

Developing Country Lending and Current Banking Conditions

by Walker F. Todd

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Introduction

This article describes the general evolution of the present developing country debt problem and discusses some of the current efforts to deal with it.¹

In a nutshell, the problem since 1982 has been that many debtor nations in the developing world have interrupted their normal external debt service from time to time and, in most instances, have had to rely on reschedulings and loans of additional funds from both commercial banks and official sources to maintain debt service.

Because of both the larger quantities of funds involved and the commitment of new commercial bank loans to assist the adjustment process, the current methods of debt resolution stand apart from prior balance of payments adjustment programs in the post-World War II era.

During the 1970s and early 1980s, the claims of United States banks on developing countries (also called "lesser developed countries," or "LDCs"), increased rapidly. The LDC debts raised difficult issues that have troubled borrowers, lenders, creditor country governments, and official multilateral lending agencies since the scope of the debt problem became clear in 1982.

8 1 Adjustments in debtor economies or among foreign bank creditors are beyond the scope of this article. See Federal Reserve Bank of Cleveland, *Annual Report 1987*, for discussion of these aspects of the LDC debt problem.

Initially, lenders and their governments believed that restructured and rescheduled lending by creditors, and domestic policy adjustments by debtors, would be sufficient to resolve the debt problem in a reasonable period of time. Now, however, more than five years have passed and the debt problem is still unresolved.

Although economic conditions in the debtor countries may have improved somewhat from their 1982-1984 low point, by a number of objective criteria several important debtor countries seem little closer to being able to service their debts on an ongoing basis than was the case five years ago.

From the perspective of the U.S. banking system, an important characteristic of the LDC debt problem is the distribution of the debt among U.S. banking firms. By June 1987, nine money-center banks held 66 percent of all U.S. banks' claims on 15 heavily indebted countries, including the most heavily indebted Latin American countries.² In addition, those claims were equiva-

■ 2 The 15 heavily indebted countries are: Argentina (\$9.1), Bolivia (\$0.1), Brazil (\$23.0), Chile (\$6.2), Colombia (\$2.0), Cote d' Ivoire (\$0.4), Ecuador (\$1.9), Mexico (\$23.6), Morocco (\$0.8), Nigeria (\$0.6), Peru (\$1.1), Philippines (\$4.8), Uruguay (\$0.9), Venezuela (\$8.4), and Yugoslavia (\$1.9). The amounts of all U.S. banks' claims on those countries, as of June 30, 1987, are indicated in parentheses (amounts in billions). In late 1987, Costa Rica (about \$400 million) and Jamaica (about \$200 million), also were added to the official schedule of heavily indebted countries.

T A B L E 1

**Claims on Foreign Countries Held
by U.S. Banking Offices and Foreign
Branches of U.S. Banks**

(New data series as of June 1987)
(Amounts in billions of dollars)

Year-end	Total	Latin America ¹
1976	206.8	36.2
1977	240.0	40.8
1978	266.3	45.7
1979	303.9	52.5
1980	352.0	63.2
1981	414.4	76.5
1982	436.3	84.8
1983	434.0	86.7
1984	405.7	88.2
1985	391.9	84.6
1986	390.5	83.4
1987 (June)	392.0	83.9
1987 (Sept.)	392.7	82.3

1. Latin America includes OPEC members Ecuador and Venezuela, but excludes Panama, the Bahamas, and other offshore (Caribbean) banking centers.

SOURCES: *Federal Reserve Bulletins* (Table 3.21).

lent to 113 percent of the total capital of the nine money-center banks. By comparison, bank claims on this same group of countries were equivalent to 64 percent of the total capital of 13 other large regional banks, and 27 percent of the total capital of all other U.S. banks.

I. Beginnings

U.S. banks' lending to Latin America increased rapidly during the 1970s and early 1980s. Although the data are not strictly comparable for different time periods, U.S. banks' claims on all of Latin America rose from \$8 billion at year-end 1973 to \$84.8 billion at year-end 1982. Despite a modest amount of new-money lending to rescheduling countries since 1982, claims on Latin America were reduced to \$83.9 billion by June 1987 and \$82.3 billion by September 1987 (table 1).³

□ 3 Sources: *Federal Reserve Bulletins*, Table 3.18, display claims of all U.S. banks on foreigners. Beginning in 1976, a new series was started: claims on foreign countries held by U.S. banking offices and foreign branches of U.S. banks. This series, Table 3.21, pertains only to U.S.-chartered banks, while Table 3.18 data pertain to all banks in the United States, including U.S. offices of foreign banks. To obtain figures for Latin America using Table 3.21 data, one must add claims for all of Latin America, plus Latin American OPEC members Venezuela and Ecuador.

While foreign borrowings from U.S. banks increased rapidly from 1971 through 1973, an enormous increase in LDC debt materialized after the first oil-price shock (October-December 1973), possibly because of the methods used to cope with greatly increased capital outflows from oil-importing countries.* Initially, the expanded debt levels seemed acceptable to many creditors and debtors because the rate of increase of economic growth in many large debtor economies exceeded the rate of increase in their external debt levels.⁵

How far in advance lenders foresaw the Mexican debt difficulties in midyear 1982 is not clear. However, at least some lenders were caught unaware—at least one new, large, syndicated loan for Mexico, worth \$100 million or more, still was being offered to lenders in July and August 1982. Banks' lending to Mexico accelerated until the onset of its payment difficulties—\$6.4 billion of new Mexican debt was added into the \$84 billion final total, before rescheduling, during the first six months of 1982 alone.⁶

A number of developments unforeseen by the borrowers or lenders suddenly disrupted the servicing of the LDC loans. The sharp recession and the onset of disinflation in 1982 certainly are among the foremost precipitating factors for the August 1982 crisis. The dramatic decline in inflation during the first half of 1982 reduced borrowers' planned receipts and increased their demand for credit to maintain living standards.

