

ASSESSORS' HANDBOOK  
SECTION 503

CASH EQUIVALENT ANALYSIS

MARCH 1985

REPRINTED JANUARY 2015

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This manual has been renumbered from AH 510F.

This manual has been reprinted with a new format and minor corrections for spelling and math errors. The text of the manual has not changed from the prior edition. It has **not** been edited for law, court cases or other sources since the original publication date.





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## CHAPTER 1: INTRODUCTION

In the past decade a certain preeminence has been ascribed to the role of the comparative sales approach. The appraisal profession as well as the courts and property tax laws have generally sanctioned this approach as the preferred method of estimating market value. With this change in emphasis, proper sales analysis has become more important than ever in the appraisal process. Now under article XIII A changes in ownership of real property require reappraisal which means that purchase prices of sold properties must be scrutinized thoroughly to arrive at value indicators.

The cash equivalence aspect of sales analysis has been the subject of misunderstanding and misapplication. In some cases the concept is completely ignored and in others all intangible items are discounted. A more balanced approach is necessary. It is important that adjustments be made only when it is determined that the payment was not made in cash or its equivalent. Any policy stating that all selling prices comprised of elements other than cash must be adjusted, or that all trust deeds must be discounted, is incorrect. The facts in a given situation, such as whether the sale is in cash, financed by a loan with an interest rate not typical of the market, or financed by tangible property, determine the necessity for any cash equivalent adjustments to a selling price. **It should also be emphasized that selling prices adjusted to a cash equivalent are merely cash value indicators and do not necessarily represent market value.** The relationship between cash selling price and market value is fully discussed in Chapter 2, Cash Selling Price and Market Value. The objective of this handbook is to set forth concepts and techniques to be used as a guide in cash equivalent analysis. Other aspects of sales analysis, such as time and comparability adjustments, are discussed in Assessors' Handbook Section 501, *Basic Appraisal*.

## CHAPTER 2: CASH EQUIVALENT CONCEPT

### BASIC PREMISE

The cash equivalent concept is based upon the principle that **market** values must be measured or expressed in cash or money. If this principle is accepted, the cash equivalent of all forms of nonmonetary consideration must be estimated before a sale is considered as a possible indicator of market value. Money performs several functions, one of which is to measure value. Therefore, from a logical and practical viewpoint, it is also proper to measure market value in terms of money. In the field of valuation for property tax purposes, values should be expressed in terms of the same thing for all the different kinds of property. If not, the equity of the tax is destroyed or at least greatly impaired.

Money's primary characteristic is **general** acceptability. The paper notes and coins of the United States Government are money or cash. All lawful money of the United States is legal tender, which means a debtor is required to offer and a creditor is required to accept the currency, provided the denominations are proper, in payment of debts. Anything less acceptable than legal tender is not money. Personal checks have limited acceptability and are not legal tender, but economists usually include them as a part of the money supply. Intangibles, such as individual promises to pay money, stocks, and bonds, are clearly **not** money; and, of course, neither are tangibles such as land, automobiles, radios, books, etc.

An offer of \$20,000 cash today and a promise to pay \$20,000 in cash ten years from today at zero rate of interest are significantly different things in an economic sense. The second is not cash but a promise to pay cash ten years from today at zero rate of interest. Markets exist in which lenders pay cash for promissory notes in exchange for the right to receive money in the future. Lenders charge interest and perform the economic functions of waiting and bearing the risk of nonpayment. It is possible to estimate the rate of interest a lender requires for the right to receive money over a period of time and to discount the promissory note to its present cash value. Calculating the discount is an example of the cash equivalent concept.

The example of a note bearing no interest is given above to make the principle clear. It is logical to suppose that interest rates on most promissory notes will be high enough to compensate the lender for the delay in collection and the risk of nonpayment so that a note will have a cash value on its date of issue equal to its face value. This is the normal situation, and in most cases the cash value of a promissory note as of the date of the loan is equal to its face value. However, there are exceptions to this general statement. A professional appraiser, therefore, cannot simply accept selling prices without analyzing the cash equivalency of nonmonetary consideration.

In the past, transactions were analyzed on the basis of what the buyer paid. Beginning in the 1930's, as loan-to-value ratios increased and cash down payments decreased, the emphasis shifted from what the buyer paid to what the seller received. Many contemporary authorities continue to support this concept of cash to seller.

Property is often sold subject to an existing loan secured by a deed of trust. In the event of foreclosure, the beneficiary has first call on the sale proceeds. The equity holder receives any residual cash. This situation is parallel to the case of the buyer who pays some cash down while persuading a lender to put up the balance of the purchase price. The seller's situation is even more complicated because he or she usually pays a real estate commission. In addition to these factors, both the buyer and the seller are usually required to pay some closing costs. The cash amounts actually received by the seller or paid by the buyer depend upon many factors, such as financing, real estate commissions, and closing costs, and vary according to the terms of the sales agreement. Therefore, the term "cash to the seller" must be clearly defined if the concept is to be applied uniformly in cash equivalent analysis. For purposes of this manual, "cash to seller" is gross cash received by the seller or for seller's equity plus the cash balance of any obligation of which the seller was relieved.

A more precise way of dealing with cash equivalents is to analyze a transaction in light of the full consideration for the **property**. The consideration **given** for the property, regardless of how the buyer accumulates it, is equal to the consideration **received** for the property, regardless of how the seller shares it. This full consideration must be identified and expressed in cash. Here is a brief outline of the elements of valuable consideration and their disposition.

Elements of Consideration	Given By	Received By
Cash (All or Part)	Buyer	Seller
Cash (All or Part)	Third-Party Lenders	Seller
Promise to Assume Existing Loan	Buyer	Seller
A Promissory Note or Contract (All or Part)	Buyer	Seller
Tangible Property (Boat, Vacant Lot, or Other)	Buyer	Seller
Intangible Property (Other Than a Note)	Buyer	Seller

The appraiser's objective in cash equivalent analysis is to express the consideration given for the property in terms of cash as of the date of the transaction. He is concerned with the consideration paid for the property under appraisal; consideration for any other property the seller may sell or for the various other services that are provided to both the buyer and seller at the time of the sale is of no consequence. In Chapter 3, Real Estate Sales, we discuss the different services usually performed at the time of a sale.



## LEGAL BASIS

Section 1, article XIII of the California Constitution states:

Unless otherwise provided by this Constitution or the laws of the United States.

(a) All property is taxable and shall be assessed at the same percentage of **fair market value**. . . . (Emphasis added.)

It is imperative to have an acceptable definition of fair market value for use in cash equivalent analysis. The courts have defined value in many different ways. One of the most frequently cited court definitions is:

. . . **The highest price estimated in terms of money** which the land would bring if exposed for sale in the open market, with reasonable time allowed in which to find a purchaser, buying with knowledge of all of the uses and purposes to which it was adapted and for which it was capable . . . the highest sum which the property is worth to persons generally. . . .<sup>1</sup> (Emphasis added.)

In another benchmark decision, the California Supreme Court amplified the statutory definition of market value as follows

It provides, in other words, for an assessment at the price that property would bring to its owner if it were offered for sale on an open market under conditions in which neither buyer nor seller could take advantage of the exigencies of the other. **It is a measure of desirability translated into money amounts** . . . and might be called the market value of property for use in its present condition.<sup>2</sup> (Emphasis added.)

No one definition conveys all of the conditions of a hypothetical transaction that the courts have decided will yield market value. For property tax purposes, the definitive value concept is stated in section 110 of the Revenue and Taxation Code and further amplified by section 2 of Title 18 of the California Administrative Code (Property Tax Rule 2). Section 110 defines value as follows:

Except as is otherwise provided in Section 110.1, “full cash value” or “fair market value” means the amount of cash or its equivalent which property would bring if exposed for sale in the open market under conditions in which neither buyer nor seller could take advantage of the exigencies of the other and both with knowledge of all of the uses and purposes to which the property is adapted and for which it is capable of being used and of the enforceable restrictions upon those uses and purposes.

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<sup>1</sup> *Sacramento Southern RR Co. v. Heilbron*, 156 Cal. 408; particularly, pages 412-14.

<sup>2</sup> *De Luz Homes, Inc. v. County of San Diego*, 45 Cal. 2d 546; particularly, pages 561-62.

Property Tax Rule 2 defines value in this manner:

In addition to the meaning ascribed to them in the Revenue and Taxation Code, the words “full value,” “full cash value,” “cash value,” “actual value,” and “fair market value” mean the price at which a property, if exposed for sale in the open market with a reasonable time for the seller to find a purchaser, would transfer for cash or its equivalent under prevailing market conditions between parties who have knowledge of the uses to which the property may be put, both seeking to maximize their gains and neither being in a position to take advantage of the exigencies of the other.

Section 4 of Title 18 of the California Administrative Code (Rule 4, The Comparative Sale Approach to Value) further provides that when applying the comparable sales approach to value the assessor shall:

Convert a noncash sale price to its cash equivalent by estimating the value in cash of any tangible or intangible property other than cash which the seller accepted in full or partial payment for the subject property and adding it to the cash portion of the sale price and by deducting from the nominal sale price any amount which the seller paid in lieu of interest to a lender who supplied the grantee with part or all of the purchase money.

The legal expression of value for property tax purposes is cash or money. Therefore, for property tax appraisal purposes, the value of all nonmonetary components of a selling price must be expressed in terms of money.

### **CASH SELLING PRICE AND MARKET VALUE**

The adjustment of a nominal selling price to a cash selling price is only one of the adjustments necessary in the comparative sales approach to value. The sales approach requires many types of adjustments. They are made in the following sequence:

1. Cash equivalent - results in a cash selling price at time of sale when parties to the transaction have agreed to a method of payment other than cash.
2. Time - adjustment results in a current cash selling price as of the date of sale.
3. Comparability and any other adjustment that is necessary to produce an indicator of the current full cash value of the subject.

The fewer the number of adjustments, the less likelihood of error. **In some cases no adjustments may be necessary.** For example, many selling prices are on a cash equivalent basis, many sales are current, and many sold properties may have characteristics similar to the subject; however, no appraiser should assume that these conditions exist. It is the appraiser’s task to verify these factors and to make adjustments where necessary. If a transaction is old or the

characteristics of the sold property are extremely different from those of the subject property, the appraiser should not use the transaction if other data are available. The same is true of adjustments to the nonmonetary considerations. When the nonmonetary consideration is unusual, complicated, and requires large adjustments, it may be desirable to discard the sale and use others. This alternative may not be feasible when sales are scarce or when the only sale is of the subject property.

