analysis of the United States Railway Association's (USRA) Final System Plan, concluded that the industry (excluding Conrail) faced at least a $10 billion capital shortfall problem over the 1976–85 period.[5] According to the FNCB analysis, if the railroads (excluding Conrail) tried to catch up on deferred maintenance in addition to their normal capital requirements for equipment, road property, dividends, debt maturities, and interest, there would be a cash shortfall of $21.1 billion generated between 1976 and 1985. Assuming that traditional equipment financing would provide $11.8 billion of this amount, the industry would be left with a "$10 billion financing problem," significantly in excess of the industry's $1.1 to $1.5 billion theoretical debt capacity.[5]

In a review of FNCB projections for the Office of Technology Assessment of the Congress, Harbridge House, Inc., noted that most of this financing problem is associated with the FNCB assumption that annual shortfalls will be financed, as needed, by long-term debt.[6] As a consequence, the 10-year shortfall is "swollen by the interest and repayment requirement for the assumed borrowing." Harbridge House restated the forecasts without this assumption and concluded that the industry faces a shortfall of about $5 billion. The impact of this shortfall is that "internally generated cash will be sufficient to hold maintenance at a 'normalized level,' but not to make a significant reduction in existing deferred maintenance." Harbridge House also stated that the railroads' cash needs would be increased dramatically if equipment financing does not continue to be available, noting that several recent events have raised questions about the continued availability of such financing.

In addition, the Harbridge House report found that the variability between the performance of strong and weak roads could create additional railroad bankruptcies, even if the industry as a whole had no capital shortfall.

In 1976, the ICC projected a capital shortfall significantly greater than that forecast by the FNCB. As part of Ex Parte No. 271, the ICC forecast an $11.5-billion gap over the 1976–85 period for the total industry (excluding Conrail, the National Railroad Passenger Corporation (Amtrak), and the Chicago, Rock Island and Pacific), less assumptions regarding any financing charges that would occur if this shortfall were met by long-term debt. The shortfall varied by region, ranging from $2.7 billion in the East to approximately $4.4 billion in both the South and West.

Many factors might be responsible for the sizeable difference between the $5-billion shortfall forecast by the FNCB (as adjusted by Harbridge House) and the $11.6-billion shortfall forecast by the ICC, but three stand out: The general economic scenario used by the ICC was significantly more pessimistic than the one used by the FNCB; the ICC's 10-year forecast of the industry's capital expenditures was $4 billion higher than the FNCB's forecast (more equipment and less facilities investment); and the FNCB assumed that annual labor productivity equal to 3.7 percent would continue over the 1976–85 decade, while the ICC assumed that labor productivity would diminish over time. In addition, the FNCB projections were not entirely tied to its general economic scenario; revenues were derived by assuming a range of operating ratios. While this analytical method was more than adequate for the purposes of the FNCB analysis, FNCB noted in its summary of key assumptions that it considered its assumption regarding the 1976 operating ratios as particularly "optimistic." The ICC projections, on the other hand, were derived from a computerized financial model that forecast revenues, expenses, and capital expenditures on an individual account level and integrated the accounts with its general economic scenario.

Despite its thoroughness, the ICC was quick to point out: "There is no presumption as to the infallibility of the projections." The ICC model is currently undergoing revision to refine some methodologies and incorporate recommended adjustments. These adjustments may alter the dollar amount of the projected capital shortfall, but they are unlikely to alter the basic conclusions of this report and the FNCB and ICC studies. The industry, indeed, faces a significant shortfall over the next decade.

ONGOING NATURE OF THE SHORTFALL

Projections of a significant capital shortfall over the next decade will hardly surprise railroad management. The industry has been unable to generate enough funds to meet all its capital needs for some time. To compensate, many segments of the industry have had to delay capital expenditures and defer maintenance. Funds generated from operations have been supplemented by drawing down working capital and by increasing the level of debt financing. Even these measures were not sufficient for some companies. Eight railroads, including the Penn Central (the largest in the country at the time), filed for bankruptcy between 1967 and 1972. Two more companies have since joined their ranks. Although the northeastern bankruptcies were significantly related to regional economic difficulties, all bankrupt railroads are evidence of the increasing inability of the industry to survive by relying on the sort of defensive measures just described.

Current shortfall projections are more meaningful than those of the past because the industry has come close to exhausting its reserves. Total industry