Journal of Accountancy

Volume 62 | Issue 3 Article 5

9-1936

Mathematical Computations for Defaulted Bond Issues

R. S. Bickford

Mathematical Computations for Defaulted Bond Issues

BY R. S. BICKFORD

Subsequent to 1928 defaults occurred in the payment of many first-mortgage real-estate gold bonds. Accountants are aware of the processes by which bondholders through representative protective committees and trustees have sought protection for their investments through foreclosure and other legal remedies.

Soon after the occurrence of default a bondholders' protective committee composed of prominent business men is usually organized. They endeavor to encourage all bondholders to deposit their bonds with them under a deposit agreement in order that concerted action may be taken in instituting foreclosure proceedings and in effecting a plan of reorganization.

The purpose of this paper is to point out the mathematical procedure involved in a customary bond-issue foreclosure for distributing the income derived from the operations of the property during the period of receivership prior to the date of foreclosure sale—the sale proceeds—and the income arising from the property during the period of redemption from a foreclosure sale.

As I am a resident of Illinois, this discussion is governed by the statutes of that state. Here the equity owner is allowed twelve months in which to redeem from the foreclosure sale by payment in cash at any time during this period of the amount bid at the sale, plus interest from the date of sale. Judgment creditors have an additional three months within which to redeem.

The original document to support a bond issue is a trust agreement. By its terms the payment of funds from the foregoing sources is stipulated.

The next instrument of importance is the bill of complaint, drawn and filed in court by the solicitors for the trustee in accordance with the provisions of the trust agreement. The complaint alleges the particulars of the default and of the relief sought.

In every foreclosure it is necessary for the court to render an account of the amount due the various parties in the proceedings. In order properly to state this account voluminous testimony is presented. The court, therefore, refers nearly every foreclosure case to a master in chancery or some other officer of the court in order to permit the plaintiffs and defendants to present and receive full consideration of their claims.

In Illinois there is one master in chancery for every circuit and superior court who is appointed by the judge in office. In most cases the masters are attorneys whose duties are twofold:

1. To hear the evidence and to report to the court of their findings of facts and of law.
2. To carry out the orders of the court.

The decree of foreclosure is the record of the court's findings based upon the report of the master. It orders the action to be taken with respect to the default. The master in chancery's report of sale and distribution gives evidence that the action has been performed.

The decretal indebtedness is the aggregate amount found to be due in the decree. This is composed of the following liens which are detailed according to their priority:

1. All costs and expenses incurred by the master in chancery and by the court, which are paid in full.
2. All expenses and advances incurred by the complainant such as trustee's fees, solicitor's fees, stenographic charges, advances for title examination etc., which are also paid in full.
3. The amount due on defaulted bonds and interest coupons plus interest thereon.

In some instances there may be mechanics' liens which are recognized by the court and will participate in the sale proceeds either prior to or subsequent to the indebtedness of the defaulted bonds and interest coupons.

One part of the decretal indebtedness which may cause considerable trouble is the calculation of additional interest on the defaulted principal amount of bonds and interest coupons. There are three dates to be known before application of the interest rates can be made. These dates are:

1. Serial dates of matured bonds, dates of the unpaid interest coupons and the date of acceleration, which is the date on which the remaining outstanding principal amount of bonds is declared due and payable.
2. The date of the decree of foreclosure.
3. The date of the foreclosure sale.

Interest on matured unpaid bonds and coupons is computed at 7 per cent. from the date of their respective maturities to the date of the decree.

Interest on the remaining outstanding bonds is computed at the contract rate of the bond issue from the date of the last matured interest coupon to the accelerated date and then at 7 per cent. from the date of acceleration to the date of the decree. Both computations are based on the par value of the bonds.

From the date of the decree to the date of the master's foreclosure sale interest is compounded at 5 per cent. on the aggregate total of the 7 per cent. calculation.

One of the first steps in every foreclosure suit is to request the court to appoint a receiver for the property, for the purpose of enforcing the lien on the rents as set forth in the trust agreement. The receiver takes possession of and operates the property under the supervision of the court. The receiver may be in possession of the property from the date of his appointment to the end of the redemption period or he may be discharged after the foreclosure sale in favor of the new owner.