The adjustment to a cash selling price is only one step in the adjustment process and cash selling price is not necessarily synonymous with value. Cash equivalence adjustments most often narrow the price range of a group of similar sold properties, although they may sometimes broaden the range. It is common knowledge that selling prices of similar properties that transfer during the same time period will vary. The fact that cash adjustments may widen this variance is not a valid reason for ignoring the adjustments. It is always possible that some sellers were poorly informed or did not adequately adjust the asking prices for the cash equivalence of promissory notes. If these sales are to be used, the individual selling prices must first be adjusted to a cash equivalent basis and then some further adjustments made to account for the buyer's ignorance or lack of sophistication. **Selling prices adjusted to their cash equivalent are merely indicators of value and do not necessarily represent market value.** The validity and reliability of these value indicators must be resolved by the appraiser in the correlation process. The end product of this process is the final value estimate.

It is necessary to apply all cash equivalent adjustments to the nominal selling price prior to making any other adjustments for time, quality, condition, location, size, motivation, etc. If other adjustments are made before the cash equivalent is determined, it will cause distortions and produce an inaccurate indicator of value. The calculation of the cash equivalent is always the first step in adjusting a selling price to a market value indicator.

## CHAPTER 3: REAL ESTATE SALES

The sale of real estate is a complex transaction made up of several activities. Although the same general procedures apply to all sales of real property, there are specific differences in the practices employed in the marketing of certain types of property and in certain locations. The material presented here applies specifically to single-family residential property and generally to all real estate. Typically there are five different types of activity involved in the transfer of real estate:

- Real estate brokerage
- Real estate financing
- Escrow
- Title insurance
- Government services

Each of these service activities involves separate and distinct costs. These costs are referred to as closing costs. Although the buyer and seller customarily assume different elements of these costs, there is no rigid rule as to who must pay them. Either the buyer or the seller may pay all or a part of the costs. An exception to this statement occurs in connection with VA financing due to government regulations which prohibit the buyer from paying certain costs, namely loan fees in excess of 1 percent (or “point” as it is termed). FHA loans, as of December 1, 1983, have been deregulated. Interest rates and buyer’s points involved in FHA loans are no longer controlled by federal agency but rather by forces in the real estate market itself.

### REAL ESTATE BROKERAGE

Real estate brokerage charges are negotiable and are generally deducted from the total amount of cash paid into escrow. Some people hold that all brokerage costs are paid literally by the buyer. The brokerage charge is usually the highest single closing cost. Not all real estate sales take place through a broker. Appraisal theory dictates that the full amount of the commission should be included in the value of the property because it is a part of the economic cost of acquiring property. A sale of real estate by the owner without benefit of broker raises the question of whether the selling price should be adjusted upward to reflect brokerage costs. This question should be resolved **after** the cash equivalent and time adjustments have been made; the appraiser then decides whether the property would have sold for more had it been sold through a broker. Like most problems in the field of appraisal, the correct answer depends entirely upon the circumstances. No prudent seller would elect to perform the sales activity without anticipating appropriate compensation for the effort. However, not all sellers are prudent. A seller who is prudent, efficient, and who has devoted sufficient time to the sale should be able to obtain the same price as a broker. A buyer should not have any objection to paying this price whether it is sold by a broker or the owner. These are conditions which the appraiser must analyze in the third category of sales adjustments shown on page 5 (comparability, motivation, etc.); they are immaterial to cash equivalent analysis.

## REAL ESTATE FINANCING

Although some sales occur on a cash basis, the vast majority of the sales of real estate involve some type of financing.<sup>3</sup> In California, the customary practice is that the borrower provides security for the lender by executing a deed of trust. This arrangement pledges the real estate as security for payment of the debt.

The debt on real estate may be secured by more than one deed of trust. The greatest sources of funds have traditionally been institutional lenders such as savings and loans, commercial banks, and insurance companies. These lenders, who are subject to stringent regulation, usually loan only on promissory notes secured by first deeds of trust. Mortgage companies, real estate syndicates, pension and endowment funds, real estate investment trusts, and individuals are examples of noninstitutional lenders. Individuals are an important source of funds for notes secured by junior deeds of trust.

The terms of the loans as specified in the promissory note must be known in order for the cash value of the note to be determined. The terms include return to the lender, loan-to-value ratio, amortization method, payment schedule, and duration of the loan. The return to the lender consists of the rate of interest as well as all charges for the origination of the loan.

The loan-to-value ratio, i.e., the amount of the loan in relation to the "value," usually ranges from 80 to 90 percent. The smaller the loan-to-value ratio, the less the risk for the lender. A 50 percent loan-to-value ratio provides the lender with a great deal of security in the event of a foreclosure, whereas a 95 percent ratio reflects a high risk loan. The value used is the appraised value determined by the lender and may not represent market value. An 80 percent loan of an amount that is 125 percent of market value is a 100 percent loan. Such loans have occurred.

The amortization method defines the way in which the loan is repaid. The most common method is a system of equal monthly payments which fully repays the loan over the life of the loan, including both interest and principal. Another method consists of equal periodic payments plus a large single payment (called a balloon payment) at the end of the loan. Many other repayment schedules exist. Knowledge of the repayment schedule is essential for calculation of the cash value of the note. If the seller receives cash equivalent to the note's face amount, no discount is necessary.

Loans secured by junior trust deeds are more risky than conventional loans secured by first trust deeds. Such loans usually make up the difference between the conventional loan plus cash down payment and the full purchase price of the property. The junior loans are usually for a shorter term (two to ten years), bear higher interest rates, and may have a balloon payment.

Financing under the VA loan guarantee program usually involves a very high loan-to-value ratio, but the risk to the lender is reduced because of governmental support. The maximum interest

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<sup>3</sup> Real estate financing is a large field. The reader who wishes to explore it is referred to the texts listed in the bibliography.

rates allowed on these loans, together with the ceiling on loan origination fees to the buyer, may cause lenders to charge loan discount points in order to obtain satisfactory returns. The number of points depends upon the relationship of market interest rates and loan origination charges to VA maximum interest rates and loan origination charges. Loan points have varied significantly over time and must be paid by the seller.

When a property subject to an existing loan is sold, the existing loan must occasionally be paid off, resulting in prepayment penalties charged to the lender. VA loans have no prepayment penalties, but some conventional loans do. Some lenders eliminate the penalty after the loan is five to seven years old; some lenders do not collect a prepayment if they refinance the property. Prepayment penalties vary widely, but 2 to 3 1/2 percent of the unpaid balance is not uncommon. Penalties may become “a thing of the past” with the growing popularity of variable and adjustable rate loans. Short-term loans involving a balloon payment may also help render the penalty clause obsolete.

## **ESCROW**

An escrow is a trust agreement in which a third party (generally a title company) holds the elements of a transaction—the deed, money, and evidence of title—until the conditions of the transaction are met. These elements are then distributed to the principals. An escrow is not required in every transaction, but most sales are consummated in this manner.

The escrow service provides for the payment of property taxes and insurance in accordance with escrow instructions. Property taxes are usually prorated as of the date of transfer; the seller may receive a refund for prepaid taxes. Because of impound requirements, the buyer may be required to pay some taxes and insurance in advance. These charges and refunds are not part of the total consideration paid for the property, but are proration of obligations and liens on the property. These items are not added to or deducted from the consideration for the property.

The escrow service fee is also neither added to nor subtracted from the consideration paid for the property. Escrow rates vary, typically being highest in Southern California, where the escrow service is usually separate from the title insurance business. Escrow rates increase in proportion to the selling price. Although either the buyer or seller may pay the escrow fee, each locality has a customary practice. Throughout California, the customary practices in 64 localities indicate that in 41 the fees are usually split, in 14 the buyer pays, and in nine the seller pays.

## **TITLE INSURANCE**

Title insurance, which protects against the loss because of a defective title, is not required by law. However, institutional lenders require title insurance, and title companies will not handle the escrow unless title insurance is obtained. Needless to say, title insurance provides the property owner with valuable protection. Title insurance, like the escrow, is an additional service and the cost should not be added to or deducted from the consideration for the property.

Title insurance rates, although regulated, are not uniform. The difference in rates between the companies is usually small. A basic policy is issued for the buyer and another for the lender. The rates vary with the amount of insurance, but usually the rate is based on each one thousand dollars of money loaned. If the property being insured has been insured within the past two years, the basic policy cost is reduced 20 percent. One company charges a higher rate if the last insurance was taken out seven or more years ago.

Either buyer or seller may pay title insurance. A survey made in California in 1976 showed that the buyer customarily paid title insurance fees in 32 localities and seller in 12, while in 19 localities the fees were split. Payment policies may vary depending upon the type of property involved in the transaction.

### **GOVERNMENT SERVICES AND COSTS**

The sale of real estate involves a county transfer tax as well as charges for the recording of certain documents. The amounts of these charges are not additions to or deletions from the property value. Like all of the closing costs, these items may be paid by either the buyer or seller.

The transfer tax or documentary stamp cost is \$.55 for each \$500 of selling price except that the tax is not levied on the amount of any assumed loan. The seller customarily pays the tax.

The recording of the grant deed costs \$4 for the first page plus \$1 for each additional page. There are many other documents which may be recorded, such as deeds of trust, quitclaim deeds, reconveyances, etc. The seller normally pays for some recordings and the buyer for others.

## CHAPTER 4: INCOME TAX CONSIDERATIONS

People are motivated to maximize after-tax incomes. Federal and state income tax laws provide some tax advantages to the buyers and sellers of real estate. One provision led sellers to desire a maximum of 29 percent down so that the sale could be considered an installment sale, whereby the taxation of the total gain is deferred. Federal Internal Revenue Service (and the California Franchise Tax Board) requirements no longer specify this percentage as a criterion for an installment contract.<sup>4</sup> Realizing the income in the form of a capital gain, with higher annual depreciation charges and lower annual income, is also a tax advantage. Prepaid interest payments have tax advantages to buyers of real estate, since interest is a deductible expense.

These are a few of the tax aspects of real estate transfers. They create motives for buying and selling real estate which unquestionably influence market value. Except in unusual cases, the income tax does not create any incentive to pay a higher price or sell at a lower price than that dictated by the market. People in high income groups, for example, do not pay more for tax-exempt bonds than people in middle income groups, nor do they sell them for less, although their tax savings are much greater.<sup>5</sup>

Income tax considerations should have no bearing on the adjustment of noncash components of a selling price. A promissory note drawn as a part of the consideration of a selling price no longer has a 29 percent down payment limit to qualify as an installment sale; all transactions, regardless of the size of the down payment, are considered by the Internal Revenue Service to be installment sales.

