AN ANALYSIS OF THE EFFECTS OF M.U.R.B. LEGISLATION ON VANCOUVER'S RENTAL HOUSING MARKET

by

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ABSTRACT

The purpose of this paper is to examine the impact of federal M.U.R.B. legislation on Vancouver's rental housing market, and to see what conclusions can be drawn about the effectiveness of this subsidy policy in achieving its objective, which was to increase the allocation of resources to the housing sector of the economy by stimulating the construction of rental units.

It is the thesis of this paper that the M.U.R.B. legislation was not effective in achieving its objective, since the inelasticity of the land supply function, as imposed by junior levels of government through zoning and other supply constraints, prevented the rental market from responding to these incentives in the form of increased production. It is hypothesized that the real effect of the program was to create windfall gains for existing owners of multiple family zoned land at the time the legislation was passed. It is argued further that real estate markets are more efficient than they are generally given credit for, in the sense that tax shelter benefits associated with M.U.R.B. properties will be fully capitalized into the value of such properties, thus preventing M.U.R.B. investors from earning rates of return superior to those earned by owners of comparable non-M.U.R.B. properties.

The paper begins with a brief history of M.U.R.B. legislation, and an analysis of the magnitude and cost of the program to the Canadian government. This is followed by a graphical analysis of the impact of M.U.R.B. legislation on the multiple family housing market, and a discussion and review of the literature pertaining to the

theory of efficient markets, the capitalization of costs and benefits into value, and the various models of land value which have been formulated. Two theoretical models are then presented as the underlying basis for the empirical research in the paper. The first is a valuation function for apartment investments, where the dependent variable is the selling price of an apartment building; the second is a model of the determinants of multiple family land values, where the dependent variable is the price of a site.

The two theoretical models are tested using multiple regression techniques. The data results provide evidence which contradicts the general case for the operation of the multiple family housing market, where renters should receive the full benefits of the M.U.R.B. program in the form of lower rents. The research shows that the future tax shelter benefits associated with M.U.R.B. properties are fully capitalized into the market values of completed M.U.R.B. buildings, and that M.U.R.B. investors do not earn rates of return superior to those of investors in non-M.U.R.B. apartment properties. The research suggests further that the expected M.U.R.B. tax shelter benefits were over-capitalized into higher land value premiums during the life of the program, thus creating windfall gains for existing landowners at the time the program was introduced.

The results suggest that the full capitalization of M.U.R.B. benefits into both land and apartment block values resulted in all of the benefits of the subsidy policy not filtering through to renters. Some benefits most likely did reach renters, since it is unrealistic to assume no substitution in the production function for apartments, but the actual distribution of policy benefits between renters and existing landowners cannot be measured within the scope of this research.

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1.0 INTRODUCTION

In 1972, the Federal Government removed the tax shelter benefits available to owners of residential real estate investments, resulting in severe criticism from the real estate industry, and in claims that construction of rental housing would decline or even terminate as a result. Since the demographic characteristics of Canada's population continued to put pressure on the market for rental accommodation (given that the peak of the baby boom cohort was still only 14 years of age at the time, and the front end was 27 years of age),[1] the public pressure which ensued prompted the Federal Government in 1974 to reinstate tax shelter benefits on a limited basis. This took the form of the Multiple Unit Residential Building (M.U.R.B.) Program, whose objective was to increase the allocation of resources to the housing sector of the economy by stimulating the construction of rental units. The purpose of this paper is to examine the impact of this legislation on Vancouver's rental housing market, and to see what conclusions can be drawn about the effectiveness of the policy in achieving this objective.

It is the thesis of this paper that the M.U.R.B. legislation was not effective in achieving its objective, since the inelasticity of the land supply function, as imposed by junior levels of government through zoning and other supply constraints, prevented the rental market from responding to these incentives in the form of increased production. It is hypothesized that the real effect of the program was to create windfall gains for existing owners of multiple family zoned land at the time the legislation was passed. It is argued further that real estate markets are more efficient than they are generally given credit for, in the sense

that tax shelter benefits associated with M.U.R.B. properties will be fully capitalized into the value of such properties, thus preventing M.U.R.B. investors from earning rates of return superior to those earned by owners of comparable non-M.U.R.B. properties.

The paper begins with a brief history of M.U.R.B. legislation in Canada, and an analysis of the magnitude and cost of the program to the government. This is followed by a graphical analysis of the impact of M.U.R.B. legislation on the multiple family housing market, and a discussion and review of the literature pertaining to the theory of efficient markets, the capitalization of costs and benefits into value, and the various models of land value which have been formulated. Two theoretical models are then presented as the underlying basis for the empirical research in this paper. The first is a valuation function for apartment investments, where the dependent variable is the selling price of an apartment building; the second is a model of the determinants of multiple family land values, where the dependent variable is the price of a site.

The empirical testing of the two theoretical models utilizes multiple regression techniques. The objective will be to estimate the magnitude and significance of the M.U.R.B. tax shelter benefits in the determination of the capital value of apartment buildings sold during 1979 and 1980 and in the determination of multiple family zoned land values in the City of Vancouver from 1972 to 1978.

The final section of this paper will discuss the implications of the empirical findings in the context of Vancouver's rental housing market. The broader implications for government policy will also be addressed.

2.0 HISTORY OF THE FEDERAL M.U.R.B. PROGRAM

The new Canadian Income Tax Act which came into effect on January 1, 1972, introduced major changes in tax law relating to capital gains tax provisions, income tax rates, income averaging, corporate tax treatment, and resource taxation.[2] The tax change most pertinent to the analysis in this paper was the elimination of tax sheltering of "other" income by capital cost allowance (CCA) deductions claimed on residential investment properties. CCA deductions could only be used to offset any positive income on a particular investment property, rather than other non-real estate income of the taxpayer. The new Act also eliminated the "pooling" of assets with values exceeding $50,000, thus preventing a taxpayer from deferring recapture on disposition of one asset by adding new assets to the same class.

The federal budget presented in November, 1974 re-introduced limited provisions for the full deductibility of capital cost allowances on residential investment properties from any income source of the taxpayer. As a consequence, two new asset classes were created under the Income Tax Act which were exempted from the 1972 tax reform removal of tax shelter benefits: Class 31 frame buildings (10 per cent annual CCA on a declining balance) and Class 32 concrete buildings (5 per cent annual CCA on a declining balance). These two asset classes were obtainable only through C.M.H.C. certification on new residential construction containing at least two units, and where at least 80 per cent of the gross floor area of the proposed building was to be allocated to residential use.[3]

The M.U.R.B. designation provided annual capital cost allowance deductibility against any income of the taxpayer, as well as the traditional deductibility of front-end "soft costs" associated with the development of the building. These soft costs, which generally comprise between 15 and 25 per cent of the total capital value of a building, include the following:

- survey, engineering and architects' fees
- legal and accounting fees
- property taxes
- interim financing
- marketing and administrative expenses
- landscaping costs
- limited servicing costs

Although initially the M.U.R.B. program was intended to remain in effect only until December 31, 1975, subsequent revisions to the Income Tax Act extended it on an annual basis until the end of 1979. As of December 31, 1979, the Act was amended in such a way that any transfer of a M.U.R.B.-designated building with Class 31 status (10 per cent CCA) would automatically move the building into the Class 32 asset class (5 per cent CCA), this presumably a first step towards the elimination of the program altogether. However, the program was reintroduced in late 1980 with a termination date of December 31, 1981. The federal budget announced on November 12, 1981, and subsequent revisions, indicated that the M.U.R.B. program would not be continued beyond 1981, but that certification would still be available until May 31, 1982 to those developers/investors who had submitted application for M.U.R.B. designation prior to the budget date.

As a supplement to the M.U.R.B. program in stimulating construction of multiple-unit rental buildings, the Federal Government, in 1975 and in 1976, in concert with several provincial governments, introduced the Assisted Rental Program (A.R.P.). This program initially involved an outright monthly per-unit grant of $900 to the developer through Canada Mortgage and Housing Corporation, with annual reductions in the grant over a ten-year period and accompanying escalations in economic rent, effectively allowing the developer a constant rate of return on equity from operating flows over the ten-year period.

The involvement of provincial governments in 1976, most notably B.C. and Ontario, resulted in variations in A.R.P. program provisions, so that C.M.H.C's commitment was in the form of a second mortgage which accumulated over a ten-year interest-free period, while the provincial government provided annual per-unit grants. Units were rented at market levels, while annual reductions in both the federal second mortgage and provincial grant ensured a constant rate of return on equity to the developer over the ten-year contract period.

Thus, the combination of the M.U.R.B. and A.R.P. program provisions created very attractive tax incentives to potential investors and developers of multi-unit residential properties. The question is, of course, whether the tax revenues foregone by the Federal Government induced an increase in the construction of rental units which would not otherwise have occurred.

Unfortunately, the actual cost to the Federal Government of the estimated 195,000 units built under the M.U.R.B. program is not publicly available, although future

lost tax revenue has been estimated at $514 million in 1981 dollars, assuming a discount rate of 12 per cent and an average marginal tax rate of 40 per cent for M.U.R.B./investors (Clayton Research, 1981). However, this estimate is based on the unrealistic assumption that none of the tax shelter benefits will be recaptured by the government upon disposition of these properties over the next 30 years.

Table 1 sets out an estimate of accumulated federal tax losses associated with M.U.R.B./units built from 1975 to 1979. Due to the "off and on" nature of the program in both 1980 and 1981, estimates for these years have been omitted.

