pay too much for bank underwritten IPOs at the expense of the investors in the funds. We conclude that there is conflict of interest in the combination of bank lending, underwriting, and fund management. Although universal banks use their superior information regarding underwritten firms to float the cherries, investors in bank managed funds end up paying too much for the equity of these firms.

1 Introduction

Costs and benefits of universal banking have been at the center of the debate on banking reform in the United States and elsewhere. Proponents of universal banking argue that universal banks enjoy superior information regarding client firms and are, therefore, better qualified to serve as underwriters. Opponents stress that there is potential conflict of interest in universal banking, for example, between bank lending and bank underwriting. In fact, the desire to prevent conflict of interest led to the enactment of the, now controversial, Glass-Steagall legislation which requires complete separation between commercial and investment banking.

Existing empirical evidence on this issue is from the pre-Glass-Steagall period, most notably Ang and Richardson (1994), Kroszner and Rajan (1994), and Puri (1996). There is a real need for modern evidence, for example from Continental European countries where banking is universal. However, stock markets in Continental Europe have not been very active recently in terms of Initial Public Offerings (IPOs), rendering such a study hard to perform. Israel provides an excellent opportunity to study costs and benefits of legislation limiting the scope of bank activities. Banks in Israel are truly universal, operating in all segments of the capital market, underwriting securities, managing investment funds, and owning the equity of firms, directly as well as via these funds. Furthermore, there has recently been a large wave of IPOs on the Tel Aviv Stock Exchange. The universal banks were deeply involved in the IPO wave, both as underwriters and by purchasing, mainly through bank managed investment funds, large amounts of the newly issued equity.

Using a unique newly constructed data set on Israeli IPO firms in the nineties, we study costs and benefits of universal banking. Our data include information on the identity of the underwriter (including whether it is bank affiliated), on whether the underwriting bank was also a significant creditor of the underwritten firm in the year of the IPO, and whether investment funds managed by the same bank purchased stock of the newly issued firm.

We also use data on several performance and corporate governance measures, including ownership concentration and bank lending concentration.

We focus on evaluating the relative post-issue performance of the firms in our sample according to their affiliation with banks and bank underwriters. As measures of post-issue performance we use accounting profitability and the stock price performance during the first year following the IPO. The average post-issue accounting profitability of firms underwritten by a bank affiliated underwriter that were also borrowers from the same bank in the IPO year, is significantly better than average.[1] This is interpreted as evidence that universal banks use their superior information regarding underwritten firms to float the cherries, not the lemons.

We also find, however, that the stock price performance of these firms during the first year following the IPO is lower than average. Furthermore, among these firms, the stock price performance of those whose equity was purchased by an investment fund that is affiliated with the underwriting and lending bank is even lower. We also compute first day returns for the IPO stocks. The first year underperformance is interpreted as IPO overpricing, which is consistent with the first day returns. Thus, bank managed funds pay too much for bank underwritten IPOs at the expense of the investors in the funds. We conclude that there is conflict of interest in the combination of bank lending, underwriting, and fund management. Although universal banks use their superior information regarding underwritten firms to float the cherries, investors in bank managed funds end up paying too much for the equity of these firms.

In our regressions, we control for holdings by large shareholders finding that accounting profitability is higher the larger the fraction of equity held by large shareholders. This is further evidence regarding the importance of large shareholders for corporate governance. By contrast, we find that bank debt concentration does not affect performance. We relate these findings to the debate on the relative effectiveness of bank versus stock market

[1] For brevity, we will often refer to such firms as firms with a bank underwriter-lender.

monitoring.[2]

We find an overall decline in post-issue accounting profitability, which is consistent with work by Jain and Kini (1994) who detect a decline in post-issue accounting performance for a sample of US firms. Similar findings are obtained by Mikkelson, Partch, and Shah (1995) for a different sample of US firms. Pagano, Panetta, and Zingales (1995) who focus on the factors determining the decision whether and when to go public, also find, for a sample of Italian firms, a decline in profitability following an IPO. DeGeorge and Zeckhauser (1993) find similar results for a sample of reverse leveraged buyouts in the United States. It seems, therefore, that the decline in accounting profitability following an IPO is an empirical regularity that transcends the structure of the financial system and the legislative environment. DeGeorge and Zeckhauser interpret their findings as driven mainly by pre-IPO window dressing. We provide evidence suggesting that in our sample, window dressing cannot fully account for the superior post-IPO performance of firms with a bank underwriter-lender.[3]

The next section is devoted to a description of relevant aspects of universal banking in Israel and the IPO wave of the 1990s, and to a presentation of the data. Section 3 is devoted to the empirical analysis, in Section 4 we discuss the relation of the paper to the literature on conflict of interest in universal banking prior to the Glass-Steagall legislation, and Section 5 concludes.

[2]For the view that bank monitoring is driven by bank shareholding (rather than bank debt), see Edwards and Fischer's (1994) criticism of Cable (1985) who studies a sample of German firms, and findings in Yafeh and Yosha (1997) for a sample of Japanese firms; see also Hauser and Shohat (1991).

[3]A related paper is Michaely and Womack (1996) who study potential conflict of interest within underwriting firms that engage both in security issuance and provision of timely information about publicly traded firms. They find, for a sample of US IPOs, evidence of conflict of interest between the corporate finance and the brokerage divisions of underwriting firms, and that the investing public does not comprehend the full extent of the bias.

2 Institutional Background and Data

2.1 Universal banking in Israel and the IPO wave of the 1990s

As in many Continental European countries, banks in Israel are truly universal, managing mutual and provident funds and controlling subsidiaries that specialize in underwriting or in mortgage origination. Banks own the stocks of manufacturing and insurance firms, typically up to 25 percent of a single firm's equity, and in some cases more. In 1995, for example, mortgage banks constituted, on average for the five largest banks, 11.3 percent of total book equity, long term credit banks constituted 1.3 percent, other financial institutions (including leasing companies, brokers, and underwriters) constituted 7.2 percent, and non-financial companies (including insurance companies) constituted 12.9 percent of total book equity value. The return on equity for these investments were 13.3, 2.1, 5.4, and 13.8 percent respectively.[4]

The banking system is also very concentrated. For example, the combined assets of the two largest banks constitute almost three quarters of total bank assets. The Herfindahl index in the local currency non-indexed bank deposit and bank credit segments of the market is about 0.25, with the five largest banks controlling over 95 percent of these activities. Concentration in banking is also prevalent in many European countries. For example, in 1990 the Herfindahl index of total bank assets was 0.24 in the Netherlands and 0.23 in Norway. In the same year, the five largest banks in France granted about 44 percent of bank credit and held over 58 percent of deposits.

An important feature of the Israeli banking system, not directly related to our study, is that following the October 1983 stock market crash the Israeli government became the owner of almost the entire banking system. The government has not interfered with the

[4]In 1993, a record boom year on the Tel Aviv Stock Exchange, the return on equity for "other financial institutions," that include leasing companies, brokers, and underwriters, was 29.5 percent. For further details see Israel's Banking System, an annual survey published in English by the Supervisor of Banks, Bank of Israel.

management of the banks, and is currently engaged in a slow process of privatization.[5]

Provident funds play an important role in the Israeli capital market. These funds are long term saving instruments enjoying tax benefits, that can be redeemed after a period of no less than 15 years. Approximately 22 percent of the assets in the public's financial portfolio are managed by these funds. The funds are mostly bank managed (about 80 percent) with the three largest banks controlling about 47 percent of this segment of the market. Commission income from provident funds constituted in 1995 about 4 percent of total bank revenue.[6] Mutual funds constitute a short term liquid form of investment. More than 75 percent of mutual fund assets are managed by the three largest banks, and 12 additional percent are managed by four other banks. The concentration in investment funds is, therefore, also very high.[7] Commentators argue that concentration is not as high in underwriting, and that commercial banks are less dominant in this segment of the market. Our sample does not corroborate this view—in about 75 percent of the IPOs in our sample a bank affiliated investment house was a leading member of the underwriting consortium.