In computing a cash equivalent, only future cash flows are discounted. Present cash payments, whether called down payments, prepaid interest, or something else, receive no discount because there is no deferral of income.

In calculating cash equivalents, appraisers should consider the possible affects of the Tax Reform Act of 1984 on any notes being analyzed. That change in federal income tax laws is aimed principally at real estate syndications and especially those whose accounting system is on an accrual basis. Most syndications are set up on the accrual method of accounting so that annual accrued interest is deducted without actually paying out any cash. The seller, usually on a cash accounting basis, does not report interest income until actually received. In this way, the United States Treasury has been left waiting for taxes on the interest earned, on the one hand, while allowing reduced taxes as if the interest had been paid, on the other. This was the reason for the law change.

Excluded from this law is the sale of a principal residence by an individual and the sale of a farm for \$1,000,000 or less. It is not clear how to handle the sale of a farm for a price in excess of \$1,000,000 on which is situated the principal residence.

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<sup>4</sup> Federal law effective October 1980; California, December 1980.

<sup>5</sup> For example, \$10,000 of tax-exempt bond income saves a person in the highest taxable income bracket \$5,000 in income taxes, but saves a married taxpayer with taxable income of \$20,000 - \$24,000 only \$3,200.



Under this law, the Internal Revenue Service will announce every six months the applicable federal rate for notes with terms of one to three years, three to nine years, and over nine years. For income tax purposes, if the stated interest rate of a note is not at least 110 percent of the applicable federal rate, then the IRS will impute an interest rate of 120 percent of the applicable federal rate. For example, assume the applicable federal rate is 12 percent; 110 percent of that rate is 13.2 percent. If the stated rate of a note is 12.5 percent, it is inadequate under this law and a rate of 14.4 percent (12 percent times 120 percent) will be imputed for income tax purposes.

A property tax appraiser analyzing a note should ascertain the following:

1. Does the note in question fall under the Tax Reform Act of 1984?
2. If it does, is the stated rate of the note so low that IRS will impute a higher rate?
3. If a higher rate will be imputed, what is the difference between actual interest to be received and the IRS imputed interest on an annual basis?
4. What would be the typical income tax liability (federal) on the increment of imputed interest?
5. What would be the affect on the cash value of the note because of this additional income tax liability?

# CHAPTER 5: WHAT AND WHEN TO ADJUST TO A CASH EQUIVALENT

## NONCASH COMPONENTS

Noncash components of a selling price that may require adjustment to a cash price are classified as tangibles or intangibles. The tangibles may include any kind of real or personal property. For example, the seller may accept as all or part of the consideration:

- Land
- Automobiles, bonds, jewelry, paintings, furniture, cattle, and other chattels
- Other real property

The cash equivalent of these items must be determined or the total selling price in money cannot be ascertained. Appraisers utilizing such selling prices often unhesitatingly adjust such nonmoney parts of the consideration to a cash basis; however, problems can arise when intangible items are a part of the consideration. Intangible components of a selling price may be:

- Promissory notes not secured
- Promissory notes secured by first, second, third, etc., deeds of trust
- Promissory notes secured by purchase money deeds of trust or mortgages
- Land, installment, or conditional sale contracts
- Stocks and bonds
- Long-term indebtedness, liabilities, and accounts payable

Most tangibles have a value written on them, such as the face value of promissory notes, land sale contract amounts, and the par value of stocks and bonds. It is a well known fact that the par values of stocks and bonds need not, and usually do not, coincide with their cash value. The face values of promissory notes and land sale contracts also need not equal their cash values.

## ADJUSTMENT DATE

The date for analyzing the noncash components of a selling price is the date of the transaction. All economic data change over time; the real estate loan market is particularly subject to rapid change. It is incorrect to analyze the cash equivalent of a promissory note issued for a transaction that took place at some prior date on the basis of current loan terms. The objective is to determine the cash selling price as of the date of the transaction. The value of any noncash component and even cash (purchasing power of cash) itself changes over time. Therefore, the relevant data for analyzing promissory notes, stocks, bonds, personal property, and other property are those as of the date of valuation.

## **AN EXCEPTION (SECTION 236 HOUSING)**

A distinction is made in the financing of property constructed under the auspices of the National Housing Act (specifically section 236). The builder-developer receives a government subsidy in the form of the difference between a 1 percent and the prevailing interest rate. The private lender in making the loan determines the market interest rate and the federal government supplies the differential from 1 percent. Properties constructed under section 236 can be sold; the selling prices, including the subsidized interest, are not subject to cash equivalent analysis. Moreover, the initial financing of section 236 properties is not subject to cash equivalent analysis on the basis of the 1 percent to market differential in the interest rate.<sup>6</sup>

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<sup>6</sup> For further legal reference in the valuation of section 236 properties, see section 402.9, Revenue and Taxation Code.

## **CHAPTER 6: ADJUSTMENT TO A CASH EQUIVALENT**

The appraiser should consider several factors when adjusting a nominal selling price to its cash equivalent, including those listed below:

1. Identify any noncash components of the consideration for the property. These may include new or assumed notes, stocks, bonds, and personal and real property.
2. Ascertain the face value of any new loan or the balance owing on any assumed loan, look up the market price of any stocks or bonds, and ascertain the value of any tangible property as of the date of the sale.
3. Determine the terms of the notes or contract of sale, the rate of interest, the amount and timing of payments, and whether the loan is fully amortized by periodic payments or whether a balloon payment is required.
4. Determine the terms and conditions of the typical loan available for the type of property in question as of the date of the transfer; the market rate of interest; the ratio of loan to value, the amortization method, timing of payments; and the period of repayment. In the case of newly originated financing, it should be determined whether or not the seller paid any points.
5. Adjust, when necessary, the face value of the newly drawn note, contract, or remaining balance of an assumed loan to its cash equivalent. This can be a simple matter of deducting seller's points from a new loan; or it may be a more complicated calculation involving the present worth of future payments. Examples of common types of cash equivalent adjustments are given in Chapter 11.
6. Add the cash value of the noncash components of the consideration to all cash payments (cash down and prepaid interest). The addition of these two components equals the cash selling price of the sold property. The appraiser then can make any other necessary adjustments to the cash selling price of the sold property.

## CHAPTER 7: APPLICATION OF DISCOUNTING TECHNIQUES

### SELLER'S POINTS

The simplest kind of cash equivalent adjustment is a deduction of seller's points, usually applicable to VA guaranteed loans. The maximum interest rates for these loans are regulated by the federal government and are generally lower than those paid for conventional loans. Since lenders will not invest their funds in mortgages which yield a below-market rate of return, they invariably require a discount of the face value of the note. This discount is generally expressed in terms of "points"—one "point," in the language of real estate finance, being a 1 percent discount applied to the face value of the loan. Current law precludes the buyer from paying the points; hence the points are paid by the seller. This arrangement allows consummation of the sale without violating the government requirement.

If the market interest rate is 15 percent and the VA maximum rate is 14.5 percent, lenders require a discount of approximately four points. An eight-point discount is equal to an increase of about one full percent in the effective interest rate. In the above case, the four-point discount would have the same effect as increasing the legal VA interest rate from 14.5 percent to 15 percent.

For Example:

Sale		
Cash Down Payment	\$5,000	
VA Loan	<u>\$65,000</u>	
Nominal Selling Price	\$70,000	
Analysis of Sale		
Cash Down		\$5,000
Loan	\$65,000	
Less 4 Points *		
\$65,000 x .04	<u>\$2,600</u>	
Cash Advanced for Loan		<u>\$62,400</u>
Cash Equivalent of Nominal Selling Price		<u>\$67,400</u>

\* Points are paid by the seller.

In the case of a VA loan requiring seller's points, the full consideration is less than what it would be for a cash transfer at the same nominal selling price. Although it appears that the nominal selling price is adjusted upward to compensate the seller, what probably occurs is that the prudent seller does not lower the asking price as much for a VA financed loan as for a cash sale or a conventional loan. The case of a prudent seller bargaining with a prudent buyer usually results in a nominal selling price adjusted by the amount of the seller's points. In the previous example, the cash equivalent selling price is \$67,400 and the nominal selling price is \$70,000 with four seller's points and a \$65,000 loan. However, in some cases the seller may sell at a cash equivalent price even though seller's points are charged or the buyer may pay cash for a property whose price allows for seller's points.

These factors do not invalidate the cash equivalent concept any more than any imperfection in the market invalidates the concept of market value. It is the task of the appraiser to adjust selling prices to their equivalent in cash and subsequently make any other necessary adjustments for motivation, uninformed buyers or sellers, or any other factors. It makes no difference whether or not the seller has been able to adjust the selling price upward or avoids reducing his asking price. The nominal selling price should be decreased by the amount of the seller's points times the loan amount. The reason for this is that the lender pays only cash equal to the loan amount less the product of the seller's points times the loan amount. Consequently, the cash consideration bargained for is less than the nominal selling price.

The number of seller's points is not easy to determine. The seller is the best source of information, but the assessor's practice is to send change-of-ownership statements to buyers. The number of seller's points changes frequently; therefore, the use of a fixed amount for points for all transfers is incorrect. In many cases, even adjusting the number of points to the conditions at the time of transfer will be incorrect because the points are established at the time of the loan commitment. In some special cases no seller's points are charged.

In those cases where the number of seller's points and the loan amount are relatively small, the cash equivalent adjustment may not be worthwhile. Just what is considered small is a matter of judgment, but it is likely that three or less points may not be worth adjusting.

Prior to December 1, 1983, FHA and VA loans were similar because both had interest rate ceilings which the buyer could not exceed. Since then, FHA regulations have been changed so that loan rates are at market interest levels as with conventional loans, and points are negotiable and payable by either buyer or seller. However, lenders continue to require loan insurance for FHA loans.

### **CALIFORNIA FARM AND HOME PURCHASE PROGRAM (CAL-VET)**

The Cal-Vet program's purpose is to assist qualified California veterans to acquire suitable farm or home property at low financing costs. The money for these loans is provided by the Cal-Vet agency which obtains its funds through the issuance of California State bonds. The rate is determined by the level at which State bonds can be sold plus an allowance for administrative costs. The credit of the State and its tax-exempt status are used to obtain these funds, enabling the veteran to obtain an interest rate which is less than that charged by conventional lenders.