The extraordinary increase in interest rates that preceded the July 1981 to November 1982 recession also was a factor contributing to the crisis. Dollar interest rates were above prior post-World War II levels throughout the period. The prime

□ 4 See, for example, Margaret Garritsen De Vries, *The IMF in a Changing World* (1986). Data on U.S. banks' foreign claims in *Federal Reserve Bulletins*, Table 3.18, indicate that U.S. banks' claims on foreign borrowers increased nearly 75 percent in 1974 alone; claims on Latin American borrowers increased 90 per cent in 1974 alone. Total foreign lending of U.S. banks increased \$19.7 billion during 1974, and loans to Latin America constituted \$7.1 billion (36 percent) of the increase. Other historians maintain that the seeds of the impetus for expanded foreign lending by U.S. banks were sown by the stimulus of the domestic economy by U.S. fiscal and monetary authorities in 1970-1972.

■ 5 Federal Reserve Bank of Cleveland, *Annual Report 1987*. Thus, the *Annual Report* maintains, debt-service capacity increased at a rate that seemed to be consistent with future debt-service requirements. See "Developments in International Financial Markets," 1975 *Federal Reserve Bulletin* 605-617, for a tacit, official acceptance of the use of bank intermediaries for petrodollar recycling in the 1970s.

□ 6 Harold Lever and Christopher Huhne, *Debt and Danger: The World Financial Crisis*, 49-52 (1985, 1986). U.S. banks' exposure to Mexico increased by \$3.5 billion in the first six months of 1982, a 32.4 percent annual rate of increase. 1983 *Federal Reserve Bulletin* A 63 (Table 3.21) (January 1983).

lending rate, which had peaked at 20.5 percent in August 1981 (monthly average), still was at 15 percent on August 15, 1982.⁷ A large proportion of the LDC loans was negotiated at floating interest rates, with frequent interest rate fixing dates. Although these practices allowed LDCs to hedge against anticipated declines in interest rates, increasing amounts of debt had to be rolled over at increasingly shorter intervals.

II. Confronting the Problem

Following the onset of Mexico's payment difficulties, in mid-August 1982, with only rare exceptions, the flow of voluntary, new-money lending to the heavily indebted countries gradually stopped. For a time, sovereign debt service problems were managed, on a country-by-country basis. Brazil still could roll over maturing short-term foreign bank credits until early December 1982, but then Brazil also temporarily stopped paying interest due on its loans, interrupting its debt service due to what was considered a "short-term liquidity crisis." One by one, Argentina, Venezuela, and eventually every continental country in Latin America, except Colombia and Paraguay, interrupted its foreign debt service. Each of those countries arranged reschedulings or restructurings of its external debt, usually under the auspices of the International Monetary Fund (IMF).

The initial approach to resolving Mexico's payments difficulties in 1982 contained several novel elements, such as a substantial amount of new-money lending by banks, together with customary IMF assistance and a three-year adjustment program.

After the program was implemented in February 1983, analysts began to observe that a pattern of continued real growth in the industrial economies of 3 percent per year would enable significant improvements in the LDCs' debt-service capacities to occur and identified real growth in the industrial economies as the most important international influence on the LDCs' debt position.⁸

At the same time, U.S. economic policy stimulated domestic economic growth aggressively through both fiscal and monetary measures, a development that, among other economic policy objectives, encouraged imports from the LDCs, who reciprocally were reducing their own imports from industrial economies, thereby enabling the LDCs to maintain their external debt service. U.S. authorities also encouraged other industrial countries to stimulate their economies, partly in order to facilitate LDC debt service, but such stimulation was comparatively slow in coming, due to concerns about renewed inflation abroad.

The 1982-85 era was a period in which debtors negotiated the first round of adjustments necessary for redressing their external-account imbalances and made significant progress toward that goal. The reschedulings were a necessary component of the official effort to buy time to enable the debtor countries to complete the adjustments required to service the debt. The adjustments were extremely difficult and, in many instances, caused cutbacks in the degree of longstanding and highly developed state involvement in, and subsidization of, domestic economies in countries like Mexico, Brazil, and Argentina.⁹ The reschedulings, however, have continued down to the present in most debtor countries, including a few repeat reschedulings of principal for which the grace periods under earlier reschedulings expired.

New loans extended in connection with reschedulings allowed LDC debtors to keep interest payments current after mid-1982. They also increased the outstanding principal owed by debtors to the creditors. The foreign debts of Mexico and Brazil (that is, debt for all classes of borrowers owed to all classes of foreign creditors), for example, increased from approximately \$80 billion each in mid-1982 to \$105 billion for Mexico and \$114 billion for Brazil at midyear 1987, with very little in the way of new, usable funds provided in the interim. External debt as a percentage of exports of goods and services of the heavily indebted countries increased from 33.5 percent in 1980 to 46.3 percent in 1982 and 60.8 percent in 1986.¹⁰

Another purpose of the reschedulings and new-money loans was to provide enough time for orderly adjustments in the creditor countries, especially within their banking systems. The

□ 7 1983 Federal Reserve Bulletin A 27 (Table 1.33) (January 1983). The prime rate was cut to 14.5 percent on August 16, 1982.

■ 8 See Bergsten, C. Fred, William R. Cline, and John Williamson. *Bank Lending to Developing Countries: The Policy Alternatives* 7, 18, Institute for International Economics, 10 *Policy Analysis in International Economics* (April 1985).

■ 9 For a description of the types of debtor-country adjustments that were made, see Federal Reserve Bank of Cleveland, *Annual Report 1987*.

■ 10 World Bank, 1 *World Debt Tables: 1987-1988*, xiv, 33 (1988).