Until about 1990 the stock market was very thin and did not play a meaningful role as a source of capital. Furthermore, government involvement in capital markets was high. The financial markets reform, initiated in 1985, brought about a drastic reduction in the government's involvement in financial markets,[8] an extensive liberalization of international capital flows,[9] and minor changes in the organization of the intermediation sector.[10] Banks were required to reduce their holdings in corporate equity, and "Chinese Walls" were created between underwriting, fund management, and commercial banking activities. Despite these restrictions it is often argued that the steps taken were not satisfactory, leaving too much power in the hands of the banks. The following anecdote is instructive. The Israeli Treasury

[5]See Yosha (1995) for more details and a theoretical analysis of related issues.

[6]Since 1994 the Treasury publishes this information, in Hebrew.

[7]Pension funds, unlike provident and mutual funds, are mostly managed by the labor unions, investing mainly in subsidized non-marketable government bonds.

[8]See Ben Bassat (1993).

[9]See Bufman and Leiderman (1995) and Blass and Yafeh (1996).

[10]See Yafeh and Yosha (1996). Ber (1996) provides an analysis of the "disintermediation" phenomenon.

filed a complaint with the police against the two largest Israeli banks that had allegedly bought in 1994, via their provident funds, a large fraction of the IPO of an Israeli company despite evidence that the company was in bad shape. The reason for purchasing the stock was that the company owed large sums to the banks who bought the firm's stock, on behalf of the depositors in the provident funds, to prevent the company from going under. In the two quarters following the IPO the company lost approximately $7 million, the entire amount raised in the IPO.[11] Without systematic research it is hard to establish whether banks with inside information about debtor firms and market power in several segments of the capital market issued the securities of the lemons, as this anecdote suggests, or of the cherries.

The reform and the economic boom that Israel experienced in the past decade contributed to considerable development of the Tel Aviv Stock Exchange. Provident funds are now allowed to invest in corporate stocks and bonds, disclosure requirements (e.g. regarding top management compensation) are now more stringent, and trade in derivative securities has begun. Most important, perhaps, about 150 manufacturing firms went public during the period 1991–5, almost tripling the number of manufacturing companies traded on the exchange. The banks were heavily involved in the IPO wave. As mentioned earlier, in about 75 percent of the IPOs in our sample a bank affiliated underwriter was a leading member of the underwriting consortium, and for approximately 37 percent of the firms in the sample a bank managed fund purchased at least 5 percent of the equity of the newly issued firm.

2.2 Sample and variables

The sample consists of 138 Israeli manufacturing firms that went public on the Tel Aviv Stock Exchange during the period 1991–4 (8 in 1991; 46 in 1992; 60 in 1993; and 24 in

[11]The story was published in *Telegraph*, an Israeli daily financial newspaper (that no longer exists), on June 27, 1995, regarding a company named Yesh-Gad.

1994). We use data regarding these firms through 1995. We rely on the following data sources: (1) Financial statements of the firms, available for the two years prior to the IPO and for all subsequent years; (2) data on the number of banks each firm borrows from and the amounts borrowed. These data are obtained from the Supervisor of Banks at the Bank of Israel. Banks are required to report to the Supervisor only transactions with large borrowers (defined, for large banks, as borrowers with bank debt higher than 1.7 million New Israeli Shekel (NIS)—about $0.5 million, and with somewhat less debt for smaller banks). Approximately two thirds of the publicly traded manufacturing firms are defined as large borrowers by at least one bank. Since it is possible that firms that borrow from several banks will qualify as large borrowers only for some of the lending banks, rendering our bank debt data imprecise, we compare the total bank debt as reported by the banks to the Supervisor with the total bank debt as reported in the firm's financial statements. The discrepancies are minimal, suggesting that there is no danger of bias due to reporting practices; (3) data on the ownership structure of the publicly traded firms are collected from reports on large shareholders and company executives published annually by the Tel Aviv Stock Exchange. These data include the combined ownership of company executives and large shareholders owning at least 5 percent of the company's equity, as well as shareholding by banks and their subsidiaries;[12] (4) data on the ownership structure prior to going public and on the identity of the underwriters is from the prospectus submitted by each firm prior to the IPO; (5) the age of the firms is from the Registrar of Companies; (6) stock price data is official Tel Aviv Stock Exchange data, available at the Bank of Israel.

Table I displays descriptive statistics of the sample.[13] Firms with a bank underwriter that was also a major lender (Panel B) are bigger and older than the rest of the firms in the sample (Panel C). There are no meaningful differences in leverage, bank debt concentration, ownership concentration, and profitability between the two groups.

[12]For brevity, we refer to "company executives and large shareholders" simply as large shareholders.

[13]We include in the sample only firm-years with profitability not larger than 100 percent and not smaller than negative 100 percent in all years. Only three observations are omitted for this reason.

The pre-IPO fraction of the equity held by large shareholders is 96.2 percent, while the post-IPO holdings average at 80.8 percent. Israeli manufacturing firms are, therefore, relatively closely held even after going public. To measure leverage we use the ratio of total debt to liabilities.[14] Leverage before the IPO is 0.61 on average, declining to 0.36 after the IPO. This may be due to a desire on the part of firms to reduce bankruptcy risk, or it may simply reflect a general process of reduction in bank financing, independently of risk considerations. Since the corporate bond market in Israel has remained underdeveloped, providing only negligible funds to manufacturing firms, equity financing via IPOs may be interpreted as a way of reducing debt financing per se or, alternatively, as a way of reducing bank financing.

There is a positive relation between the age of firms and their size. Large shareholders concentration is similar for small and large firms.[15] Bank debt concentration is higher for small firms, reflecting better opportunities for large firms to diversify credit sources. Alternatively, lower bank debt concentration for bigger firms may reflect constraints imposed on banks by the Supervisor regarding the amount of credit (as a fraction of bank equity) that can be extended to a single firm.[16] There are no substantial differences across industries in bank debt concentration and ownership concentration. Profitability and size do, however, vary across industries.

3 Empirical Analysis

3.1 The basic regression: Post-IPO accounting profitability

We examine first whether profitability changes following an IPO. The dependent variables in the regressions are various measures of profitability: net profits normalized by sales

[14] Since for some firms book equity is very low, and even negative in a few cases, the ratio of total debt to book equity seems less appropriate as a measure of leverage.

[15] Small and large are measured relative to average firm size in the sample.

[16] Bank credit concentration data are calculated from reports of banks to the Supervisor of Banks at the Bank of Israel.

(PROF), operating profits normalized by sales (OPERAT), the return on assets (ROA), and the return on equity (ROE). The dummy variable ISSUE takes the value zero for firm-years prior to the IPO and the value one for firm-years following an IPO, including the IPO year. ISSUE is, therefore, a status variable that splits the sample into publicly traded and privately owned firms. The estimated coefficient of ISSUE represents the marginal effect of the change in status on the dependent variable.