The major difference between Cal-Vet and conventional loans is that Cal-Vet receives a grant deed to the property from the seller and issues a contract of sale to the buyer. Conventional loans are structured with a grant deed conveying the property from the seller to the buyer and the lender takes back a trust deed from the buyer to secure a promissory note. This difference between Cal-Vet and conventional loan practices does not require a cash equivalent adjustment; the seller is not required to pay any more fees for a Cal-Vet loan than for a conventional loan.

## THIRD-PARTY LOANS

Loans secured by first deeds of trust made by savings and loans, banks, and insurance companies (which are not insured by FHA, not made by Cal-Vet, and not guaranteed by the VA) have loan terms that are established by market conditions. The rate of return adequately compensates the lender. The loan ratio of such financing is usually between 60 and 80 percent. In some cases, where the loan ratio is higher, an institutional lender may require the borrower to buy private mortgage insurance which reduces the lender's risk. The lender supplies cash for the full amount of the loan, so no cash equivalent adjustment is necessary.

In **all** loans made by a lender who is a third party, the lender buys the loan, i.e., supplies cash to the loan. If the lender charges no "points" to the **seller** or does not discount the note, the lender has paid cash for the loan. The effect of seller's points has already been explained.

## LEGAL POSITIONS ON THE ASSUMPTION OF LOANS

In the sale of real estate, sometimes an existing loan is assumed by a buyer. The nominal selling price typically consists of the cash down payment plus the face amount of the assumed loan.

If a loan agreement contains a "due-on-sale" clause, an assumption may or may not take place. Recent court cases have treated the validity of the "due-on-sale" clause variously. A California Supreme Court case<sup>7</sup> in 1978 declared the clause invalid where a state-chartered institution is the lender. In 1982 the U.S. Supreme Court decided the clause is valid where a federally chartered institution is the lender.<sup>8</sup> The assumption of loans made by a federally chartered institution can be expected to disappear as a result of this court decision, but the assumption of loans from state-chartered institutions will remain in the marketplace for some time to come.

In October 1982, the President signed into law the Garn-St. Germain Depository Institutions Act of 1982. Among other aspects, the act contains provisions for the enforcement of "due-on-sale" clauses. This enabling legislation allows State Legislatures, the U.S. Comptroller of Currency, and the Federal Home Loan Bank Board to enact laws and regulations to enforce "due-on-sale" clauses. This act generally increases the legal ability of any lender, whether state or federally chartered, to enforce the "due-on-sale" clause.

A lender, however, may permit the buyer to assume an existing loan but only at a higher interest rate. The higher rate may well be at the current level but occasionally some lending institutions have negotiated a "blended" rate which is somewhere between the stated rate of the original loan and the current rate for similar loans.

The assumption of an existing promissory note with an interest rate lower than market may necessitate an adjustment to selling price, because a buyer will often pay a premium to obtain

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<sup>7</sup> *Wellenkamp v. Bank of America*, 21 Cal 3d 943.

<sup>8</sup> *Fidelity Federal Savings and Loan Association v. De La Cuesta*, 456 U.S. 923.

advantageous financing in the form of a low-interest assumption. A buyer, for example, may agree to a nominal price of \$180,000 when an existing \$100,000 loan can be assumed at a below-market interest rate; but might agree to no more than \$150,000 if the terms were cash for the entire purchase price. On the other hand, the assumption of a note with an above-market rate could result in a lower price. A buyer might agree to a \$120,000 selling price with a \$100,000 loan assumption at high interest rate, but the cash selling price might be \$150,000.

A lender buying a promissory note will discount it or pay a premium to the point that its return is equalized with the rate of return required. This phenomenon is most clearly illustrated in the bond market. Although promissory notes secured by deeds of trust on real estate are in a different market, the economic principles are the same.

The cash equivalent of an assumed loan is calculated in the same way as it is with newly created notes. The payments are discounted to their present worth at the current market rate of interest.

### **DISCOUNTING PAYMENTS**

When an investor is considering buying a note, the primary concern is not with the stated rate of interest.<sup>9</sup> Of more concern is the balance owed, the amount and frequency of payment, the remaining term, the required yield rate based on the security of the loan, and the ability of the borrower to repay. The investor should be able to command the same return as if a new note were drawn at a current interest rate. This return is achieved by converting the face value of the debt to reflect the current yield required for loans of this nature. For example:

A seasoned note with remaining balance of \$89,427, a 20-year remaining term, and equal monthly payments of \$804.60 including principal and interest at 9 percent, is offered to a lender. Lenders now require a return of 12 percent based on the risk and payment schedule. In the 12 percent column of a present worth of one-per-month table, the 20-year factor is 90.8194. The present worth of the 240 monthly payments at a yield of 12 percent is \$804.60 times 90.8194, so the cash equivalent of the \$89,427 remaining balance is \$73,073.

If the purchase price of the note is known, the calculations can be reversed to determine the yield rate. For example:

The \$89,427 note described above is purchased by an investor for \$73,000 (a 20 percent discount). Dividing the cash equivalent of \$73,000 by the monthly payment of \$804.60 produces a factor of 90.7283. A perusal of the 20-year present worth of one-per-month tables reveals a factor of 90.8194 in the 12 percent column. The yield rate then is slightly less than 12 percent.

<sup>9</sup> The examples used in this section employ the remaining term or amortization period; in later examples a shorter term is employed.



Another method of estimating the cash equivalent is by calculating the present worth of the difference between the payments as called for in the note and the payments that would be required at a market rate of interest. For example:

A 10 percent, 20-year note in the amount of \$100,000 calls for equal monthly payments of \$965. A current rate of 15 percent is required for this type of loan. At 15 percent the monthly payments would be \$1,316.80, a difference of \$351.80. The difference between the present worths of the two payments may be computed by multiplying the monthly difference by the present worth of one-per-month factor for 20 years at the annual yield rate of 15 percent;  $\$351.80 \times 75.9422 = \$26,716$ . The cash equivalent of the note is its face value of \$100,000 less \$26,716, or \$73,284.

### **SELLER-CARRIED PURCHASE MONEY MORTGAGES**

When third-party institutional financing became difficult to obtain, many sellers of real property resorted to “carrying” the loan themselves. During the period 1980-82, the interest rate of seller-carried loans approximated 11 to 13 percent, considerably lower than the conventional interest rate of 15 to 17 percent.

The present worth of seller-carried loans can be measured in the marketplace. Brokers in this market who deal on a daily basis in trust deeds and contracts of sale can evaluate discounts quickly. To avoid having to determine individual discounts, the appraiser can either calculate the difference in present worth factors or evaluate the selling price in terms of units of production. For example, investors who purchase orange groves base the price paid on projected productive capacity. The appraiser can compare the price per box paid for a creatively financed grove with the average price per box paid for groves with typical or conventional financing. Such a comparison will indicate whether a cash equivalent adjustment is necessary.

The criteria for determining whether a note should be discounted is the prevailing third-party interest rate. Any note written at other than the current rate for third-party loans may require adjustment. Here is an example of how the appraiser might adjust for the difference:

Nominal Selling Price	\$100,000
Down Payment	\$25,000
Purchase-Money Mortgage	\$75,000
Amortization Period	30 years
Interest Rate on Loan	12%
Monthly Payments	\$765
Prevailing Third-Party Rate	15%

Solution:

Holding Period: Present Worth Factor for 7 years at 15 percent times actual monthly payments,  $51.8221 \times \$765 = \$39,644$

Balloon:

Remaining 23-Year Period @ 12% Equals	
93.5834 x \$765 or \$71,591 Deferred 7 Years at 15%	
Monthly Payment Premise:	
.3522 x \$71,591 =	<u>\$25,214</u>
Cash Equivalent of Loan	\$64,858
Add: Down Payment	<u>25,000</u>
Total Cash Selling Price	<u>\$89,858</u>

In this example the anticipation is that the “holding period” is an average of seven years when the loan will be extinguished by market turnover. Any period of years might prevail at a given time; the important point is that the length of the holding period must be derived from the analysis of current sales and financing of these transactions occurring in the real estate market.<sup>10</sup> While there are no particular criteria for selecting a holding period, the appraiser can justify the procedure by comparing the sales price of “creatively financed” properties with those of nearly identical conventionally financed properties. One assessor has calculated this difference to equal the present worth of the difference in the monthly payments for three years. Thus, the rationale of the procedure is not that the properties will resell within a three- or seven-year period, but rather that the discounting technique enables the appraiser to infer the cash equivalent price of the sold property which has been creatively financed. This technique does not measure the value of the “paper” in the mortgage exchange market. The note itself might sell for a far different price.

Assessors should test different areas within the county to determine whether a discount should be applied to seller-carried notes. Comparing the selling prices of conventionally financed homes with the selling prices of similar homes financed through seller-carried notes can give a factor to apply to creatively financed selling prices.

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<sup>10</sup> See P. Barton DeLacy, “Cash Equivalency in Residential Appraising,” *The Appraisal Journal*, January 1983. Also see J. B. Corgel, Paul R. Goebel, *Financing Adjustments Via Cash Equivalency: Evidence on Accuracy*, a monograph funded by the Society of Real Estate Appraisers Foundation. Both works are listed in the bibliography.

# **CHAPTER 8: DETERMINATION OF THE MARKET INTEREST RATE**

## **METHODS OF COMPILING DATA**

The most sensitive aspect of cash equivalent analysis is the determination of the market rate of interest, that is the yield necessary to attract a lender. Two types of essential data serve in the determination of the rate: information derived from comparable recent sales and information gathered from active participants in the overall lending market.

The first type of data must be obtained from loans negotiated on similar properties on or near the date of the sale. This phase of the investigation should include interviews with the principals and agents.

Secondly, institutional and noninstitutional lenders, loan brokers, mortgage companies, real estate brokers, and knowledgeable borrowers and lenders should be interviewed to obtain data about interest rates, loan terms, and lending trends. This research will confirm the appropriateness of the rate selected for a subject property.

## **RATE OF INTEREST**

The rate of interest charged by a knowledgeable lender for a secured loan will be influenced by several factors:

1. The money market (the general level of interest rates based on the supply of and the demand for money).
2. The type, quality, and value of the property held as security.
3. The ability of the borrower to repay the loan. In the case of income-producing properties, this also encompasses the ability of the property itself to generate sufficient net income to repay the borrowed funds.
4. The ratio of loan to appraised value. Increasing the cash down payment decreases the loan ratio and, for any loan, increases the security in the event of default.