T A B L E 2

**U.S. Banks' Cross-Border Nonlocal
Currency Exposures to 15 Heavily
Indebted Countries¹**

	Exposure		Total Capital		Total Assets	
	1982	1987	1982	1987	1982	1987
Nine large money-center banks	54.3	56.3	27.1	49.8	—	630.0
Thirteen other large banks	17.9	14.8	12.7	23.1	—	284.0
All other banks (excluding 22 banks above)	18.0	14.1	26.4	51.4	—	679.0
Total (All U.S. banks) ²	90.2	84.8	66.2	124.4	—	1,593.0

1. The 15 countries are: Argentina, Bolivia, Brazil, Chile, Colombia, Cote d'Ivoire, Ecuador, Mexico, Morocco, Nigeria, Peru, Philippines, Uruguay, Venezuela, and Yugoslavia. Amounts in billions of dollars as of June 30, 1982 and June 30, 1987.

2. The number of reporting banks was 167 in June 1982; 181 in June 1987.

NOTE: Totals may not agree due to rounding.

SOURCE: FFIEC Statistical Releases No. E. 16 (126), Country Exposure Lending Survey. Exposures are adjusted for guarantees and external borrowings.

condition of the nine large U.S. money-center banks with the greatest exposures to 15 heavily indebted countries is shown in table 2. Their exposure (\$54.3 billion) in June 1982 was approximately twice their total capital (\$27.1 billion). Also, that exposure constituted about 60 percent of the total claims of all U.S. banks on those 15 countries (\$90.2 billion).

The concentrated exposure in the largest U.S. banks raised questions about the capacity of the entire U.S. banking system to withstand the shock of the default of a single large debtor or the coordinated defaults of a group of debtors.¹¹ Also, four large Latin American debtors (Mexico, Brazil, Argentina, and Venezuela) account for three-fourths of all U.S. banks' claims on the heavily indebted countries.

Such concerns prompted additional efforts to ensure the soundness of banking conditions. For some time prior to 1981, banks' capital adequacy had been a matter of increased supervisory concern. The International Lending Supervision Act (ILSA), enacted in November 1983, directed U.S. bank supervisory authorities to monitor the foreign lending activities of U.S. banks and to study the need for capital increases and new loan-loss reserves because of those activities. The U.S. bank supervisory authorities proposed increased minimum capital ratios in July 1984, requiring pri-

mary capital of 5.5 percent and total capital of 6.0 percent for member banks and bank holding companies.¹²

In fact, as table 2 shows, the capital positions of all banks have improved substantially since 1982—both absolutely and in relation to LDC debt. The large regional banks reduced their LDC debt exposures slightly and nearly doubled their total capital from 1982 until 1987. During 1986 and 1987, there were particularly large increases in both primary capital and total capital of the 34 largest bank holding companies (see table 3).

If rescheduling and new-money loans acted to increase debts for the debtors and the loans outstanding for many creditors, the net effect of those measures was, in many cases, to retard the progress of those creditors in adjusting their balance sheets in the direction of greater stability. Thus, the resulting LDC debt exposure of U.S. banks, on a scale that constitutes a potentially serious difficulty, remains concentrated increasingly in the money-center banks, together with one or two large regional banks.

After the initial round of reschedulings in 1982-84, a generally improved world economic outlook encouraged those who believed that the new-money-lending approach would work satisfactorily. In fact, much progress occurred. Even though domestic inflation never really was controlled in

¹¹ For accounts of official statements on the "too big to let fail" problem, see Sprague, Irvine H., *Bailout 259* (1986) (remarks attributed to a former Comptroller of the Currency and to a former director of the Federal Deposit Insurance Corporation). Cf. Lever and Huhne at 17-22.

¹² See Federal Reserve System Board of Governors, *Annual Report 1984* at 177. The 1981 minimum capital ratios for large bank holding companies had been established at 5.0 percent (primary capital) and 5.5 percent (total capital). ILSA is Pub. L. No. 98-181, Title IX, Nov. 30, 1983; codified at 12 U.S.C.A. sections 3901-3912.

T A B L E 3

Large Bank Holding Companies
Capital Increases (Decreases)
During 1986 and 1987

	Total Primary Capital		Total Capital	
	1986	1987	1986	1987
Twelve Large Money-Center Banks (except California)				
Bank of New York	\$231	\$319	\$272	\$335
Bankers Trust NY	472	1,271	538	1,152
Chase Manhattan	571	987	706	1,441
Chemical NY	364	1,674	258	1,892
Citicorp	2,598	3,281	5,583	2,931
Irving Bank Corp.	50	253	133	302
Manufacturers Hanover	517	742	461	892
J.P. Morgan & Co.	824	929	1,333	1,078
Marine Midland	159	464	140	469
Republic NY Corp.	255	471	390	346
Bank of Boston Corp.	471	448	837	370
First Chicago	466	537	525	653
Money Center Composite	7,093	11,376	11,176	11,861
Large California Banks				
BankAmerica Corp.	24	679	339	722
First Interstate	369	291	267	14
Security Pacific	616	1,631	1,210	2,080
Wells Fargo	1,133	495	1,760	275

SOURCES: Salomon Brothers; and *American Banker*.

either Mexico or Brazil, exports were stimulated, imports were reduced by more than one-half in Mexico, and enough new-money loans were provided to cover debt-service needs. By early 1985, Mexico and Brazil had accumulated modest or, in Brazil's case, significant surpluses in their trade balances (up to \$10 billion per year).

At the IMF-World Bank annual meeting in Seoul, Korea, in October 1985, U.S. Treasury Secretary James A. Baker revealed what is now known as the Baker Plan for the LDC debt crisis. Moving beyond the initial, three-year IMF austerity regimes for debtors, Secretary Baker urged banks to continue providing enough new-money loans to stimulate real growth in LDC economies, "in addition to merely lending enough to meet debt-service requirements. In return, eligible LDC debtors (the "15 heavily indebted" countries) were to strengthen the foundation for long-term growth and eventual debt service by adopting market-oriented reforms of domestic

policies, including extensive privatization of state-owned enterprises, and elimination of some producer and consumer subsidies. About \$20 billion of new-money loans, net of repayments, over a three-year period were called for.