Based on estimates in the Clayton Research Associates study, 60 per cent of those units with M.U.R.B. certification actually were built and operated as M.U.R.B.'s. Assuming an average federal marginal tax rate of 40 per cent, a one-year construction period, an average CCA rate of 7.5 per cent (reflecting an equal weighting of properties in the 5 per cent and 10 per cent asset classes), and an opportunity cost of 12 per cent per annum to the government on foregone tax revenues from 1975 to 1979, the federal tax losses accumulated by 1981 as a result of the M.U.R.B. program amounted to some $304 million.[4]

These estimates assume further that one-half of the CCA deductions are claims that can be attributable only to the M.U.R.B. program. The exact portion of CCA that can be deducted solely due to the M.U.R.B./ exemption is quite difficult to estimate since it would differ among properties depending on financing arrangments and among investors depending on their other real estate holdings. For non-M.U.R.B. properties, the general rule is that "annual capital cost allowances on all

Table 1

ESTIMATED M.U.R.B. FEDERAL TAX REVENUE LOSSES
(1975 - 1980)

	1975	1976	1977	1978	1979	Present Value of Foregone Revenue 1981 ($000)
Multiple starts[1]	107,527	138,890	137,321	117,638	87,932	
M.U.R.B. certificates issued[2]	8,517	35,219	82,265	80,089	76,550	
Rental units[3]	5,110	21,131	49,359	48,043	45,930	
Per unit construction cost[4]	$35,000	$ 39,000	$42,650	$46,650	$51,350	
Deductible CCA ($000)						
1976	$13,414					
1977	$12,408	$ 61,809				
1978	$11,478	$ 57,174	$157,887			
1979	$10,617	$ 52,886	$146,046	$168,127		
1980	$ 9,821	$ 48,919	$135,092	$115,517	$176,888	
Tax Loss ($000)						
1976	$ 2,683					$ 4,728
1977	$ 2,482	$ 12,362				$ 23,357
1978	$ 2,296	$ 11,435	$31,577			63,654
1979	$ 2,123	$ 10,577	$29,209	$33,625		94,750
1980	$ 1,964	$ 9,784	$27,018	$31,103	$35,378	$117,877
						$304,366

1) C.M.H.C., Canadian Housing Statistics, 1976-1980.
2) Clayton Research Associates, Tax Expenditures - Housing, p. B./2.
3) Assumed to be 60 per cent of M.U.R.B. certificates, based on results of Clayton Reasearch Associates study.
4) C.M.H.C., 1975 - Table 90; 1980 - Table 100.

of the taxpayer's rental properties combined is limited to the amount, if any, of his net income minus losses on those properties computed before deducting capital cost allowance" (Harris, 1979: 223). Thus, the incremental CCA benefit of a M.U.R.B. is dependent on the difference between the available CCA claim and the remaining aggregate rental income of the investor after deducting operating and interest expenses (the CCA that could be claimed on a non-M.U.R.B.). In this analysis, it is assumed that half of the total CCA deductions would have been claimed in the absence of M.U.R.B.'s, offsetting positive rental income flowing from rental properties.

Offsetting the estimated federal tax losses in the future will be the federal tax revenue resulting from any recapture of the CCA at the time of sale of the M.U.R.B. properties. Since 1972, the Income Tax Act requires that any CCA claimed during an investment which is greater than the actual economic depreciation of the asset be recaptured upon sale and taxed as ordinary income. This "excess" CCA is effectively an interest-free loan provided by the government during the holding period of the investment. The net cost over time of the incremental CCA claimed under the M.U.R.B. program is therefore an interest expense to the federal government of this CCA loan. With interest rates for government borrowings at the 15 per cent level, and assuming all the incremental CCA will be recaptured, the annual federal interest expense of the above foregone tax revenue is approximately $46 million.

In the context of the Vancouver rental market, which is the subject of the analysis in this paper, 448 M.U.R.B. projects were started during the period 1975 through

May 31, 1981.[5] If each of these properties contained an average of 20 suites, a total of about 9,000 multiple family rental units in the city would be presently under the M.U.R.B. program. This represents approximately 10 per cent of the current stock of multiple family dwellings.[6]

The next section of this paper presents a theoretical framework for analysing the impact of the M.U.R.B. program on Vancouver's rental housing market. Two models will be presented. The first is a valuation function for apartment buildings, while the second is a model of the determinants of multiple family land values.

3.0 THEORETICAL FRAMEWORK

This section of the paper presents a theoretical framework for analyzing the impact of the M.U.R.B. program on Vancouver's rental housing market. The theoretical discussion begins with a graphical analysis of the expected impact of M.U.R.B./ legislation on the sub-sectors of the multiple family housing market under various assumptions. The concept of efficient markets is then examined, followed by a discussion of capitalization and a review of the land price models which have been formulated through previous empirical research.

3.1 THE MULTIPLE FAMILY HOUSING MARKET

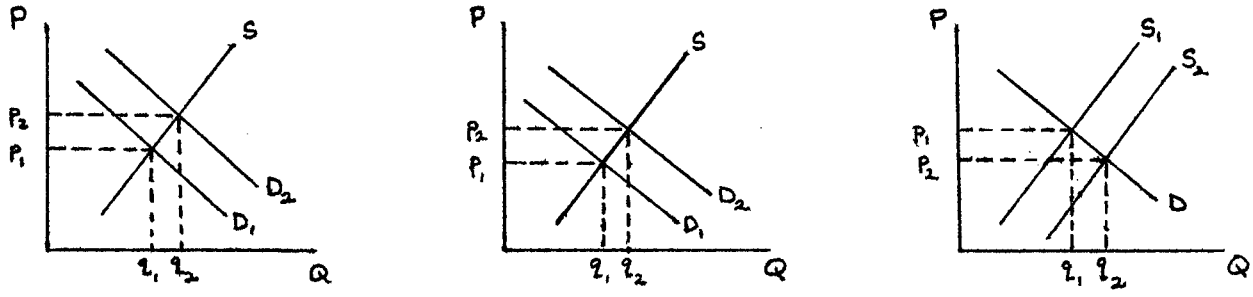
Within the multiple family housing market, there are three groups who would react to or benefit from the introduction of the preferential tax treatment associated with M.U.R.B.'s - landowners, investors and renters. In this context, developers merely act as the middlemen between landowners and investors, thus they can play either of two roles in the market, depending upon whether they owned the land prior to development, or were expecting to hold the property over the long term after completion.

The following paragraphs review the impact which M.U.R.B./legislation should have on each of the three sub-groups within the multiple family housing market, under

various assumptions concerning the elasticity of the supply and demand schedules for each of these groups.

Case 1: General Case

In the general case, the supply and demand schedules for landowners, investors and renters are all neither perfectly elastic nor perfectly inelastic. Under these conditions, the introduction of M.U.R.B. legislation should cause a shift in the demand schedule of landowners (as shown in Figure 1), resulting in higher prices for multiple family sites and an increased supply of such sites available for development. Similarly, the demand schedule of apartment block investors should shift upward in response to the special M.U.R.B. tax benefits, resulting in higher apartment block prices and higher production of units. This increase in supply of apartment units will cause a corresponding shift in the supply schedule for renters, who will thus benefit in the form of lower rents.



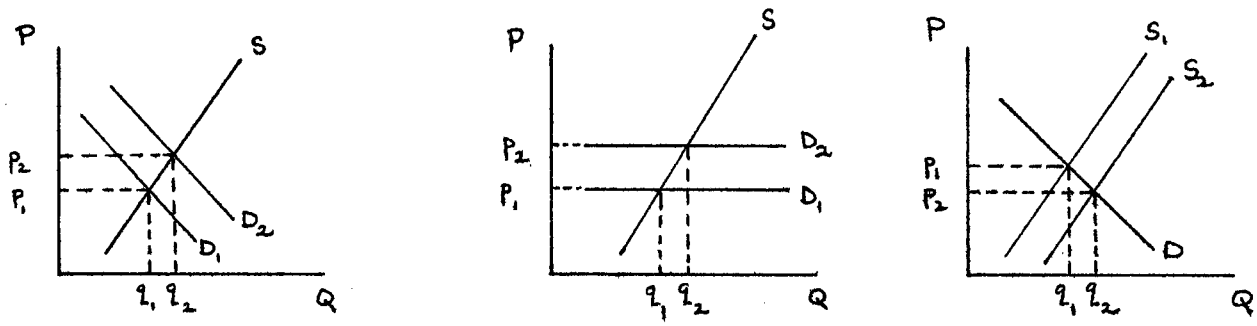
Landowners Investors Renters

FIGURE 1

In the above case, because of the slope of the demand and supply schedules, the increase in the price of both land and apartment blocks should be less than the actual present value of the M.U.R.B. tax shelter benefits to either landowners or investors. Furthermore, if there is substitution in the production function for apartment blocks, i.e. if the increase in demand induces substitution of capital for land and higher density apartment blocks are produced, the supply curve for investors should be more elastic than that for landowners, and the increase in apartment block prices should be lower than the increase in land prices as a result of the M.U.R.B. program, assuming of course that the slope of both demand curves is equivalent.

Case 2: Perfectly Elastic Investor Demand

In this case, the demand curve for investors is perfectly elastic, i.e. it is horizontal. This would be the case where there is a totally efficient apartment investment market, where an increase in expected profits causes an equivalent increase in the price of apartments (see Figure 2). The shape of the supply schedule for investors under such conditions would have no effect on the magnitude of the increase in price of apartment blocks, although it would certainly affect the magnitude of increased production of apartments as a result of the shift in demand.



Landowners Investors Renters

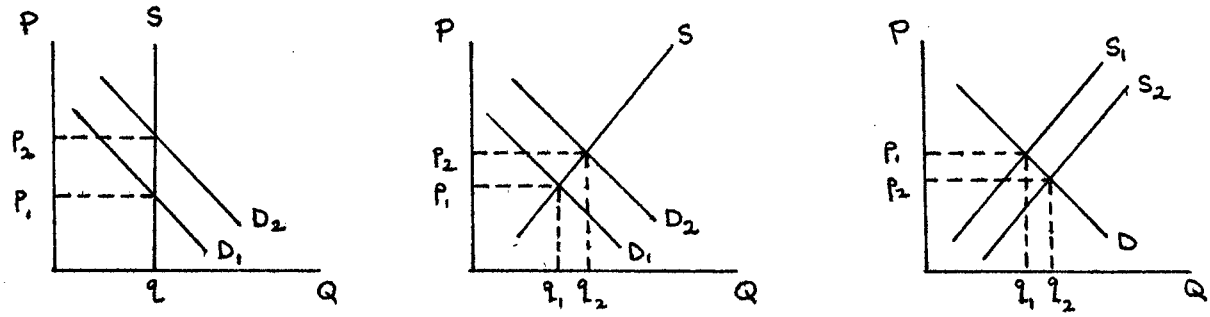
FIGURE 2

The impact of the M.U.R.B. on landowners and renters in this case should not vary from Case 1, since it does not follow that their demand curves would also be perfectly elastic.

Case 3: Inelastic Land Supply

If the multiple family land supply function were perfectly inelastic, a shift in the demand schedule for landowners as a result of higher demand for sites by investors would induce a proportionate increase in prices of such land, and no additional land would be made available for the production of multiple family housing (see Figure 3). However, if there is substitution in production, the higher demand for apartments by investors would result in production to higher densities of existing multiple family sites, through demolition of structures not presently representing full capacity on these sites. Thus, the supply curve for

investors would be flatter than the land supply curve; the actual slope of this curve would of course depend upon the magnitude of substitution and hence the shape of the production function.



Landowners Investors Renters

FIGURE 3

Case 4: Inelastic Land Supply and Perfectly Elastic Investor Demand

If the supply of multiple family land were inelastic and the demand for apartment blocks by investors were perfectly elastic, the impact of M.U.R.B. legislation should be as shown in Figure 4. No additional land would be made available for production, and land prices should rise at least by the amount of the present value of the M.U.R.B. benefits. If there is substitution in production, more sites should be redeveloped to higher densities, but to a lesser extent than in Case 3, since more of the M.U.R.B. tax benefits will go into higher prices because of the flat investor demand curve. Renters should still benefit under these conditions, but again to a lesser degree than in Case 3. The magnitude of their benefit would

depend upon the slope of the investors' supply curve, and hence on the degree of substitution in production.