The above four factors determine the level of interest rates. The risk of nonpayment of all or part of the loan is one of the determinants of the interest rate. The ultimate security for the payment of a secured loan is the value of the property. If the buyer cannot pay, the property must be sold to pay off the loan. A forced sale may result in a lowered price. Moreover, it is possible that the real estate market may have declined or that the buyer may have mismanaged and damaged the property. These factors, together with the costs of foreclosure and sale, make 100 percent loans very risky. A cash down payment reduces this risk. The lender, however, has little or no risk with FHA-insured or VA-guaranteed high ratio (almost 100 percent) loans. The elimination of

risk will not reduce the interest rate to zero. Up to a point, increasing the cash down payment will reduce risk and consequently will usually also reduce the interest rate and private mortgage insurance charges. Further increases in the cash down payment generally have no effect upon the interest rate at which the loan is written.

A minimal down payment made in the course of arranging a conventional loan increases risk to the lender, prompting him to charge a commensurately higher rate of interest for the funds loaned. The down payments on loans should be investigated whenever cash equivalent analysis is performed. Down payments of, say, 5 to 15 percent for seller-carried loans may be accompanied by relatively high interest rates because of the risk. An inflated selling price might result in a seller's loan being 100 percent or more of market value, even though there is a cash down payment of 25 percent or more of the selling price. Hence, a relatively substantial down payment does not necessarily mean a low-risk loan.

In order to adjust a note to its cash equivalent, it is necessary to know the term or length of the loan, manner of amortization, and frequency of payments; however, separate adjustments are not required for these factors. The market interest or yield rate will account for these factors in the discounting of the payments according to their deferment, amount, and frequency.

Although sources of third-party conventional financing sometimes become expensive and hard to find, the real estate sections of daily newspapers continue to carry the names of mortgage lenders, their interest rates, and the points charged to acquire a loan. The effective interest rate can be calculated by converting the points into a dollar amount and subtracting this amount from the face value of the loan. For example, a mortgage brokerage firm may advertise a 15 percent loan with a loan fee of 2 percent. The borrower pays \$2,000 for a \$100,000 loan; in essence, he nets \$98,000. The monthly payment, however, on the \$100,000 loan is \$1,264.40 for a 30-year amortization period. Converting the net \$98,000, we divide the \$1,264.40 by \$98,000 to arrive at .012902, the installment factor to amortize a net \$98,000 loan. The factor most resembles the factor of .012891 in the 15.25 percent table. The effective rate of the loan is 15.25 percent. Often the loan fee takes the form of a set amount plus percentage points.

### **MARKET INTEREST RATES FOR SELLER-CARRIED LOANS**

One problem confronting the appraiser is accounting for the difference between interest rates charged by private individuals and those charged by institutions. This problem often arises when the type of property under appraisal is one upon which institutional lenders seldom, if ever, make a loan. This is often the case with vacant land, some rural properties, and poor quality residential property. It also occurs when third-party rates are so high that seller financing becomes the primary source of loan funds.

A study of existing loans on these types of properties often reveals that they are seller-carried purchase money loans secured by first, second, and more, deeds of trust, or land sales contracts written at interest rates below the rates charged for loans made by institutional lenders. When the

financing consists of a seller-carried loan, the absence of institutional lenders dealing in this type of paper makes it necessary for the appraiser to establish the market rate for a valid cash equivalent analysis.

The relevant market for loans under these circumstances is made up of the sellers of such properties. If available, loans made by third parties on similar properties at the time of the sale provide the best evidence of the going rate of interest. In areas of a county where third-party loans are virtually absent for certain types of property and no benchmarks are apparent, the appraiser should accept the selling prices of properties with typical financing as their cash equivalents.

The appraiser must recognize the predominant type of financing for the particular type of real estate in the market area. For example, agricultural properties are generally seller-financed because there is a virtual absence of third-party money in most areas of the state. What rate the large San Francisco banks might or might not charge, should they make a loan on a farm property, is irrelevant if they have not made such loans. The Federal Land Bank makes farm loans featuring variable rates; perhaps FLB's base rate could be used in areas of the state where the bank makes such loans.

In many areas these rates may seem low, but this may simply be due to the familiarity the lender has with the property and the resulting reduction in his risk. The alternatives of using rates institutional lenders might charge, when they never lend on such property, or rates they charge on other types of property, are not acceptable. These alternatives will generally result in the discounting of all selling prices in a given area and the creation of an artificial price level. One alternative is to use the rates of interest that seller-held paper commands if it is bought by a private mortgage broker and resold to a long-term private lender. If the price used is the price that the mortgage broker receives when the "paper" is resold to an investor rather than the price the original seller/lender received for the note, this calculation measures the value of the note, not the cash equivalent value of the property itself. Such an alternative moves the appraiser two markets away from the subject property and violates the premise of "cash to the seller." It is therefore not recommended as a good technique for cash equivalent analysis.

## CHAPTER 9: CREATIVE FINANCING

During the early 1980's, the scarcity of institutional funds, and the high cost of those institutional loans that were available, prompted sellers to resort to other means of financing. These alternative methods become known as "creative financing." Typical devices were buydowns, zero interest loans, and low interest rates coupled with inflated selling prices. Most loan packages were structured to qualify the buyer as of the intended date of closing, with the hope that the buyer's financial situation would improve sufficiently to enable him or her to meet the payment obligations in succeeding years.

### ASSUMPTION OF AN EXISTING LOAN

The loan assumption has played an important role in resales. Some authorities question the importance of an assumed loan, but without question the assumed loan makes a transaction more attractive and speeds the consummation of many "deals."

An assumed loan must display an attractive loan price ratio in order to play a vital role in a transaction. One authority believes an assumable loan has no appeal should the loan-to-selling price ratio fall below 40 percent.<sup>11</sup> Even when an assumable loan possesses a ratio of 50 to 60 percent, additional financing is often required. Thus it is unlikely that a cash equivalent adjustment would be necessary when the buyer's down payment is 40 percent or more of the purchase price. An assumable loan must represent a substantial portion of the selling price before it becomes attractive and plays a dominant role in the transaction.

### CONVENTIONAL LOANS

The future of the fixed-rate mortgage is uncertain. Lenders hesitate to commit themselves to 30-year loans with fixed rates that may be overtaken by still higher market rates in subsequent years. To prevent a wide divergence between contract and current rates, lenders will most likely resort to adjustable, variable, or renegotiated rates. Some fixed-rate loans will continue to be made, but most likely these will involve amortization based on a 30-year period, with a balloon payment required after only three to five years. The lender and borrower can, at the time the balloon payment comes due, rewrite the loan at the then prevailing interest rate. In a sense, this type of loan resembles a renegotiated rate mortgage. At least one savings and loan association offers the buyer a choice of either a new 80 percent loan at the current rate or an assumption of the existing balance at 1 to 2 points below the current fixed rate when the balance assumed represents 60 percent or less of the purchase price. The purchaser is generally also required to pay an assumption fee and, in some instances, points, thereby increasing the effective interest rate.

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<sup>11</sup> M. C. Finaly and F. E. Fischer, *Residential Appraisal Under Creative Financing*, Research Study, University of Southern California, March 11, 1982.

An adjustable rate mortgage allows the conventional lender at stated intervals to adjust an existing rate to a current market rate. The percentage of rate change may be restricted in the original loan document.

The variable rate mortgage also allows a periodic change in the loan rate. The rate is determined by a cost-of-funds index issued by the Federal Home Loan Bank Board. The change in rate is limited by regulation that states no increase can exceed one-half of 1 percent for any one year or 2 1/2 percent during the life of the loan. Conversely, a change downward has no limitation.

If a provision for periodically changing the interest rate allows a free floating current market rate, none of the three types of mortgage (adjustable, renegotiated, and variable) needs to be adjusted for cash equivalency. Upon assumption, those loans with limitations on the change of the interest rate may require a cash equivalent adjustment, especially if the rate allowed by the loan document is not in keeping with the third-party rate prevailing at the time of the transaction.

### **BLENDED RATE LOANS**

A blended rate loan takes the remaining balance and interest rate of an existing loan and blends it into a new loan. Typically, the lender will weight both the old interest rate by the remaining balance on the existing loan, and also weight the interest rate of a completely new loan by the amount necessary to complete the total loan amount. For example, an existing loan at 10 percent with a \$60,000 remaining balance and additional new money of \$40,000 at 15 percent might be blended into a new loan of \$100,000 at 12 percent.

\$60,000 @ 10%	6%
\$40,000 @ 15%	<u>6%</u>
Blended Rate	12%

Since the prevailing third-party interest rate is 15 percent, the income stream must be adjusted to determine a cash equivalency. The monthly payment to amortize a \$100,000 blended loan at 12 percent is \$1,028.60; the present worth factor for 15 percent over 30 years is 79.0861. The present worth of the monthly payment over 30 years is \$81,348; however, if a shorter period, say seven years, is selected, the computations for cash equivalency:

$$\begin{array}{l} \text{PW of 1 for 7 Years @ 15\%} \\ 51.8221 \times \$1,028.60 = \qquad \qquad \qquad \$53,304 \end{array}$$

$$\begin{array}{l} \text{PW of Reversion:} \\ \text{Reversion 23 Years @ 12\%} \\ 93.5834 \times \$1,028.60 = \$96,260 \\ \text{Deferred 7 Years @ 15\%} \\ .3522 \times \$96,260 = \qquad \qquad \qquad \underline{\underline{\$33,903}} \\ \qquad \qquad \qquad \qquad \qquad \qquad \qquad \underline{\underline{\$87,207}} \end{array}$$

## BUYDOWNS

New homes are occasionally sold on a **buydown** in order to qualify purchasers whose income is short of meeting the monthly payment requirement. Essentially, the builder-developer supplies funds for the purchaser's first few (usually three) years. The funds are the difference between what would be the actual monthly payment and a lowered payment calculated by reducing the interest rate 3-2-1 percentage points over a three-year period. For instance, the actual rate of 13 percent for the first year is reduced to 10 percent; the second year, to 11; and the third year, to 12. In the fourth year the interest rate reaches 13 percent and remains at this level for the remaining term of the loan. To illustrate the effect on a cash equivalent calculation, let us present an example:

Purchase Price:	\$125,000	
Loan Amount:	\$112,500	@ 13%/30 Years
Monthly Payment:	1st Year:	\$987.19 @ 10%/30 Years
	2nd Year:	\$1,071.34 @ 11%/30 Years
	3rd Year:	\$1,157.18 @ 12%/30 Years
	4th-30 Year:	\$1,244.48 @ 13%/30 Years
First Year Buydown	(\$1,244.48 - \$987.19)	x 12 = \$3,087.48
Second Year Buydown	(\$1,244.48 - \$1,071.34)	x 12 = 2,077.68
Third Year Buydown	(\$1,244.48 - \$1,157.18)	x 12 = <u>1,047.60</u>
Total Buydown		\$6,212.76
Purchase Price	\$125,000.00	
Less: Buydown (Seller-Provided)	<u>6,212.76</u>	
	<u>\$118,787.24</u>	

Since the buydown is a lump sum payment made at the time the loan is originated, no discounting of the lump sum is necessary. The buyer, a parent, or a friend can also assist the buyer in qualifying for the loan by adding to the initial lump sum payment. The buyer's contribution, however, is part of the purchase price and is not subject to either subtraction or discounting. Only the seller's contribution is deducted.

