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REAL ESTATE AND THE TAX REFORM ACT OF 1986

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ABSTRACT

In contrast to the convèntional wisdom, real estate activity in the aggregate is not disfavored by the 1986 Tax Act. Within the broad aggregate, however, widely different impacts are to be expected. Regular rental and commercial activity will be slightly disfavored, while historic and old rehabilitation activity will be greatly disfavored. In contrast, owner-occupied housing, far and away the largest component of real estate, is favored, both directly by an interest rate decline and indirectly owing to the increase in rents. Low-income rental housing may be the most favored of all real estate activities.

The rent increase for residential properties will be 10 to 15 percent with our assumption of a percentage point decline in interest rates. For commercial properties, the expected rent increase is 5 to 10 percent. The market value decline, which will be greater the longer and further investors think rents will be below the new equilibrium, is unlikely to exceed 4 percent in fast growth markets, even if substantial excess capacity currently exists. In no-growth markets with substantial excess capacity, market values could decline by as much as 8 percent from already depressed levels.

Average housing costs will decrease slightly for households with incomes below about $60,000, but increase by 5 percent for those with incomes above twice this level. With the projected increase in rents, homeownership should rise for all income classes, but especially for those with income under $60,000. The aggregate home ownership rate is projected to increase by three percentage points in the long run in response to the Tax Act.

The new passive loss limitations are likely to lower significantly the values of recent loss-motivated partnership deals and of properties in areas where the economics have turned sour (vacancy rates have risen sharply). The limitations should have little impact on new construction and market rents, however. Reduced depreciation write-offs, lower interest rates, and higher rents all act to lower expected passive losses. Moreover, financing can be restructured to include equity-kickers or less debt generally at little loss of value.

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The U.S. Congress passed the Tax Reform Act of 1986 (the Act) on September 27 and President Reagan signed it into law on October 22. This bill, which is the outcome of a process that began several years ago and included numerous tax reform proposals, radically alters the federal income tax system and generally taxes investment activities more heavily. In fact, partial equilibrium analysis leads to the implausible conclusion that tax reform will reduce investment in all capital goods. Reduced investment in relatively disadvantaged capital goods and increased investment in relatively advantaged goods would be a more plausible outcome.

The mechanism by which a general decline in investment is converted into a mixed investment response is a fall in interest rates. This fall would follow directly from a general reduction in the demand for investable funds. Allowing for an interest rate decline significantly alters the expected impact of the Act upon real estate. In particular, one finds that depreciable real estate will be negatively affected by the Act, but the effect is much less negative when one factors in the interest rate decline. Moreover, owner-occupied housing shifts from being unfavorably affected to being favorably affected when a decline in interest rates is incorporated into the analysis.[1]

The analysis begins with a discussion of the main provisions of the Act and their implications for interest rates. In Section II, we turn to the anti-tax shelter provisions of the bill: passive loss and interest expense limitations and changes in at-risk rules and the minimum tax. Sections III and IV report the likely effects of the Act upon income-producing properties (market rent levels and real estate values) and owner-occupied housing (the cost of ownership and the aggregate ownership rate). The provisions for low-income housing are discussed in Section V, and a summary concludes the paper.

I. Major Provisions of the Act and Their Implications for Interest Rates

Three classes of provisions are considered in turn: individual income tax rates, tax depreciation schedules, and investment tax credits. The likely interest-rate impact of these provisions is then discussed.