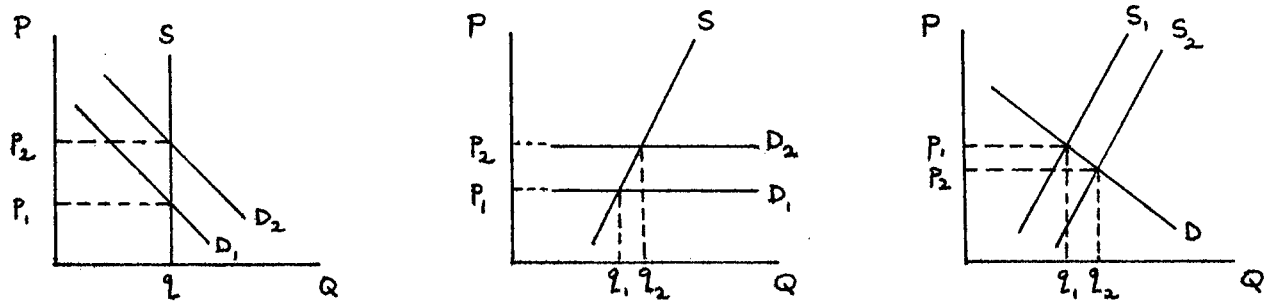


FIGURE 4

Case 5: Inelastic Land and Apartment Supply

Figure 5 illustrates the impact of M.U.R.B. legislation where both the land supply and apartment supply functions are inelastic. Under these circumstances, no increase in apartment production would result from the introduction of M.U.R.B.'s, and land and apartment block prices would rise by the equivalent of the present value of the M.U.R.B. benefits. There would be no benefits accruing to renters because of M.U.R.B.'s; however, it does not follow that the renters supply curve is inelastic, since there can be tenure changes in existing multiple family properties from condominium to rental.

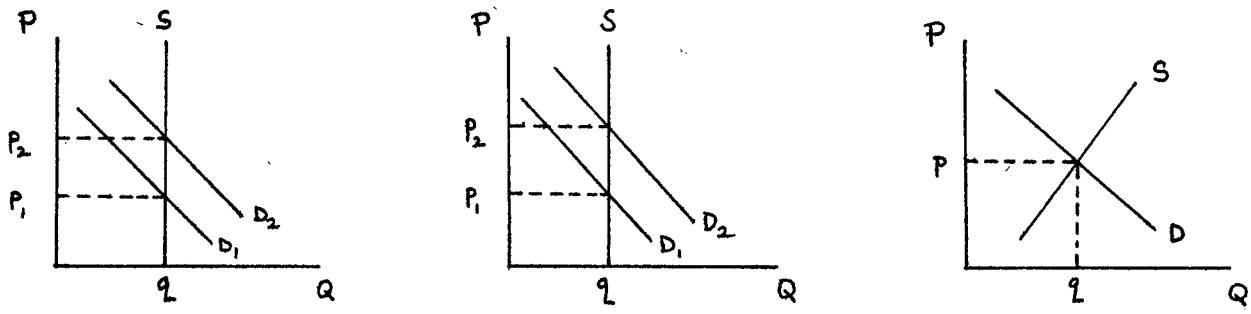


FIGURE 5

The conditions necessary for this case to be true, however, are not very realistic. In order for apartment supply to be perfectly inelastic, there can be no substitution of capital for land in the production of apartments. This implies that all existing multiple family sites are built to capacity, which is clearly not the case in many metropolitan areas, and Vancouver is no exception.

It is hoped that the research in this paper will provide some evidence as to the filtering of the M.U.R.B. tax shelter benefits through to the various sub-groups of the multiple family housing market. The following paragraphs review previous work which has been done in real estate and other capital markets relating to these concepts.

3.2 EFFICIENT MARKETS

Considerable research has been undertaken to test the efficiency of competitive speculative markets, particularly with respect to the stock market (Fama, 1970). An efficient market has been defined as one in which current market prices "fully reflect" available information, and it is assumed that such information is fully and rapidly capitalized into prices. Fama has distinguished three types of market efficiency:

- weak form - where market prices are a reflection of historical price information;

- semi-strong form - where market prices fully reflect public information, e.g. dividend declarations;

- strong form - where market prices take into account all available information, even that held by those with special knowledge, such as professional speculators or management.

The empirical research of stock market prices which has been done to test the efficient markets model has generally supported both the weak and semi-strong concepts of efficiency (Fama, 1970). However, strong form efficiency has not held up well, as seen in the work of Figlewski, who found that "when there is a wide range of forecasting ability or a diversity of expectations among the participants, the market may deviate relatively far from efficiency" (1978: 597).

Efficiency in the context of real estate markets is to date a relatively untested concept, although it has been argued that numerous characteristics of real estate markets preclude their efficient operation, characteristics such as:

- the local orientation of real estate markets;
- a lower incidence of transactions for specific properties;
- the uniqueness and lack of comparability of various parcels of real estate vis-a-vis different common stocks;
- the importance of financing and the specialized nature of some real estate financing techniques;
- the lack of sophistication of investors;
- a dearth of disciplined analysis of future events and the use of crude rule-of-thumb techniques;
- the divergence between expectations and actual accomplishments of participants, and their widely varying investment objectives;
- the extreme volatility in construction activity, which leads to sharp swings in vacancy factors and related short-term cash flow yields (Roulac, 1976).

Although real estate markets do suffer from these deficiencies,[7] it nevertheless seems reasonable that prudent investors would compare expected investment returns on real estate assets to expected returns on other capital assets, and that public information, such as the announcement of the M.U.R.B. program in 1974, would be reflected in subsequent transactions prices of both multiple family zoned land, whose future cash flow benefits would be considerably enhanced, as well as the transactions prices of M.U.R.B. properties once built. Although this paper will not test the speed of the market's reaction to M.U.R.B. legislation, it will nevertheless seek some evidence of semi-strong form efficiency to the extent that the change in expected cash flows associated with M.U.R.B. properties caused a proportionate increase in their values relative to comparable non-M.U.R.B. properties of similar risk, and that investors in M.U.R.B. properties earn equivalent rates of return to investors in non-M.U.R.B. properties in the same risk class.

3.3 CAPITALIZATION

The empirical research which has been undertaken on the concept of capitalization does have some overlap with the efficient markets concept, in the sense that it is measuring the extent to which (although not the speed with which) market values of assets have capitalized changes in expected future costs or benefits. Work by Tullock (1975) suggests that changes in government regulation which create preferential benefits for certain groups (e.g., owners of taxi cab medallions) effectively create windfall gains for persons already in the group, since these benefits are competed away and hence become capitalized into the value of the

commodity by other market participants trying to obtain it. As Krueger has pointed out in her study of import licenses in India, the efforts of persons trying to obtain the special benefits associated with import licenses actually change the optimal allocation of goods in the domestic economy, since resources are diverted from other sectors in the attempt to attain those "rents". Hence, as argued by Posner, the competition to obtain special rights of a monopolistic nature results in the transformation of potential monopoly profits into social costs (1975: 807).

The property tax literature lends support to the concept of capitalization of future benefits into real estate values. Hamilton's (1976) study of the effects of interjurisdictional differences in tax rates supported previous work (Mieszkowski, 1969, 1972) on the capitalization of varying rates of property taxation into property values across localities, although he demonstrated further that it is these tax rate differentials relative to public sector benefits which should be capitalized rather than just the tax differentials themselves. His model reflects an arbitrage process whereby the fiscal surplus or deficit created by the difference between actual tax rates and the level of public sector benefits results in proportional variations in the values of properties owned by high and low income households. He concludes, among other things, that in communities containing a variety of high-value and low-value dwellings, land value differentials between those properties will exactly reflect the present value of their fiscal surplus differentials.

Further work on property taxation by Mills (1981) indicated that the nature of property taxes does have an effect on the land-use allocation of land, as a result of the impact of the tax on the income streams of different land uses. For example, a

property tax on the value of land rather than the income generated from that land will favour the construction of projects with earlier income streams, since the effective discount rate or required rate of return is increased by the property tax on vacant land.

Thus, the research relating to the capitalization concept has shown that some real estate markets have responded to differential future costs and benefits and to changes in public regulation, by bidding up the prices of capital assets to yield returns similar to those which existed before the change occurred. In the context of this paper, the impact of the M.U.R.B. program on the value of M.U.R.B.-certified apartment buildings can be analyzed through a valuation model, in which the value of a real estate investment is equal to the present value of its future after-tax cash flows. In the form of a before-financing framework:[8]

$$V = \left[\sum_{i=1}^{n} \frac{O_i - (O_i - C_i)t}{(1+k)^i} \right] + \frac{S_n - T_n}{(1+k)^n}$$

where V = market value of the property;

O_i = net operating income in year i;

C_i = capital cost allowance in year i;

S_n = net sales price of the property at the end of the investor's holding period (i=n);

T_n = taxes resulting from sale of property;

t = marginal tax rate;

k = market rate of return.

The operating flows received each year during the investor's holding period ($i = 1, \ldots, n$) are equal to the net rental income after operating expenses, O_i , minus taxes (determined by the taxable income, $O_i - C_i$, and the tax rate). The final cash flow at the end of the holding period is the after-tax proceeds resulting from the sale of the property.

If an investor acquires a property for a price equal to V, his expected rate of return, r, is equal to k, the return required in the market given the risk level of the investment. If, however, the price is less than V, r would be greater than k. With all flows held constant, there is an inverse relationship between the acquisition price of a property and an investor's expected rate of return.

As discussed earlier, the purpose of the M.U.R.B. program was to increase the allocation of resources to multiple family rental housing and stimulate construction by increasing the rates of return of investors in properties under the program. In terms of the valuation framework, the M.U.R.B.*1* program, by raising C_i in the equation, causes the taxable income of the investment to be negative and thereby increases the after-tax cash flows to the M.U.R.B. investor. If the prices of these

properties were not affected by being in the program, the r of M.U.R.B. investments would be greater than k (the rate of return expected on other investments of equivalent risk), and investors would be encouraged to allocate more funds to rental housing.

However, in competitive real estate markets, there is little reason to believe that the market value of M.U.R.B. properties would be unaffected by the tax subsidies available under the program. If investors recognize and respond to the additional cash-flow benefits, they should increase their demand for these properties and bid up the price of the investments. Acquisition prices would rise until r equals k. Real estate investors should not be able to earn abnormal or superior returns from the benefits of publicly-known tax incentive programs. Real estate markets would be expected to capitalize into property values the tax benefits of this program by competing away the excess cash flow benefits until the rate of return of M.U.R.B. investors is the same as the rate expected on other investments of similar risk. Thus, the benefits of the program would accrue to existing owners at the time of its introduction.

The analytical framework for assessing the impact of the M.U.R.B. program on land values (as apart from completed M.U.R.B. apartment buildings) will be addressed in the next subsection of this paper.

3.4 LAND PRICE MODELS

There have been numerous empirical investigations of the determinants of urban land values, but there are four studies which seem most relevant to the topic of this paper - Brigham (1965), Adams (1968), Witte (1975), and Diamond (1980). All of these studies examine residential land value determinants, albeit for single family dwellings rather than medium or high density residential properties.