## ZERO INTEREST LOANS

Some builder-developers advertise zero interest rate loans, which in effect consist of a substantial down payment and an amortization period of five or six years. The short pay back period makes the zero interest loan very attractive. The Internal Revenue Service allows the purchaser, for income tax purposes, to impute a certain amount of interest to the periodic payment he makes to the builder-developer. The selling price is presumed to be inflated to offset the lack of an interest component; therefore, to arrive at a full cash value, the appraiser must discount the nominal selling price.



Here is an example of the process of discounting a zero interest rate transaction:

Selling Price	\$105,000
Down Payment	\$35,000
Loan Amount	\$70,000
Loan Period	5 Years (60 Months)
Monthly Payments	\$1,166.67 ( $\$70,000 \div 60$ )
Current Institutional Rate	13 Percent
Present Worth Factor	43.9501 (60 Months)

Solution:  $43.9501 \times \$1,166.67 = \$51,275.26$  (present worth of \$70,000 total payments)

Rounded to	\$51,300
Down Payment	<u>35,000</u>
Cash Equivalent	\$86,300

The main advantages of a short-term zero interest loan are the small amount of built-in interest paid and the fact that the real property is owned free and clear after a brief period.

### **WRAP-AROUND MORTGAGE (ALL-INCLUSIVE MORTGAGE)**

The label **wrap-around** refers to the practice of making a new loan on a property already encumbered with an existing institutional loan. Typically, the seller continues to make payments on the institutional loan while the buyer makes payments on a new seller-carried loan. The institutional loan must mature before the “wrap-around” loan does; otherwise the property becomes free and clear to the buyer while the seller still has an obligation. The cash equivalent concept applies to the wrap-around in the same manner as to any other seller-carried loan. If the wrap-around mortgage bears an interest rate that differs from what third-party lenders are charging, an adjustment should be made.

### **SHARED-APPRECIATION MORTGAGE**

Occasionally, when a lender makes a loan at an interest rate lower than institutional rates, the right is given in return to share in the appreciation of the property at the end of a five- to ten-year period. At the end of the stipulated period the buyer must meet the obligation either by paying the lender’s share of appreciation from other funds, selling the property, or refinancing it.

An illustration: A seller conveys a property at a nominal selling price of \$200,000 giving the buyer a loan of \$150,000 and receiving \$50,000 in cash. The loan bears a 13 percent interest rate and amortizes in 30 years; however, the loan is due and payable in four years with the seller expecting to share in the appreciation. If the property is not sold at the end of four years, an appraisal is made. For participation in the loan and the future appreciation, the seller expects an overall yield of 18 percent written into the note.

Nominal Selling Price	\$200,000
Loan Principal	\$150,000
Interest Rate	13 percent
Amortization	30 years
Due and Payable	4 years
Yield Expected	18 percent

Problem: What future selling price will yield 18 percent?

Solution:

Monthly Payment		
13%, 30 years .011062 x \$150,000		\$1,659.30
Annuity Value		
48 Months to Yield 18%; 34.042554 x \$1,659.30	(Rounded)	\$56,487.00
Balloon Payment Needed		
\$150,000 - \$56,487 = \$93,513		
18% in 48 Months = \$93,513 ÷ .489362	(Rounded)	\$191,092.00
Balance of Principal		
After 48 Months @ 13% (26 Years Remaining)		
89.107200 x \$1,659.30	(Rounded)	\$147,856.00
Required Appreciation \$191,092 - \$147,856		\$43,236.00
Percentage of Required Appreciation		
\$43,236 ÷ \$200,000 = .21618, Round to 21.62%		

The property must appreciate by 21.62 percent for the lender to realize a yield of 18 percent. If the property is sold for \$250,000 after four years, the lender realizes \$43,236 of the \$50,000 increase and the buyer receives the balance, or \$6,764. When the future sale is consummated, the original lender receives \$147,856, the balance of the loan principal, and \$43,236, from the appreciation, for a total of \$191,092.

The original buyer receives the original down payment of \$50,000 plus debt reduction of \$2,144 (\$150,000 - \$147,856), plus the \$6,764 residual growth, for a total of \$58,908. The original buyer's portion, \$58,908, added to the seller's portion, \$191,092, amounts to the selling price, \$250,000.

Since shared-appreciation mortgages have built-in yields, there is no need to discount the lower interest rate loans. Perhaps only where the expected yield is either above or below third-party expectancies would a cash equivalent application be necessary.

## INTERIM FINANCING

Many of the current lending practices point toward the increasing use of interim financing. The use of buydowns, variable and adjustable interest rates, shared appreciation, and balloon payments indicates that lenders do not want to commit themselves to fixed-interest rates for long periods of time. Although the fixed-rate mortgage is available, the rates may continue to be high, precluding many borrowers from qualifying.

Interim financing practices may well have an effect on alternative forms of financing, for they provide a benchmark for a cash equivalent analysis. For example, the buydown arrangement described on page 27 indicates the marketplace uses a payment graduated over three years, a period during which the buyer is given time to strengthen his or her financial position. Similarly, in the shared-appreciation mortgage illustration on pages 28 and 29, the buyer is given a period of four years in which to rearrange his or her financial position. Also, in seller-carried financing, a balloon payment due and payable after a short term usually forces a rearrangement of the financial position of the buyer.

While the use of creative financing reflects the necessity of refinancing within a short period of time, conventional fixed-rate financing is a long-term device. The long-term obligation is terminated before the end of the established amortization period whenever the property is transferred and new financing is needed. The original intent of the lender and borrower is then superseded by new priorities; the long-term financing becomes short-term. Just how often the fixed-rate long-term intent is broken is an open question.

## SUMMARY

Our discussion of the various types of loan mechanisms found in the marketplace has by no means been exhaustive. Other new arrangements will certainly crop up to meet the requirements of individual transactions. The mechanism employed is not the decisive element in the appraiser's search for a market value estimate.

The marketplace of **creative financing** is imperfect. Sellers who become lenders are not necessarily knowledgeable on lending practices. Often as not, sellers simply want to sell their properties and they just as often set the selling price near the amount for which other similar property has sold. But sellers who carry purchase money mortgages are not necessarily willing to wait a full 30 years to completely recover the loaned principal amount. They usually want full payment within a matter of three to five years, at which time the buyer must refinance. The appraiser's benchmark should be the well-established conventional lending market.

Some authorities maintain that since residential property typically turns over every few years, a cash equivalent should be computed on a short-term basis rather than on the full term of the loan. Certainly, some financial arrangements have the balloon provisions written into the promissory note or deed of trust, and when this is the case, the appraiser should use the shorter period in making a cash equivalent computation.

While a few loans survive their full terms, most are extinguished long before the end of the amortization period. The mobility of American life is encouraged by various forces: employee transfers, expanding family, “moving up” or “moving down,” divorce, and other changes in life style. The new result is that few people “stay put” for the 25 or 30 years necessary to amortize a traditional real estate loan.

Appraisers must be cautious when computing the cash equivalent of a combination low interest rate assumption and a seller-carried second deed of trust. The computation may well yield a cash equivalent (including the substantial down payment) which is less than the combined face value of the two mortgages. Such a result reflects an imperfect marketplace and means the appraiser must look to other indicators of market value.

The following example illustrates how cash equivalency analysis applied to a combined rate assumption and a seller-carried second deed of trust might produce results below the face value of the combined loan amounts.

Nominal Selling Price	\$200,000	
Cash Down		\$40,000
Assumed Loan (Balance Owing) at 9%, Payments of \$900 Per Month, 20 Years Remaining	\$100,000	
Current Interest Rate	15 1/2%	
Present Worth of 1 Per Month at 15 1/2% for 20 Years 73.8617 x \$900		\$66,476
Seller-Carried Loan Interest Only @ 12% Compounded Annually on \$60,000 for 5 Years When Principal is Due	\$600 per month	
Discounted @ 15 1/2% \$600 x 41.5745	\$24,945	
P.W. of Reversion Due in 5 Years .4629 x \$60,000	<u>\$27,774</u>	
		<u>\$52,719</u>
Cash Equivalent		<u>\$159,195</u>

Note that loan face value of \$160,000 (\$100,000 assumed and \$60,000 seller-carried) exceeds the cash equivalent sale price of \$159,195 when the remaining 20-year term is used to discount the assumed loan; consequently, the \$40,000 cash down payment would appear to be lost. Appraisers should carefully examine the cash equivalent result whenever a long period is used to calculate the discount. Comparison with sales prices of conventionally financed comparable properties can be made to determine whether the cash equivalent adjustment is proper.

## CHAPTER 10: PITFALLS TO AVOID IN CASH EQUIVALENT ANALYSIS

Applying a discount to the components of a nominal selling price in order to adjust it to a cash selling price requires careful consideration and research. Any policy that requires the discounting of **all** selling prices, or of **all** transactions involving low down payments, or of **all** second trust deeds, is clearly incorrect.

Here is a list of incorrect assumptions commonly made in cash equivalent analysis followed by the correct reasoning in each case.