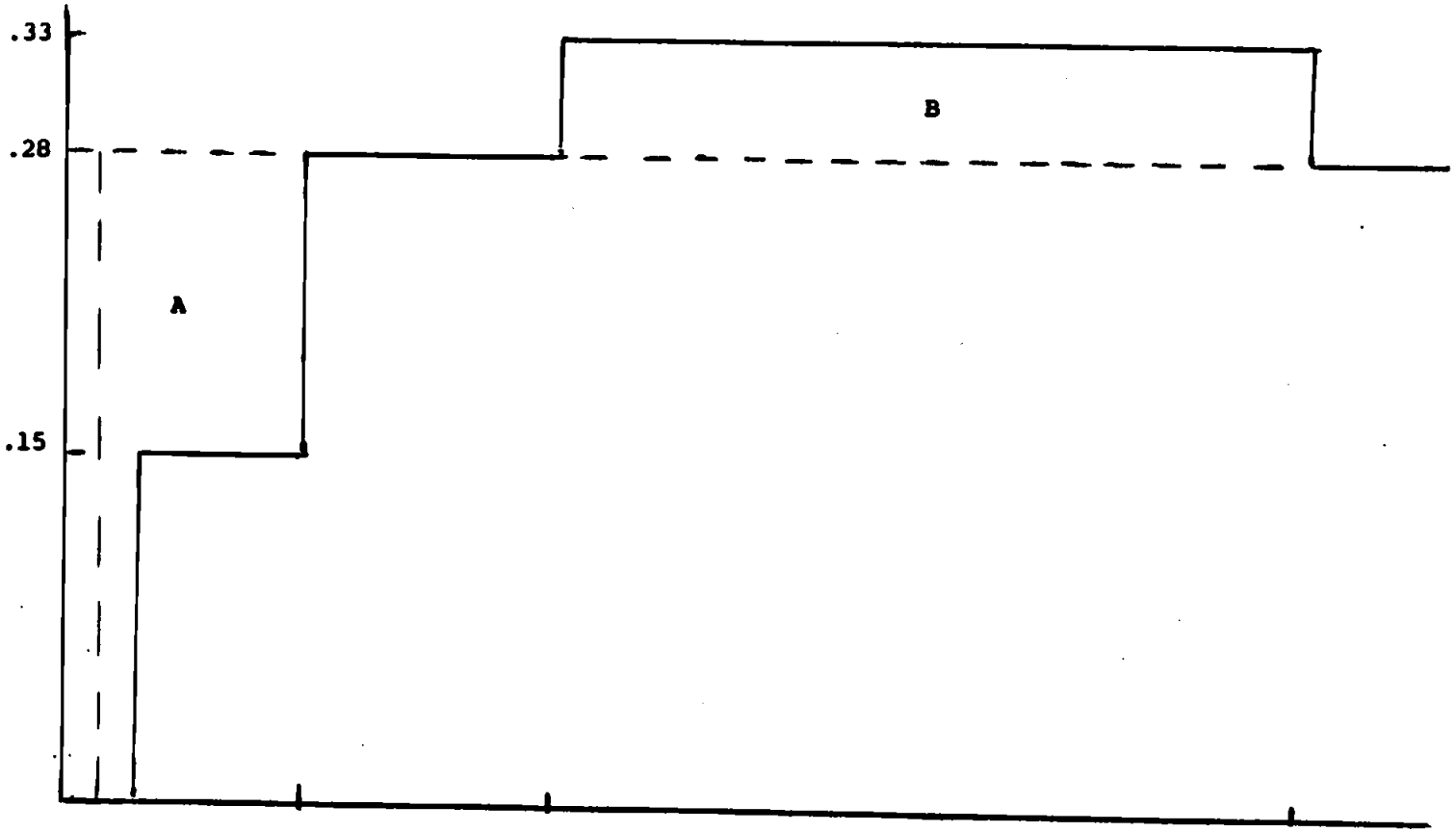
A. Individual Tax Rate Schedule

The new law replaces the previous 14-bracket tax rate schedule with what is best viewed as a 4-bracket rate schedule. These four rates are 15, 28, 33, and 28 percent. The rate schedule for nonitemizing households is drawn in Figure 1. The 33 percent marginal rate reverts to 28 percent when a household's average tax rate on all income above the standard deduction equals 28 percent (when area B in the figure equals area A). That is, the benefits of the zero tax rate on personal exemptions and of the initial 15 percent tax rate will be phased out for taxpayers with sufficiently high incomes, the phase-out mechanism being a five percent surcharge -- giving the 33 percent marginal rate -- on income above the indicated level in Figure 1. The new rate schedule takes effect in 1988 and will be adjusted for inflation beginning in 1989. A transitional tax rate schedule that consists of five tax rates ranging from 11.5 percent to 38.5 percent will be in effect in 1987.

Breakpoints for the tax bracket changes are shown at the bottom of the figure (in thousands of dollars) for four household types: married couples with two dependents, married couples with no dependents, "other" household heads with one dependent, and single households. The first breakpoint for nonitemizers is governed by the standard deduction and the personal exemptions (for itemizers, more of AGI goes untaxed, so all breakpoints would be further to the right). The Tax Reform Act increases the standard deduction (zero bracket amount) by about a quarter (to $5,000 in 1988) for marrieds filing jointly, by a full two-thirds (to $4,400) for heads of household, and by an

Figure 1

Tax Rate Schedule for Nonitemizers, 1988



Married, 2 dep.	12.8	(8.4)	42.6	84.7	205.7	Adjusted
Married, 0 dep.	8.9	(6.1)	38.7	80.8	180.0	Gross
Other, 1 dep.	8.3	(3.8)	32.2	70.0	153.9	Income
Single	4.9	(2.6)	22.8	48.1	105.5	

eighth (to $3,000) for singles. The personal exemption will be increased gradually until 1989 at which time the exemption will equal $2,000 for the taxpayer, the taxpayer's spouse and dependents. The standard deduction and the personal exemption amounts will be adjusted annually for inflation beginning in 1989 and 1990, respectively. The numbers in parentheses following the first breakpoint represent the extrapolated 1988 income levels at which nonitemizers would have begun paying taxes under the old law (standard deduction plus 4,2,2 and 1 personal exemptions, respectively, for the four households). The substantial increases under the new law are expected to remove 6 million households from the federal income tax rolls.

The reductions in statutory tax rates, including the near doubling of the personal exemption, significantly lower both the average and marginal tax rates at which households will deduct housing expenses. Table 1 contains some sample calculations for households with different adjusted gross incomes. While the calculations are based on numerous specific assumptions (married couples with two dependents, etc.), the general result -- a cut in these tax rates -- holds for virtually all households.[2]

The Tax Act also alters the tax rate on capital gains income. In 1988 and beyond, the general capital gains exclusion will not exist (in 1987, capital gains will be taxed at no more than a 28 percent tax rate). For most households with significant assets other than consumer durables and their residence, the capital gains rate will be increased from 20 percent or less to 28 or 33 percent. The effective exemption of capital gains taxation on owner-occupied housing continues unaltered, however. That is, capital gains taxation on owner-occupied housing can be totally postponed upon sale by purchasing another home of at least equal value; in addition, a one-time capital gain of up to $125,000 is excluded from taxation for taxpayers above the age of 55.

B. Depreciation Schedules

Economists have argued that tax depreciation should equal economic depreciation at replacement cost. This generally means relatively low tax depreciation in the early years of a property but much higher depreciation in later years if significant inflation exists. Because depreciation allowances would be inflation-indexed, more than 100 percent (possibly far more) of an asset's value would be deductible over its life. Legislators have not bought this argument in practice, although they seem to have accepted it in principle. More specifically, when inflation became rampant in 1979 and 1980, tax depreciation lives were sharply shortened (by ERTA) to offset the inflation. Since then, inflation has fallen and depreciation lives for industrial and commercial structures have been lengthened (from 15 to 19 years). The 1986 Act continues this lengthening.

Under previous law, residential rental property could be depreciated over 19 years using a 175 percent declining balance method with a switch to straight line in about the ninth year. Nonresidential property could use either straight line or the 175 percent declining balance method, but given the severity of the recapture provisions for those who used the accelerated procedure, most nonresidential property was depreciated using straight line. Equipment was depreciated over 5 years, on average, and public utility structures over 10 or 15 years; 150 percent declining balance with a switch to straight line was applicable to both asset types.

Under the new law, residential rental property is depreciable over 27.5 years and nonresidential property over 31.5 years. The depreciation method is straight line, and the recapture provisions are eliminated. Tax lives for public utility structures are lengthened to 15 or 20 years (still 150% DB). While tax lives of equipment are lengthened, a more accelerated method (200% DB versus the old 150% DB) is available. The net result is roughly no change in

the present value of tax depreciation allowances. Finally, construction period interest and property tax expenses are added to the basis of the property; consequently, they will be amortized over either 27.5 or 31.5 years versus the 10 years under previous law.

C. Tax Credits

Under the old law, tax credits existed for equipment, public utility structures, and rehabilitation expenditures on qualified properties. The latter included historic structures and nonresidential old (over 40 years) and quasi-old (over 30 years) structures. The credits were 10 percent for equipment and public utility structures, 15 percent for quasi-old rehabilitation outlays, 20 percent for old rehabs and 25 percent for historic structures. The depreciation basis was reduced by the full credit for the nonresidential rehabs and by half the credit for equipment and public utility and historic structures.

The new bill removes the credits for equipment, public utility structures, and rehabs of buildings built after 1936. For historic structures, the credit is cut from 25 to 20 percent, and the depreciable basis must now be reduced by the full credit. For old qualifying properties, the credit is lowered from 20 to 10 percent.[3] Our calculations suggest that assets which lose, partially or totally, their tax credits are the investment activities most disadvantaged by the Tax Reform Act.

