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ASSESSING DAMAGES: THE 1983 ISRAELI BANK SHARES CRISIS

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In 1983, Israeli bank shares collapsed following several years during which the banks had actively intervened to promote share prices and thereby contributed to a 300% rise in real terms. During the crisis the government assumed control of the banks, which they did not begin to sell back to the public until 1993. We compare 1993 bank share prices after the banks were partially relisted on the Stock Exchange with 1983 precrisis values. The 1993 time-adjusted market values were $10 billion lower than in 1983, a decline borne by precrisis shareholders ($4 billion) and by taxpayers ($6 billion). Of this latter amount, two-thirds represents a transfer from the government to shareholders, while approximately one-third represents an efficiency loss—and hence a direct cost—resulting from government ownership of the banks for 10 years following the crisis. The results highlight the risk inherent in a banking system that is both concentrated and universal and illustrates the costs associated with sustained government ownership. (JEL G21, G28, E44, K22)

I. INTRODUCTION

On October 6, 1983, the Tel Aviv Stock Exchange (TASE) was shut down for 18 days following several weeks of heavy selling by shareholders of seven banks representing nearly all commercial banking in Israel and more than 60% of market capitalization (equivalent to 40% of GNP). As during previous episodes of excess supply, the banks reacted by making large-scale purchases of

their own shares. The unusually large autumn 1983 sell-off, however, strained bank liquidity and raised concerns about overall banking stability. These concerns threatened to cause a run on deposits and a drain of foreign exchange reserves that, together with other political considerations, led the government to close the Exchange. During the closure the government devalued the shekel and assumed control of the banks, converting their shares into government guaranteed zero-coupon bonds maturing within five to six years at face values of 85% to 117% of preclosure dollar market values. These newly issued bonds declined in value by 40% after the TASE reopened.

In a recent verdict the banks were found to have caused the crisis by manipulating share prices for several years preceding the collapse.[1] The verdict capped an extended period of investigation that began almost

1. District Court of Jerusalem, Taf-Hay 524/90, *State of Israel v. Bank Leumi LeIsrael, Ltd. et al.* The verdict was partially overturned on appeal. See Blass and Grossman (1996).

ABBREVIATIONS

NIS: New Israeli Shekels
TASE: Tel Aviv Stock Exchange

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immediately after the collapse. Indeed, the government-appointed Bejsky Commission concluded in its 1986 report that the banks had manipulated stock prices "through a series of actions ... designed to affect share prices and returns," and that these actions, the object of which was to convince investors that bank shares were riskless, caused the subsequent collapse.

In this article, we assess both the extent and the composition of the damages in the aftermath of the crisis and during subsequent years of government ownership. Our analysis will shed light on both the costs and the distributive consequences of the crisis. Despite extensive investigation in the aftermath of the crisis by the courts, a state commission of inquiry, and other academic and nonacademic investigators, so far no one has provided an adequate accounting of the damages inflicted by the crisis. We find that investors and taxpayers incurred losses totaling $10 billion (in 1983 present value)—equal to about a third of Israel's 1983 GDP—during the crash and the subsequent period of government ownership. Of this, $4 billion reflects the immediate decline in shareholder wealth in October 1983. The remainder, $6 billion, which was borne by taxpayers, represents the difference between 1983 postcrash prices and properly discounted 1993 market prices following the banks' relisting on the TASE. This amount equals the difference between the values of banking assets that the government realized in 1993 and those of the liability that it assumed in 1983 by effectively converting shares into government debt. We further show that this $6 billion decline can be broken down into two subcomponents:

1. a transfer payment of $4 billion from taxpayers to shareholders brought about by the government's issuance of guaranteed zero-coupon bonds, which were worth more than the underlying value of the equity;

2. an efficiency loss of $2 billion resulting from government ownership of the banks for 10 years following the crisis.

We decompose the damages into two components with a counterfactual analysis of what prices would have been in the absence of manipulation, using a methodology employed in estimating financial fraud damages in the United States (Easterbrook and Fischel, 1991; Simmons and Hoyt, 1993).

Our calculation is derived from a projection of bank share prices forward from 1977 (before the beginning of extensive manipulation) to estimate fundamental values in 1983 as well as a backward projection of actual market values from 1993 when the two largest banks were relisted, to calculate present value in 1983.