A number of debtors, including Argentina and Brazil, agreed to the principal Baker Plan-style reforms, and renewed attempts to control their domestic inflation. In January and February 1986, Argentina and Brazil adopted the Austral and Cruzado plans, respectively, which included sweeping currency reforms, wage and price freezes, and initial reductions in domestic inflation. Mexico was pursuing a modified version of the 1982 IMF austerity regime and experienced modest net inflows of capital in 1986 and early 1987.

III. Economic Conditions of LDC Countries

The initial successes of the chosen approach to the LDC debt crisis eventually were impaired by persistent and increasing domestic inflation and large domestic budget deficits, especially in the largest heavily indebted countries. Debt-export and debt-service-export ratios remained burdensome.

In 1982, real gross domestic product (GDP) growth in the 15 heavily indebted countries averaged about zero percent, inflation averaged nearly 60 percent, domestic budget deficits were more than five percent of GDP, the aggregate current-account deficit totaled about \$50 billion, the debt-export ratio was close to 270 percent, and the debt-service export ratio was about 50 percent (table 4). As the data in table 4 indicate, economic conditions in the aggregate have improved in a number of respects since the 1982-1984 period. Real GDP growth, budget deficits and the current-account balance all improved by varying degrees.

Yet, it is clear from the data that inflation remains severe and debt burdens have increased, despite the fact that debt-service obligations (interest payments and principal amortizations expressed as percentages) have moderated somewhat from their 1982 peak values. And it is also clear that, despite some improvements since 1982, economic conditions in the heavily indebted countries are far from healthy today. Improvements in the aggregate trade balance, a key source of foreign-exchange earnings, slowed during the past two years. Though some economic improvements have occurred since the worst of the crisis, and though debtor countries and lenders have worked hard at improving the

T A B L E 4

Economic Indicators of 15 Heavily Indebted Countries
(Percent change of annual rate unless otherwise indicated)

Indicator	Average	1979	1980	1981	1982	1983	1984	1985	1986	1987
	1969-1978 ^a									
Real GDP ^b	6.1	6.1	5.0	0.5	-0.4	-3.4	2.2	3.1	3.5	3.2
Consumer prices	28.5	40.8	47.4	53.2	57.7	90.8	116.4	126.9	76.2	86.3
Fiscal balance (percent GDP)	na	-0.8	-0.8	-3.7	-5.4	-5.2	-3.1	-2.7	-4.5	-3.6
Trade balance (\$-billions)	na	-1.9	4.4	-7.5	3.2	28.3	43.2	40.8	22.9	18.8
Export volume	2.8	7.3	0.6	-2.2	-5.1	6.4	9.6	1.8	-6.5	-1.3
Import volume	8.4	7.2	7.9	4.3	-16.7	-21.2	-2.4	1.1	-8.5	0.5
Current-account balance (\$-billions)	na	-24.6	-29.5	-50.3	-50.6	-15.2	-0.6	-0.1	-11.8	-14.0
Debt-export ratio (percent) ^c	na	182.3	167.1	201.4	269.8	289.7	272.1	284.2	337.9	349.6
Debt-service/exports (percent) ^c	na	34.7	29.6	39.0	49.4	42.5	41.1	38.7	43.9	40.7

a. Compound annual rates of change unless otherwise noted.

b. Gross domestic product.

c. Ratio of debt or debt-service payments to exports of goods and services.

na — not available.

SOURCE: World Bank, *World Debt tables: 1987-1988 (1988)*.

situation, the debt burden remains enormous even five years after the crisis began.

IV. Implications for U.S. Banking Conditions

Since 1974, stock-market values of U.S. money-center banks' shares have usually been priced well below book values. Since 1982, money-center banks' shares have been priced even more substantially below book values, apparently because investors in financial markets evaluated LDC loans at less than their nominal value.

By year-end 1986, oil prices in Mexico fell as low as \$9 per barrel, Mexican foreign-exchange reserves were at negligible levels, and the difficulties surrounding Argentina's Austral and Brazil's Cruzado plans were overwhelming. The stabilization programs that the debtors pursued relied heavily on nonmarket-oriented wage and price controls. Brazil suspended foreign-exchange interest payments to conserve foreign currency

reserves in February 1987, and Argentina undertook negotiations for a new-money loan and rescheduling later in the year to compensate for shortfalls in the Austral plan.

In March 1987, apparently in response to concerns regarding Brazilian and certain other IDC debts, the nation's largest commercial bank holding company announced that it had put \$3.9 billion of LDC loans on a "cash" accrual basis. Then, in May 1987, it announced the creation of up to \$3 billion of loan-loss reserves for IDC debt, about 25 percent of its current LDC exposure. Within a week, its common equity share value increased \$5 per share, about 9 percent of prior share value. Other bank holding companies followed suit in May and June 1987, including, in all, 43 of the 50 largest bank holding companies in the United States, as of June 30, 1987.

The amount of loan-loss reserves, which usually had been between 1 and 2 percent of total loans at the largest banks before 1986, became comparatively large, in the range of 3 to 5 percent. Table 5 shows loan-loss reserves as a per-

T A B L E 5

Loan-Loss Reserves to Total Loans
(Percent)

Name of Bank Holding Company	1982	1983	1984	1985	1986	6-30-87	12-31-87
Ten Largest							
Bankers Trust							
New York Corp.	1.11	1.17	1.55	1.70	2.02	5.10	4.96
BankAmerica Corp.	0.88	1.25	1.18	1.88	2.94	4.91	5.06
Chase Manhattan Corp.	1.00	1.01	1.23	1.47	1.61	4.00	4.00
Chemical New York Corp.	1.00	1.10	1.22	1.45	1.70	4.15	4.15
Citicorp	0.76	0.83	0.88	1.06	1.29	3.68	3.34
First Interstate Bancorp.	1.20	1.35	1.34	1.38	1.55	3.65	3.72
Manufacturers Hanover Corp.	0.74	0.90	1.08	1.41	1.80	4.88	4.77
Morgan (J.P.) & Co.	1.15	1.48	1.63	2.14	2.62	5.35	5.58
Security Pacific Corp.	1.07	1.11	1.57	1.40	1.61	2.77	3.27
Wells Fargo & Co.	0.93	0.96	1.14	1.70	2.00	3.51	3.69
Ten largest Average	0.93	1.08	1.20	1.50	1.85	4.11	4.25

Weighted averages (except for 12-31-87).