Brigham's study is the most pertinent to the present analysis, since it is a cross-sectional study of residential land values within a single metropolitan area. The underlying model in his study assumes that the value of an urban site is functionally related to its accessibility to economic activities, to its topography, to its present and future use, and to certain historical factors that affect its utilization (1968: 325). He employed multiple regression to analyze a sample of land values by census tract within the Los Angeles metropolitan area in 1964. His estimation of residential land values was able to explain 79 to 89 per cent of variations in price, where the independent variables included accessibility to employment opportunities and the central business district, the level of median family income, a measure of crowding, average value of dwellings in the neighbourhood, and a dichotomous topography dummy variable. The major difficulties he faced were the highly collinear nature of some of the data, and the instability of some of the coefficients.

Adams et al (1968) also developed an intrametropolitan model of the determinants of peripheral land value, using a series of over 1,100 transactions in Philadelphia

between 1945 and 1962. Their empirical results showed that variation in the price of residential sites during this period could be 60 per cent explained by distance from the central business district, distance to public transportation, location on a major arterial, zoning, and "state of the land" variables (e.g. servicing availability). However, the authors do not employ any measures of income or population over the 17-year period, factors which one would expect to have an impact on residential land values, particularly at the periphery of an urban area.

Witte (1975) develops and estimates a derived demand model for single family residential sites, in an attempt to explain differences in residential land values across SMSA's from 1966 to 1969. Her model, which explained 78 per cent of the variation in average prices per square foot of residential sites across SMSA's, suggests that average residential site values are determined primarily by the average size of sites in various urban areas, the value of agricultural land, population density, current annual family income levels, and the rate of change in population (as a proxy for households). It is interesting to note that average site size is a significant determinant, possibly a reflection of economies of scale or decreasing marginal returns as site sizes rise above what is considered "essential" for the average homebuyer. The absence of location or amenity variables as determinants of residential land value is explained by the very aggregate nature of her data (e.g. average price of land in an SMSA).

Further work on intraurban land values was done recently by Diamond, who utilized bid-price theory to strengthen the empirical relationship between land prices and locational amenities (1980: 32). His results were similar to previous studies in

terms of the importance of proximity to the central business district and public transit. However, his amenity variable measures differed somewhat from those used in other studies - they included crime rates, particulate pollution levels, distance to a lake, and topography, all of which were important determinants of land value ($R^2 = 0.75$).

In the context of the present analysis, the theoretical framework for estimating the determinants of multiple family zoned (RM-3)[9] land values is a derived demand model similar to that employed by Witte (1975), since the value of multiple family zoned land will be derived from the demand for multiple family housing. Since land is a residual in the development process, we would expect the value of land to vary with the expected future costs and benefits associated with multiple family housing, which in turn will be affected by broad demand and supply variables influencing the rental market. The basic land residual equation states that land value is equal to the difference between the selling price of the lot fully developed and the cost to construct the building on the site:

$$\text{Land Value} = (\text{Selling Price} - \text{Construction Costs})$$

The selling price of the fully developed site will be a function of the net income accruing to the property, the investor's required rate of return, CCA deductions, the investor's marginal tax rate, and the expected capital gains accruing to the property over the investor's holding period. The valuation function described in Section 3.2 represents the selling price portion of the land value equation above,

while construction costs are deducted from this selling price to yield the residual land value. Thus, using the net cash flow equation, residual land value is equal to:

$$V = \left[\sum_{i=1}^{n} \frac{0_i - (0_i - C_i)t}{(1+k)^i} \right] + \frac{S_n - T_n}{(1+k)^n} - CC$$

The following paragraphs break down the land value equation into the various demand and supply variables which will affect the net cash flows accruing to multiple family zoned sites, and hence the residual value of such sites.

The dependent variable in this model of the determinants of multiple family land value is the price of a multiple family zoned site (P_s), which is a function of both the demand for (Q^d) and the supply of (Q^s) such sites, as shown in (1):

$$(1) \qquad P_s = f(Q^d, Q^s)$$

The quantity demanded of multiple family zoned sites will be a function of the net cash flows accruing to the developer, including the income generated from the property (I), the cost of construction (CC), and the price of the land (P_s), as shown in (2):

$$(2) \qquad Q^d = g(I, CC, P_s)$$

The income generated from multiple family housing will be a function of numerous cash flow variables: the potential rents attainable by any specific property (R), the cost of debt (i), apartment vacancy rates (VR), the cost of equity or required rate of return (k), which will determine the present value of the future income stream to the investor, and any special tax benefits available, in this case the M.U.R.B. benefits. All of these variables will affect the holding period cash flow of a multiple family property, as shown in (3):

$$(3) \qquad I = h(R, i, VR, k, MURB)$$

Thus, I represents the entire bracketed expression in the LV cash flow equation presented above.

The rent component of income can be divided into two functions - current rents (R_c) and expected future rents (R_f). Current rents will be a function of general market rent levels per unit (R_m), the number of units which can be built on the site (UNITS), market vacancy rates (VR), and the location of the site (L):

$$(4) \qquad R_c = j(R_m, UNITS, VR, L)$$

Future rents (R_f) will be a function of growth in the number of non-family households (Δ HH), who are the primary demanders of multiple family housing, growth in future income levels of non-family households (Δ Y) -- under the assumption that the marginal propensity to consume housing is positive -- and a supply constraint (STARTS), which will affect the level of future competition for

multiple family housing and hence future rents. Growth in household income ($\triangle Y$) can be specified either in nominal ($\triangle Y$) or real ($\triangle Y^*$) terms. The R_f equation, which represents a growth function, is shown as (5):

$$(5) \qquad R_f = m\,(\triangle HH, \triangle Y, STARTS)$$

STARTS are expected to have a negative influence on land value since increased future competition implies lower future rent levels attainable by the developer, and hence lower residual land value. On the other hand, $\triangle$ HH, UNITS and $\triangle$ Y are expected to have a positive influence on land value, since as they rise, so does the demand for multiple-family housing and hence future rent levels.

The nominal capitalization rate or required rate of return on multiple family properties, k, has three components: inflation (π), the real interest rate (i^*) or return on risk-free capital assets, and the excess return or risk premium required to invest in multiple family properties (ER_a^*). This relationship is shown in (6), while (7) and (8) show the derivation of ER_a^*, which is simply the real capitalization rate (k^*) minus i^*.

$$(6) \qquad k = \pi + i^* + ER_a^*$$

$$(7) \qquad k = k^* + \pi$$

$$(8) \qquad ER_a^* = k^* - i^*$$

The real capitalization rate is equal to the nominal capitalization rate (k) minus π' , where the nominal capitalization rate represents the overall rate of return on typical multiple family investment properties, i.e. gross income divided by selling price.

Turning to the supply side of equation (1), the quantity of multiple family sites supplied will be a function $\left[(9)\right]$ of the price of sites (P_s), the size of sites (SS), and zoning (Z).

$$(9) \qquad Q^S = m(P_s, SS, Z)$$

The zoning variable will constrain the supply of multiple family land, since unless a site is included in the appropriate zoning category, it is not available to be developed as multiple family housing. The size of sites affects supply in the sense that a large number of small sites would prevent economies of scale in development and hence the effective supply of sites would be reduced.

By substituting all of the supply and demand equations into (1), one obtains:

$$(10) \qquad P_s = f(R_m, \text{UNITS}, L, \Delta Y^*, \Delta HH, \text{STARTS}, i,$$

$$\text{VR}, ER_a^*, \text{MURB}, CC, SS, Z)$$

By dividing through by SS and converting to real terms where appropriate, the reduced theoretical model of multiple family land values, where the dependent variable is the real price per square foot of sites, becomes:

$$(11) \qquad P_s^*/SS = f(R_m^*, \text{UNITS}, L, \Delta Y^*, \Delta HH, \text{STARTS}, i^*,$$

$$\text{VR}, ER_a^*, \text{MURB}, CC^*, Z)$$

In the context of the land residual equation discussed previously,

$$LV = (SP - CC)$$

all of the variables except CC in equation (10) will determine the selling price or value of a fully developed site. Thus,

$$P_s = (SP - CC)$$

and from (11) $$P_s^*/SS = (SP - CC)^* /SS$$

Equation (11) is thus the land model to be tested in the empirical section of this paper, where the critical concern will be the significance and sign of the MURB variable in the land value equation.

4.0 DATA BASE

The major portion of the data for this research was collected during the summer and fall of 1980; it was later supplemented in the spring and summer of 1981. The primary sources of data were the B.C. Assessment Authority, the B.C. Land Title Office, Canada Mortgage and Housing Corporation, and Statistics Canada. Two separate samples were collected: a sample of sales transactions of M.U.R.B. apartment buildings and a matching set of non-M.U.R.B. apartment buildings (the "RESALES" file), and a sample of multiple family land sale transactions (the "LANDSALES" file). The RESALES sample will be used to estimate the apartment block valuation function presented in Section 3.2, while the LANDSALES sample will be used to estimate the land price model presented in Section 3.3. The characteristics of the data contained in each of these files will be discussed in turn in the next two subsections.

4.1 M.U.R.B. RESALE SAMPLE

A sample of 46 apartment block transactions in the City of Vancouver in 1979 and 1980 were identified through B.C. Assessment Authority records. This sample consists of 7 M.U.R.B. apartment buildings and 39 matching non-M.U.R.B apartment buildings sold during the same time period. These non-M.U.R.B. properties are similar to the M.U.R.B.'s in terms of number of suites in the building, location within the city and holding period.[10] Although the non-M.U.R.B. buildings in the

matching sample do vary in age, and in all cases are older than the M.U.R.B.'s, they are nevertheless considered comparable in terms of total investment risk.

For each of these apartment blocks in the sample, information was obtained from the B.C. Assessment Authority and B.C. Land Title Office concerning the physical characteristics of the property (e.g., number of suites, lot size, number of storeys, etc.), construction and land costs, and the rental incomes earned during the investor's holding period. A complete list of the data collected on a variable-by-variable basis is included as Appendix Table A-1. The data were sufficient to allow for an accurate measurement of the actual operating cash flows and capital gains received by owners of both M.U.R.B. and non-M.U.R.B. properties, as well as an analysis of the determinants of the market prices of these properties.

Appendix Table B-1 contains the descriptive statistics for all variables in this sample, which includes for each variable the minimum value, maximum value, mean and standard deviation. The average sales price in the sample is $785,220, the average building size 27 suites, the average lot size 10,566 square feet, and the average age 26 years.