The results illustrate both the magnitude and distribution of the damages brought about by the crisis. They emphasize the potentially destructive nature of financial instability and therefore the importance of adopting stability-enhancing reforms. The results further highlight the costs of prolonged government ownership of financial institutions following a state-led bailout.

The outline of the article is as follows. Section II provides background information on the crisis. In section III, we calculate the time-adjusted decline in market value and decompose the decline into three components: the decline in shareholder wealth in 1983, the transfer payment to the shareholders brought about through the government's issuance of zero-coupon bonds that were worth more than the banks, and the decline in share values that accompanied the government's decade-long operation of the banks. We also discuss the relationship between our calculations of "damages" and the "economic costs" of the crisis. Conclusions follow in section IV.

II. BACKGROUND

A. The Crisis and Banking Structure

The crisis occurred after a period of several years during which the banks intervened in the market for their shares, smoothing price fluctuations and providing support for upward movement in price and for frequent and substantial new issues. Share prices quadrupled in real terms (Figure 1), while stock offering proceeds from 1977 through 1983 were larger than 1977 market values for every defendant bank. Share appreciation and offerings (as well as an interactive effect—the appreciation of newly issued equity) contributed to a real 700% increase in the banks' market value during the period (Figures 2 and 3). The banks' intervention prevented bank shares, representing more than half of overall market

FIGURE 1
Industrial and Bank Shares Total Return Index, December 1976–December 1983
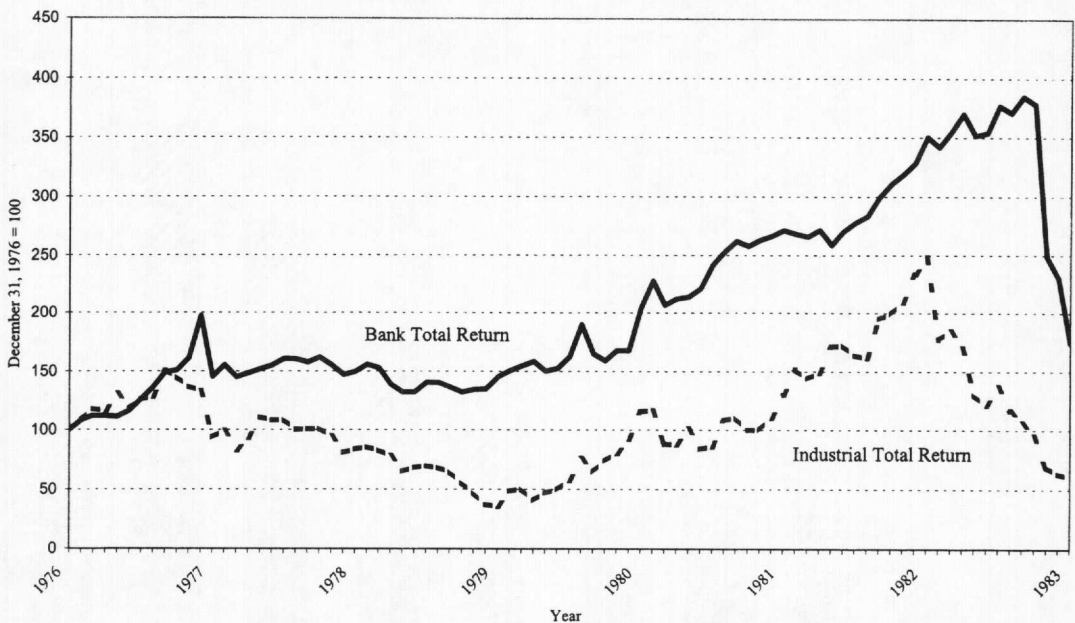
Source: Central Bureau of Statistics.

value, from falling even when industrial shares declined in real terms by 70% in 1978 and 1979 and by 50% in early 1983.[2]

Normally, it might be difficult to sustain price levels not in accordance with fundamental values for long periods of time. Capital markets in Israel, however, were then (and are to a large extent today) characterized by features that allowed the intervention to succeed for many years:

A. Commercial banking is (and was in 1983) highly concentrated—the top three banks account for 80% of commercial banking activity. Moreover, substantial barriers to entry into Israeli commercial banking have further dampened competition.