SOURCE: Call Reports and Salomon Brothers.

centage of total loans, from 1982 to 1987. The new loan-loss reserve ratios are significantly larger than historical ratios in the last 15 years.

The round of special LDC loan provisioning initiated in early 1987, however, did not play itself out by midyear. More LDC loan-loss provisioning occurred at year-end 1987, including a general move toward 50 percent provisioning at most U.S. regional banks and three of the 10 largest banks. Ongoing payments arrears in Brazil, Ecuador, and Peru, together with particular uncertainties in other heavily indebted countries, generally were cited as the reason for the increased provisioning. In December 1987, one large U.S. regional bank took the first actual charge-offs of a portion of its LDC loans to a major debtor country, and at least two large regional banks with prior LDC debt exposure became 100 percent reserved for it in January 1988. The remaining seven largest U.S. banks have reserved thus far against approximately 25 percent of their LDC debt exposure.

Banks have added to capital and increased reserves. Generally, apart from the largest New York City banks and one large California bank, reserves are more or less in line with market evaluations of the debts of the 15 heavily indebted countries. The 1987 rounds of special provisions for LDC debt were taken almost entirely from the equity accounts (paid-in, common-share capital,

perpetual preferred shares, plus retained earnings or surplus) of the bank holding companies. Because 100 percent of the LDC loan-loss provisions still count as primary supervisory capital, the primary capital ratios of the bank holding companies have not been weakened, but the equity capital ratios are as low as they have been since the early 1980s, typically between 2 and 4 percent of total assets at the largest companies where the bulk of the remaining LDC exposure is concentrated.

The future exclusion of the new loan-loss reserves from primary (Tier 1) capital for supervisory capital adequacy purposes, however, seems likely to cause banks to attempt to rebuild equity capital.¹³ Under the proposed international guidelines, 4 percent would be the eventual norm for equity capital, by 1992.

¹³ See, for example, Bennett, Robert A., "Hard Times for Three Big Banks." *New York Times*, April 10, 1988, section 3, at 1, col. 2 (national edition). Future treatment of loan-loss reserves as a part of bank capital is discussed in a 17-nation agreement released December 10, 1987. Bank for International Settlements, Basle Committee on Banking Regulation and Supervisory Practices, "Proposals for International Convergence of Capital Measurement and Capital Standards," Dec. 10, 1987. The Federal Reserve System's Board of Governors approved publication for comment on capital adequacy standards generally conforming with the December 10, 1987 document on January 25, 1988. The joint, federal bank supervisory authorities' capital adequacy proposal was published in 53 *Federal Register* 8550-8587 (March 15, 1988).

T A B L E 6

**Dividend Payout Ratio
and Dividends on Common Stock
Per Share, 1982-1987**

	1982		1983		1984		1985		1986		1987	
Bank of New York	32.2%	1.09	30.5%	1.16	29.5%	1.26	32.9%	1.40	31.4%	1.56	nr	nr
Bankers Trust NY	27.1	1.05	27.4	1.15	26.5	1.26	25.6	1.38	25.5	1.53	nm	1.71
Chase Manhattan	44.0	1.70	31.9	1.75	40.5	1.83	29.7	1.90	30.9	2.05	-18.7	2.16
Chemical NY	34.2	1.92	34.1	2.16	36.4	2.36	33.8	2.48	34.3	2.60	-16.3	2.72
Citicorp	30.7	1.72	29.0	1.88	31.9	2.06	31.7	2.26	34.5	2.45	-31.7	2.70
Irving Bank Corp.	36.8	1.68	36.2	1.76	36.0	1.84	31.9	1.96	30.5	2.08	nm	nr
Manufacturers Hanover	37.9	2.95	36.7	3.07	44.5	3.17	38.3	3.21	36.9	3.25	-12.1	3.28
J.P. Morgan & Co.	36.6	0.87	35.9	0.95	33.8	1.03	28.9	1.13	26.6	1.26	nm	1.40
Marine Midland	28.4	1.29	28.9	1.40	38.4	1.60	28.9	1.75	27.5	1.98	nr	nr
Republic NY Corp.	26.5	0.93	27.7	1.01	29.2	1.07	27.4	1.09	22.8	1.12	nm	1.16
Bank of Boston Corp.	29.6	0.66	29.3	0.72	28.1	0.78	29.1	0.82	24.7	0.91	nm	1.02
First Chicago	36.0	1.20	32.1	1.26	110.9	1.32	46.5	1.32	28.1	1.32	14.0	1.50
Money-Center Median	33.2%		31.2%		34.9%		30.7%		29.3%		-12.1%	
BankAmerica Corp.	58.5	1.52	69.7	1.52	85.9	1.52	nm	1.16	nm	0	nm	0
First Interstate	39.6	2.12	38.5	2.22	37.7	2.32	36.0	2.46	36.4	2.62	-23.1	2.77
Security Pacific	30.0	0.98	30.2	1.09	30.3	1.20	30.1	1.31	29.7	1.45	nm	1.72
Wells Fargo & Co.	33.1	0.96	32.9	0.99	31.6	1.08	29.9	1.24	28.0	1.41	nm	1.67
Regional-Bank Median (includes 22 banks)	37.0%		35.6%		34.8%		30.4%		31.7%		36.4%	
35-Bank Median ^b	35.1%		33.4%		34.9%		30.6%		30.5%		12.1%	

a. Common dividends declared per share, divided by net income per share on a primary basis.

b. Average of subgroup medians.

c. Stock split during year is dividend = \$1.35/share, \$2.70 on prior basis.

nm = not meaningful.

nr = not reported.

SOURCE: Salomon Brothers.