D. Tax Reform and Interest Rates

The Tax Reform Act of 1986 has negative direct implications for every type of capital good. Longer depreciation lives raise the investment hurdle rates (annual rental costs) for all structures except owner-occupied housing, and the reduction or elimination of investment tax credits increases hurdle

rates for equipment, public utility structures, and rehabilitation projects. Finally, the cut in personal tax rates lowers the demands for depreciable real estate and owner-occupied housing. With the demand for all investment goods falling, interest rates will certainly decline. The magnitude of the decline depends on the interest sensitivities of both the supply of domestic and foreign saving and of investment demand itself. Hendershott (1986) has constructed a model in which total saving is independent of interest rates and the demands for capital are approximately unitary elastic with respect to the rental prices of capital goods. In this model, interest rates have to decline by 1.4 percentage points to offset the negative capital provisions of the Act. That is, rates have to decline by this much to maintain aggregate investment at its pre-reform level. A similar calculation with the more detailed Galper-Lucke-Toder model (1986) yields a 1.74 percentage point decline.

Of course, interest rates will decline less if the supply of saving is reduced, and a reduction might be expected. On the domestic side, the deductibility of contributions to retirement accounts has been limited. IRA contributions for those with established pensions will no longer be deductible for households with incomes above $35,000 (singles) or $50,000 (married couples). Also, the maximum deductible annual contributions to supplemental retirement accounts (401k's) has been lowered from $30,000 to $7,000 (a similar reduction occurs for 403b's). On the foreign side, any reduction in U.S. interest rates reduces returns to foreigners because they pay taxes based on foreign tax schedules, not U.S. schedules, and thus do not benefit from lower U.S. tax rates. However, international capital flows are not infinitely elastic, and even if they were, the U.S. is sufficiently large that its reduced investment demand would lower the world level of interest rates.

In the calculations reported in Sections III and IV, a one (not 1.4 or 1.76) percentage point decline in U.S. interest rates is presumed. This does not mean that interest rates should be expected to decline (abstracting from other factors affecting interest rates) by 100 basis points from levels on the Act's enactment date; some of the rate decline likely occurred earlier in 1986. All tax reform plans considered in 1986 proposed elimination of the investment tax credit for equipment and public utility structures retroactive to the beginning of 1986, and the likelihood of some version of tax reform passing was high virtually all year. Thus the decline in interest rates and the weakness in equipment expenditures experienced in 1986 was partially attributable to the anticipated removal of this provision. Indeed, 75 basis points of 140 basis point model-calculated decline in interest rates is due solely to the elimination of this credit. Real estate likely benefited from tax-reform induced lower interest rates during much of 1986.

II. Anti-Tax Shelter Provisions

The Tax Reform Act of 1986 contains multiple attacks on tax shelter activities: (1) the establishment of a new income category (passive income), the losses from which are generally not deductible against other income, (2) a tightening of the limitations on interest expenses, (3) application of the at-risk rules to real estate, but with major exceptions, and (4) an expansion of the individual minimum tax. Each of these is discussed in turn. The section concludes with an analysis of the market impacts of these changes.

A. Passive Loss Limitations

For many years, different sources of income have been taxed differently under the federal tax code. For example, until 1981, "unearned" (nonlabor) income was subject to a far higher maximum tax rate than was "earned" or labor

income. Also, capital gains have generally been taxed less heavily than other income, owning both to the gains exclusion and deferral until realization. Moreover, portfolio capital losses, while fully deductible against portfolio capital gains, have been deductible against only $3,000 of other income.

The 1986 Act introduces a new income class, passive income, and puts restrictions somewhat analogous to those on portfolio capital losses on passive losses. Passive income is defined to include income generated from business and trade activities in which the taxpayer does not materially participate and from rental activities such as real estate. For individuals, partnerships, trusts, and personal service corporations, losses from passive activities can be used to offset income from other passive activities, but not other income (e.g., wages, interest, etc.). Losses that cannot be claimed in a particular year can be "banked" and used to offset passive income in future years. Also, cumulative losses are allowed in full at the time of sale of the property if a gain or loss is recognized. The effective date for this provision is January 1, 1987, but a transition period was established for properties purchased before the law was signed by the President. The transition rule allows 65 percent of passive losses to be used to offset nonpassive income in 1987, 40 percent in 1988, 20 percent in 1989, and 10 percent in 1990.

An important exception applies to "small landlords." Taxpayers who actively manage residential rental investments may deduct up to $25,000 in losses against nonpassive income if their adjusted gross income computed without regard to the losses is less than $100,000. This amount is phased out one dollar for two dollars of income for taxpayers with incomes above $100,000 so that no losses are allowed for anyone who earns above $150,000. An identical exemption applies to tax credits in a deduction-equivalent sense; that is, $7,000 in credits is allowed because a $7,000 credit is equivalent to a $25,000 deduction for a taxpayer with a 28 percent tax rate ($25,000x.28 =

$7,000). Active management requires that a taxpayer have at least a 10 percent interest in the property (and not be a limited partner) and be involved in the management of the property on a "substantial and continual" basis.

Two related rationales for the small landlord provision can be provided. The first is based upon uncertainty regarding the true nature of the income from actively-managed properties. With active management, some of the income is earned income and thus should be aggregatable with other earned income. The second rationale reflects the difficulties of real estate diversification for small investors attempting to use their management/maintenance skills. Diversification (by geographic area and real estate type) becomes particularly important when passive losses are deductible against only passive gains. Without diversification, large losses can more easily occur. While equity mutual funds allow small equity investors to easily diversify, real estate diversification for small managers/maintainers is impossible.

Other potentially important exceptions apply to certain types of corporations. Regular C Corporations are not subject to the rule so they will be able to use passive losses to offset both regular and portfolio income of the corporation. Closely held C corporations other than personal service corporations that are subject to the at-risk rules (generally where 5 or fewer individuals own more than 50 percent of the stock) can use passive losses to offset earned income, but not portfolio income (unearned income other than passive income).

B. Interest Expense Limitations

Previous law employed the concept of net investment income (investment income less investment expense) and investment interest expense (interest expense associated with investment income) to limit the amount of investment interest expense a taxpayer could deduct. The limit equalled $10,000 plus the amount of the taxpayer's net investment income. The new law will tighten the limitation by restricting the amount of investment interest expense that can be deducted to net investment income. Excess interest expense can be banked for possible deduction in future years, and the four-year transition period for passive losses applies.

In general, interest expense and income (losses) for passive activities will not be included in the calculation of investment income or investment interest expense, i.e., real estate is not subject to the interest expense limitation. However, during the transition period passive losses allowed (e.g., 65 percent in 1987) will be subtracted from investment income. Thus, a taxpayer for whom the investment interest expense limitation is binding will not obtain any relief from the transition rule for the passive losses.