1. **All financed sales require a cash equivalent adjustment.** This is wrong. New loans made by third parties require no discounting because the lender advances cash for the loan amount; the only exception is when seller's points are charged (see pages 16 and 17).
2. **Buyer's points or loan origination fees should be deducted from the loan amount.** This is not correct. The buyer is in effect paying more interest when he pays points; the lender, however, nonetheless advances cash for the full amount of the loan. (Buyer's points must be recognized in computing the effective interest rate.) (See pages 22 and 23.)
3. **First deeds of trust taken back by sellers are always worth their face amount.** This is wrong. The cash equivalent concept does not depend upon whether a note is secured by a deed of trust. What is important is that the risk be carefully evaluated and a rate of return selected that is commensurate with perceived risk (see pages 23 and 24).
4. **Second deeds of trust are always discounted.** This is not true. Whether to discount depends upon the rate of return and the risk.
5. **Selling prices involving high cash down payments never require discounting.** This is incorrect. A high down payment will lessen the risk but an adjustment may still be necessary if the interest rate of an assumed existing loan is not commensurate with the risk (see page 23).
6. **Transactions involving low cash down payments always require discounting.** Not necessarily! No discounting is required if the interest rate is commensurate with the risk (see page 23).
7. **The cash selling price can never exceed the nominal selling price.** This is incorrect. If the contract interest rate on an assumed note is greater than the market rate, the assumed note can have a cash value greater than its face amount (see pages 19 and 45).
8. **Transactions wherein creative financing is prevalent produce a marketplace wherein all selling prices are discounted.** A false conclusion! Creatively financed selling prices may very well be comparable to those involving third-party financing. The marketplace is imperfect; yet the theoretical definition of market value calls for knowledgeable parties—including the lender. The appraiser must be especially suspicious of a cash equivalent selling price which is less than the face value of any and all mortgages.

## CHAPTER 11: TYPICAL CASH EQUIVALENT ADJUSTMENT PROBLEMS

The following 11 examples demonstrate the techniques available for solving common cash equivalent problems. Comprehensive present worth tables, such as those contained in Assessors' Handbook Section 505, *Capitalization Formulas and Tables*, or programmed in some electronic calculators, are necessary for most cash equivalent adjustments. Except for Problems 7 and 11, the calculations are made assuming that the average holding period is three to ten years.

The problems cover the following subjects:

<b><u>Number</u></b>	<b><u>Subject</u></b>
1	Seller's points
2	Purchase money loan, discounting payments and a balloon
3	Assumed first deed of trust and new second deed of trust
4	Determine payments on second deed of trust and present worth of balloon payment
5	Determine discount when amount of the monthly payment is unknown
6	Interest-only payments for a period, then constant payment amortization
7	Interest only plus total principal payment
8	Three deeds of trust
9	Determine amortization period of first and second deeds of trust; interpolate factors
10	How the assumption of high-interest note actually increases the nominal selling price
11	Equal amortization payments; straight-line declining payments

**PROBLEM NUMBER 1**  
**SELLER'S POINTS**

Selling Price: \$75,000  
Down Payment: \$3,750  
Financing: New \$71,250, 30-Year VA Loan at 12.5%  
Four Points Paid by Seller  
Lender: Savings and Loan

***Solution***

<b>Selling Price</b>	<b><u>\$75,000</u></b>	
Down Payment		\$3,750
First Deed of Trust	\$71,250	
Less Four Points— $\$71,250 \times .04$	<u>2,850</u>	
		<u>\$68,400</u>
 <b>Cash Equivalent Selling Price</b>		 <b><u>\$72,150</u></b>

**PROBLEM NUMBER 2**  
**PURCHASE MONEY LOAN DISCOUNTING PAYMENTS**  
**AND A BALLOON PAYMENT**

Selling Price: \$73,000

Down Payment: \$20,000

Financing: The seller carries a \$53,000 first deed of trust @ 12% with a 30-year amortization period calling for a monthly payment of \$545.16 and a balloon payment at the end of 5 years.

The current institutional rate is 15%.

Lender: Seller

***Solution***

Selling Price	<b><u>\$73,000</u></b>	
Down Payment		\$20,000
Purchase Money Note		
Monthly Payment of \$545.16 is Multiplied by the Factor of 42.034592 @ 15% for 5 Years:		
42.034592 x \$545.17	(Rounded)	\$22,916
Balloon: P.W. of \$545.16 @ 12% with 25 Years Remaining:		
94.946551 x \$545.16 = \$51,761 (Rounded)		
Deferred for 5 Years @ 15%:		
.474568 x \$51,761	(Rounded)	<u>\$24,564</u>
<b>Total Cash Equivalent</b>		<b><u>\$67,480</u></b>



**PROBLEM NUMBER 3**  
**ASSUMED FIRST DEED OF TRUST AND**  
**NEW SECOND DEED OF TRUST**

Selling Price: \$300,000

Down Payment: \$50,000

Financing: A \$139,325 first deed of trust is assumed. It was originally written for \$160,000 with a 20-year term @ 10%. It has 14 remaining years. The monthly payment is \$1,544. The current market rate is 13%. A second deed of trust is drawn in the amount of \$110,675 calling for equal monthly payments of \$1,718 @ 14% for 10 years. The market rate for second deeds of trust is 18%. The assessor has estimated the holding period to be 7 years.

Lenders: First: Commercial Bank  
 Second: Seller

***Solution***

<b>Selling Price</b>	<b><u>\$300,000</u></b>	
Down Payment		\$50,000
First Deed of Trust:		
Present Worth of \$1,544 Payment @ 13% for 7 Years		
$54.969328 \times \$1,544$	\$84,873	
Balloon Payment:		
PW of Balloon Payment 7 Years Hence @ 13% (Balloon Payment @ 10% for 7 Remaining Years)		
$.404499 \times (60.236667 \times \$1,544)$	<u>\$37,621</u>	\$122,494
Second Deed of Trust:		
Present Worth of \$1,718 @ 18% for 7 Years		
$47.578633 \times \$1,718$	\$81,740	
Balloon Payment:		
PW of \$1,718 @ 14% for 3 Years, Deferred 7 Years @ 18%		
$29.258904 \times \$1,718 \times .286321$	<u>\$14,392</u>	<u>\$96,132</u>
<b>Total Cash Equivalent</b>		<b><u>\$268,626</u></b>

**PROBLEM NUMBER 4**  
**DETERMINE PAYMENTS ON SECOND DEED OF TRUST**  
**AND PRESENT WORTH OF BALLOON PAYMENT**

Selling Price: \$125,000

Down Payment: \$25,000

Financing: A newly drawn note and first deed of trust for \$87,500 @ 12.5% interest. A newly drawn second deed of trust for \$12,500 @ 13% interest with monthly payments of \$186.64 based on a 10-year amortization schedule, but all due and payable in 3 years. (The monthly payment of \$186.64 may be calculated by dividing the face value (\$12,500) of the second deed of trust by the 13% factor for monthly payments for 10 years, 66.974419.) The market rate of return for a note of this type is 18%.

Lenders: First Deed of Trust: Institutional Lender

Second Deed of Trust: Seller

***Solution***

<b>Selling Price</b>	<b><u>\$125,000</u></b>	
Down Payment		\$25,000
First Deed of Trust of \$87,500 Requires no Adjustment; Lender Supplies Cash in the Amount of the Loan		\$87,500

**Second Loan:**

The cash value of the second note consists of the present worth of the monthly payments for 3 years plus the present worth of the remaining balance or balloon payment. The present worth of the monthly payments of \$186.64 multiplied by the 18% factor for 3 years, 27.660684, equals \$5,162 (rounded).

The balance owing at the end of 3 years is calculated by multiplying the monthly payment by the present worth of one per month factor for the remaining term of the loan at the rate of interest called for in the note, 13%. The 13% factor for 7 years is 54.969328. \$186.64 times 54.969328 equals \$10,259 (rounded), the balloon payment.

This balloon payment must be discounted at the market rate (18%) for the time until payment is made. The factor for a single payment due in 3 years discounted at 18% is .585090. The present worth of the balloon payment is \$10,259 times .585090 or \$6,002.

Present Worth of 36 Monthly Payments	\$5,162	
Present Worth of Balloon Payments in 3 Years	<u>\$6,002</u>	

		\$11,164
<b>Cash Selling Price</b>		<b><u>\$123,664</u></b>

**PROBLEM NUMBER 5**  
**DETERMINE DISCOUNT WHEN AMOUNT OF**  
**THE MONTHLY PAYMENT IS UNKNOWN**

Selling Price: \$70,000

Down Payment: 0

Financing: A contract of sale for \$70,000 calling for equal annual payments of principal and interest at 12% for 10 years (fully amortized loan).

Lender: Seller

Investigation disclosed that typical financing for this type of property and terms is a 16% interest rate. The assessor determines that a 10-year holding period is proper.

***Solution***

**Selling Price**

**\$70,000**

The discounted value of a future income stream, consisting of equal annual principal payments and interest, can be calculated by finding the ratio between the factors for the present worth of one per annum at the market rate and at the stated rate for the period of repayment and then multiplying the face value of the note by the ratio.

The present worth of one per annum for 10 years at 12% is 5.650223.

The present worth of one per annum for 10 years at 16% is 4.833227.

$$\frac{4.833227}{5.650223} = .8554505$$

$$.855405 \times \$70,000$$

(Rounded) **\$59,878**

**Cash Equivalent Selling Price**

**\$59,878**

**PROBLEM NUMBER 6**  
**INTEREST-ONLY PAYMENTS FOR A PERIOD,**  
**THEN CONSTANT PAYMENT AMORTIZATION**

Selling Price: \$850,000

Down Payment: \$175,000

Financing: A newly drawn note for \$675,000 at 12% calling for interest only for 2 years, then to be amortized by equal annual payments for 10 years, for a total term of 12 years. The assessor estimates that no shorter period is necessary.

Lender: Seller

***Solution***

<b>Selling Price</b>	<b><u>\$850,000</u></b>
Down Payment	\$175,000

The market rate for this type of loan is determined to have been 15% at the time of the sale. The cash equivalent is the present worth of the entire income stream. The first segment of income is the 12% interest-only payment of \$81,000 per year for the first 2 years.

These payments must be discounted at the market rate of 15 percent. The present worth of one per annum for 2 years at 15 percent is 1.625709.

\$81,000 x 1.625709	(Rounded) \$131,682
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The second segment of income consists of the 10 years of equal annual payments, consisting of principal and interest, starting in the third year and continuing through the twelfth. The annual payment is calculated by multiplying the principal by the mortgage constant factor .176984, the installment to amortize \$1 for 10 years at 12%.

$\$675,000 \times .176984 = \$119,464$

The 10-year period of \$119,464 in annual payments must be discounted at the market rate of 15% and deferred for 2 years to calculate the present worth at the time of the transaction. The 2-year, 15% factor of 1.625709 is deducted from the 12-year factor of 5.420619 to produce the factor required to discount the 10 years of payments.

$5.420619 - 1.625709 = 3.79491$

### PROBLEM NUMBER 6 (Contd.)

The payments must be multiplied by the factor 3.79491 to produce the present worth.