B. Commercial banks in Israel have traditionally dominated investment banking, the mutual and provident fund industries, and
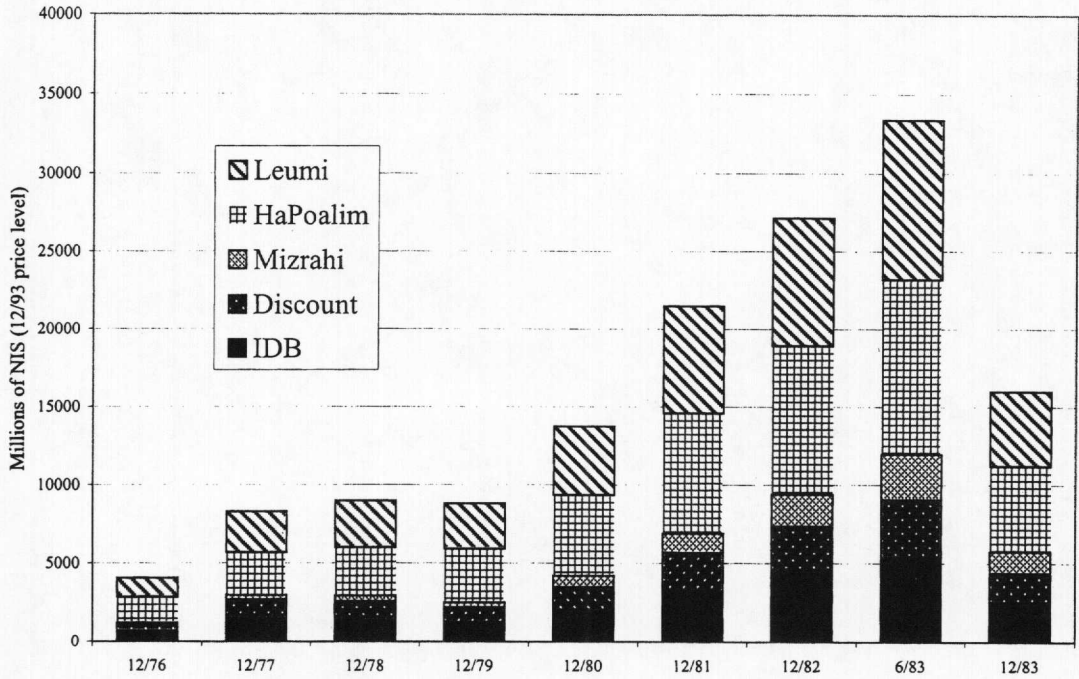
the brokerage business, leading to conflicts of interest within banks among their different fiduciary roles. Indeed, such conflicts were key factors behind the passage of laws in various countries limiting the securities activities of commercial banks (Blass and Grossman, 1998).

C. Capital markets have been constrained—local investors have generally been prevented from purchasing foreign securities.

B. Motivation and the Regulators

Why did the banks manipulate stock prices? The Bejsky Commission described two motives. First, if market prices were above economic values, the offering of additional shares at prevailing market prices benefited existing shareholders at the expense of new shareholders. Second, the high inflation that prevailed in the late 1970s and early 1980s, combined with poorly designed regulations, forced banks to repeatedly raise equity to maintain required capital ratios: Until the mid-1980s, equity was generally stated at historical values, whereas other balance

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2. The immediate cause of the crash is difficult to identify. There were no dramatic economic or political events immediately prior to the crash, although some observers suggest that devaluation rumors prompted investors to dump shekel-denominated equities to acquire dollar-linked assets (Sarnat, 1991). Much of the description of the crisis in this section comes from Blass and Grossman (1996, 1998).

FIGURE 2
Values of Five Major Banks

Source: Stock Exchange Yearbook.
Note: As of 12/93, $1 = NIS 2.9.