The new law prohibits the deduction of nonbusiness household interest except that on debt secured by first and second residences. Moreover, this interest is limited to that on mortgage debt which does not exceed the sum of the original purchase price of the properties, the cost of improvements, and (up to the current market value of the properties) educational and medical expenses incurred. The mortgage debt ceiling applies only to debt incurred after August 15, 1986. The prohibitions on nonmortgage, nonbusiness household interest deductions are subject to the four-year transition period for passive losses.

C. At Risk Rules

At risk rules limit the cummulated deductible losses on an investment to the amount at risk (initial equity contribution plus cummulated taxable income less cummulated cash distributions plus recourse debt). To the extent that cummulative losses exceed investment at risk, the losses can be banked for future possible deductibility. Under old law, real estate was exempt from the at-risk rule.

The Tax Act extends the at-risk rules to real estate but simultaneously expands the definition of the amount at risk for real property to include nonrecourse debt secured by the property, including debt supplied on commercially reasonable terms by a lender with an equity interest in the property. Seller or installment sale financing, however, is not treated as nonrecourse debt. While this extension will obviously discourage seller financing, no general impact on the real estate market seems likely.

D. The Individual Minimum Tax[4]

Individuals must pay the higher of their regular tax liability or their minimum tax liability. The latter is 21 percent of their income base -- regular taxable income plus specified tax preferences less a $40,000 exemption for married taxpayers ($30,000 for singles or individual filers). The exemption is reduced 25 cents for each dollar by which the income base exceeds $150,000; during this phase out, the effective tax rate is 26.5 percent.

The 1986 Act expands the list of tax preferences to include "accelerated depreciation" on equipment (the difference between 200% DB and 150% DB), tax-exempt interest on new private activity bonds (those issued after August 7, 1986), and the appreciation component of charitable contributions. These expansions will increase the likelihood of taxpayers paying the minimum tax. However, the real estate tax preferences are reduced because accelerated

depreciation and excluded capital gains on real estate no longer exist. Still remaining is the excess of tax depreciation over 40-year straight line. This could reduce the value of tax depreciation allowances by a sixth.[5] Also, the reduction in taxable income resulting from an installment sale is a tax preference item. Moreover, during the transition period passive losses allowed (e.g., 65 percent in 1987) will be included in the minimum tax.

E. Impacts of Anti-Shelter Provisions

Of all the anti-shelter provisions, only the new passive loss rules could plausibly affect real estate markets significantly. Four areas of possible impact include: market rents, the volume of transactions, the form of financing and the form of ownership. Such impacts are considered in turn.

Using the simulation methodology described in the next section, we computed the worse-case certainty impact of passive loss rules on rents. That is, the investment earns the expected return with certainty, and no passive gains on other investments are available to offset passive losses. The analysis implies little impact. The combination of lengthened tax depreciation and construction period interest and property tax (CPIT) deductions (to 27.5 years), lower interest rates (one percentage point), and higher rents (10 percent) virtually eliminates initial tax losses. Moreover, if passive losses were expected to be greater, as they would be in a higher inflation (and thus interest rate) environment, the financing could/would be restructured. The simplest method would be greater use of equity. Alternatively, debt with equity-kickers (share of asset appreciation or increase in rents) could be used to lower direct interest costs and thus passive losses.

The passive loss rules could still affect market rents, however. While no losses occur when the project "works," significant uncertainty surrounds the net operating income from properties, and losses would occur if this income

falls significantly below expectations. If incomes from other projects are not sufficient to offset the passive losses, net losses would not be currently deductible. This possibility would cause investors to raise the required expected return on real estate investments. Also acting to raise the required return is the reduction in importance of the relatively certain tax depreciation component of real estate investment vis-a-vis the relatively uncertain operating income and cash reversion component.

The passive loss rules will likely increase the number of real estate transactions. At any point in time, some projects are likely to be souring -- earning significant passive losses and promising to do so for some future periods -- and others to be sweetening -- earning above expected returns and thus promising significant passive gains in the future. A sale of the sour project to the owner of the sweet one would allow the banked passive losses to be immediately deducted and would transfer the expected future losses to an owner who could use them as they accrue. While the sale price will be a distressed one, the buyer and seller will gain vis-a-vis the Treasury in that the losses will be deducted sooner.

A final issue is the impact on ownership form. Will large C corporations increase their ownership of real estate because they are able to deduct passive losses against nonpassive income but individuals and partnerships are not?

This seems likely in the short run when substantial passive losses on numerous projects exist, owing to both the large losses built into deals in the last few years and the high vacancy rates for many types of real estate in many areas of the country. In the longer run, however, expanded corporate ownership seems unlikely. For the first time in decades, the corporate income tax rate will be higher than the maximum personal tax rate. Moreover, the taxation of corporate income at the personal level may even be rising with the increase in the capital gains tax rate. The 1986 Tax Reform Act is unlikely to be a boon to the corporate ownership form.

III. Impacts on Income-Producing Properties

This section reports the likely effects of the Tax Act upon the rents and values for rental and commercial real estate. The discussion makes the stylized distinction between the long- and short-run effects of the Act. The short-run effect is to alter the values of existing properties, while the long-run effect is to alter the level of rents. The likely impacts on rents and values are reported in turn, but first we discuss the precise tax law changes analyzed and the key underlying assumptions made.

The real estate provisions analyzed are: the lengthening of tax depreciation from 19 years, 175% DB to 27.5 (or 31.5) years straight line, an extension of the deduction period for construction period interest and taxes from 10 to 27.5 (or 31.5) years, the removal of the capital gains exclusion and a cut in personal tax rates. All of these changes tend to raise rents and lower real estate values.

The precise tax rate change depends on the assumed marginal investor. For the new law, a marginal federal rate of 0.33, which would be paid on taxable income of $72,000 to $193,000 (itemizing married couple with two dependents), seems reasonable enough. But the corresponding tax rates under

the old law (indexed to 1988) range from 0.42 ($68,000 to $97,000) to 0.49 ($124,000 to $184,000), with 0.45 lying in between. Because of our uncertainty regarding the marginal investor, two sets of results will be reported, one starting with a 0.52 tax rate [0.49 + (1 - .49).06, where .06 is the presumed state and local income tax rate] and the other with a 0.45 rate [0.42 + (1 - .42).052]. In both cases, the marginal investor under new law is assumed to be in the 0.36 bracket [0.33 + (1 - .33).045, the lower state and local rate reflecting a presumed cut to offset the broadening of the taxbase]. That is, the marginal rate will be cut by 0.09 or 0.16.