$\$119,464 \times 3.79491$

$\$453,355$

**Cash Selling Price**

**$\$760,037$**

**Alternative Method** of Calculating Cash Value of the Last 10 Years of Payments:

1. Present worth of one per annum, 10 years, at 15% =  
5.018769

2. Present worth of one, deferred 2 years, 15% =  
.756144

3. Multiply:  $5.018769 \times .756144 = 3.794912$

4.  $\$119,464 \times 3.794912 =$

(Rounded)  $\$453,355$

**PROBLEM NUMBER 7**  
**INTEREST ONLY PLUS TOTAL PRINCIPAL PAYMENT**

Selling Price: \$150,000

Down Payment: \$20,000

Financing: Annual interest only at 10% for 10 years. The entire principal is due and payable at the end of 10 years. The holding period is determined to be 10 years.

Lender: Seller

**Solution**

<b>Selling Price</b>	<b><u>\$150,000</u></b>
Down Payment	\$20,000

The market rate is determined to be 13%. The market value of the note is the present worth of the annual payments plus the present worth of the lump sum discounted at the market rate.

Interest Only	
$\$130,000 \times .10 = \$13,000$	
$\$13,000 \times 5.426243$ (Present Worth of One Per Annum, 13%, 10 Years)	\$70,541

Lump Sum Payment	
$\$130,000 \times .294588$ (Present Worth of One, Deferred 10 Years, 13%)	(Rounded) <u>\$38,296</u>

<b>Cash Selling Price</b>	<b><u>\$128,837</u></b>
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**PROBLEM NUMBER 8  
THREE DEEDS OF TRUST**

Selling Price: \$1,000,000

Down Payment: \$194,500

Financing: A first note and deed of trust in the original amount of \$500,000 with a remaining balance of \$435,410 is assumed. Terms call for equal monthly payments of \$4,825 at 10%. The loan was originally written for 20 years. It has 14 years left to run.

Lender: Commercial Bank

A second note originally written for 10 years which has a remaining balance of \$149,107 is also assumed. It calls for equal monthly payments of \$3,587 at 12% and has 4 1/2 years remaining.

A newly drawn third note for \$220,982 at 17% for 10 years with equal annual payments of \$47,435.

Holding Period: The assessor determines the holding period to be 5 years.

Lender: Seller

***Solution***

Selling Price	<b><u>\$1,000,000</u></b>	
Down Payment		\$194,500
The market rates for the three notes are determined to be as follows:		
First 15%—Second 18%—Third 20%		
First: \$4,825 per month at 15% for 5 years		
42.034592 x \$4,825	\$202,817	(Rounded)
Present Worth of Loan Adjusted to 15% Over Remaining 9 Years .4745 x \$4,825 x 71.029355 (10%, 9 years)		
	<b><u>\$162,619</u></b>	(Rounded)
Cash Value of First		\$365,436
Second: \$3,587 Per Month at 18% for 4 1/2 Years*		
36.8305 x \$3,587		
Cash Value of Second		\$132,111
Third: \$47,435 Per Year @ 20% for 5 Years		
2.9906 x \$47,435	\$141,859	
\$47,435 Per Year @ 17% for 5 Years Deferred 5 Years @ 20% 3.1993 x \$47,435 x .4018		
	<b><u>\$60,977</u></b>	
Cash Value of Third		<b><u>\$202,836</u></b>
<b>Cash Selling Price</b>		<b><u>\$894,883</u></b>

\* The factor for 4 years is 34.0425; for 6 months, 5.6971. We defer the 6 months for 4 years: .4893 x 5.6971, or 2.788, and add the latter to 34.0425 to produce 36.8305.

**PROBLEM NUMBER 9**  
**DETERMINE AMORTIZATION PERIOD OF FIRST AND**  
**SECOND DEEDS OF TRUST; INTERPOLATE FACTORS**

Selling Price: \$150,000

Down Payment: \$30,000

Financing: An assumed note in the original amount of \$75,000 written at 9.5% interest to be amortized by a payment of 1% per month of the original principal until paid. The payments have been made for 4 years. The remaining balance is \$65,013. The current market rate is 15%.

A second note accepted by the seller for the balance of \$54,987 at 15% to be amortized at 1.5% per month until paid. The holding period is determined to be 3 years.

**Solution**

<b>Selling Price</b>		<b><u>\$150,000</u></b>
Down Payment		\$30,000
First Deed of Trust		
<p>The original note has been amortized by monthly payments of \$750 for 4 years. The total amortization period can be determined by perusing the installment to amortize \$1 column of the 9.5% monthly compound interest table until the factor 0.01—or 1%—is found. The factor .010150 is for 16 years; .009898 for 17 years, indicating that the 1% per month payment of \$750 would take approximately 16 1/4 years to amortize \$75,000. Since the payments have been made for 4 years, the 16 1/4 year original period has 12 1/4 years to go. The 12 1/4 years are divided into two sections, an annuity for 3 years at 15% and a lump sum payment at the end of 3 years at 15%.</p>		
<p>Annuity for three years:  \$750 x 28.847267</p>	(Rounded)	\$21,635
<p>Lump Sum Payment  Payments of \$750 for 9 1/4 years, discounted at 9.5%; this annuity deferred 3 years at 15%  .639409 x 73.6748* x \$750</p>	(Rounded)	<u>\$35,331</u>
<b>Cash Value of First</b>		<b><u>\$56,966</u></b>

\* The present worth factor for 9 years at 9.5% is 72.414648; the factor for a quarter year is 2.953119, deferred 9 years (2.953119 times .426717) equals 1.260146; the latter added to 72.414648 is 73.6748.



## PROBLEM NUMBER 9 (Contd.)

**Second Deed of Trust:**

The second note calls for equal monthly payments of 1.5% of the principal until paid. The payments are \$825 (\$54,987 x .015). Again the unknown amortization period is found by checking the monthly installment to amortize \$1 column for the 15% interest rate. The factor .015009 is exactly at 12 years. The market rate for a second deed of trust on this type of property is determined to be 17%. The 12-year period, again, is divided into two sections, a 3-year annuity at 17% and a lump sum payment for the remaining 9 years, deferred 3 years, at 17%.

**Annuity:**

\$825 x 28.048345	(Rounded)	\$23,140
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**Lump Sum Payment:**

Annuity at 15% for 9 years, deferred 3 years, at 17% .602648 (\$825 x 59.086509)	(Rounded)	<u>\$29,377</u>
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<b>Cash Equivalent, Second Deed of Trust</b>		<b><u>\$52,517</u></b>
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Recap	Face Value	Cash Value
Assumed First	\$65,013	<b>\$56,966</b>
Second Note	\$54,987	<b>\$52,517</b>
Down Payment	<u>\$30,000</u>	<u>\$30,000</u>
<b>Totals</b>	<b><u>\$150,000</u></b>	<b><u>\$139,483</u></b>

**PROBLEM NUMBER 10**  
**HOW THE ASSUMPTION OF HIGH-INTEREST NOTE**  
**ACTUALLY INCREASES THE NOMINAL SELLING PRICE**

Selling Price: \$145,000

Down Payment: \$33,969

Financing: A 17% first note with a balance of \$111,031 is assumed. It calls for equal monthly payments of \$1,587. The original term was 30 years. It now has 28 years remaining. The anticipated holding period is 7 years.

***Solution***

<b>Selling Price</b>	<b><u>\$145,000</u></b>
Down Payment	\$33,969
<p>The market rate at the time of the sale was 14%. The cash value of the note is the sum of present worth of \$1,587 per month for 7 years at 14% and the present worth of the balloon at the end of 7 years.</p>	
Present Worth of Monthly Payments:	
\$1,587 x 53.361760	\$84,685 (Rounded)
Present Worth of Lump Sum	
<p>Lump sum is calculated by applying 17% factor for 21 years and deferring the resulting sum for 7 years at 14%:</p>	
68.550346 x \$1,587 x .377446	<u>\$41,062</u>
Cash Value of First	<u>\$125,747*</u>
<b>Cash Selling Price</b>	<b><u>\$159,716*</u></b>

\* Since the assumed loan has a higher interest rate than the current market rate, the value of the loan is higher than its face value.

**PROBLEM NUMBER 11**  
**EQUAL AMORTIZATION PAYMENTS;**  
**STRAIGHT-LINE DECLINING PAYMENTS**

Selling Price: \$300,000

Down Payment: \$50,000

Financing: A 12% note providing for annual payments of \$25,000 on the principal plus interest on unpaid balance. (Market rate of interest is 14%.) The holding period is 10 years.

Lender: Seller

**Solution**

<b>Selling Price</b>	<b><u>\$300,000</u></b>
Down Payment	\$50,000

Payments decline in a straight line. The decline equals principal paid times stipulated interest rate (\$25,000 x 12% = \$3,000). Payment in period one equals principal payment plus outstanding balance times stipulated interest (\$25,000 + (250,000 x 12%) = \$55,000).

Discount each payment at 14%.

Period	Present Worth of 1 Per Annum @ 14 Percent	x	Payment =	Present Worth (Rounded)
1	.877193		\$55,000	\$48,246
2	.769468		\$52,000	\$40,012
3	.674972		\$49,000	\$33,074
4	.592080		\$46,000	\$27,236
5	.519369		\$43,000	\$22,333
6	.455587		\$40,000	\$18,223
7	.399637		\$37,000	\$14,787
8	.350559		\$34,000	\$11,919
9	.307508		\$31,000	\$9,533
10	.269744		\$28,000	\$7,553

Cash Value of Loan	<u>\$232,916</u>
<b>Cash Selling Price</b>	<b><u>\$282,916</u></b>

## PROBLEM 11 (Contd.)

### **Alternate Method**

Value of Declining Annuity

Formula\*:

$$(d - kN) a_{\overline{n}|i} + \frac{k(N - a_{\overline{n}|i})}{i} = V(\text{alue})$$

Where:

- d = First Period Income
- k = Decline in Income per Period
- N = Number of Periods
- $a_{\overline{n}|i}$  = Present Worth 1 per Annum for n periods at i Rate
- i = Interest Rate

**Solution** The cash equivalent of the note is equal to

$$(\$55,000 - (\$3,000 \times 10)) (5.216116) + \frac{\$3,000 (10 - 5.216116)}{.14}$$

$$\$25,000 \times 5.216116 + \frac{\$3,000 \times 4.783884}{.14}$$

$$\$130,403 + \frac{\$14,352}{.14}$$

$$\$130,403 + \$102,512 = \$232,915$$

Cash Selling Price	(\$232,915 + \$50,000)	<u><b>\$282,915</b></u>
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\* Elwood Tables, 4th Edition, Part 1, Page 39. See bibliography.

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