4.2 LAND SALE SAMPLE

A sample of 115 arms length sales transactions of RM-3 zoned land which occurred in the City of Vancouver from 1972 to 1978 were identified through the B.C. Assessment Authority and B.C. Land Title Office records.[11] The site-specific

information for each transaction includes the lot size, location, selling price and date of sale, on a quarterly basis. The location variable is disaggregated into four sub-areas:

Vancouver Sub area	Number of Observations
West End	10
Kitsilano	33
Marpole	2
East Vancouver	70
	115

In addition to the site-specific information on the land sales, the 90 variables in the "LANDSALES" data file include measures, in varying forms, of all of the determinants of multiple family land values identified in the theoretical model (refer to Appendix Table A-2). Data were gathered from Statistics Canada and Canada Mortgage and Housing Corporation on measures of population, income, unemployment, interest rates, housing construction activity, rent levels, construction costs, vacancy rates, and various measures of inflation.

The existence of M.U.R.B. legislation is specified in this data set as a dichotomous dummy variable with a value of 0.0 during the period preceding the introduction of the M.U.R.B. program in 1974 (0.0 for sales during the first quarter of 1972 through the fourth quarter of 1974), and a value of 1.0 during the period following the legislation. Since the 1972 to 1974 period was one characterized by a slowdown in

apartment construction activity, it was difficult to find a large number of land transactions during that period. Nevertheless, 19 transactions were identified from 1972 to 1974, with the remaining 96 transactions in the sample occurring after the M.U.R.B. program was introduced. This 5 to 1 ratio of non-M.U.R.B. to M.U.R.B. transactions in the sample is not considered large enough to bias the data results.

As Appendix Table B-2 indicates, the average real sales price (indexed by the general CPI for Vancouver) of the land transactions is $10.81 per square foot, while the average lot size is 9,285 square feet.

5.0 ESTIMATION OF APARTMENT VALUATION FUNCTION

This section of the paper presents two methods for analyzing the impact of the M.U.R.B. program on the resale values of M.U.R.B. apartment buildings. These analyses were done using the matching sample in the "RESALES" file which, as discussed, contains 7 M.U.R.B. properties and 39 matching non-M.U.R.B. properties, all of which have holding periods terminating in 1979 and 1980.

5.1 CAPITALIZATION

In order to measure the extent of the capitalization of M.U.R.B. tax shelter benefits into market values of M.U.R.B. properties, a valuation function is estimated from the "RESALES" sample using multiple regression analysis. This valuation function shows the relationship between the selling price of an apartment block and its physical and financial characteristics, such as age, number of suites, gross income, and cost of debt.

Numerous runs on the dependent variable (selling price) were made using various combinations of the variables in the data file in an attempt to find the best fit of variables which fully represents the determinants of apartment block value, and which best explains the variation in prices of apartment blocks, in both a statistically significant and intuitive sense. Table 2 presents the best estimation of the apartment block valuation function, which explains 84.5 per cent of the

Table 2

APARTMENT BLOCK VALUATION FUNCTION

$$SP = 481600. + 10.831\ GI + 63526.\ MURB - 13758.\ I - 452.32\ AGE$$

(2.084)* (14.342)* (2.082)* (-1.239) (-1.864)

$R^2 = .845$ F = 51.202

SE = 293010. n = 46

SP = sales price

GI = gross income at time of sale

I = interest rate

MURB = 0-1 variable with 1 = M.U.R.B.

AGE = number of years since construction

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t - statistics in parentheses.

* = coefficients significant at .05 level.

variation in apartment block prices. According to this equation, the price of an apartment building will be determined by its gross income, the existence of M.U.R.B. tax shelter benefits, the cost of debt (the weighted average interest rate on all financing at the time of sale), and the age of the building; as expected, the former two variables have a positive and significant effect on value (at the .05 level), while the latter two have a negative effect on value. MURB is a dichotomous dummy variable, with a value of 1.0 for M.U.R.B. properties and 0.0 for non-M.U.R.B. properties.

In the context of the theoretical apartment block valuation function discussed in Section 3.3, GI in the estimated equation is a measure of O_i, MURB is a measure of C_i, AGE will have an impact on operating expenses and hence O_i, and the cost of debt, I, represents one component of the investor's required rate of return, k. The disposition term does not enter into the estimated equation, since there is no way of measuring an investor's expectations concerning either his optimal holding period or the anticipated selling price of the property. Presumably, such expectations are part of the 15.5 per cent of selling price variations which cannot be explained by the estimated equation.

These regression results clearly show that the presence of M.U.R.B. benefits in an apartment investment do have a significant impact on value. Given the magnitude of the M.U.R.B. coefficient, M.U.R.B. investors in this sample apparently paid an average premium of $63,526 to acquire these properties. At the 5 per cent level of significance, this represents a confidence interval of $63,526 $\pm$ $59,800. The actual

value of the M.U.R.B. benefits to an apartment block investor can be calculated in terms of the following present value equation:

$$PV_{MURB} = \left[\sum_{i=1}^{n} \frac{CCA_{MURB}}{(1+r)^i} \right] - \frac{Recapture}{(1+r)^n} + \frac{SP_{MURB} - SP_{nonMURB}}{(1+r)^n}$$

where PV_{MURB} = the present value of the M.U.R.B. tax shelter benefits.

CCA_{MURB} = the marginal CCA deductions allowed on a M.U.R.B. building over and above what would be available on a non-M.U.R.B. building.

Recapture = the recapture of the marginal M.U.R.B. CCA deductions upon disposition of the property.

$SP_{MURB} - SP_{nonMURB}$ = the sales premium which the investor receives because of the remaining M.U.R.B benefits available to the purchaser of his building.

r = the investor's discount rate.

n = the investor's holding period.

Based on an average depreciable basis of the properties in the sample of $560,000,[12] a CCA rate of 5 per cent (all are Class 31 properties), a marginal tax rate of 55 per cent,[13] and a discount rate of 12 per cent, the present value at the

time of purchase of the future M.U.R.B. tax shelter benefits, assuming a seven-year holding period, is $61,972. This is extremely close to (and lower than) the M.U.R.B. premium estimated in the equation; however, it does not take into account the sales premium on disposition, since this is not possible to measure. This is nevertheless strong evidence that M.U.R.B. subsidies are fully capitalized into the market values of M.U.R.B. properties.

5.2 RATES OF RETURN TO M.U.R.B. VS. NON-M.U.R.B. INVESTORS

In order to determine whether M.U.R.B. investors actually achieved rates of return superior to those of non-M.U.R.B. investors, the seven M.U.R.B. apartment properties identified as having complete holding periods by the end of 1980 (i.e., they were built, rented and sold to investors by that year) are matched with seven comparable non-M.U.R.B. apartment properties with similar holding periods. Again, comparability was defined in terms of size of building and location. To eliminate the influence on the rates of return of specific financing arrangements by investors, the before-financing rates of return are calculated recognizing the income, capital appreciation, and, if applicable, the tax shelter benefits accruing to each investment in the sample.[14] The returns are after-tax, assuming a marginal tax rate of 55 per cent.

The comparative rates of return for the M.U.R.B. and non-M.U.R.B. properties are presented in Table 3. The average returns earned on the two groups of real estate investments are essentially equivalent - 12.8 per cent for the M.U.R.B. properties

Table 3

RATES OF RETURN:
M.U.R.B. VERSUS NON-M.U.R.B. APARTMENTS

	M.U.R.B.		Non-M.U.R.B.
Average Rate of Return	12.8%		13.2%
Standard Deviation	5.4		8.0
t-Value		.13	
Number of Observations		14	

and 13.2 per cent for the non-M.U.R.B. properties. The following statistical test supports the hypothesis that the means of these two samples are not significantly different:[15]

Let $\bar{Y}$ = the mean return on M.U.R.B. properties

$\bar{Z}$ = the mean return on non-M.U.R.B. properties

Let $(\bar{Y} - \bar{Z})$ be an estimator of $u_1 - u_2 = -0.4$.

Let $s^2 (\bar{Y} - \bar{Z})$ be the estimator of the variance of the sampling distribution of $(\bar{Y} - \bar{Z})$

where: $$s^2 (\bar{Y} - \bar{Z}) = s^2 \left[\frac{1}{n_1} + \frac{1}{n_2} \right]$$

and where s^2 is the estimator of the common variance:

$$s^2 = \frac{s_1^2 + s_2^2}{n_1 + n_2 - 2}$$

Therefore $s^2 = 7.763$

$$s^2 (\bar{Y} - \bar{Z}) = 2.218$$

hence $s(\bar{Y} - \bar{Z}) = 1.489$

Since $t(.975 ; 12) = 2.179 \qquad (\alpha = .05)$

The hypothesis that $u_1 = u_2$ holds where:

$$A_1 \leq (\bar{Y} - \bar{Z}) \leq A_2$$

where $A_1 = -t(0.975 ; 12)\, s(\bar{Y} - \bar{Z})$

$A_2 = t(0.975 ; 12)\, s(\bar{Y} - \bar{Z})$

Therefore, since $A_1 = -2.179\ (1.489)$

$= -3.24$

$A_2 = +3.24$

the condition holds that $A_1 \leq (\bar{Y} - \bar{Z}) \leq A_2$

since $-3.24 \leq -0.4 \leq 3.24$

These results indicate that M.U.R.B. investors do not necessarily receive a higher rate of return, but rather earn the same returns as are experienced on other apartment investments of similar risk. Hence, the proposition that superior rates of return on M.U.R.B. properties will shift the allocation of resources into the rental housing sector is not supported, since the program does not in fact create superior rates of return for investors. This occurs essentially because the market competes away any special profits expected from M.U.R.B. properties and the future tax benefits associated with M.U.R.B.'s become fully capitalized into higher apartment transactions prices, as supported by the empirical results in Section 5.1. Thus, the apartment valuation and comparable rates of return results yield the same conclusion -- M.U.R.B. apartment block investors do not appear to have earned preferential ex ante rates of return as a result of the M.U.R.B. program.

There are two groups other than investors who may have benefitted from the M.U.R.B. program - landowners and renters. The next section of this paper tests whether it was landowners who benefitted by estimating the impact of the legislation on multiple family land values.

6.0 ESTIMATION OF MULTIPLE FAMILY LAND PRICE MODEL

The objective of this analysis of the determinants of multiple family land value is to find an estimation of the land price model which fully represents those factors which influence land values, so that the estimated impact of the M.U.R.B. variable on land values will be unbiased. To this end, careful selection of variables for inclusion in the regression equation was made, both in terms of the actual measure of specific variables in the theoretical model and in terms of how those variables were represented in empirical terms. The structure of the M.U.R.B. variable as a 0-1 dummy, which is 0.0 during the pre-1975 period and 1.0 thereafter, meant that any time trend existing in other independent variables would have to be eliminated in order to clearly identify the M.U.R.B. impact. Hence, all variables are specified in real terms (where applicable).

Before discussing the regression results, the following paragraphs describe the 12 variables which have been included in the preferred estimation of the theoretical model.

6.1 DESCRIPTION OF VARIABLES

6.1.1 Location Variables

As previously discussed, the two location variables which were significant in estimating multiple family land values (West End and East Vancouver)

are 0-1 dummy variables indicating whether or not the land transaction took place in that sub-area of the city.[16] Since the West End district is much closer to Vancouver's central business district, and hence is a much more established apartment district, one would expect sites in this area to be greater in value than sites in East Vancouver.