The major assumptions underlying the analysis are an expected inflation rate of 0.045, a risk-free interest rate of 0.09 applied to debt maintained at two-thirds of the market value of the project (see Hendershott and Ling, 1986), depreciation rates of 2½ percent in rents and 3 percent in structure price,[6] and a required after-tax return on equity of about 0.105 for the 52 percent tax bracket investor and 0.115 for the 45 percent investor.[7]

A. Impact on Equilibrium Rent Levels

The computational procedures employed to determine the change in equilibrium rent use a discounted cash flow model of an investment in real estate. The model takes into account the downpayment, the expected after-tax cash flows, and the expected net reversion at sale. The long-run equilibrium level of rent is the initial rent that would equate the net present value of the investment to zero for a given set of assumptions (inflation, interest rate, required return on equity, etc.) and a particular tax regime. This rent per dollar of investment serves as a hurdle rate for prospective investors in income-producing properties. If a property can earn a rent greater than the equilibrium rent, then new units will be built to expand the supply of real estate. This process continues until the market rent declines to the

equilibrium rent. On the other hand, if the equilibrium rent were to jump above the market rent, then new construction would be cut back until market rent rose to the new equilibrium value. The impact of the Tax Act upon rents is obtained by comparing the equilibrium level of rent under previous law to that required under the new law. In this computation, real estate value is assumed to equal its presumably unchanged replacement cost.

The equilibrium level of rent must increase under the Act to replace the reduced tax benefits. Only then will investors in real estate earn a rate of return comparable to what can be earned on other investments of similar risk. Estimates of the likely rent increase are presented in Table 2 for alternative of assumptions regarding the tax rate of the marginal investor in real estate and the size of the interest rate decline. The first numbers, which are discussed first, are for residential properties; the second numbers (in parentheses) are for commercial properties.

The top row indicates the equilibrium increase in rent assuming no change in interest rates for two different assumptions regarding the tax rate of the marginal investor under prel986 law. With a 45 percent marginal tax rate, rents will increase by 19 percent; with a 52 percent marginal rate, the rent increase is 33 percent. These increases are partially a result of increases in the required rate of return (81 and 182 basis points, respectively, for the 45 and 52 percent tax-bracket investors) owing to the generally lighter taxation of pretax returns on alternative investments. Because ample evidence exists that taxpayers with tax rates far below the maximum are active in the rental market, the 19 percent increase seems more plausible than the 33 percent increase.

In the second row a 100 basis point decline in interest rates (and a 68 basis point decline -- relative to that incorporated in the first row -- in the required after-tax equity rate) is factored into the analysis. The result is a substantial reduction in the required rent increase: from 19 percent to 11 percent for the 45 percent tax-rate investor and from 33 percent to 24 percent for the 52 percent investor. The rational for believing that the Tax Act would lower interest rates was developed earlier.

The required return on equity in real estate could rise relative to that on other investments because the importance of the relatively certain tax depreciation component of the return to real estate will decline vis-a-vis the less certain net-operating-income component. Moreover, real-estate losses will no longer be deductible against nonpassive income. If one's passive activities should fall on hard times, the lack of deductibility against other income would result in the investor shouldering the entire loss, as opposed to sharing it with the U.S. Treasury. A one percent increase in the required return would raise all equilibrium rent increases in Table 2 by about four percentage points.

Our own view is that a 10 to 15 percent rent increase for residential properties is most likely. That is, we believe (1) the marginal investor under the old law to have been in the 45 percent tax bracket, (2) the likely decline in interest rates to be 100 basis points, and (3) some increase in the required return to be necessary to offset the increased riskiness of real estate investments.

The rent increases for commercial properties -- the numbers in parenthesis in Table 2 -- are lower. For the 45 percent tax rate, the percentage increases are about 5 points less; for the 52 percent tax rate, the increases are 7 points less. While tax depreciation for commercial properties is less generous than for residential under the new law, depreciation for the

former was even less generous than for the latter under the old law. For commercial properties, then, the expected range of "rent" increases is 5 to 10 percent.

It is important to reiterate the process by which rents increase in competitive markets. Builders will find it less profitable to invest at the current level of rents with the new tax incentives than with the old. The combination of reduced new construction with normal growth in demand and steady obsolescence of the existing stock will eventually generate higher rents for the existing stock.

How quickly will rents rise from the old equilibrium level to the new? The rise will occur at the most rapid rate in fast-growing markets and will get to the new equilibrium sooner the smaller the change in the equilibrium level. Of course, in markets with high vacancy rates this rent rise will occur only after current rents and occupancy rates get back to their equilibrium level under old law. Our best guess is that it will take four (Columbus, Ohio) to ten (Houston, Texas) years for rents to rise to their new equilibrium level.

Which provisions of the Act are most responsible for the rent increases? Estimates of the effects of the individual provisions, including a change in the marginal tax rate from 0.45 to 0.36, were computed two ways: the change in the equilibrium rent if a specific provision were the only change being made and the change when this provision is added after all other provisions -- including a 100 basis point decline in the rate of interest -- had been taken into account. Either way, the depreciation change increases rents about twice as much as the cut in the regular income tax rate does, and the impacts of the CPIT and capital gains exclusion are negligible. Removal of the capital gains exclusion is of little importance because (1) few gains are expected in a low inflation environment, (2) gains are expected to be realized in the far distant

future (see the next paragraph), and (3) the gains exclusion is also removed on alternative investments, a fact that will lower the required return on real estate and thus tend to offset the direct impact of the exclusion removal.

Trading should decrease under the new law. Under old law, trading before tax depreciation disappeared in the 19th year was advantageous. Trading should not be optimal prior to the new 27½ (or 31½) year tax depreciation life because a penalty to trading -- the capital gains tax rate -- has been increased and an advantage to trading -- getting on the new depreciation schedule -- has been decreased (see Hendershott and Ling, 1984, on optimal trading). Moreover, the value of installment sale transactions, a method of dampening the capital-gains tax penalty, is greatly reduced in the Tax Act for sales of assets worth over $150,000 for sellers with substantial debt. In effect, the fraction of taxes that could formerly be deferred is reduced by the ratio of the seller's debt to book value of assets.

B. Impact on the Value of Existing Properties

We now turn to the short-run impact of the Act upon the value of existing real estate. The initial perspective taken is that of an investor in early 1987 contemplating purchase of property put in place in 1986. This new investor will face a less generous tax depreciation schedule, a higher capital gains tax rate, a lower marginal tax rate and, possibly, passive loss limitations. The question, then, is how much will this new investor alter his bid for the property relative to his bid under previous law? The standard of comparison is the price of the property that would have made it a zero net present value investment under the old law, assuming that rents were at their equilibrium level.

If rent instantaneously jumped to its new equilibrium level, then value would not decline; the higher rent would compensate exactly for the less generous tax depreciation, lower marginal tax rates, etc. Because rent will

not rise instantaneously, value will decline, the magnitude depending on how slowly investors think rent will rise to the new equilibrium level (Hendershott and Ling, 1985). The longer is the expected adjustment -- the greater is the present value of expected below equilibrium rents -- the greater will be the fall in value. A useful analogy can be drawn to the pricing of discount bonds. Bonds sell at a discount when they are earning a below-market coupon (rent). The more the coupon is below market and the longer the bonds are expected to earn the below-market coupon (the longer is the bond's maturity), the lower is the market value relative to par.