Alternative Solutions That Have Been Pursued

- Three large bank holding companies announced new common equity issues during 1987, and other large bank holding companies are said to be considering such issues to raise equity accounts. Only two of the 15-largest bank holding companies had new common equity issues in 1986, which were the first significant new common equity issues by the largest bank holding companies since 1982.
- Banks also may have to reexamine dividend policies if they wish to rebuild equity accounts through retained earnings. The dividends per share declared by eight of the 10-largest bank holding companies increased each year from 1982 through 1986. Prior to year-end 1987, every major New York City bank holding company increased its declared dividend each year since August 1982. The dividend payout

ratio (dividends as a proportion of net income per share) essentially was unchanged at most of the largest bank holding companies over the 1982-1986 period (see table 6).

- Generally, New York City banks increased their declared dividends as reported earnings rose during that period. Low equity capital ratios of most large bank holding companies, caused by the LDC loan-loss reserves created in 1987, are likely to prompt the largest bank holding companies to reconsider their policies on declared dividends, or at least to consider reducing their dividend payout ratios, in order to build up the equity capital ratios through retained earnings.
- Debt-for-equity swaps are frequently mentioned for improving banks' capacity to manage the payments arrears problem on LDC debt. Debt-for-equity swaps are exchanges of LDC debt, usually at discounts from par value, for equal value (in

dollars) of shares or other equity investments in enterprises operating within the debtor country. Regulations allowing U.S. banks and Edge or Agreement corporations to own equities in foreign, nonbanking businesses have been liberalized twice in the last year.

- Debt-for-equity swaps may be useful vehicles in particular circumstances but have only limited capability to resolve the overall LDC debt problem because of the limited availability of enterprises suitable for debt-for-equity conversion in many LDCs. Some analysts have noted that, in the past, debt-for-equity swaps have substituted for capital flows (direct investments) that might have occurred anyhow, without the inducement of discounted exchanges for local equity. Such exchanges might reduce the debtor's net external resources below the expected level that would have been available otherwise. Domestic inflation also may be increased to the extent that new domestic credit is created to accommodate the exchange of local currency for external debt in connection with the swap.
- Securitization, another frequently mentioned LDC debt option, generally is understood to mean the packaging of debt, usually with a payment guarantee provided by the issuer (seller) of fractional shares of the packaged debt. Securitization appears to offer only limited value as a long-term solution to the LDC debt crisis because the debt being offered is considered by many analysts to be of speculative value and could not satisfy institutional investors' "prudent man" fiduciary standards without sellers' or third parties' payment guarantees. Most analysts believe that debt-for-equity swaps and securitization have a useful, but limited, role to play in the LDC debt-adjustment process.

A secondary market for LDC debt developed in London shortly after the 1982 crisis began. It began initially as a device for repositioning LDC debt exposures among institutional creditors. That market has increased in depth and volume and has expanded to New York. Although this market still is incapable of dealing with more than modest amounts of LDC debt in an orderly fashion, the estimated volume of trading in 1987 reached \$12 billion per year (par value). Estimated volume in this market is about 50 percent above 1987 levels thus far in 1988. Representative bid prices for LDC debt in April 1988 were as

follows: Brazil (49.5 percent), Argentina (28 percent), Mexico (51 percent), and Venezuela (54.25 percent).

Thus, as with the alternatives mentioned above, outright sales of LDC debt in the secondary market offer limited opportunity at present for easing the strains of the LDC debt crisis. The market is so small that any offer of a large quantity of a country's debt depresses bid prices dramatically, and the sale of debt at market prices clearly would require sellers to recognize extensive losses on the debts thus sold under current accounting standards. Also, from the debtors' perspectives, the secondary market often does not ease the strains because the discount from par value may not be captured by the debtors—they often remain obligated to repay at par value, even after the sale is completed.

Another important development occurred in late December 1987, when J.P. Morgan & Company, the U.S. Treasury, and the Mexican government separately made statements announcing a proposed auction arrangement under which Mexican debt held by banks would be exchanged for Mexican government 20-year bonds.¹⁴ Bids in the auction were expected by many to enable Mexico to exchange \$1 of bonds for a greater amount of debt, perhaps as many as \$2.

The repayment of principal (after 20 years) was to be assured by Mexico's purchase of a new issue of U.S. Treasury, zero-coupon, 20-year securities for between \$2 billion and \$2.5 billion. The principal value of the U.S. bonds at maturity was to be between \$10 billion and \$11 billion at current interest rates and was to enable Mexico to extinguish up to \$20 billion of bank debt.

The actual results of the auction were not as encouraging as many had expected. Although active participation in the auction was expected from regional and foreign banks, it was not expected from most money-center banks. The participation of

■ 14 See Bennett, Robert A., "Big Bank Proposes a Plan for Easing Third-World Debt," *New York Times*, December 30, 1987, at A1, col. 6 (late city edition). Farnsworth, Clyde H., "New Debt Relief Policy," *New York Times*, December 31, 1987, at A1, col. 1 (late city edition). Bennett, Robert A., "Billions in Plan in Mexico Bond Sale," *New York Times*, February 26, 1988, at 39, col. 4. The Treasury's role in this arrangement is not entirely clear—it took steps to facilitate the transaction, but it does not appear that the Treasury's initial role was more than that of a facilitator. Cf. Bennett, Robert A., "Lesson on Mexican Debt," *New York Times*, March 5, 1988, at 15, col. 1. Citations to the *New York Times* are to the national edition unless otherwise indicated.

the money-center banks may have been hindered by accounting rulings that apparently required banks to charge off or reserve against all Mexican debt tendered at the auction at the rate of discount tendered, regardless of whether the tender was accepted. In fact, at the debt auction held early in March 1988, only \$3.7 billion of debt was accepted, at an average price of 69.77 cents per dollar, for \$2.6 billion of bonds, reducing Mexico's debt by only \$1.1 billion.