The bondholders' protective committee is generally the purchaser of the property at the foreclosure sale in accordance with an accepted plan of reorganization. Where it is found expedient, the committee purchases from the equity owner title to the property either for cash or for some consideration in the new entity—it buys liens and other judgments thereon—and after the foreclosure sale redeems from the sale as the owner and effects title subject only to the lien on the rents, issues and profits as set forth in the trust agreement.

By having title to the property the bondholders' committee can, by producing sufficient evidence to the court, seek the discharge of the receiver, take possession of and operate the property.

Therefore, at the time of the foreclosure sale the bondholders are distinguished as between "deposited" and "non-deposited."

From proceeds of the sale the expenses and advances which must be paid in full are deducted. The remainder is distributable to all bondholders on pro rata. The amount that each bond and interest coupon will receive is determined by dividing the amount distributable by the total decretal indebtedness for bonds and interest coupons. The quotient is the amount payable for each dollar of decretal debt.

The bondholders' protective committee generally pays the purchase price in cash and in bonds. The amount applicable to the bonds is equivalent to the proportionate share of the amount distributable, computed on the aggregate decretal indebtedness of the bonds and interest coupons in possession of the committee at the date of sale.

The master's report of sale and distribution details the bonds and coupons presented by the bondholders' protective committee (which are to receive credit on the bid price) and those of the non-depositors. The credit on deposited bonds represents the pro-rata share which they would receive if it had been a cash sale. Having this information, the percentage between deposited and non-deposited bonds can be accurately determined. The method employed is to divide the total decretal indebtedness by the total par value of defaulted bonds and interest coupons. The quotient is the decretal debt per dollar. Multiplying this result by the total par value of each group the total indebtedness of each class is determined and likewise the percentage of each class to the aggregate indebtedness.

Before the actual reorganization is effected one or more of the non-deposited bonds and interest coupons, as detailed in the master's report of sale, may be deposited. This will change the percentage between the two classes of bondholders and it should be effected by using the quotient of decretal debt per dollar. It is easier to determine the new percentage on the total par value of defaulted bonds, but this method is inequitable because there are generally detached interest coupons which are not deposited. This is particularly true where more than one series of coupons will participate proportionately with the bonds.

The theory may be propounded that the total par value of defaulted interest coupons is infinitesimal when compared to the total par value of bonds—and without doubt this is true. Yet the court orders in the decree that the defaulted bonds and interest coupons are to share equally and without priority of one over the other in the proceeds of the foreclosure sale and the net rents derived from the operations of the property in accordance with the statute of redemption. Therefore, to exclude the interest coupons is contrary to court order and might also prove embarrassing to the trustee.

The cash-receipts-and-disbursements basis is used in accounting for the net operations of a property under foreclosure. The account should be recorded for two periods. The first period is from the date of the appointment of the receiver to the date of the foreclosure sale. The second is from the date of the foreclosure sale to the end of the redemption period, which is fifteen months in Illinois.

It is an accepted fact that all disbursements made by a court's receiver during the period prior to the foreclosure sale are proper expenditures, because items of large amount must have the approval of the court, and the property during this period is being operated for the benefit of all bondholders.

During the redemption period the property is operated either by a receiver or, as in most cases, by the purchaser at the date of the foreclosure sale. This may be the bondholders' protective committee or the new entity as established in the accepted plan of reorganization by the "deposited" bondholders, providing they own the title or have some assignment of rents from the title holder.

The net income earned from the property during this period is applicable to the deficiency due on the decretal indebtedness and is distributed pro rata between "deposited" and "non-deposited" bondholders. The accounting procedure is on the cash-receipts-and-disbursements basis.

Where a receiver is in possession through the period of redemption his accounting covers the actual revenues received and all disbursements made. His accounting is subject to the approval of the court and, if improper, will be disallowed. Therefore it is assumed that, when the receiver's reports of operation are approved, they are considered to be correct.

Where the bondholders' protective committee or its representative or the new entity is in possession, the net result from operation during the redemption period may be subject to adjustment by adding back certain types of expenditures if payments have been made for the following classes of expense.