FIGURE 3
Market Value of Five Major Banks by Components, 1977–1983
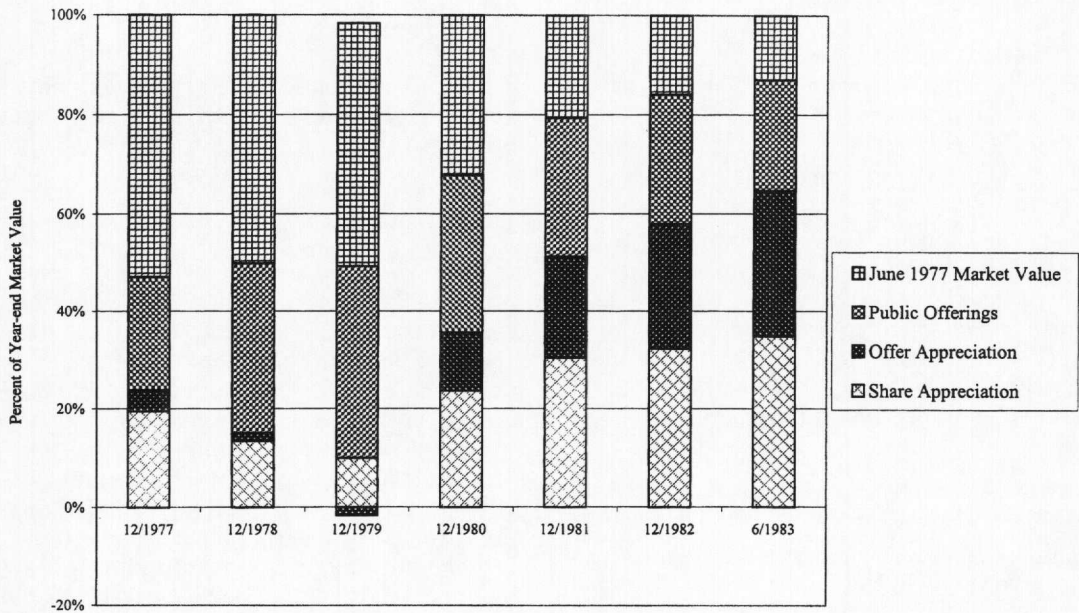
Source: Daily data, Bejsky Report.

sheet items were stated at current values, which, beginning in 1979, more than doubled every year. Unless new shares were issued frequently, equity-to-asset ratios would have fallen below regulatory requirements.[3]

The banks were not hindered in their actions by government regulators. The Supervisor of Banks was reportedly concerned that banks would find it difficult to raise capital and meet reserve requirements unless they manipulated share prices. Other officials were pleased with the manipulation-aided new equity issues, since the proceeds of these offerings were, as required by law, invested in government bonds that funded annual budget deficits totaling 6% to 8% of GDP.

C. Mode of Operation

The banks employed several techniques to support share prices. First, each bank maintained inventories of its own shares (more than $1 billion, or almost one-tenth of outstanding equity, by September 1983) for the stated purpose of causing share prices to rise smoothly over time.

Second, bank-employed stockbrokers bolstered demand by recommending that clients purchase bank shares. Incentives were offered to branches that achieved sales quotas. In addition, public issues were often floated as rights offerings that allowed old shareholders to buy shares at a discount, thereby ensuring that new stock would be fully subscribed.

Third, the banks extended credit to purchasers of bank shares and called in lines of credit from sellers. Because credit was tight and regulated in Israel during the 1970s and 1980s, it was difficult for many customers to obtain credit at any interest rate. By tying credit to bank share holdings, the banks pumped up demand. In their roles as stockbrokers, banks also relaxed collateral requirements for owners of bank shares, which were margined at 90% of market value, compared to 50% for other securities.

Fourth, bank mutual and provident funds (representing more than 90% of all funds' assets) purchased bank shares when demand was slack, thereby providing additional price support.

Fifth, bank subsidiaries and affiliates purchased shares when demand was relatively low. This technique allowed the banks to circumvent reserve requirements because while stock inventories held by banks reduced reserve ratios, shares held by certain subsidiaries and affiliates did not.

As a result of these actions, bank shares rarely declined even when the rest of the market fell, so that they appeared to provide high returns without any market risk (Blass and Grossman, 1996).

III. DATA AND METHODOLOGY

A. Total Decline in Share Value

We begin by calculating the overall decline in share values, in terms of 1983 present value, from 1983 before the crash until 1993 when the government began to divest itself of its bank holdings. Although precrash share prices are readily available, prices in the decade after the crises are unavailable because the banks were taken over by the government. The 1993 partial sale of Bank Leumi and Bank HaPoalim, however, permit us to construct a market model to estimate the present value of bank stocks in 1983 conditional on their actual 1993 valuations. We then decompose the total decline into three components: the decline in shareholder wealth in 1983, the cost to the government by guaranteeing prices above *1983* fundamentals, and the decline in share values that accompanied the government's decade-long stewardship of the banks.