The applicability of the Mexican bond approach to the immediate debt-service problems of other countries is not yet clear. For one thing, it requires foreign currency reserves to purchase the U.S. Treasury or other similar securities that would support any new bond issue, and most LDC debtors besides Mexico lack comparable amounts of foreign exchange.

Also, a Mexican-style bonds-for-debt auction probably would require creditors to accept bonds for significantly less than the face value of the debt and to recognize the loss. Nevertheless, the Mexican proposal is another encouraging example of the search for solutions that is under way.

Solutions obviously will vary from debtor to debtor and from lender to lender. In April 1988, Brazil conducted a debt-for-equity swap variation of the Mexican bonds-for-debt auction, exchanging \$150 million of equity in designated Brazilian enterprises for \$186 million of foreign debt at discounts ranging from 10 to 27 per cent below par value.

VI. Conclusion

The LDC debt crisis is not significantly closer to a permanent, global solution today than in 1982. By creditor-country measures, such as LDC debt as a percentage of total banks' capital, the problem of the U.S. banking system is only half as severe as in 1982, but the remaining problem is still highly concentrated in seven of the nine largest money-center banks. For most U.S. regional banks, the LDC debt crisis now is a problem no more severe, proportionately, than domestic credit problems.

For the debtor countries, the problem remains as severe as ever. For example, real wages in Mexico declined 34 percent below 1982 levels

by 1985 and have continued to decline since then.¹⁵ Domestic inflation (more than 150 percent per annum) and currency depreciation (more than 100 percent per annum) were increasing rapidly in three of the four large debtor countries at year-end 1987, and debt-service indicators deteriorated in most LDCs throughout the 1982-1987 period. Because of the new-money loans, the external debt now exceeds 50 percent of gross national product in all but four of the 15 heavily indebted countries. From the debtors' standpoints, great sacrifices have been made, but there is as yet very little to show for them.

Effective remedies may not, in the end, depend crucially on large-scale, government-directed plans. The market valuation of banking firms will reflect expectations of the banks' future earnings, regardless of the banks' actual loan-loss provisions or LDC debt charge-offs. To a large extent, financial markets have already discounted the value of LDC loans on the books of banks.

Market recognition of the substantial risks that could impede eventual debt service probably will continue to prompt banks to reserve further (in accordance with the perceived market value of LDC debts), to raise capital, and perhaps also to reexamine dividend policies. And debtors and creditors alike seem likely to continue to explore cooperative solutions that recognize the necessity of compromises in the terms, maturities, and principal amounts of the debts.

■ 15 Real wage changes were computed by dividing the local currency wage index and consumer price index for 1985:1Q by the same indices for 1982 (annual averages). International Monetary Fund. *International Financial Statistics* 350 (June 1987).

Comparing Inflation Expectations of Households and Economists

by James M. Hvidding

In a recent issue of this Review, Bryan and Gavin (1986a) hereinafter referred to as GB, compared the forecast accuracy of three alternative series of inflation forecasts: the Livingston survey of Economists' CPI forecasts, the Michigan survey of household inflation expectations, and a generated series of out-of-sample time-series forecasts of the inflation rate. They concluded that the household survey is a more accurate forecast of inflation than the Livingston survey of economists' forecasts but that "the relatively simple time-series model...performed about as well as the Michigan survey." This note addresses the second part of this conclusion.

The BG study was designed primarily to compare the Livingston and Michigan surveys. Since these two surveys measure different expectations, some compromises had to be made. First, in fairness to the semiannual Livingston survey, half the observations from the quarterly Michigan

While the Economic Review primarily contains articles by economists associated with the Bank or the Board of Governors, occasionally we receive comments from readers that are appropriate for the Review. Prof. Hvidding's comment on an earlier Review article by Michael Bryan and William Gavin is one such case.

This comment extends Bryan and Gavin's earlier Economic Review article (1986 Quarter 3) on measuring inflation expectations. Using a different frequency of observations, Prof. Hvidding's results support Bryan and Gavin's findings that the Michigan Survey dominates the Livingston Survey as a forecast of inflation. Using quarterly observations, he finds, however, that the Michigan survey forecasts inflation slightly better than the time series method, while Bryan and Gavin find the opposite using semiannual data.

— Editor

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survey had to be ignored. Second, a choice had to be made whether to treat the forecasts as June to June (Livingston) or May to May (Michigan).¹ Given the outcome of the study, BG made the correct choice in picking June to June. Handicapping the Michigan survey in this way strengthens their primary conclusion that the Michigan survey is superior to the Livingston survey. But using only half of the available observations and measuring forecast accuracy on the wrong forecast horizon is not appropriate if the objective is to compare the Michigan survey with a generated alternative forecast.

To provide a more appropriate comparison of the Michigan survey and the generated forecast, I generated out-of-sample time-series forecasts for both the June to June and May to May forecast periods using a seasonally adjusted CPI series supplied to me by BG. Using semiannual observations on the June to June series, I was able to replicate their results almost exactly. These results are reported in tables 1(a) and 2(a).² I then repeated the forecast comparison using

■ 1 The Livingston survey is conducted semiannually in June and December and asks its respondents to forecast the level of the Consumer Price Index for the following June or December. The forecasts are therefore "June to June" (or December to December). The Michigan survey is taken quarterly in February, May, August, and November. Here the respondents are asked to predict what will happen to the prices of the things they buy "over the next twelve months." The forecasts are from February to February, May to May, and so on.

■ 2 BG did not present figures for the "naive" forecast (the inflation rate for the year preceding the forecast date). It is included here to facilitate comparison between the semiannual data used by BG and the quarterly data presented here.