6.1.2 M.U.R.B. Variable

This 0-1 dummy variable is expected to have a positive effect on multiple family land values, since the presence of M.U.R.B. increases the expected future net after-tax cash flows to the developer of an apartment building.

6.1.3 Vacancy Rates

The first measure of vacancy rates used in the final estimation is the overall vacancy rate in apartment buildings in the City of Vancouver which have been completed for at least six months. Another measure which was tested was the vacancy rate in the sub-area in which the land sale occurred, but this measure did not perform well, i.e. the coefficient was positive and significant rather than negative in preliminary regressions. One would expect the vacancy rate coefficient to have a negative sign since an increase in potential vacancies would reduce expected future cash flows to the developer and hence reduce the amount he would be willing to pay for apartment zoned land. A possible reason why this measure did not perform as expected is the fact that the vacancy rate was higher in the

West End throughout the study period, but land values were also higher in that area. Some correlation problem may thus have occurred.

The second measure of vacancy rates used in the analysis is the vacancy rate in new multiple family dwellings, defined as the stock of newly completed and unoccupied multiple family dwellings in the City of Vancouver divided by multiple family completions over the previous four quarters. An increase in this vacancy rate should have even greater negative impact on developers' expectations regarding future cash flows than the overall vacancy rate in existing apartments, since new apartments will represent developers' strongest competition in the marketplace.

6.1.4 Income

The income measure used in this analysis is real per capita income (indexed by the general CPI for Vancouver) in British Columbia over the study period. Ideally, one would use the average income of non-family households in the Vancouver metropolitan area, since such households are the primary market for multi-unit housing. However, income information at the metropolitan level is severely deficient, particularly as far back as 1971. Although taxation statistics are available at the metropolitan and municipal levels, such statistics do not account for changes in average household income, since they are on an individual taxpayer basis rather than on a household basis. Hence, although the B.C. per capita income measure is not specific to non-family households, it is considered the best

information available which can represent real changes in income over the required time period.

6.1.5 Interest Rates

The interest rate measure employed in this analysis is the real interest rate (adjusted by the general CPI for Vancouver) on NHA approved lender rental properties (i^*). This rate is considered more appropriate than the conventional mortgage rate, which would be more representative of rates on single family dwellings than on apartment properties.

6.1.6 "Excess" Apartment Returns

It is reasonable to assume that one inducement for developers to buy multiple family land is the rate of return expected on apartment properties over and above the rate of return on a risk-free asset. This "excess returns" variable is thus defined as the real capitalization rate minus the real interest rate on NHA approved lender rental properties, which in a sense represents the leverage opportunities available to apartment block investors. The measure of capitalization rates is derived from a data file containing the universe of arms length apartment block transactions in the City of Vancouver from 1969 to 1981.[17] Since this data included information on a quarterly basis on the selling price and gross income for each apartment block transaction, a standard representative apartment

block was selected in each quarter, for which the capitalization rate was used.

6.1.7 Rents

One would expect developers' decisions concerning the price they are willing to pay for multiple family zoned land to reflect current market rents being achieved on new apartment buildings. However, there is no public or private source of such information over the seven-year study period of this paper. Therefore, the measure of rental rates used is the Statistics Canada rent index for Vancouver (adjusted by the general CPI for Vancouver).[18]

A second variable which should have an impact on developers' expectations about future rents is the level of apartment dwelling starts in the City of Vancouver. As the number of potential competitive units rises, other things being equal, a developer should expect this competition to reduce future market rents and hence the rents he will be able to achieve in his building. Therefore, this variable is expected to have a negative effect on multiple family land values.

6.1.8 Construction Costs

The construction cost variable represents the Statistics Canada construction cost index for British Columbia (adjusted by the general CPI for

Vancouver).[19] This variable is expected to have a negative impact on multiple family land values, since increases in this variable would decrease expected future cash flows to the developer.

6.1.9 Population

The measure used as a proxy for growth in households is the quarterly growth in British Columbia's total population which, although probably too macro a measure to fully represent the effect of increasing numbers of households and decreasing household size in the Vancouver region, is the only measure available on a quarterly basis. Several alternate measures were attempted, one being the change in households in the City of Vancouver interpolated between census years, and the other the annual change in main residence telephone listings in the City of Vancouver.[20] Neither of these measures performed well in the equation for various reasons.

In the case of the census information on households, the interpolation between five-year intervals created time trend problems with the M.U.R.B. variable, since the total change in households in Vancouver between 1976 and 1981 was higher than the change between 1971 and 1976;[21] thus, the structure of the variable resulted in high collinearity with the M.U.R.B. variable, preventing efficient estimation of their individual effects on multiple family land values.

When added to the equation, the regression coefficient for the telephone listings variable was negative, which is contrary to the expected positive effect of growth in households on land values. There are two possible explanations for this result. Firstly, using the City of Vancouver statistics may be too narrowly defining how the housing market operates. Presumably, demand for multiple family housing, and hence pressure on multiple family land values, is coming from migration and undoubling within the entire Vancouver region, rather than just in the City of Vancouver. Secondly, the growth in total households includes family as well as non-family households, hence the effect on non-family housing and land values may not be clearly represented.

6.1.10 The Zoning Issue

The underlying assumption throughout this analysis will be that the zoning variable in the theoretical model remains constant. It seems appropriate to address this issue directly and to present evidence that it is indeed a valid assumption.

If during the study period of this paper, any major change in the supply of multiple family zoned land occurred, this would clearly bias the representation of the multiple family land market, and hence the M.U.R.B. and other coefficients in the equation. However, discussions with planning officials in the Greater Vancouver region has revealed that the supply of multiple family zoned land on a regional basis was fairly constant throughout the 1972 to 1978 period. Although the West End was downzoned in

1975, reducing build-out capacity in that area by 5,000 to 10,000 units, other parts of the city were upzoned to increase total capacity, as were other municipalities in the region, most notably Richmond, Burnaby and Surrey.[22] Thus, it appears reasonable to assume that the multiple family zoning variable is a constant over the study period of this research.

Since zoning is assumed to be constant, both Z and UNITS will drop out of the theoretical model (equation (11)); the number of units per square foot will be constant for all sites because of the constant floor space ratio.

6.2 EMPIRICAL RESULTS

The results of the estimation of the multiple family land value model are shown in Table 4. Each of the regression equations is discussed in turn in the paragraphs which follow.

6.2.1 Run Number 1

This equation represents the estimation of the theoretical model with all variables measured as expected theoretically. However, there is an extreme collinearity problem with two variables, real rents and real income, whose correlation with the MURB variable are greater than .90, as shown in Table 5 (for RLRENT2 and REALINC). This collinearity prevents an efficient estimation of the true effect of each of these three variables

on land values; the MURB variable consequently shows a negative sign, contrary to what is expected.

An examination of the scatter plots of RLRENT2 and REALINC versus QUARTER included in Appendix "C" provides an explanation for the high collinearity of these two variables with MURB. Essentially, the very small number of data points in the middle of the study period, which was the time when M.U.R.B.'s were introduced, compared to the larger number of data points at the two extreme ends of the study period, results in high positive and negative correlation between MURB and any time trend variable. This does introduce a bias into the data results, but it is an unresolvable problem in terms of availability of transactions data, due to the paucity of land sales in the City of Vancouver during the 1973 to 1975 period.

The objective of this analysis is to find an efficient and unbiased estimate of the significance of the MURB and other variables in determining multiple family land values. The collinearity problem identified above creates an efficiency problem; however, the usual remedies for reducing collinearity, i.e. collecting more data and taking first differences on both sides of the regression equation, are not available in this case. An alternative representation of the rent and income variables is their change from quarter to quarter, which removes the time trend interference with MURB, as can be seen from Table 5 (for GRRLINC and LAGRENT). However, it must be recognized that although some gain in efficiency is

Table 4

THE REGRESSION EQUATIONS FOR MULTIPLE FAMILY LAND VALUES

Dependent Variable		Regression Coefficients of the Independent Variables (t-values in parentheses)																
	Constant	L_{we}	L_{ev}	MURB	VR	NEWVRATE	Y^*	i^*	Rm^*	STARTS	CC^*	ΔPOP	ER_a^*	R^2	n	F-stat	DW	SE
Real price per square foot of multi-family zoned sites in the City of Vancouver during the 1972 to 1978 period.	Run Number 1																	
	-252.63 (-4.12)*	1.81 (1.81)	-3.26 (-5.52)*	-5.64 (-1.44)	-1.66 (-1.60)	0.05 (0.60)	0.06 (4.41)*	-0.35 (-0.72)	0.84 (3.53)*	-0.004 (-3.90)*	-0.30 (-3.89)*	1.42 (1.34)	-0.37 (-2.18)	.592	112	11.98	2.11	2.44
	Run Number 2																	
"	-8.66 (-1.65)	2.77 (2.66)*	-3.13 (-4.97)*	8.37 (3.41)*	0.18 (0.11)	0.14 (1.53)	0.69[b] (1.96)*	-0.26 (-0.43)	0.23[ab] (2.24)*	-0.002 (-1.91)	0.07 (2.41)*	2.23 (2.00)*	-0.65 (-2.79)*	.532	112	9.38	1.88	2.61
	Run Number 3																	
"	10.36 (1.46)	2.48 (2.29)*	-3.20 (-5.14)*	0.65 (0.20)	-1.94 (-1.23)	0.33 (3.38)*	0.12[b] (0.42)	0.99 (1.84)	-0.11 (-1.57)	-0.004 (-3.46)*	-0.22[b] (-2.30)*	2.75 (2.42)*	-0.35 (-1.51)	.540	112	9.70	2.05	2.59
	Run Number 4																	
"	0.56 (0.16)	3.20 (3.12)*	-3.22 (-5.20)*	5.20 (2.22)*	-2.46 (-1.68)	0.35 (3.76)*	0.20[b] (0.66)	0.97 (1.82)	0.18[ab] (1.89)	-0.004 (-3.23)*	-0.27[b] (-2.98)*	3.22 (2.95)*	-0.44 (-1.89)	.545	112	9.90	1.97	2.57
	Run Number 5																	
"	-1.31 (-0.23)	3.21 (2.89)*	-3.14 (-4.97)*	4.74 (1.89)	-2.84 (-1.93)	0.40 (4.10)*	0.10[b] (0.27)	1.33 (2.27)*	-0.29[b] (-0.47)	-0.004 (-3.19)*	-0.23[b] (-2.11)*	3.16 (2.84)*	-0.42 (-1.77)	.530	112	9.30	2.10	2.61
"	Run Number 6																	
	9.28 (0.73)	2.17 (1.96)*	-3.18 (-4.95)*	1.72 (0.38)	-0.67 (-0.42)	0.20 (2.35)*	0.30[b] (0.95)	0.42 (0.72)	-0.13 (-1.31)	-0.002 (-2.47)*	0.02 (0.44)	2.19 (1.92)	-0.47 (-1.88)	.517	112	8.82	1.94	2.65