We define four quantities: V_m represents the market value of bank shares prior to the Exchange's closure; V_g is the value of the shares following their conversion into government guaranteed zero-coupon bonds; V_{f83} equals the fundamental value of the shares in 1983, projected forward from 1977; and V_{b93} represents the fundamental value of bank shares in 1993, in present value terms in 1983.[4]

The market value of the shares prior to closure, V_m, minus the value of the relisted

3. See Asquith and Mullins (1986) on the consequences of additional share dilution.

4. We argue that market prices reflected fundamental value prior to the onset of manipulation in the late 1970s and following the relisting of the shares on the TASE in 1993. See Simmons and Hoyt (1993).

shares, V_{b93}, represents the total decline in market value. V_m is straightforward to calculate: It is simply the market value prior to the crash—New Israeli Shekels (NIS) 34 billion. To calculate V_{b93}, we discount 1993 share values (after the banks were partially sold to the public) back to 1983, discounting by rates of return equal to the riskless rate plus 70% of market return in excess of that rate.[5] From this, we conclude that V_{b93} is NIS 5 billion, so that the total decline in value incurred during the crash and the period of government ownership $(V_m - V_{b93})$ was NIS 29 billion ($10 billion).

B. Decomposition

To identify the classes that were harmed by the decline in market value, we distinguish three components that account for the overall decline $(V_m - V_{b93})$: the decline in shareholder wealth on impact in 1983 $(V_m - V_g)$; the cost to the government by guaranteeing prices above *1983* fundamental value $(V_g - V_{f83})$; and the decline in share values that accompanied 10 years of government ownership $(V_{f83} - V_{b93})$. The components are calculated as follows and illustrated in Figure 4:

1. First, we evaluate the decline in shareholder wealth after the TASE was reopened. This is a straightforward calculation of $V_m - V_g$, or the difference between the market value of the shares before the crisis and the amount received by shareholders in the form of government guaranteed zero-coupon bonds.

2. Second, we calculate the net increase in government liabilities as being equal to the value of the government-guaranteed bonds less the 1983 value of the banks that it received in return $(V_g - V_{f83})$. V_{f83} can be viewed as the level to which prices would have declined had there been no government guarantee.

3. Finally, we estimate the decline in bank value from 1983 through 1993 $(V_{f83} - V_{b93})$ which reflects the loss absorbed by the government by holding onto the banks for a long period of time instead of selling them to private investors in 1983. The decline could be

viewed as an estimate of consequential damages, that is, the cost of the banks having been inefficiently run by the government.

C. Gross Damages to Precrash Shareholders

From its peak, the market value of the banks fell by NIS 11 billion, from NIS 34 billion (V_m) to NIS 23 billion (V_g) in October 1983 after the government provided a guarantee, by effectively converting the bank shares into government debt. Shareholders' gross damages were therefore NIS 11 billion in 1993 prices (Table 1, column 1).
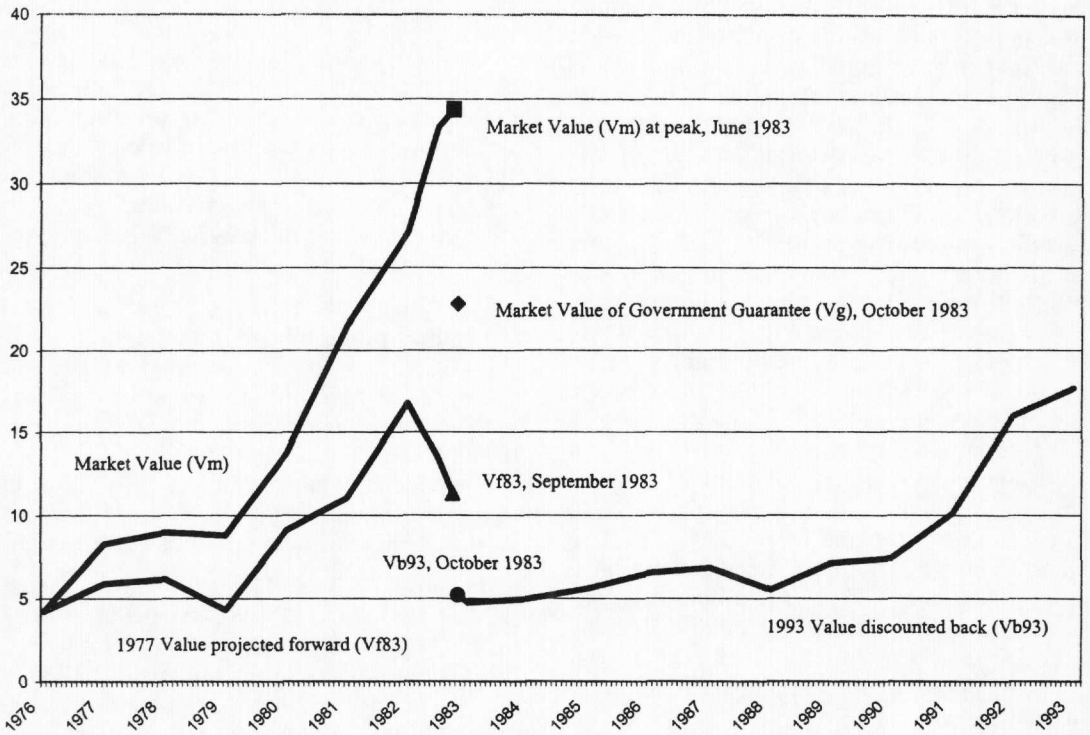
D. The Net Increase in Government Liabilities: The Transfer Payment

