

interest and principal payments. The amount required to be deposited in the bond reserve is greater today than it was in 1946. Having experienced isolated revenue bond defaults in recent years resulting from a failure of estimated revenues, investors now frequently demand a reserve large enough to meet both interest and principal payments for at least a year beyond a point of temporary cessation of revenues. Often this reserve requirement is tied to the maximum annual interest and principal requirement during the term of the bonds.

Reserves for repairs and replacements have become more important in bond instruments during the past 20 years. In the earlier years of revenue bond financing, there was often no distinction between the payment of revenues for ordinary operating expenses and extraordinary maintenance expenses of a type that did not recur annually. This was often because the earlier revenue bonds were secured by a pledge of gross revenues, which meant that debt service was paid ahead of operating expenses, and the distinction between ordinary and extraordinary maintenance expenses was a matter of little concern to the investor. However, with the trend from a pledge of gross revenues to a pledge of net revenues, the difference took on an obvious significance. The investor was not prepared for extraordinary repair expenditures, such as the costly resurfacing of a toll road, to take precedence over the payment of his interest and principal. Hence, the reserve for repairs and replacements was created, often following the bond reserve in the flow of funds, and subject to restrictions and conditions designed to prevent extravagance in the application of the reserve. The amount of the reserve is frequently based upon the issuer's annual budget requirements.

Earnings tests governing the issuance of additional revenue bonds which are *pari passu* with outstanding bonds are stricter today, both as to the earnings base and the required ratio or coverage of net earnings over debt service. With the exception of additional bonds required solely to complete the project, an earnings test is today required for the issuance of additional parity bonds under the same bond resolution in order to minimize the dilution of the revenues available to service the outstanding bonds. In the earlier years of revenue bond financing, it was often believed sufficient if the earnings base of the test was limited to estimated future revenues. In other words, additional parity bonds could be issued if the future net earnings from the project, as estimated by the issuer's consulting engineer, would cover debt service plus a margin of safety. It is rare today when an earnings base does not include a showing of actual net revenues during the preceding year or period in relation to debt service. Frequently, the actual, or historical, earnings test stands above, unadulterated by the estimate of earnings for future years. One reason for this is the insistence of at least one of the rating agencies that the authority to issue additional parity revenue bonds—even completion bonds—without a historical earnings test is cause for refusal to rate the bonds. The second part of the earnings test—the times coverage—has also become stricter in recent years. The margin required depends again upon the nature of the issuer and the project but percentages of 135 and 150 are not uncommon today. In all of these earnings tests, more thought is given today to reflecting possible adverse conditions, such as the effect of construction or threatened construction of competitive facilities, as well as eliminating speculative elements wherever possible.