An IPO entails changes in capital structure and in ownership concentration, which may affect the incentives and behavior of managers. If large shareholders indeed monitor managers (Shleifer and Vishny 1986), the reduction in ownership concentration as a result of an IPO should induce managers to devote less resources to screening projects, to pay less attention to selecting cost minimizing production processes, and to increase managerial perquisites. To control for changes in ownership concentration, we include the variable LGOWN, the total share of the firm's equity held by large shareholders, as a regressor. Since the pre-IPO holdings are available only for the year prior to the IPO, we assume that the ownership structure does not change in the two years prior to the IPO. If large shareholders discipline managers, or if managers are themselves large shareholders (LGOWN includes equity owned by senior officers of the company) then we would expect this variable to have a positive effect on profitability.[17]

An IPO, in and of itself, is accompanied by lower leverage. According to the free cash flow hypothesis this should facilitate managerial empire building (Jensen 1986, Perotti and Spier 1993) and should, therefore, lead to lower profits. Firms that issue new equity may,

[17]Since the correlation between LGOWN and the Herfindahl index of ownership concentration is high, we do not include both variables in the regressions. We further construct the fraction owned by the CEO of each firm in every year starting in the IPO year, as follows. The fraction of equity held by the CEO is taken from reports on large shareholders and company executives published annually by the Tel Aviv Stock Exchange. The name of the CEO is reported in the Tel Aviv Stock Exchange Yearbook, published by *Globs* (a private publisher). Regressions of various profitability measures on CEO holdings yield no statistically significant results, and are not reported. Also of potential interest is a decomposition of LGOWN to finer categories, in particular direct holdings by banks. Since our focus here is not on corporate governance per se (we only want to control for ownership by large shareholders), and since this decomposition is not straightforward (e.g., it cannot be carried out fully for one of the largest banks), we stick with the variable LGOWN.

however, restore the pre-IPO leverage by raising new (bank or non-bank) debt, for example due to optimal bankruptcy risk considerations. We, therefore, include LEVERAGE, the ratio of total debt to liabilities as a regressor.

An IPO may also entail a reduction in bank monitoring, due to the lower dependence of the firm on bank lending. In and of itself, this should work in the same direction as the reduction in ownership concentration—lower profits. If, however, the stock market plays an important role in imposing discipline on management, e.g., by facilitating incentive contracts tying managerial compensation to the performance of the company's stock (Hölmstrom and Tirole 1993), then we should expect precisely the opposite—an increase in profits following an IPO. If banks indeed monitor, then it is reasonable to expect that monitoring will be more effective for firms with higher debt concentration. A bank that lends large amounts to a firm may have a greater incentive to reduce managerial waste, as well as greater influence on the behavior of managers, especially if the firm obtains a large fraction of its debt from this bank. We, therefore, include the variable HRFCRED, a Herfindahl index of concentration of the firm's bank debt, as a regressor. Other right hand side variables are SIZE, the size of the firm's balance sheet, and AGE, the number of years since incorporation. We include year dummies to control for aggregate year-specific effects and industry dummies to control for industry specific effects.

In most regressions we include the variables in levels, where observations are firm-years. The interpretation of regressions in levels for firm-years ("pooled" data) is that every year, given the explanatory variables, the dependent variable is chosen by each firm independently of the choice in previous or in subsequent years. To neutralize potential firm specific effects, we also try a specification with fixed effects, using the profitability measure PROF, measuring each variable as a deviation from its mean, where the mean is calculated for each firm over the years in the sample.[18] For AGE and ISSUE we include the actual

[18]Let x_{it} denote a variable for firm i in year t. Let $\bar{x}_i$ be the average of x_{it} over the years for which we have observations regarding firm i. Then we include in the regressions the variable $x_{it} - \bar{x}_i$. The firm

variable (not the deviation from the mean). The results for the fixed effects specification are overall similar.[19]

Our regressions include only the firm-years for which there are data allowing us to calculate bank debt concentration. If in a particular year a firm is defined as large borrower by the Supervisor of Banks (see section 2.2 for the criteria) there is information regarding its bank debt in that year. Since investment, profit retention, and financing policies of firms determine whether they choose to become large borrowers, there is potential selection bias in our sample, which is corrected as follows. Using the entire population of manufacturing firms publicly traded on the Tel Aviv Stock Exchange, of which approximately one third are not defined as large borrowers, we run a probit regression where the dependent variable is a dummy variable that takes the value one when the firm is a large borrower. As explanatory variables we include the firms' age, size, and industry dummies. The coefficients of age and of several of the industry dummies are highly significant, whereas size is not. We include the resulting Inverse Mill's Ratio in all our regressions.[20]

The use of bank debt data reduces the sample significantly from about 600 to 320 firm-years. When we use all the 600 observations, omitting the variable HRFCRED, none of the results reported below change (in fact, the significance level of several coefficients increases). We nevertheless include bank debt concentration in the regressions because we believe that it is a potentially important corporate governance variable that should be controlled for.

The results displayed in Table II indicate that there is a clearly visible and statistically

fixed effects wash out, of course, while the time fixed effects are captured by the four year dummies and a constant.

[19] A specification combining levels and differences also yields similar results.

[20] In our main regressions profitability is a dependent variable, namely we regard profitability as an endogenous variable which is determined every year as a function of firm characteristics. We, therefore, did not find it advisable to include profitability as a regressor in the probit analysis. Since our sample includes only firms that went public, the interpretation of the coefficients of variables such as LGOWN and HRFCRED is limited to publicly traded firms. To generalize the results to all firms one must control for potential selection effects in the going public decision. This is not central for our study, especially not for the main question regarding the effect of bank underwriting, lending, and fund management on post-IPO performance. We partially address this issue by running a probit regression using a very problematic sample of privately held manufacturing firms that could but did not go public. AGE is the only significant variable in this probit regression, and is included in our main regressions.

significant decline in profitability after an IPO, as can be seen from the negative and highly statistically significant negative coefficient of the status variable ISSUE. This is obtained for all the profitability measures as well as in the fixed effects regression using PROF. The magnitude of the coefficient of ISSUE in the regression using PROF with "pooled" data is interpreted as follows: Controlling for the dilution of ownership, for potential change in bank debt concentration, and other variables, the change in status from a fully privately held company to a publicly traded company induces a decrease in profitability of 4.6 percentage points. Compared to the 6.8 average profitability in our sample (Table I), the decrease in profitability is substantial.

By including ISSUE as a regressor we are in fact regarding the timing of the IPO as being chosen independently of profitability. (The decision whether to go public is not relevant here since all the firms in our sample go public eventually). Notice that if firms are more likely to go public when profitability is high, the coefficient of ISSUE is biased upward, i.e. it should be even more negative. Therefore, for our purposes the potential endogeneity of ISSUE is not a major concern.

The magnitude of the coefficient of ISSUE in the regressions using ROA and ROE is larger than in the regression using PROF, which is most likely due to the fact that when new capital is raised, total assets and total equity increase right away whereas the return to new investment takes time to materialize. The profit to sales and the operating profit to sales ratios are not automatically affected by new equity or new assets on the balance sheet.[21] The results of regressions with different profitability measures are presented to emphasize the robustness of the findings, but the focus will be on the regression with PROF as the dependent variable.