Table 4 (cont'd)

THE REGRESSION EQUATIONS FOR MULTIPLE FAMILY LAND VALUES

Dependent Variable	Constant	L_{we}	L_{ev}	MURB	VR	NEWVRATE	Y^*	i^*	Rm^*	STARTS	CC^*	ΔPOP	ER_a^*	R^2	n	F-stat	DW	SE
						Regression Coefficients of the Independent Variables (t-values in parentheses)												
Real price per square foot of multi-family zoned sites in the City of Vancouver during the 1972 to 1978 period.	Run Number 7																	
	1.52 (0.47)	3.04 (3.06)*	-3.21 (-5.20)*	4.11 (2.48)*	-3.10 (-2.81)*	0.38 (4.47)*		1.18 (2.78)*	0.16[ab] (1.78)	-0.004 (-3.58)*	-0.28[b] (-3.06)*	3.28 (3.02)*	-0.33 (-1.97)*	.543	112	10.82	1.95	2.56
	Run Number 8																	
"	0.73 (0.23)	3.03 (3.02)*	-3.17 (-5.08)*	4.30 (2.57)*	-2.84 (-2.57)*	0.38 (4.50)*		1.20 (2.82)*		-0.40 (-3.46)*	-0.25[b] (-2.80)*	3.20 (2.93)*	-0.40 (-2.42)*	.529	112	11.34	1.93	2.59
	Run Number 9																	
"	7.79 (9.58)*			3.54 (4.02)*										.125	112	16.20	1.48	3.35
Average real price per square foot of land sale transactions in quarter x.	Run Number 10																	
	23.48 (1.04)	0.16[c] (0.20)		-5.27 (-0.76)	-0.04 (-0.02)				-0.21 (-1.21)	0.13[d] (0.22)	0.03 (0.30)		-0.04[e] (-0.14)	.446	20	1.38	2.75	3.57
	Run Number 11																	
"	9.32 (6.64)*			2.52 (1.45)										.104	20	2.10	1.68	3.71

a Lagged by one quarter.
b Change since last quarter.
c Location index variable, weighted by sub-area.
d Expectations variable, defined as the lag over the past six quarters in Vancouver rents.
e Real capitalization rate variable.
* Indicates t-value significant at .05 level.

achieved by taking these first differences, there is also some loss in unbiasedness in the results. The following paragraphs describe the data results using these new specifications for rent and income.

6.2.2 Run Numbers 2 and 3

Run Number 2 includes ΔR_m^* and ΔY^* in the regression equation, both of which are significant and have the expected positive sign. Other variables in this equation which are significant and have the expected sign are the two location variables (West End and East Vancouver), MURB, population growth (Δ POP), and excess returns on apartment investments (ER_a^*). Variables which do not have the expected sign are the vacancy rate (VR), the vacancy rate in new multiple family dwellings (NEWVRATE), and construction costs (CC^*).

Since the specification of the rent variable is in quarterly change terms rather than the actual level, it would seem more consistent to include construction costs in quarterly change terms as well, particularly since the coefficient for the level of construction costs does not make intuitive sense. Run Number 3 replaces CC^* with ΔCC^*, but keeps R_m^* rather than ΔR_m^*, to see what the effect of ΔCC^* is in the equation, independent of ΔR_m^*. As Table 4 shows, ΔCC^* is in fact significant and negative as expected in this equation, but R_m^* is also negative. The equations in the following paragraphs will specify both ΔR_m^* and ΔCC^*, as this is considered to be most consistent.

6.2.3 Run Number 4

This equation represents my preferred estimation of the theoretical model, since all but two of the variables have the expected sign and the collinearity between independent variables has been minimized (refer to Table 5). According to this equation, the most statistically significant determinants (at the 5 per cent level) of multiple family land values are: location (the West End having a positive effect and East Vancouver a negative effect), MURB, the level of apartment dwelling starts, construction costs, and population growth. Other variables which are not statistically significant, but which do contribute to the explanation of multiple family land values, hence minimizing bias in the estimation of the MURB coefficient, are: vacancy rates, change in real income, the real interest rate, a one quarter lag in the change in rents,[23] and excess returns expected on apartment investments.

The NEWVRATE and i^* variables do not have the expected negative sign in this equation, although these measures are consistent with the theoretical determinants of multiple family land values. Furthermore, neither of these variables is severely collinear with other independent variables in the equation, although the correlation coefficient of .75 between NEWVRATE and MURB, and .79 between REALINT and VACRATE, may be causing statistical problems.

Table 5

CORRELATION MATRIX
FULL MODEL VARIABLES

Variable	Correlation Coefficients																				
39.NEWREALP	1.0000																				
7.WESTEND	.3899	1.0000																			
8.KITS	.0931	-.1910	1.0000																		
9.EASTVAN	-.3227	-.3675	-.8035	1.0000																	
10.MARPOLE	.0692	-.0399	-.0871	-.1676	1.0000																
25.MURBSTAT	.3592	.0335	-.4362	.3730	.0570	1.0000															
22.VACRATE	-.1656	.0725	.3697	-.3638	-.0799	-.4390	1.0000														
92.NEWVRATE	.3794	.0178	-.3200	.2582	.1126	.7542	-.3859	1.0000													
42.REALINC	.4204	.1252	-.3930	.2936	.0130	.9143	-.3073	.6911	1.0000												
52.GRRLINC	-.2679	-.1790	.2359	-.1188	-.0065	-.6092	.1562	-.2042	-.6280	1.0000											
55.REALINT	-.1810	.0147	.2124	-.1686	-.1395	-.2924	.7956	-.2820	-.1436	.3289	1.0000										
93.RLRENT2	-.4081	-.1094	.4340	-.3380	-.0229	-.9554	.4469	-.6997	-.9736	.6742	.3162	1.0000									
97.RLRNTLAG	-.4105	-.1034	.4444	-.3492	-.0298	-.9649	.4611	-.7407	-.9711	.6141	.3015	.9954	1.0000								
60.LAGRENT	.1821	.0505	-.0819	.0561	-.0285	.1991	.0976	.1557	.1578	-.3394	.1092	-.1107	-.1036	1.0000							
94.STARTS	.0273	-.0563	-.1136	.1562	-.0695	.4122	.1489	.2860	.5768	-.2515	.2758	-.4800	-.4576	.0800	1.0000						
95.REALCOST	.2123	.1814	-.0323	-.0682	-.0096	.1827	.2233	.1098	.5279	-.2516	.3523	-.3532	-.3346	.0356	.4897	1.0000					
63.CCOSTBC2	-.0439	.0861	.0269	-.1281	.2029	-.2522	-.0496	.1285	-.3371	.4573	-.0172	.3578	.3039	.0161	-.6018	-.0913	1.0000				
51.POPGRTH	-.2766	-.0432	.4330	-.3711	-.0333	-.8013	.4500	-.7042	-.6895	.4488	.2004	.7351	.7576	-.2551	-.1030	-.0779	.0170	1.0000			
70.RLAPTRTN	-.1325	-.0774	.1160	-.0780	.0475	-.1747	.2318	.1416	-.1811	.7039	.3305	.2672	.1976	-.2041	.1078	-.0184	.3307	.2938	1.0000		
12.BCPOP	.4130	.1146	-.4135	.3180	.0154	.9482	-.3639	.6945	.9919	-.6595	-.2156	-.9929	-.9901	.1433	.5264	.4309	-.3558	-.7208	-.2190	1.0000	
53.INFLATIO	.2539	-.0251	-.3353	.3030	.0880	.5281	-.8816	.4358	.3539	-.3854	-.9273	-.5347	-.5321	-.0560	-.1812	-.3548	-.0998	-.4498	-.3687	.4378	1.0000
	39. NEWREALP	7. WESTEND	8. KITS	9. EASTVAN	10. MARPOLE	25. MURBSTAT	22. VACRATE	92. NEWVRATE	42. REALINC	52. GRRLINC	55. REALINT	93. RLRENT2	97. RLRNTLAG	60. LAGRENT	94. STARTS	95. REALCOST	63. CCOSTBC2	51. POPGRTH	70. RLAPTRTN	12. BCPOP	53. INFLATIO

It is worthwhile noting that the R-squared of .545 for this equation is quite acceptable for cross-sectional studies of this nature. Although the sample contains transactions which occurred over a seven-year period, the removal of the time trend, and the conversion to real terms changes the data to a cross-sectional sample. One would expect a much higher R-squared in time series studies such as those by Witte and Adams et al.

These data results suggest that the introduction of the M.U.R.B. program in 1974 had a significant impact on multiple family land values, and that developers paid a premium of $5.20 per square foot (compared to the average real sales price per square foot of $10.81) to obtain such land over the period of the program. Hence, a developer would pay an extra $52,000 (in 1971 dollars) for a typical 100' x 100' apartment site (this is somewhat smaller than the average apartment block in the RESALES sample). At the 5 per cent level of significance, this represents a confidence interval of $52,000 $\pm$ $45,891. If one assumes that the developer built a typical (Class 31) 25-unit apartment block on this site, with a marginal tax rate of 55 per cent, a real discount rate of 2 per cent and a seven-year holding period, the present value of the future marginal tax shelter benefits associated with the M.U.R.B. certification is $23,180 (in 1971 dollars). Converting to 1980 dollars, the equation estimates that a developer would pay $108,680 to acquire a site with future tax shelter benefits worth $48,446. This estimate is again based on the PV_{MURB} equation described previously:

$$PV_{MURB} = \left[\sum_{i=1}^{n} \frac{CCA_{MURB}}{(1+r)^i} \right] - \frac{\text{Recapture}}{(1+r)^n}$$

Thus, the M.U.R.B. premium on land price estimated in these data results represents a significant over-capitalization of future M.U.R.B. tax shelter benefits.

6.2.4 Run Number 5

This equation shows the impact of using ΔR_m^* in current rather than lagged form. Although the R-squared is only moderately affected (it is reduced, however), the sign of ΔR_m^* is incorrect, and ΔY^* is no longer significant. It also reduces slightly the significance of i^*, ΔCC^* and Δ POP, although it only marginally affects the MURB coefficient. This equation shows that the specification of the rent variable in current terms is not as good a measure as lagged rents in explaining developers' behaviour. This may result from information lags, or it may be that developers are merely slow in reacting to changes in the market.

6.2.5 Run Number 6

Run Number 6 show the regression results where income is specified as a quarterly change, but rents and construction costs are specified in level terms. Only three variables are statistically significant - WESTEND, EASTVAN, and STARTS, while four variables do not have the correct sign - NEWVRATE, i^*, R_m^*, and CC^*. Thus, Run Number 4 is still considered the preferred estimate of the theoretical model, although this run could be considered more theoretically appealing.