We estimate the net increase in government liabilities by looking at the difference between the amount that the government guaranteed to shareholders (V_g) and the fundamental value of the banks in 1983 (V_{f83}) that the government received in return. To estimate V_{f83}, we construct a counterfactual estimate or "forward values" of what bank stock prices would have been after 1977, the year in which manipulation was initiated (see Bejsky Commission, 1986), had there been no manipulation.[6] In constructing this estimate, we start with 1977 (premanipulation) market values, subtract dividend payments and add public offerings, assuming that in the absence of manipulation that monthly bank returns would have been equal to the riskless rate of return plus 50% of the industrial shares' excess monthly return.[7] Table 1 and Figure 4 illustrate that the value of the banks (V_{f83}) would have been NIS 11 billion, instead of NIS 23 billion as guaranteed by the government (V_g), so that the government incurred a net liability of NIS 12 billion.

6. This is a common technique in analysis of economic damages in 10b-5 securities litigations. See Simmons and Hoyt (1993).
7. The calculation assumes that 1977–1983 share offerings would not have adversely affected bank share returns and therefore probably overstates V_{f83} (Asquith and Mullins, 1986). The 50% figure, though lower than the 80% figure estimated from post-1992 data, is consistent with the betas of the third and fourth largest banks in 1977 and 1978. Moreover, the Industrial Index was riskier in the 1970s and early 1980s, so that the banks' betas with respect to this index are probably lower than the 1990s estimates.

5. This is comparable with post-1992 estimates. See section III.E for further discussion and section III.F (and Table 1) for sensitivity analysis.

FIGURE 4

Actual and Projected Market Values, December 1976–December 1993

Source: December 1993 figure is an estimate of five bank market value based on actual Leumi and HaPoalim values at that date. With the exception of 1983 data, all lines above are December.

TABLE 1

Gross Damages Estimate and Sensitivity Analysis (NIS Billion)

	Estimated Value	Sensitivity Analysis			
		Changes in V_{b93}			Changes in V_{f83}
		Beta	Fixed Rate of Return	Range of Premia	
Gross damages $v_m - v_{b93}$	29	27.5–30.0	24–30	27–30	29
Decline in shareholder wealth $v_m - v_g$	11	11	11	11	11
Government hit $v_g - v_{f83}$	12	12	12	12	3–9
Inefficiency cost $v_{f83} - v_{b93}$	6	4.5–7	1–7	4–7	9–15

We also estimate an alternative counter-factual to calculate V_{f83}. We assume that the banks convinced the shareholders that shares were riskless. Indeed, during the manipulation period bank shares exhibited no market risk (betas were equal to zero), and prices almost never declined (Blass and Grossman, 1996). As a result, by 1983 shareholders discounted future profits at a riskless rate of 4%, equal to the promised real yield on long-term government indexed bonds. The discount rate includes a risk premium. We assume that the overall stock market risk premium was 8%, but that bank shares were inherently less risky. If the bank shares' "true" beta was 0.5, only half of the overall risk premium need be added. If so, bank shareholders should have discounted shares at 8% (the riskless 4% plus a 4% premium). If profits (p) were expected to rise at an annual perpetual rate of g, share prices should have been equal to $p/(0.08-g)$ but instead were equal to $p/(0.04-g)$. If g were equal to 0.02, share prices would have risen 200% above their true values, an estimate consistent with our calculation that the precrash market value (V_m) of NIS 34 billion was approximately triple the fundamental value (V_{f83}).