In all the regressions but one there is a strong and highly significant negative effect of leverage on profitability. If higher leverage is associated with higher risk then, in an efficient

[21]The correlation between the various measures of profitability is rather high; e.g., the correlation between PROF and ROE is 0.8, suggesting that we should expect qualitatively similar results for the various profitability regressions.

market, it should be associated with higher profitability. If leverage imposes discipline on managers, higher leverage should also entail higher profitability. The negative coefficient of leverage is not consistent with either of these interpretations. It may be driven by the natural reduction in leverage following an IPO. As a consequence, leverage is negatively correlated with ISSUE, so the coefficient of leverage picks up part of the effect of ISSUE. Another possibility is that leverage proxies for investment since firms that make large investments in plants and equipment are likely to borrow against these assets. These investments may mature slowly resulting in low profitability for a few years. The coefficient of ISSUE could then be interpreted as the change in profitability controlling for the amount of investment in collateralizable assets.

The coefficient of LGOWN is positive in all the regressions and is statistically significant in the PROF regression with "pooled" data and in the ROA and ROE regressions, confirming that large shareholders play an important role in corporate governance. The magnitude of the coefficient is similar in the three regressions where it is significant. It suggests that if the fraction held by large shareholders increases by one percentage point, profitability increases by about 0.13 percentage points (that correspond to approximately 2 percent of average profitability which is 6.8 percent). For most firms in the sample, LGOWN is almost constant through time (except in the year of the IPO). Therefore, in the fixed effects regression, the variable LGOWN for a given firm does not vary much around its time average (see footnote 18), and will have little explanatory power. It is interesting that despite the high ownership concentration after an IPO (LGOWN falls from 96.2 percent before the IPO to 80.8 percent after the IPO), the fraction held by large shareholders still affects performance. We interpret this as indicating that LGOWN is not just a proxy for the existence of controlling blocks but, rather, that it genuinely measures the incentive of large shareholders to affect managerial decisions, or their effectiveness in doing so.[22]

[22]The coefficient of LGOWN may also reflect a "smart money" effect—shareholders of profitable firms dilute ownership less.

The Inverse Mill's Ratio from the large borrower regression is not statistically significant, suggesting that the profitability of large borrowers is not different on average from that of other firms. Finally, bank concentration, HERFCRED, is not statistically significant in all the regressions which suggests that if banks have a monitoring role it does not decrease when firms borrow from several banks.[23]

In subsection 3.3 we evaluate potential explanations for the decline in profitability following an IPO. It is important to note that the precise interpretation of this phenomenon is not central for our analysis of potential conflict of interest in universal banking. Our main focus will be on differences in the decline in profitability between firms that were underwritten by a lending bank and those that were not. These differences in post-IPO performance are most likely driven by considerations related to universal banking.

3.2 Post-IPO accounting profitability and universal banking: Conflict of interest or superior information?

To measure the effect of bank underwriting and lending on post-IPO profitability, we construct a dummy variable that takes the value one if a bank served as a leading underwriter of the firm's IPO and the firm was a large borrower from the same bank in the IPO year, where leading underwriters are identified in the IPO prospectus and "large borrower" is defined by the Supervisor of Banks. The variable takes the value one for roughly one third of the firms in the sample. For brevity, we will refer to this variable as the bank underwriting and lending dummy. We also construct the variable REPAY, the fraction of the IPO proceeds designated in the IPO prospectus for the repayment of bank debt, that we interact with the above dummy variable. For each firm, the bank underwriting and lending dummy takes the same value in all years, before and after the IPO. The variable REPAY also takes

[23]Since 1993 was beyond doubt a "hot issue market" year on the Tel Aviv Stock Exchange, low quality firms may have taken advantage of the stock market boom to go public. Nevertheless, in a regression (not reported) with a dummy variable that takes the value one in 1993, 1994, and 1995 for firms that went public in 1993 the coefficient of this variable is not significantly different from zero. We also tried specifications with the variables log-AGE, AGE squared, and similarly for SIZE, obtaining almost identical results.

the same value in all years, before and after the IPO. These variables are "characteristics" of the firm. When interacted with ISSUE, their coefficients measure their effect on the change in profitability following an IPO.

The first column in Panel A of Table III displays the results of a profitability regression with the bank underwriting and lending dummy as an additional regressor. The inclusion of this variable does not affect the coefficients of the other regressors, and its coefficient is positive but not significantly different from zero. We run the same regression (not reported) using only pre-IPO firm-years, i.e. with firm-years for which ISSUE=0, also getting an insignificant coefficient for the bank underwriting and lending dummy. Our first conclusion is that firms that are affiliated with a bank, in the sense captured by the bank underwriting and lending dummy, do not differ ex-ante from other firms in terms of profitability.

The second column in Panel A of Table III displays the results of a profitability regression with the bank underwriting and lending dummy interacted with the status variable ISSUE. The coefficient of this variable measures the change in profitability after the IPO of firms with a bank underwriter-lender above and beyond the change in profitability of the other firms. The coefficient is positive and statistically significant. (The coefficients of the other regressors are not affected.) The coefficient is also economically significant: The post-issue accounting profitability of firms with a bank underwriter-lender declines by 2.6 percentage points *less* than average, which is more than 50 percent less than the average decline in profitability for the entire sample (see the coefficient of ISSUE).[24]

We conclude from these findings that on the basis of observed pre-IPO profitability alone, it is not possible to identify the firms for which post-IPO performance will decline less than average. Nevertheless, bank underwriters that are also lenders succeed in selecting such firms, probably as a result of private information about the management, corporate

[24]To verify the robustness of this finding, we run the same regression (not reported) with the bank underwriting and lending dummy not interacted with ISSUE, using only post-IPO firm-years, i.e. with firms-years for which ISSUE=1, getting a positive and significant coefficient for the bank underwriting and lending dummy. We also run the regressions using other profitability measures (OPERAT, ROE, ROA), and with a firm fixed effects specification, obtaining similar results.

culture, and investment opportunities of these firms, generated through the lender-borrower relationship or as a result of expertise in underwriting. These results provide no evidence in support of the view that banks exploit the potential for conflict of interest by issuing the securities of below average firms. On the contrary, our findings regarding post-IPO accounting profitability strongly suggest that the combination of bank lending and underwriting results in better informed underwriting.

We further argue that window dressing cannot explain the observed differences in post-IPO performance between firms with and without a bank underwriter-lender. If window dressing were driving these differences, the positive coefficient of the bank underwriting and lending dummy interacted with the status variable ISSUE would be interpreted as indication that firms with bank underwriter-lenders window dress less. But then, since window dressing prior to an IPO means transferring profits through "creative accounting" from the future to the present, we should expect, for firms with a bank underwriter-lender, post-IPO profitability to be higher than average *and* pre-IPO profitability to be lower than average. Our results indicate, however, that post-IPO profitability is higher than average but pre-IPO profitability is not lower than average.

The third column in Panel A of Table III displays the results of a profitability regression with the bank underwriting and lending dummy interacted with REPAY as an additional regressor. The coefficient of this variable indicates whether, for firms with a bank underwriter-lender, profitability is affected by the fraction of the IPO proceeds designated for repayment of bank debt. The fourth column displays the results of a similar regression with the bank underwriting and lending dummy interacted with both REPAY and ISSUE, capturing whether the change in profitability following an IPO depends on the fraction of the proceeds designated for repayment of bank debt. The inclusion of these variables does not affect the coefficients of the other regressors. The coefficients of these variables are positive but not significantly different from zero (the second variable has a t-statistic of 1.3). These results strengthen our conclusion that there is no conflict of interest

in the combination of bank lending and underwriting. If banks had exploited the potential for conflict of interest they would have issued the equity of low quality firms that owe them large sums of money to help these firms repay their bank debt. We find no evidence in support of this claim.