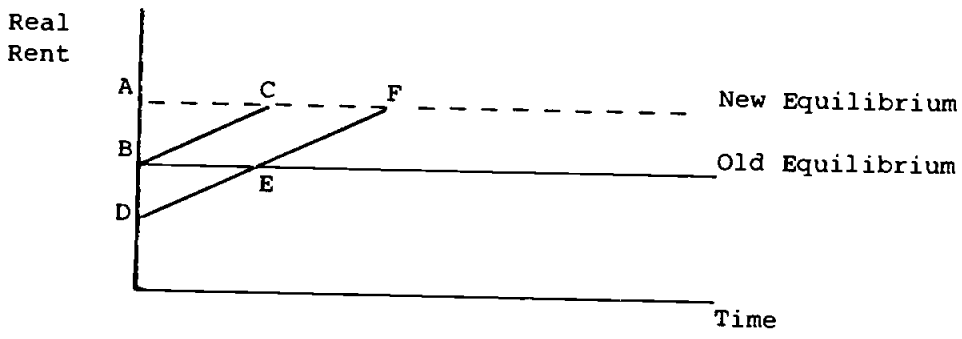
Investor expectations of the rental adjustment process should vary with both the growth rate of the area and the extent of initial disequilibrium. We consider two growth rates (zero and positive) and three prereform states of the market (equilibrium, 10 percent "excess capacity" and 20 percent excess capacity). In all cases, depreciation or obsolescence is assumed to occur at the rate of 2 percent per year. Thus 10 percent excess capacity or below market rent would be eliminated in 5 years even with zero growth. The positive growth market is assumed to eliminate 5 percent excess capacity per year, 2 for obsolescence and 3 for growth. Thus 30 percent initially below-market rents, 20 percent due to excess capacity and 10 percent due to tax reform, would be eliminated in 6 years in the high growth area versus 15 years in the no-growth area.

The upper half of Table 3 contains estimates of the percentage value declines in a property purchased in early 1987 owing to an 11 percent increase in equilibrium rents and the failure of actual rents to increase immediately to that level. The first row is for a property that would have had a zero net present value under the old law, i.e., is in a market in equilibrium prior to the enactment of the Tax Act. As can be seen, the value decline is a modest one percent in a growth market and two percent in a no-growth market.

Rows 2 and 3 pertain to cases of 10 and 20 percent excess capacity. In these calculations, we first compute the total percentage price discount from reproduction cost and then attribute some of it to the initial disequilibrium and the remainder to tax reform. The calculations are illustrated in Figure 2 which plots real rent over time. The solid horizontal line is equilibrium real rent in the absence of tax reform; the dashed horizontal line is equilibrium rent with tax reform. Now consider a market initially in equilibrium. As a result of tax reform at time 0 in the figure, rent rises along the BC segment, the slope of which is steeper in growth areas than in no-growth areas. The decline in value is measured as the ratio of the present value of triangle ABC to the initial value (reproduction cost). Next, consider a market with substantial excess capacity prior to enactment of the Tax Act, i.e., initial rent equal to D rather than B. With passage of the Act, rent rises along the DF segment. The percentage price discount from reproduction cost is the ratio of the present value of triangle ADF to reproduction cost. The percentage decline in value due to the Tax Act is then the ratio of the difference in the present values of ADF and BDE -- the present value of ABEF -- to the initial below market price (reproduction cost less the present value of triangle BDE).

As can be seen in Table 3, the value declines are far larger when substantial excess capacity exists. The Tax Act is seen to reduce value, from an already depressed level, by 7 or 8 percent in no-growth areas versus only 4 percent in a growth area. The 8 percent is probably the upper bound on value decline. The 11 percent rent increase and 20 percent excess capacity is a worse case commercial scenario and is probably equivalent to a worst case rental scenario. While greater rent increases are possible for rental, excess capacity is far less.

Figure 2
Rent Paths with and without the Tax Act



The perspective taken above was that of new buyer of the property in early 1987; an alternative perspective is that of the current owner of a new property placed in service in 1986. The value of the investment to this person will exceed that to the 1987 purchaser because this person will be able to use the more generous tax depreciation schedule from previous law and, if he purchased before 10/22/86, the passive loss transition rules. The computations are contained in the lower half of Table 3. Note that the value to this investor rises even if rents are expected to take 5 years to adjust (the no growth assumption), as long as the passive loss limits are not binding. That is, the present value of the tax saving from the more favorable tax depreciation exceeds the present value of the below-market rents. However, if the investor has no passive income to offset passive losses and is not eligible for the transition rules (row 5), the more generous depreciation is of no value. Because this investor is worse off than the marginal investor, who is not affected by the passive loss limits by assumption, value declines are greater than those in row 1. Finally, if this investor purchased the property before 10/22/86 (row 6), the value declines would be less than those of the marginal investor purchasing in 1987. That is, the transition rules would nearly allow the investor to maintain value.

A comparison of row 1 with rows 4-6 yields interesting implications regarding trading in 1987. Row 1 can be viewed as the maximum bid price, relative to reproduction cost, of an investor for a property in 1987 whereas rows 4-6 give the relative value to owners of the property in different tax situations. An owner will sell only if the bid price of a new investor exceeds the value of holding the property. These numbers suggest (1) a strong disincentive by owners not subject to the passive loss limits to trade properties purchased in 1986, (2) a mild disincentive for owners subject to the limits but eligible for the transition rules, and (3) a strong incentive to

trade by those subject to the limits and not eligible for the transition rules. In fact, the latter investor trades in the first or second period in our model to maximize his return (minimize his loss). A disincentive to trade also holds for investors not subject to the loss limits who purchased properties in earlier years, but the disincentive is less the earlier the property was purchased because the present value of the tax saving from the more generous depreciation under old law is less.

IV. Impact on Owner-Occupied Housing

Current law grants important benefits to homeowners: imputed rental income is not taxed, and capital gains are rarely taxed and then only on a much deferred basis. Moreover, the deductibility of home mortgage interest ensures that itemizing households who debt finance will benefit fully from the nontaxation of owner-occupied housing. A consequence of these favorable provisions is that homeowners receive substantial tax subsidies. The higher the marginal tax rate of an individual, the larger the subsidy and the lower is the after-tax cost of owner-occupied housing.

The Tax Act of 1986 does not directly alter any of these favorable provisions, but it does affect the after-tax cost of owner-occupied housing. First, the tax rates at which households deduct housing costs are reduced. Second, the pretax level of interest rates will be lower. Furthermore, the combination of changes in owner costs and in market rents will likely change the aggregate homeownership rate.