E. The Decline in Value during the Period of Government Ownership

To estimate the cost of the government's ownership from 1983 to 1993 we discount 1993 bank values back to 1983 (V_{b93}) and subtract that amount from 1983 fundamental value (V_{f83}). We calculate V_{b93} by discounting 1993 bank values at the riskless rate plus 70% of the market's return in excess of the riskless rate, which translates into an effective discount rate of 12.7 percent per annum. By the end of 1993 only Bank Leumi and Bank HaPoalim (representing most of 1983 market value) had been sold (and only in part) to the public, so we also assume that the ratio of V_{b93} to V_{f83} for the other defendant banks is the same as the weighted average of Bank Leumi and Bank HaPoalim. Under these assumptions, V_{b93} equals NIS 5 billion, NIS 6 billion less than the fundamental value of the banks in 1983 (V_{f83}). We interpret the NIS 6 billion decline as an estimate of efficiency losses spread over 10 years of state ownership relative to a counterfactual sce-

nario in which banks were sold to private investors in 1983.[8]

F. Sensitivity Analysis

Our calculations were derived from four figures: V_m, V_g, V_{f83}, and V_{b93}. Of these, only the latter two are sensitive to changes in assumptions. We therefore recalculate damages using alternative sets of assumptions for V_{b93} and V_{f83}. We calculate V_{b93}—the 1983 present value calculation of 1993 market values—under three alternative assumptions (Table 1):

1. Betas ranging from 0.5 to 1.
2. Instead of using a market model, we calculate the 1983 present value of proceeds received in 1993 at fixed annual real rates from 5% to 15%.
3. The other banks not yet sold are sold at premia ranging from −50 to +100 percent relative to Bank HaPoalim and Bank Leumi.

Because 1993 market value was so much smaller than that in 1983, its present value in 1993 (V_{b93}) is relatively small under all the assumptions, so that our overall NIS 29 billion damage estimate is robust. Indeed, changing betas results in gross damage estimates ranging from NIS 27.5 to NIS 30 billion instead of our point estimate, NIS 29 billion. Calculating present values at fixed discount rates results in estimates ranging from NIS 24 to NIS 30 billion. Assuming that the other banks are different from Leumi and HaPoalim results in estimates ranging from NIS 27 to NIS 30 billion (Table 1). In sum, gross damages under all assumptions do not deviate significantly from $10 billion.

The relative shares of the components, however, are sensitive to the assumptions. If we were to calculate V_{b93} by projecting 1993 market values to 1983 at fixed annual real rates of 5%, the inefficiency loss would be as low as NIS 1 billion.

We next calculate V_{f83}—the 1983 fundamental value of the banks—under several different assumptions. Changes in V_{f83} do not affect the overall damage estimate of NIS 29 billion ($V_m - V_{b93}$) but do affect the two

8. It is possible that other factors contributed to the reduced value of the relisted banks in 1993; however, given our market model, these factors would exclude any factors that had a similar effect on the stock market as a whole.

components of the government's cost: If V_{f83} was lower than our estimate then the value of the transfer payment to the shareholders $(V_g - V_{f83})$ would be higher, although the decline in postcrash bank value $(V_{f83} - V_{b93})$ would decline. Conversely, if the 1983 fundamental value of the banks' shares was higher, the value of the transfer payment to shareholders would be smaller and the decline in postcrash bank value higher.

We calculate alternative V_{f83}'s by assigning fixed annual real rates from 5% to 15%, instead of using the market model. The alternative calculations suggest that our earlier estimate of V_{f83} might be too low, so that the magnitude of the government transfer to shareholders might therefore be lower than our estimates, ranging from NIS 3 billion to NIS 9 billion (instead of NIS 12 billion, as calculated). By contrast, the decline in value under the government's stewardship, however, would be larger than our NIS 6 billion calculation, ranging from NIS 9 billion to NIS 15 billion.

G. Discussion

The sum of the three components $(V_m - V_{b93})$ represents an estimate of gross damages imparted to certain classes without considering offsetting benefits accruing to others. To arrive at a better estimate of economic costs, it would be preferable to calculate net damages, subtracting the gains realized by other classes. In particular, the loss absorbed by precrash shareholders is to a large degree offset by gains made by old shareholders. Similarly, the second component, which reflects the fact that the government guaranteed the shares at prices above their fundamental values, represents a transfer from nonshareholders to shareholders. As a result, it would be wrong to view these transfers as estimates of macroeconomic costs. By contrast, the third component does reflect the efficiency loss due to continued government ownership.