1. General real-estate taxes and special assessments.
2. Exterior building maintenance.
3. Insurance.
4. Purchase of mechanical equipment.
5. Rental charge for furniture, furnishings and equipment.
6. Miscellaneous items.

The cash-receipts-and-disbursements basis means the inclusion of all cash received from whatever source and the accounting for all disbursements made. In some cases this is a comparatively simple statement to prepare, while in others there are questions of expense which are debatable.

The beginning and ending dates of the redemption period seldom coincide with the first or last day of the month. Therefore, the proper method is to account for all moneys received and all expenditures made which are applicable to the period, although payments of some expenses are made subsequent to the end of the redemption period. Owing to the poor methods in which some books are kept it is impossible to allocate correctly the expenses and the receipts. The most equitable plan in this situation would be to multiply the total disbursements and total receipts by the ratio of the redemption-period days to the total number of days of the month for the first and last part of the period.

Payments for general real-estate taxes and special assessments during the redemption period are not allowable. Such payments benefit the new purchaser and do not benefit the non-depositing bondholders, because the property is purchased at the foreclosure sale subject to unpaid taxes. The amounts so expended are added back to the net income.

Exterior building maintenance may include such items as exterior painting and tuck pointing, a new roof or a guaranteed roof recoating and sidewalk repairs. These types of expenses are considered to have a longer life than those appertaining to the actual operations of the building and should, therefore, be amortized as follows:

Type of expense	*Period of amortization*
Exterior painting and tuck pointing	3 years
New roof or roof recoating	Over period guaranteed in the contract
Sidewalk repairs	3 years

Fire-insurance coverage is generally written for three or five years because of the saving in premiums. The non-depositing bondholders do not benefit in this protection after the redemption period expires. Therefore, the unearned portion of the premiums should be determined and added back to the net income.

Most mechanical equipment, such as refrigerators, stokers, or elevators, is purchased on rental-purchase contracts. Instalment payments made during the redemption period are considered to be justifiable. The theory is that such payments represent rental charges, as the contracts are written for a period of three or more years. The contracts provide that the payments are rent until the full amount is paid. If such equipment is purchased outright the total amount disbursed should be amortized over the estimated life, charging the redemption-period operation for its portion only.

Probably one of the most difficult expenditures to determine is the fair monthly rental charge for the use of furniture, furnishings and equipment where title is not held by the estate. The following two methods are suggested which will assist in determining a fair rental charge.

1. The average gross monthly rental basis.

The average monthly gross income is determined by ascertaining the annual gross income and dividing by twelve. By applying the following percentages representing the depreciable rate for the classes of items composing the furniture, furnishings and equipment account to the average monthly gross income and allowing 5 per cent. interest on the investment the resultant total is indicative of an equitable rental charge.

Kind	*Rate*
Furniture	5%
Linen replacement	2%
China & glassware	1%
Interest on investment (average monthly)	5%

2. The cost basis:

This cost basis requires specific information as to the cost of the furniture, furnishings and equipment composing the account at the date of acquisition and of all subsequent additions. Using the estimated life of the classes of items we arrive at the total depreciation charge, to which is added the annual interest on the investment. Dividing this aggregate by twelve, the quotient is indicative of an equitable rental charge.

Type of item	*Estimated life*
Furniture	10 years
Carpet	7 years
Refrigeration	5 years
China & Glassware	3 years
Interest @ 5% on the investment	......

The cost of the furniture, furnishings and equipment at date of acquisition is generally found to be a depreciated value. Therefore, in most cases, the resulting figure is less than the one determined on the average monthly gross income basis.

Among the miscellaneous items which may have been paid from the operating funds of the property during the redemption period when the properties were operated by the committee are:

1. Interest on reorganization loan or prepayment thereon.
2. Incorporation expenses consisting of state and solicitor's fees.
3. Title examination fees and recording fees.

And other expenses which are properly chargeable to the new organization. These expenditures are not allowable and should be added back to the net income.

The adjusted net income is distributable to all bondholders on the basis determined in the master's report of sale and distribution and is also applicable to a reduction in the amount of the deficiency decree.