Next, we ask whether there is conflict of interest in the combination of bank underwriting, lending, and fund management. We construct the dummy variable FUNDLEND that takes the value one if a bank managed investment fund purchased at least 5 percent of the shares of the newly issued firm during the first year following the IPO and the firm was a large borrower from the same bank in the IPO year.[25] We then construct the dummy variable BIGCONF that takes the value one if FUNDLEND is one and, in addition, the same bank was a leading underwriter of the firm's IPO. That is, BIGCONF is the intersection of the bank underwriter-lender dummy and FUNDLEND. From the coefficient of FUNDLEND in Panel B of Table III we learn that the post-IPO accounting profitability of firms purchased by bank managed funds is not higher or lower than average. The coefficients of BIGCONF, and of BIGCONF interacted with ISSUE are also not significantly different from zero, although the latter is close to being significant at the 10 percent level. Clearly, there is no evidence that bank managed funds were involved in purchasing the stock of the lemons.

3.3 The decline in accounting profitability following an IPO: Discussion

It seems that the decline in accounting profitability following an IPO is an empirical regularity. Jain and Kini (1994) and Mikkelson, Partch, and Shah (1995) obtain similar results for two samples of US firms. Pagano, Panetta, and Zingales (1995) also find, for a sample of Italian firms, a decline in profitability following an IPO. DeGeorge and Zeckhauser (1993)

[25] We do not have data regarding the amount of equity purchased by bank managed funds during the IPO itself, although it is common knowledge among practitioners that institutional investors, and bank managed funds in particular, are massively present in IPO road shows and are usually the first to submit purchase orders for IPO stock.

find similar results for a sample of reverse leveraged buyouts in the United States.

There are several interpretations, not necessarily mutually exclusive, for the decline in profitability following an IPO. DeGeorge and Zeckhauser (1993) interpret their findings as driven mainly by pre-IPO window dressing (see also Jain and Kini 1994). Firms that are about to go public window dress their accounting numbers in order to look more attractive at the time of the IPO. This will tend to overstate pre-IPO profits and understate post-IPO profits. In our sample, the post-IPO profitability of firms with a bank underwriter-lender is higher than average but their pre-IPO profitability is not lower than average. Thus, window dressing cannot account for the difference in post-IPO profitability of firms with and without a bank underwriter-lender.

Another explanation is that an IPO entails a reduction in bank monitoring due to the lower dependence of the firm on bank lending, and at the same time it may improve monitoring by allowing managerial compensation to be conditioned on stock price performance. Our findings are consistent with the view that bank monitoring regarding project choice is reduced following an IPO, and is not fully compensated for by stock market monitoring, at least not in the first few years following the IPO. It should be noted, however, that we do not detect a significant effect of bank debt concentration on profitability. What seems to matter for profitability is the status of the firm—whether it is a publicly traded company or whether it is (still) under the exclusive supervision of large shareholders and banks.

Our results are not driven by a "hot issue market" effect since they continue to hold even when we control for the "hot issue market" of 1993 (see footnote 23). Furthermore, the profitability of the companies that went public during this year was not low as compared to companies that went public in other years. Since we control for age, the measured decline in profitability is not simply due to a natural "life cycle" in the financing patterns of firms. Of course, we cannot rule out the possibility that firms go public when they feel that profitability has reached a peak, as pointed out by Jain and Kini (1994) and Pagano, Panetta, and Zingales (1995). We can, however, rule out the view that banks help firms

go public at the peak of their performance. If this were the case, we would see that the post-IPO profitability of firms with a bank underwriter-lender declines more than average, not less than average.

Finally, it is possible that our results are driven, at least in part, by the fact that in 1994 the average profitability of the firms in the sample was particularly low, a feature which is picked up by the coefficient of ISSUE. It should be noted, though, that the low profitability of the firms in our sample in 1994 does not reflect macroeconomic conditions (1994 was not a bad year for the Israeli economy), nor does it reflect the performance of the entire manufacturing sector whose profitability in 1994 was similar to that in 1991–3. The low profitability in 1994 must somehow be related to the fact that most firms in our sample went public one or two years prior to 1994, and furthermore, the decline in profitability is attenuated for firms with a bank underwriter-lender.

As we emphasized earlier, the exact reason for the decline in profitability following an IPO is not central for our analysis. Whether window dressing, optimal timing, or ineffective stock market monitoring is responsible for this phenomenon, the central phenomenon from our perspective is that the decline in profitability is lower for firms with a bank underwriter-lender.

4 Post-IPO Stock Price Performance

We study the stock price performance of the IPOs in our sample in order to evaluate whether they were priced correctly, and if not, whether the stock price performance of firms with a bank underwriter-lender or of firms whose stock was purchased by a bank managed fund provides evidence for conflict of interest in universal banking.

Suppose that IPOs are priced correctly, that investors can identify firms with bank underwriter-lenders, and that they are aware of the differences in post-IPO profitability reported above. Stock prices will then reflect the differences in future profitability, and

risk adjusted excess returns should be zero for all stocks. Suppose that IPOs are priced correctly only on average, namely, investors are unaware of the differences in post-IPO profitability among firms. Then, a representative investor who buys a portfolio of all the IPOs should earn a zero risk adjusted excess return. The risk adjusted excess return on the stocks of firms with a bank underwriter-lender should be positive while the excess return on the other stocks in the portfolio should be negative. The results we obtain are not consistent with either of these scenarios, and suggest that the stocks of IPO firms are not priced correctly in a systematic way that points to conflict of interest in the combination of bank underwriting, lending, and fund management.

We turn to the analysis. The sample consists of 82 IPOs (out of the 138 IPOs used to study post-IPO accounting performance). The reason for excluding 56 firms is that they issued bundles of straight equity and convertible securities that were not priced separately in the IPO day, rendering the computation of excess returns hard. To ensure that we do not create a selection problem, we run a probit regression where the dependent variable is a dummy for issuing such bundles. The coefficients of all the explanatory variables but one are very small and not significantly different from zero, including accounting profitability and the bank underwriting and lending dummy. Only firm size is positive with a t-statistic of about 1.5. We conclude that no apparent selection bias is created by focusing on firms that did not issue bundles of straight equity and convertible securities.