An appropriate measure of macroeconomic costs should, however, also include additional costs that we have excluded from our calculations, such as the costs of carrying out the offenses, unmasking them, taking precautions against similar offenses, and litigation.[9] Such a measure would also add

allocative costs incurred during the run-up: the fact that misleading information about bank shares and the large amounts of funds raised through public offerings may have led investors to invest in the wrong projects.

Similarly, share manipulation led investors to misinterpret the amount of risk associated with the bank shares, thereby distorting investment and consumption choices from 1977 through 1983. In response to the new information generated in the aftermath of the crash about the nature of capital markets in general and the behavior of the intermediaries (i.e., banks) in particular, investors may have adjusted their attitudes toward risky assets and generally avoided investing in such assets throughout the rest of the 1980s (Sarnat and Szapiro, 1992).

In addition, the disruptions in asset markets following the crash may have harmed investors' ability to efficiently allocate capital among various investment projects (Bernanke, 1983).[10] Concerns about banking stability highlighted in 1983 have also convinced many policy makers to limit competition in banking-related areas, thereby further harming consumer welfare. Additional costs stem from the transfer of wealth from entities with different marginal propensities to consume (King, 1994).

IV. CONCLUSIONS

We estimated three gross damage components: the loss suffered by shareholders at the time of the crash, the increase in the government's net liabilities that resulted from its guarantee of shares at prices above fundamentals, and the decline in bank values from 1983 through 1993 resulting from inefficiencies caused by government's operation of the banks. The first two are mostly transfer payments and are estimated at NIS 23 billion, whereas the third is an efficiency loss estimated at NIS 6 billion. To arrive at an appropriate measure of macroeconomic costs, it would be necessary to add to the efficiency loss the additional costs related to disruptions in capital markets.[11] The magnitude of the

9. In addition, see the extensive literature on the consequences of rent-seeking on economic growth, Murphy et al. (1993).

10. Since most credit in Israel was government directed, it is difficult to estimate the credit-allocation costs of the bank shares crisis.

11. Our estimate is eerily similar to Grossman's (1993) estimate of the macroeconomic consequences of bank failures in the United States in the late nineteenth and early twentieth centuries.

swings in market values before and after the crash, relative to variables such as GDP, savings, and investment, suggest that these costs were substantial so that the banking crisis had serious macroeconomic consequences.

Alternatively, these costs as well as the banking crisis itself can be viewed as mere manifestations of the macroeconomic policies of Israeli governments from 1977 through 1983. Accordingly, it would be incorrect to suggest that the costs are attributable to the banks and they should instead be blamed solely on the government, politicians, and regulators. That hypothesis ignores the prevalence of many of the same trading practices by banks before 1977, the persistence of which may have led to a crisis even under a different set of economic conditions. It would be more plausible to argue that the prevailing economic conditions may have fostered an environment in which regulators might have been reluctant to act, thereby facilitating the banks' activities.

The results suggest that, despite the fact that they may be low-probability events, the cost of such crises and bailouts are substantial. Our estimate is that the gross damages from the crisis were $10 billion, or approximately one-third of Israel's 1983 GNP. Slightly more than one-third of this represents a decline in shareholder wealth, the remainder is divided into a government hit and an efficiency loss.

Our results suggest that a stable banking system can generate substantial savings by avoiding costly banking crises. There are, of course, a variety of models of banking systems that can promote stability. In many countries, efficient supervision and regulations are the primary guardians of stability. Effective shareholder monitoring could also generate stability. In the United States, a crisis in the 1930s led to the enactment of sweeping banking legislation that prevented banks from engaging in securities activities. Had such Glass–Steagall type steps been implemented prior to 1983, it is unlikely that the bank shares crisis would have occurred because the commercial banks would have lacked the means to manipulate share prices. If the banking sector had been less concentrated and capital markets more

open, the crisis would have been less likely to occur. We conclude that the *combination* of a concentrated banking system, protected from both foreign and domestic competition, with universal banking is harmful.

Once a crisis occurs, it is possible that affected banks may well end up under some sort of government control. Although the effects of government ownership may vary widely with the extent and efficiency of government ownership, our results suggest that prolonged government ownership should be avoided.

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