T A B L E 1

Forecast Accuracy

(a) Semiannual Observations: June 1966 -June 1987

Forecast	MAE	RMSE	U	U ^M	U ^R	U ^D
Naive	2.205	2.744	1.000	0.000	0.197	0.802
Livingston	2.303	3.006	1.096	0.203	0.015	0.782
Michigan	1.871	2.362	0.861	0.037	0.000	0.963
Time-Series	1.870	2.335	0.851	0.018	0.107	0.876

(b) Quarterly Observations: June 1966 -June 1988

Forecast	MAE	RMSE	U	U ^M	U ^R	U ^D
Naive	2.164	2.663	1.000	0.000	0.188	0.812
Michigan	1.612	2.030	0.762	0.026	0.020	0.954
Time-Series	1.823	2.301	0.864	0.000	0.179	0.821

KEY:

MAE — Mean absolute error.

RMSE — Root mean squared error.

U — Ratio of forecast RMSE to naive forecast RMSE.

U^M — Fraction of forecast error due to bias.U^R — Fraction of forecast error due to difference of regression coefficient from unity.U^D — Fraction of forecast error due to residual variance.

SOURCE: Author.

quarterly observations on the May to May series.³ These results are reported in tables 1(b) and 2(b). Table 1(b) reports measures of forecast accuracy for quarterly observations on the Michigan survey and the May to May time-series forecast over the period covered in BG. Here the Michigan survey is shown to be noticeably more accurate than the time-series forecast.

In addition to the standard measures of forecast accuracy, BG presented the results of a conditional efficiency test employing the regression equation:

$$(1) \quad \pi_t = \beta_0 + \beta_1 x_{1,t}^* + \beta_2 x_{2,t}^* + \dots + \beta_n x_{n,t}^* + U_t$$

■ 3 The generated time-series forecast used by BG (and reported in tables 1(a) and 2(a)) is actually a forecast of the change in the log of the CPI, which, as BG explicitly note, is only an approximation of the annual percentage change in the CPI. It just happens that this approximation makes the time-series forecast appear to be more accurate than it really is. When the delta-log forecasts are converted to percentage change forecasts, the RMSE for the semiannual time-series forecast is 2.407, as opposed to the 2.335 reported in table 1(a). The time-series forecasts used in generating the results reported in table 1(b) and 2(b) have been converted to annual percent change forecasts.

where π_t is the inflation rate and the x_{it}^* are n linearly independent forecasts of w_t . Forecast i is "conditionally efficient" relative to the other forecast if $\beta_i = 1$ and $\beta_j = 0$ for all $j \neq i$. Table 2(a) shows that the hypothesis that the Livingston survey is conditionally efficient relative to the Michigan survey and the time-series forecast can be rejected at the one percent significance level for the June observations (equation [1]) and at the five percent level of significance for the December observations (equation [2]). The conditional efficiency hypothesis is not rejected in either equation for the Michigan survey or the time-series forecast. These findings lead BG to conclude that the household survey and the time-series forecasts are statistically comparable.

In conducting their conditional efficiency test, BG divided the sample of semiannual observations into two series of annual observations and ran two separate regressions. This treatment is used in order to avoid the serially correlated error term that inevitably arises when the sampling interval is less than the forecast horizon. Hansen and Hodrick (1980) have demonstrated

T A B L E 2

Conditional efficiency tests

	(a) Annual		(b) Quarterly ^b	
	(1)	(2)	(3)	(4)
Time Period	June 66 - June 85	Dec 66- Dec 84	66:2-85:2	66:2-85:2
Constant	0.161 (0.09)	3.070 (1.58)	0.139 (0.18)	-0.195 (0.25)
Naive			(-0.347) (0.67)	
Test Statistic ^a			32.48 (.000)	
Livingston	-0.291 (0.69)	0.022 (0.04)		
Test Statistic ^a	5.67 (.005)	3.28 (.040)		
Michigan	0.784 (1.73)	-0.591 (0.73)	0.715 (1.29)	0.757 (1.24)
Test Statistic ^a	0.83 (.526)	1.50 (.252)	6.25 (.181)	2.62 (.454)
Time-Series	0.495 (1.27)	1.124 (2.33)	0.631 (1.13)	0.297 (0.72)
Test Statistic ^a	1.43 (.269)	0.67 (.622)	14.24 (.007)	11.56 (.009)
No. of Obs.	20	19	77	77
R ²	.674	.507	.641	.627
Durbin-Watson	1.560	1.239	0.838	0.621

NOTE: t-statistics for coefficients and significance levels for test statistics are in parentheses.

a. For the joint hypothesis that the coefficient is one and all other coefficients in the regression are zero. For equations using annual data this is an F-statistic. For equations using quarterly data it is Chi-square as suggested by Hansen and Hodrick (1980).

b. The t-statistics for the equations using quarterly data are derived from the adjusted standard errors as suggested by Hansen and Hodrick (1980).

SOURCE: Author

an alternative approach that is asymptotically more efficient. Their treatment includes all observations in the OLS regression and employs an estimate of the implied autocovariances of the residuals to calculate a Chi-square statistic for hypotheses concerning restrictions on the regression coefficients.⁴ Table 2(b) reports the results of conditional efficiency tests employing all quarterly observations on the forecast series.

The naive forecast (last year's inflation rate) is included in equation (3) to replace the Livingston series so that the three-way test employed by BG is preserved. Here the hypotheses that the naive and time-series forecasts are conditionally efficient relative to the Michigan survey are strongly rejected while the hypothesis that the Michigan survey is conditionally efficient cannot be rejected. Equation (4) shows that the same conclusion holds for a two-way conditional efficiency test.

These results demonstrate that the Michigan survey measure of the inflation expectations of households dominates a single ARIMA time-

a 4 For a description of this testing procedure and an illustration of its use in this context see Brown and Maital (1981) or Bryan and Gavin (1986b).

series forecast. This finding implies that such forecasts are not appropriate proxies for household inflation expectations in quarterly econometric models. Another interesting implication follows from the observation that the generated forecast used here makes use of the CPI data for the survey month, that is, first-quarter forecasts use the current February value of the CPI, second-quarter forecasts the May value, and so on. The fact that this information is not officially published until more than a month after the Michigan survey is taken, together with the finding that the Michigan survey is conditionally efficient relative to this forecast implies that households are not dependent on published indexes for information on prices and inflation.

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