For each firm we calculate the first day return using the opening and closing price on the day of the IPO. To calculate the excess return during the first year after the IPO we use the following procedure. For each stock we compute weekly returns, adjusted for dividends, for 104 weeks since the IPO.[26] Using the returns in weeks 53–104 after the IPO, weekly returns of the general index of the Tel Aviv Stock Exchange, and weekly averages of nominal money market (short term) bank rates as a proxy for the riskless interest rate, we estimate for each

[26]The first week return includes the first day return.

stock the intercept and slope in a CAPM regression.[27] Using these estimates of intercept and slope, the market returns, and the riskless rate proxy for the corresponding weeks, we construct the expected return for each stock, according to the market model.[28] Using the returns of the stock in weeks 1–52 after the IPO we then compute excess returns.[29]

The first day stock return and the first year excess return for the entire sample are displayed in the first row of Table IV. Although neither is significantly different from zero, the point estimates indicate that there is no underpricing in the first day and a negative excess return in the first year. The dummy variable FUNDLEND takes the value one if a bank managed investment fund purchased at least 5 percent of the shares of the newly issued firm during the first year since the IPO and the firm was a large borrower from the same bank in the IPO year. For these firms there is a 20 percent negative excess return in the first year following the IPO, statistically different from zero at the 10 percent level.[30] The first year negative excess return is interpreted as IPO overpricing, which is consistent with the negative, though not significant, first day return. A plausible interpretation is that bank managed funds paid too much for these IPOs, and continued to purchase stocks of these companies for a while (or at least refrained from selling them), helping to maintain a high price for these stocks. By the end of the first year the price dropped substantially generating a substantial negative excess return.[31]

The dummy variable BIGCONF takes the value one if the same bank was an underwriter-lender and one of its funds purchased at least 5 percent of the firm's stock in the IPO year. The stocks of these firms exhibit an even more negative and significant (at

[27] We test for stationarity of the time series used in these regressions (we perform a Dickey-Fuller test with a constant, a time trend, and two lags), strongly rejecting a unit root in virtually all the cases. The "beta" estimates are mostly between zero and unity, and in most cases significantly different from zero.

[28] Although many "alpha" estimates are not significantly different from zero, we use the point estimates of both "alpha" and "beta" in the computation of expected return.

[29] We also compute excess returns by subtracting the market return from the stock return (without controlling for risk in any way) obtaining very similar results in the analysis reported below.

[30] The significance tests for this table should be interpreted with caution due to the small sample size.

[31] In Israel underwriters are not obliged contractually to sustain the price of IPO stocks for any prespecified period of time. It seems, though, that this is what bank funds did in practice.

the 5 percent level) excess return during the first year (30.8 percent), which is consistent with overpricing (significant at the 10 percent level) in the first day of trade.

These findings point to conflict of interest in the combination of bank lending, underwriting, and investment fund management. A bank managed investment fund that purchases the equity of a newly issued firm which is a large borrower from the same bank and was underwritten by the same bank (BIGCONF=1), inflicts on investors an average loss of over 30 percent relative to the market within one year. The unequivocal conclusion is that although bank underwriters issue the cherries, bank managed funds pay too much for the stocks of these firms. Bank managed funds also pay too much for the stocks of newly issued firms that are large borrowers from the same bank (FUNDLEND=1) irrespective of the identity of the underwriter, inflicting on investors an average loss of about 20 percent relative to the market within one year. Thus, there is conflict of interest between bank lending and bank fund management regardless of bank underwriting.

A similar phenomenon is observed when the sample is split according to the bank underwriting and lending dummy that was used in the previous section. The stocks of firms with a bank underwriter-lender exhibit a highly negative and significant (at the 5 percent level) excess return (18.4 percent) during the first year, which is consistent with (not statistically significant) overpricing in the first day of trade. As can be seen in the second to last row of Table IV, this is not driven entirely by purchases of the IPO stocks by funds managed by the underwriting and lending bank. This is most likely explained by the concentration in the investment fund management and the underwriting industries. These industries are sufficiently collusive to induce non-bank investment funds, or funds managed by another bank, to purchase—at a high price—the stocks of firms with a bank underwriter-lender.

Concentration in the mutual fund and provident fund also helps explain why this situation was sustainable, namely why investors did not immediately sell their holdings in the funds. In 1996 a massive wave of withdrawals from these funds took place. Among the

explanations for this wave of withdrawals is the poor performance of the funds to which the performance of IPO stocks no doubt contributed.[32]

The lesson from this evidence is that the combination of bank lending, underwriting, and investment fund management results in conflict of interest. In the absence of market power the scale of the phenomenon would probably be smaller, resulting in lower negative excess returns on IPO stocks, but the incentives to engage in such behavior would still be present.

5 Relation to the Empirical Literature on Conflict of Interest in Universal Banking

Ang and Richardson (1994), Kroszner and Rajan (1994), and Puri (1994, 1996) have recently studied the effect of universal bank underwriting on the quality of issues using pre-Glass-Steagall US data. Ang and Richardson argue that corporate bonds underwritten by banks exhibited lower default rates. They further report that these bonds were priced correctly generating lower ex-ante yields. This is evidence that bank underwriters were successful in picking the cherries. They also find that the ex-post prices of these bonds are predicted equally well for bonds issued by bank underwriters and for bonds issued by non-bank underwriters, concluding that the quality of bonds underwritten by banks was not misrepresented.[33]

Kroszner and Rajan (1994) also find that, within investment grade categories, firms whose bonds were underwritten by banks exhibited lower default rates, which suggests that banks underwrote the bonds of high quality firms. They argue, however, that banks were reluctant to underwrite the bonds of firms whose quality was not "transparent" (e.g. small or young firms), and interpret this feature as evidence of potential conflict of interest that

[32]See Blass (1996) for a study of the performance of provident funds in Israel.
[33]Puri (1994) reports similar findings.

would have been appropriately discounted by the market.

Puri (1996) shows that within several risk categories, ex-ante yields were lower on bonds underwritten by banks, and interprets this as evidence of the "certification role" of universal banks, due to their superior information. She also argues that the effect is more pronounced where there is limited information (e.g. in new issues).

All three studies examine mostly corporate bond issues, and define firm affiliation with a universal bank on the basis of the identity of the underwriters. None include data on the bank debt of the firms, nor on their debt structure more generally. Whether a universal bank is a creditor of the underwritten firm is very important for the bank's ability to acquire information regarding the firm, and for its incentive to misrepresent the firm's quality. In this respect, our study is unique since we have data on whether the underwritten firm was a borrower of the underwriting bank.

Our study is novel in other respects as well. First, we use modern data from a country where the universality of the banking system is more pronounced. Second, we focus on stock IPOs rather than on corporate bond issues, and examine both accounting profitability and stock returns. Finally, the wide scope of activities of Israeli banks enables us to examine another dimension of universal banking, namely the effect of combined investment fund management with bank lending and bank underwriting.

Overall, our results, as well as those of the studies discussed here, indicate that universal banks tend to underwrite high quality firms, as measured by default rates in the earlier studies, and by post-issue accounting profitability in our study. Like Puri (1996), we also find that the price of issues by bank underwriters is higher ex-ante. However, while Puri does not examine if this premium is ex-post justified (i.e. if the issues are priced correctly), we show that IPOs issued by bank underwriter-lenders are overpriced, especially when a significant part of the shares is sold to an investment fund managed by the same bank. Kroszner and Rajan (1996) argue, although without direct evidence, that there are potential conflicts of interest in universal banking, and that the market would have priced them

correctly had they occurred. We present direct evidence for the existence of conflicts of interest, and show that these are not adequately reflected in the market price. One possible explanation is that, unlike pre-Glass-Steagall US, the Israeli banking sector is far more universal and far more concentrated, features which enable Israeli banks to take advantage of their universality. Although Israel may be an extreme case, universal banks in many Continental European countries resemble their Israeli counterparts more than they resemble US banks in the 1920s.

6 Summary

We provided evidence that the post-issue accounting profitability of firms underwritten by bank affiliated underwriters that were also borrowers from the same bank in the IPO year is significantly better than average, but that the stock price performance of these firms during the first year following the IPO is lower than average. Furthermore, the stock price performance of firms whose equity was purchased by an investment fund that is affiliated with the underwriting and lending bank is even lower. We interpret this as evidence that universal banks use their superior information regarding underwritten firms to float the cherries, not the lemons, but that the combination of bank lending, underwriting, and investment fund management results in conflict of interest. Bank managed funds pay too much for bank underwritten IPOs at the expense of the investors in the funds.