The annual after-tax cost of obtaining one unit of housing capital depends upon the cost of debt, the cost of contributed equity, property taxes, real economic depreciation, expected appreciation, and the tax savings associated with owner-occupied housing. Two costs or "prices" of owner housing are relevant: the average cost, which influences the tenure choice decision;

and the marginal cost, which affects the quantity demanded by households that choose to own. The average and marginal costs, respectively, are higher the lower are the average and marginal tax rates at which housing costs are deductible.

Estimates of owner housing costs for households in different income classes under both old law and the Tax Act are contained in Table 4, based on the tax rates listed in Table 1.[8] If interest rates were not affected by the Tax Act, then the marginal cost would be unchanged for households with incomes under $30,000 but would rise by roughly 10 percent for those with higher incomes because of the general decrease in the tax rates at which marginal housing costs are deducted. If, however, interest rates decline by 100 basis points, as we expect, then households with incomes below about $30,000 will experience about a ten percent decrease in marginal housing costs, households with incomes above about $130,000 will face a 5 percent increase, and the change for other households will be negligible. Thus any tendency toward softer house prices will be confined to only the very high end of the market (over $250,000) and will be modest in magnitude.

In the absence of a decline in interest rates, average housing costs increase 5 to 10 percent across the board. Costs increase for households with incomes below $30,000, in spite of roughly no change in marginal tax rates, because the Tax Act both raises the standard deduction and reduces nonhousing-related itemized deductions (sales taxes, consumer interest, etc.), causing more housing deductions of these households to be wasted than was the case under the old law. With the 100 basis point decline in interest rates, however, average housing costs will decrease slightly for households with incomes below approximately $60,000; households with incomes above about $120,000 will experience a 5 percent increase in costs.

Homeownership depends on, among other things, the ratio of the average cost of owning to the cost of renting. The percentage changes in these ratios for households in the various income classes are reported in Table 5. The calculations in column 1 assume no decline in interest rates and no change in rents. Columns 2 and 3 factor in the 100 basis point decline in interest rates, first without, then with, a 10 percent increase in rental costs. Because rents are held constant in columns 1 and 2, the percentage changes equal the percentage changes in average owner costs for each income level. With the interest rate decline and no rent increase, the ownership rate will likely increase modestly for households with incomes below about $60,000 and decrease ever so slightly for higher income households. With the rise in rents, all currently renting households will find homeownership relatively more attractive than under old law. Overall, the aggregate homeownership rate would eventually rise by about 3 percentage points.

V. Low-Income Rental Housing

Tax incentives to stimulate the construction of low-income rental housing have been part of the law for many years. Previous law allowed investors in low-income properties to depreciate the properties over 15 years and to use a 200 percent declining balance method; in addition, CPIT would be expensed during the construction period. Furthermore, investors often had access to tax-exempt financing at rates substantially below market.

The Tax Act changes this law in two important respects. First, the preferential depreciation and construction period write-off schedules are replaced with a system of tax credits that depends upon the type of housing purchased or built and whether the project has access to tax-exempt financing or other types of subsidy. Specifically, the investor receives:

1) An annual credit for 10 years which has a present value equal to 70 percent of the cost of construction (both new and substantially rehabilitated projects) placed in service between 1/1/87 and 12/31/89. For 1987, the applicable Treasury discount rate converts into a 9 percent annual credit, but this credit will rise if interest rates rise and fall if rates decline.

2) For existing low-income housing or new construction with tax-exempt financing or other rental housing subsidies (e.g., FmHA section 515 loans), the present value of the credit is 30 percent (the annual credit for 1987 is 4 percent).

The depreciable basis is not reduced by the credit. Second, the availability of tax-exempt financing is reduced.

An analogy to the passive loss limits applies to these credits, as does a "small landlord provision." The latter says that up to $7,000 in credits (0.28 times $25,000) can be used to offset taxes on regular or portfolio income by households with taxable income below $200,000 (no active management criterion need be met). The offset is phased out between $200,000 and $250,000. With a nine percent annual credit, an investment of up to $77,778 ($7,000/.09) is eligible for the full offset.

Potentially severe restrictions are placed upon investments to qualify investors for the credits. First, at least 20 (40) percent of the units must be occupied by tenants whose income cannot exceed 50 (60) percent of the area's median income adjusted for family size, and only the units so occupied receive the credit. (Previous law defined qualifying income as 80 percent of the area's median income.) Second, tenants cannot pay more than 30 percent of their income in rent. Third, the project must satisfy these

15 years after it is placed in service or purchased, otherwise a substantial penalty will be levied. Fourth, the total value of the credits issued in a state is limited to $1.25 times of the population of the state.

A number of difficult conceptual problems exist in modeling low-income housing. These include specifying the expected sales prices at year 15 and beyond and the depreciation rates and required equity returns, both which are presumably higher than their counterparts for regular rental housing. These and other problems must be addressed before a definitive statement can be made on the treatment of low-income housing in the Tax Act vis-a-vis old law. Nonetheless, we have made a few "minimum" rent calculations that are probably instructive.

The minimum rent required by investors to earn their required rate of return is half as large with the new 9 percent credit as it was under old law, even when tax-exempt financing was employed (the debt rate was 200 basis points below market). With the 4 percent credit and tax-exempt financing, the minimum rent is roughly the same as under old law with tax exempt financing. This suggests two things. First, the 9 percent credit dominates the 4 percent credit with tax-exempt financing. Thus, limits on tax-exempt financing for low-income housing may not be of importance. Second, the 9 percent credit is far more generous than old law. Whether the credit is sufficient to generate a substantial increase in the construction of low-income housing is unknown, however.

VI. Summary

In contrast to the conventional wisdom, real estate activity in the aggregate is not disfavored by the 1986 Tax Act. Within the broad real estate aggregate, however, widely different impacts are to be expected. Regular rental and commercial activity will be slightly disfavored (modest increases in rents and declines in values will occur), and historic and old rehabilitation activity will be greatly disfavored. In contrast, owner-occupied housing, far and away the largest component of real estate, is favored, both directly by an interest rate decline and indirectly owing to the increase in rents. Homeownership should rise significantly, and the quantity and value of houses should increase slightly, except at the very high end of the market. Low-income rental housing may be the most favored of all activities.

The rent increase for residential properties will be 10 to 15 percent with our assumption of a percentage point decline in interest rates. For commercial properties, the expected rent increase is 5 to 10 percent. The market value decline, which will be greater the longer and further investors think rents will be below the new equilibrium, is unlikely to exceed 4 percent in fast growth markets, even if substantial excess capacity currently exists. Moreover, the value of recently-purchased properties to their current holders not subject to the passive loss limits will generally rise because the more generous tax depreciation allowances under old law vis-a-vis new law adds more value than the expected below-market rent subtracts. In no-growth markets with substantial excess capacity, market values could decline by as much as 8 percent from already depressed levels.