References

Ang, J. and T. Richardson (1994), The Underwriting Experience of Commercial Bank Affiliates Prior to the Glass-Steagall Act," *Journal of Banking and Finance,* 18, 351–95.

Ber, H. (1996), "Causes and Macroeconomic Consequences of Disintermediation," Hebrew University Discussion Paper No. 316.

Blass, A. (1996), " Market Structure and Performance of Provident Funds," Research Department Discussion Paper No. 96.01, Bank of Israel (Hebrew).

Blass, A. and Y. Yafeh (1996), "Vagabond Shoes Longing to Stray: Why Israeli Firms List in New York," mimeo.

Bufman, G. and L. Leiderman (1995), "Financial Reform in Israel: A Case for Gradualism," in R. Dornbusch and Y. Park (eds.), *Financial Opening: Policy Lessons for Korea*, Seul, Korea Institute of Finance.

Cable, J. (1985), "Capital Market Information and Industrial Performance: The Role of West German Banks," *Economic Journal*, 95, 118–32.

Degeorge F. and R. Zeckhauser (1993), "The Reverse LBO Decision and Firm Performance: Theory and Evidence," *Journal of Finance,* 48, 1323–48.

Edwards, J. and K. Fischer (1994), "Bank Finance and Investment in Germany," Cambridge University Press.

Hauser, S. and A. Shohat (1991), "The Relationship Between Ownership Structure and Return to Shareholders of Israeli Publicly Traded Firms," Tel Aviv Stock Exchange Working Paper (Hebrew).

Hölmstrom, B. and J. Tirole (1993), "Market Liquidity and Performance Monitoring," *Journal of Political Economy*, 104, 678–709.

Jain, B. and O. Kini (1994), "The Post-Issue Operating Performance of IPO Firms," *Journal of Finance*, 94, 1699–726.

Jensen, M. (1986) "Agency Costs of Free Cash Flows, Corporate Finance and Takeovers," *American Economic Review*, 76, 323–29.

Kroszner, R. and R. Rajan (1994) "Is the Glass-Steagall Act Justified? A Study of the US Experience with Universal Banking before 1933," *American Economic Review*, 84, 4.

Michaely, R. and K. Womack (1996), "Conflict of Interest and the Credibility of Underwriter Analyst Recommendations," mimeo.

Mikkelson, W., M. Partch, and K. Shah (1995), "Ownership and Operating Performance of Companies that Go Public," mimeo.

Pagano, M., F. Panetta, and L. Zingales (1995), "Why Do Companies Go Public? An Empirical Analysis," mimeo.

Perotti, E. and K. Spier (1993), "Capital Structure as a Bargaining Tool: The Role of Leverage in Contract Renegotiation," *American Economic Review*, 83, 1131–41.

Puri, M. (1994), "The Long Term Default Performance of Bank Underwritten Security Issues," *Journal of Banking and Finance,* 18, 397–418.

Puri, M. (1996) , "Commercial Banks in Investment Banking: Conflict of Interest or Certification Role?" *Journal of Financial Economics*, 40, 373–401.

Shleifer, A. and R. Vishny (1986), Large Shareholders and Corporate Control, *Journal of Political Economy*, 94, 461–88 3.

Yafeh, Y. and O. Yosha (1996), Financial Markets Reform and Patterns of Corporate Finance: Israel 1985–1995, mimeo.

Yafeh, Y. and O. Yosha (1997), "Large Shareholders and Banks: Who Monitors and How?" mimeo.

Yosha, O. (1995), "Privatising Multi-Product Banks," *Economic Journal*, 105, 1435–53.

Table I: Sample Statistics, 1991-1995

Panel A displays statistics for the entire sample. Panel B displays statistics for the subsample of firms where a bank served as a leading underwriter and the firm was a large borrower from the same bank in the IPO year, where leading underwriters are indentified in the IPO prospectus, and "large borrower" is defined by the Supervisor of Banks. Panel C displays statistics for firms whose underwriter was not a lending bank. PROF is the ratio of net profits to sales (in percent), SIZE is the size of the firm's balance sheet (in million 1994 NIS), AGE is the number of years since incorporation, LEVERAGE is total debt divided by liabilities, HRFCRED is a Herfindahl index of concentration of the firm's bank debt, LGOWN is the total share of the firm's equity held by large shareholders (in percent), where a large shareholder is defined as holding at least 5 percent of the firm's equity or a managerial position in the firm, and N is the number of observations (firm-years).

Panel A. The Full Sample

	MEAN	S.D.	MEDIAN	N
PROF	6.8	14.4	6.8	618
SIZE	66.3	99.8	36.8	616
AGE	20.5	15.1	17.0	615
LEVERAGE	0.44	0.22	0.40	616
HRFCRED	0.76	0.27	0.98	328
LGOWN	85.5	12.2	85.7	603

Panel B. Firms with a Bank Underwriter that is also a Major Lender

	MEAN	S.D.	MEDIAN	N
PROF	6.8	8.5	6.9	202
SIZE	91.2	112.6	52.1	202
AGE	25.3	15.5	27.0	202
LEVERAGE	0.48	0.19	0.47	202
HRFCRED	0.71	0.28	0.69	172
LGOWN	86.5	10.9	87.0	196

Panel C. The Other Firms in the Sample

	MEAN	S.D.	MEDIAN	N
PROF	6.8	16.6	6.8	416
SIZE	54.1	90.5	32.2	414
AGE	18.2	14.3	14.0	413
LEVERAGE	0.42	0.24	0.38	414
HRFCRED	0.81	0.26	1	156
LGOWN	84.9	12.8	84.5	407

Table II: Post-IPO Accounting Profitability

The dependent variables are, respectively, PROF, the ratio of net profits to sales, OPERAT, operating profits to sales, ROA, return on assets, and ROE, return on equity (all in percent). The regressions are OLS using pooled data, except when denoted by "fixed effects", where firm-specific effects are allowed. Heteroskedasticity-consistent standard errors are reported in parentheses. The Inverse Mill's Ratio is derived from a probit procedure which identifies the attributes of "large borrowers" included in the sample, SIZE is the size of the firm's balance sheet in million 1994 NIS, AGE is the number of years since incorporation, LEVERAGE is total debt divided by liabilities, HRFCRED is a Herfindahl index of concentration of the firm's bank debt, LGOWN is the total share of the firm's equity held by large shareholders (in percent), where a large shareholder is defined as holding at least 5 percent of the firm's equity or a managerial position in the firm, and ISSUE is a dummy variable which takes the value zero in all firm-years prior to the IPO and the value one thereafter. * denotes a coefficient significant at the 5 percent level and ** denotes a coefficient significant at the 10 percent level.

	PROF	PROF (fixed effects)	OPERAT	ROA	ROE
C	YES	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES
Inverse Mill's Ratio	-34.0 (44.5)	-3.5 (39.2)	-44.3 (54.4)	-5.7 (59.4)	-69.9 (122.1)
SIZE	0.00456 (0.00402)	0.025** (0.013)	0.00405 (0.00474)	0.00367 (0.00448)	0.00705 (0.00861)
AGE	0.08 (0.22)	0.01 (0.20)	0.13 (0.28)	-0.7 (0.30)	0..06 (0.60)
LEVERAGE	-22.3* (2.5)	-17.4* (4.3)	-18.9* (4.5)	-19.7* (3.4)	-17.1** (9.3)
HRFCRED	-0.2 (1.7)	-2.02 (2.07)	-0.1 (2.0)	2.6 (1.9)	0.1 (2.6)
LGOWN	0.13* (0.04)	-0.01 (0.04)	0.11* (0.05)	0.06 (0.04)	0.19* (0.08)
ISSUE	-4.6* (1.5)	-4.9* (1.5)	-5.1* (1.6)	-9.2* (2.5)	-15.9* (4.0)
Adjusted R-squared	0.40	0.37	0.27	0.38	0.36
N	320	319	315	321	309

Table III: Post-IPO Accounting Profitability and Universal Banking

Panel A examines the effect of combined bank underwriting and lending activities on client firm performance. Panel B examines the effect of combined bank lending and fund management activities on firm performance. The dependent variable is PROF, the ratio of net profits to sales (in percent). All the regressions are OLS using pooled data (qualitatively similar results using other measures of profitability, or allowing for firm-specific effects are not shown). Heteroskedasticity-consistent standard errors are reported in parentheses. The variables that measure the effect of universal banking on firm performance are defined as follows: The bank underwriter and lender dummy takes the value one if a bank served as a leading underwriter and the firm was large borrower from the same bank in the IPO year, where leading underwriters are indentified in the IPO prospectus, and "large borrower" is defined by the Supervisor of Banks. REPAY is the fraction of the IPO proceeds desginated in the prospectus for the repayment of bank debt, FUNDLEND is a dummy variable which takes the value one if a bank-managed investment fund purchased at least 5 percent of the firm's equity in the IPO year and the firm was a large borrwer from the same bank in the same year. BIGCONF is a dummy variable which takes the value one if FUNDLEND is one, and in addition, the same bank was a leading underwriter of the firm's IPO (i.e. if both the underwriter-lender dummy and FUNLEND equal one). Other variables are as follows: The Inverse Mill's Ratio is derived from a probit procedure which identifies the attributes of "large borrowers" included in the sample, SIZE is the size of the firm's balance sheet in million 1994 NIS, AGE is the number of years since incorporation, LEVERAGE is total debt divided by liabilities, HRFCRED is a Herfindahl index of concentration of the firm's bank debt, LGOWN is the total share of the firm's equity held by large shareholders (in percent), where a large shareholder is defined as holding at least 5 percent of the firm's equity or a managerial position in the firm, and ISSUE is a dummy variable which takes the value zero in all firm-years prior to the IPO and the value one thereafter. * denotes a coefficient significant at the 5 percent level and ** denotes a coefficient significant at the 10 percent level.

(Continued on the next page)

Table III - Continued

Panel A. Combined Bank Lending and Underwriting

	PROF	PROF	PROF	PROF
C	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES
Inverse Mill's Ratio	-28.1 (44.6)	-20.1 (44.2)	-31.0 (45.7)	-24.3 (44.8)
Bank Underwriter and Lender Dummy	0.83 (0.84)			
Bank Underwriter and Lender Dummy*ISSUE		2.3* (0.9)		
Bank Underwriter and Lender Dummy*REPAY			0.5 (1.6)	
Bank Underwriter and Lender Dummy*REPAY*ISSUE				2.1 (1.6)
SIZE	0.00408 (0.00410)	0.00403 (0.00407)	0.00425 (0.00430)	0.00357 (0.00424)
AGE	0.05 (0.22)	-0.02 (0.22)	0.06 (0.23)	0.03 (0.22)
LEVERAGE	-22.3* (2.5)	-22.3* (2.5)	-22.3* (2.5)	-22.2* (2.5)
HRFCRED	-0.03 (1.7)	0.15 (1.7)	-0.16 (1.7)	0.11 (1.7)
LGOWN	0.13* (0.04)	0.12* (0.04)	0.13* (0.04)	0.12* (0.04)
ISSUE	-4.7* (1.5)	-5.9* (1.6)	-4.6* (1.5)	-4.9* (1.6)
Adjusted R^2	320	320	320	320
N	0.40	0.41	0.40	0.40

Table III - Continued

Panel B. Combined Bank Lending and Fund Management

	PROF	PROF	PROF	PROF
C	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES
Inverse Mill's Ratio	-34.6 (44.5)	-33.9 (44.3)	-32.4 (44.1)	-28.0 (44.1)
FUNDLEND	0.3 (1.0)			
FUNDLEND*ISSUE		0.7 (1.0)		
BIGCONF			0.8 (1.1)	
BIGCONF*ISSUE				1.9 (1.3)
SIZE	0.00474* (0.00413)	0.00493 (0.00410)	0.00465 (0.00400)	0.00490 (0.00401)
AGE	0.08 (0.23)	0.08 (0.22)	0.07 (0.22)	0.05 (0.22)
LEVERAGE	-22.4* (2.5)	-22.4* (2.5)	-22.4* (2.5)	-22.7* (2.5)
HRFCRED	-0.1 (1.7)	-0.1 (1.7)	-0.1 (1.7)	-0.1 (1.7)
LGOWN	0.13* (0.04)	0.12* (0.04)	0.13* (0.04)	0.13* (0.04)
ISSUE	-4.6* (1.6)	-4.8* (1.6)	-4.7* (1.6)	-5.0* (1.6)
Adjusted R^2	0.40	0.40	0.40	0.40
N	320	320	320	320

Table IV: Post-IPO Stock Returns

The table displays returns on IPO shares (dividends and capital gains) on the IPO day and one year after the IPO. One year excess returns are relative to "expected returns" that are calculated using "betas" estimated from weekly returns in the second year after the IPO (qualitatively similar results are obtained when excess returns are calculated relative to average market returns without adjustment for risk). Fifty six issues which combined both stocks and convertible securities are omitted. The upper part of the table focuses on combined bank lending and fund management activities and the lower part on combined bank underwriting and lending activities. The bank underwriter and lender dummy takes the value one if a bank served as a leading underwriter and the firm was large borrower from the same bank in the IPO year, where leading underwriters are indentified in the IPO prospectus, and "large borrower" is defined by the Supervisor of Banks. FUNDLEND is a dummy variable which takes the value one if a bank-managed investment fund purchased at least 5 percent of the firm's equity in the IPO year, and the firms was a large borrower from the same bank in the same year. Finally, BIGCONF is a dummy variable which takes the value one if FUNDLEND is one, and in addition, the same bank was a leading underwriter of the firm's IPO (i.e. if both the underwriter-lender dummy and FUNLEND equal one). * denotes that the return is different from zero at the 5 percent level, and ** denotes that the return is different from zero at the 10 percent level.

	FIRST DAY RETURNS	ONE YEAR EXCESS RETURNS
ALL IPO's (N=82)	0.006	-4.9
FUNDLEND=1 (N=14)	-3.7	-20.0**
FUNDLEND=0 (N=68)	0.8	-1.8
BIGCONF=1 (N=10)	-7.7**	-30.8*
BIGCONF=0 (N=72)	1.1	-1.3
Bank Underwriter and Lender Dummy=1 (N=26)	-3.3	-18.4*
Of which FUNDLEND=0 (N=16)	-0.5	-10.7
Bank Underwriter and Lender Dummy=0 (N=56)	1.5	1.3

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