Two offsetting factors operate on the after-tax cost of owner-occupied housing. Lower tax rates increase the cost, but lower interest rates decrease it. With a percentage-point interest-rate decline, the after-tax marginal cost will fall by about 10 percent for most households with incomes below $30,000

and rise by about 5 percent for those with incomes above $130,000. Thus, only the highest price houses would experience weakness in value. Average housing costs will decrease slightly in this scenario for households with incomes below about $60,000, but increase by 5 percent for those with incomes above twice this level. With the projected increase in rents, homeownership should rise for all income classes, but especially for those with income under $60,000. The aggregate home ownership rate is projected to increase by three percentage points in the long run in response to the Tax Act.

The new passive loss limitations are likely to lower significantly the values of loss-motivated partnership deals and of properties in areas where the economics have turned sour (vacancy rates have risen sharply). The limitations should have little impact on new construction and market rents, however. Reduced depreciation write-offs, lower interest rates, and higher rents all act to lower expected passive losses. Moreover, financing can be restructured to include equity-kickers or less debt generally at little loss of value.

Footnotes

[1] This is not the first tax act whose impact on real estate would be misunderstood without allowing for interest rate changes. Many (Brueggeman, et. al., 1981, for example) predicted substantial rent decreases in response to the more generous tax depreciation allowances contained in the Economic Recovery Tax Act of 1981. Hendershott and Shilling (1982), however, foresaw a sharp increase in interest rates as a result of the Act and forecast rising real rents. Real rents have, in fact, risen by 10 percent since 1980.

[2] The households for which calculations are reported are also assumed to have one wage earner and the average fringe benefits and nonhousing itemized deductions of their income classes (based on 1983 SOI data), to own houses of dollar value equal to twice their AGIs and to pay property taxes equal to 1.2 percent of their house values. The general methodology for computing these tax rates is discussed in Hendershott and Slemrod (1983).

[3] These credits are subject to the same passive loss treatment as is the credit for low-income rental housing (see Section IV below).

[4] See Graetz and Sunley (1986) for a detailed discussion of both the individual and corporate minimum taxes.

[5] The ratio of tax depreciation on a dollar of depreciable investment when the minimum tax is fully applied to tax depreciation with no minimum tax is

$$[\tau(1/27.5)-\tau_{min}(1/27.5 - 1/40)]/\tau(1/27.5),$$

where τ is the regular tax rate and τ_{min} is the minimum rate. With $\tau = 0.52$ and $\tau_{min} = 0.257$ (0.21 plus the state and local tax), this ratio is 0.846.

[6] A potential problem with discounted cash flow models of this type is consistency between the assumed patterns of future rents and prices (Ling and Whinihan, 1985). Assuming that rents are initially at the equilibrium level, the 2½ and 3 percent assumed depreciation rates provide consistency, e.g., the resale price at year 20 is within one percent of the present value of cash flows beyond year 20. This consistency holds for both old law and the Tax Act.

[7] We compute the required equity rate (e) as:

$$e = (1 - t^*)[i + \frac{beta}{1-v}(rm - i)],$$

where t* is a weighted average of the taxpayer's income and effective capital gains tax rates, i is the interest rate, beta is the measure of the covariance of an unlevered real estate investment with the market return (assumed to be 0.5), v is the loan-to-value ratio, and rm - i is the excess of the return on the market portfolio over the (risk free) interest rate (assumed to be 0.06). The weights attached to the regular and effective capital gains tax rates, respectively, are 3/4 and 1/4. The capital gains tax rate is $(1\text{-excl.})\tau/2$, where excl. is the long-term capital gains exclusion, τ is the regular income tax rate and the division by 2 reflects deferral. For prel987 law, $\tau^* = .8\tau$; for the new law, $\tau^* = .875\tau$.

[8] For details on the precise methodology underlying these calculations, see Hendershott and Ling (1986).

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Table 1

Tax Rate at Which Housing Costs Are Deductible

	Tenure Choice (Average)		Quantity Demanded (Marginal)	
Income (000)	Old Law	Tax Reform	Old Law	Tax Reform
13-25	.146	.074	.166	.176
25-30	.211	.128	.189	.180
30-50	.279	.242	.251	.184
50-100	.402	.316	.364	.316
100-200	.471	.370	.455	.370

Authors calculations (see footnote 2).

Table 2

Percentage Change in the Equilibrium Rent Level
(commercial number in parentheses)

	Change in Tax Rate of Marginal Investor	
	.45 to .36	.52 to .36
Basic Provisions and No Decline in the Interest Rate.	19 (14)	33 (18)
Basic Provisions and a 100 Basis Point Decline in the Interest Rate.	11 (6)	24 (10)

Authors calculations (see text).

Table 3

Estimates of Likely Percentage Property Value Changes
(11 Percent Rise in Equilibrium Rents)

	Fast Growth		No Growth	
	Total Price Discount	Discount Due to Reform	Total Price Discount	Discount Due to Reform
Purchased 1/1/87				
1. In Equilibrium	-1	-1	-2	-2
2. 10% Excess Capacity	-5	-4	-9	-7
3. 20% Excess Capacity	-9	-4	-16	-8
Held by Investor After Purchase on				
4. 12/1/86, no passive loss limits		5.3		5.2
5. 12/1/86, passive loss limits fully binding		-2.2		-2.6
6. 10/1/86, passive loss limits fully binding but transition rules are applicable		-0.5		-1.4

Authors calculations (see text).

Table 4

Marginal and Average After-Tax Cost of
Owner-Occupied Housing by Income Class

Income(000)	Old Law		Tax Act of 1986			
			9% Interest Rate		8% Interest Rate	
	Marg.	Ave.	Marg.	Ave.	Marg.	Ave.
13-25	.0818	.0851	.0808	.0909	.0729	.0820
25-30	.0795	.0777	.0804	.0865	.0726	.0772
30-50	.0734	.0700	.0800	.0743	.0722	.0673
50-100	.0633	.0610	.0670	.0670	.0624	.0624
100-200	.0567	.0550	.0629	.0629	.0588	.0588

Authors calculations (see footnote 2).

Table 5

Impact of the Tax Act on the Ratio
of Average Owner Costs to Rental Costs

Income(000)	Percentage Change in Ratio		
	9% Rate, No Change in Rents	8% Rate No Change in Rents	8% Rate, 10% Increase in Rents
13-25	7	-4	-12
25-30	10	-1	-10
30-50	6	-4	-13
50-100	10	2	-7
100-200	14	7	-2

Authors calculations (see text).