6.2.6 Run Numbers 7 and 8

These two equations show the variables which remain in equation four at the .10 and .05 significance levels, respectively. In the former equation, only ΔY^* drops out of the equation, while in the latter, ΔR_m^* also drops out. In both cases, NEWVRATE and i^* still have the incorrect sign. These results are generally encouraging, in that ten variables remain in the estimated equation even at the 5 per cent level of significance, with an acceptable R-squared of 53 per cent.

6.2.7 Run Number 9

A run was made including only MURB as the independent variable. It is interesting to note that the MURB coefficient in this equation is 3.54

(significant at .05 level), and although the R-squared is only .125, the regression is significant at the .05 level (F = 16.20).

6.2.8 Run Number 10

In an attempt to reduce the bias in the regression equation which may result from the large number of land sale observations in some quarters compared to others during the study period, an additional run on the data was made on a quarterly rather than on a transactions basis. This effectively reduced the sample size to 20, since of the 27 quarters over the 1972 to 1978 time period, 7 quarters had no occurrence of land sales transactions.

The dependent variable in this equation is the average real price per square foot of all land transactions during a quarter. A location index was created, which gave a weighting of 3.0 for sales in the West End, - 3.0 for sales in East Vancouver, and 0.0 for sales occurring in either Kitsilano or Marpole. These weights are based on the earlier regression results, which showed quite stable coefficients for WESTEND and EASTVAN, while KITS and MARPOLE were never significant in the equations (see Appendix "C" for these regression results).

Due to the dramatic reduction in the sample size for this run, the number of variables included in the equation was reduced to seven. Only the existing vacancy rate was included, while an expectations variable,

NEWRMLAG, which represents a six-quarter moving average of the real growth of rents in Vancouver, replaces ΔY^*, STARTS and Δ POP. The i^* and ER_a^* variables are collapsed into one rate of return variable, the real capitalization rate.

As can be seen from Table 4, the results of this regression are quite disappointing, since not one variable is significant at even the 20 per cent level of significance, nor is the regression as a whole significant, although the R-squared is a surprising 44.6 per cent. An examination of the residual plot and histogram of residuals for this regression (refer to Appendix "D", page 127), reveals a possible outlier in the data, which may be causing high standard errors and thus biasing the results. A regression was run excluding this possible outlier (refer to Appendix "D", page 134); however, the results are very comparable to Run Number 10, although the coefficients of the MURB, REALCOST and VACRATE variables switch signs, and the standard error is reduced somewhat and t values improved, as would be expected.[24] A possible explanation for these small sample results is that the number of variables is still too large for this sample size. However, to remove more independent variables would bias the full representation of the multiple family housing market.

6.2.9 Run Number 11

This regression equation shows the small sample results where only MURB is included as the independent variable. Although MURB is not significant,

its coefficient has a value of 2.52, which is reasonably clsoe to the value in Run 9. The R-squared is again very low (.102), while the F statistic is not significant at the .05 level.

7.0 CONCLUSIONS AND IMPLICATIONS

The results of the foregoing analysis provide evidence which contradicts the general case for the operation of the multiple family housing market, where renters should receive the full benefits of the M.U.R.B. program in the form of lower rents. This research has shown that the future tax shelter benefits associated with M.U.R.B. properties are fully capitalized into the market values of completed M.U.R.B. buildings, and that M.U.R.B. investors do not earn rates of return superior to those of investors in non-M.U.R.B. apartment properties. Similarly, these results do not support the widely made argument that adverse tax revisions (such as reductions in tax shelter benefits) cause inferior ex ante rates of return in real estate investment.[25] In competitive capital markets, equilibrium comparative returns among alternative investments are not determined by Government subsidies or differential tax treatments. Expected rates of return among assets of equivalent risk must be equal; otherwise, investors will enter or leave a specific investment market, causing prices to rise or fall until the returns among the assets are similar. The only way government programs effect differential returns is through any investment risk created by having a fluctuating or uncertain tax or subsidy policy.

This research suggests further that the expected M.U.R.B. tax shelter benefits were over-capitalized into higher land value premiums during the life of the program. Thus, using Tullock's (1975) terminology, a major effect of the program

was to create transitional gains for existing landowners at the time the program was introduced. The expected favourable tax shelter benefits were thus competed away, resulting in higher multiple family land prices. Although the data results show clearly the impact of the M.U.R.B. on land values, a weakness in the data, i.e. there were very few land sales occurring immediately before and after the introduction of the program, must be recognized, since it may be biasing the results to some extent.

The data results nevertheless suggest that one of two cases discussed in Section 3.1 holds. The over-capitalization of M.U.R.B. benefits into land values, combined with the full capitalization of M.U.R.B. benefits into the resale values of apartment blocks, would result if the land supply function were inelastic and the investors demand function were perfectly elastic (Case 4). This would imply that there is substitution in the production function for apartment blocks, i.e. developers will substitute capital for land and increase the density on existing sites as a result of the increase in demand caused by M.U.R.B. legislation. This is also evidence of semi-strong form efficiency of real estate markets, since the tax shelter benefits were fully capitalized into resale values of M.U.R.B. apartment properties. However, since this research has not tested the speed with which the market reacted to the introduction of the M.U.R.B. program, it does not provide conclusive evidence of real estate market efficiency.

The data results also cannot reject the conditions under Case 5, where both the land and apartment supply functions are perfectly inelastic, since the confidence

interval of the MURB coefficient includes the case where the present value of the M.U.R.B. benefits is equal to the estimated increase in land values which occurred as a result of M.U.R.B. legislation. However, this would imply no substitution in production, which is not very likely. Furthermore, conclusive evidence of this case could only be found by either observing the movement in rents after M.U.R.B.'s were introduced in comparison to what would have occurred in the absence of M.U.R.B.'s., or by deriving structural estimates of the supply and demand curves in the land and apartment markets. Clearly, such a comparison is not possible with these data.

A third possible market situation which is supported by the data results is where the demand schedules of both investors and landowners are perfectly elastic, a consequence of both an efficient land and apartment investment market. A definitive answer is not possible, however, without some knowledge of the change in apartment rents which resulted from the M.U.R.B. program.

What the results do suggest, however, is that the full capitalization of M.U.R.B. benefits into both land and apartment block values resulted in the full benefits of the M.U.R.B. program not filtering through to renters. Some benefits most likely did reach renters, since it is unrealistic to assume no substitution in production, but the extent of renters' benefits cannot be measured within the scope of this research.

If the supply of multiple family land is in fact inelastic and government assistance programs which increase the demand for rental housing or apartment zoned land,

are not accompanied by policies at junior levels of government which concurrently increase the supply of developable land, these assistance programs can become marginally effective tools for increasing the allocation of resources to the housing sector. This research has in fact shown that the M.U.R.B. was a very expensive subsidy policy and that its effectiveness in achieving its objective was limited by the nature of the multiple family housing market. The evidence regarding the slope of the supply and demand curves for landowners and investors suggests that the full impact of the M.U.R.B. tax shelter benefits was split between windfall gains to landowners and decreased rents for renters. However, the distribution of the benefits between these two groups is not clear from these data results.

If the introduction of the M.U.R.B. program in 1974 created windfall gains for existing landowners, then it follows that the termination of the program will create windfall losses. It also follows that the "off and on" nature of the program over the past seven years should have created considerable uncertainty for prospective land purchasers and developers, resulting in increased risk of holding real estate. Nevertheless, after termination of the program, once the market has adjusted to the lower costs of production, future market participants should earn "normal" market rates of return on apartment investments.

This research has shown that there is still much to be learned about how housing markets operate. It would be instructive to do a similar study in another metropolitan area, particularly where land sales between 1973 and 1975 were not so scarce, in order to compare market reactions in another local marketplace.

Before more definitive conclusions can be drawn concerning the behaviour of various market participants, more research needs to be done on rent movements and on the speed with which real estate markets react to changes in information.

FOOTNOTES

1 Statistics Canada, Vital Statistics, Catalogue Number 84-204.

2 See Harris (1979: 4-14) for a discussion of the tax reform process.

3 See Interpretation Bulletin IT-367R2, September 7, 1981. After 1978, with few exceptions, all new M.U.R.B.-certified buildings came under the 5 per cent CCA asset class (Class 32).

4 There will also be foregone provincial tax revenues, which will vary from province to province.

5 Based on information obtained from Helmut Pastrick at CMHC in Vancouver.

6 City of Vancouver Planning Department estimates.

7 Stock markets also suffer from some of these deficiencies, such as lack of sophistication, and divergence between expectations and actual accomplishments. The efficiency of stock markets nevertheless has been empirically supported.

8 For additional information on this type of framework for real estate investment analysis, see Gau and Kohlhepp (1976, 1978).

9 The RM-3 zoning classification in the City of Vancouver allows a maximum floor space ratio (FSR) of 1.5, i.e., the ratio of total gross building area to lot size.

10 Comparable holding period in terms of acquisition and sales date.

11 Although the present data file contains 112 transactions, the original data collected comprised some 496 transactions which occurred from 1963 to 1978. However, the pre-1972 data were not useable due to constaints in other data and because of problems which arose with the representation of the 1971 tax reform legislation in the model.

12 Assuming a typical structure-to-property value ratio of 70 per cent on the average selling price in the sample.

13 In 1980 in British Columbia, a 55 per cent marginal tax rate would apply to investors with a taxable income of $70,000 or more.

14 For the M.U.R.B. developments, the analysis assumes that 15 per cent of the construction costs are soft; in other words, outlays that could be expensed when incurred as opposed to being capitalized into the depreciable basis of the property. The 15 per cent figure is the average soft cost ratio (after eliminating syndication-type fees) found in a survey of ten registered M.U.R.B. syndicates offered in Western Canada in the third quarter of 1981.

15 Refer to Neter and Wasserman (1974: 12-13) for a discussion of this test.

16 The other two location variables, KITS and MARPOLE, did not have significant coefficients in preliminary regressions.

17 This data was also collected from B.C. Assessment Authority records, under the supervision of Professor George W. Gau.

18 Catalogue Number 62-010.

18 Catalogue Number 62-007.

19 Obtained from the B.C. Telephone Company.

21 Statistics Canada, Census of Canada, for 1971 and 1976, and preliminary census counts for 1981.

22 Based on information obtained from the Planning Departments of the City of Vancouver, the Municipalities of Richmond, Burnaby and Surrey, and the Provincial Land Commission.

23 All independent variables were tried with a lag to see if the specification of the model improved, but ΔR_m was the only variable which performed better when specified on a lagged basis.

24 This same observation was excluded from a separate run on the large sample (in Runs 1 and 4), and similarly, the regression results changed only marginally.

25 An example of such an argument can be found in Smith (1981).

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APPENDIX "A"

VARIABLE LISTS

Table A-1

LIST OF VARIABLES
APARTMENT "RESALES" FILE[1]

Variable Number	Symbol	Description
1	FILENO1	File reference
2	MONTH	Quarter of sale: 1 = 01/77 . . . 19 = 04/81
3	PRICE	Selling price of building
4	FINANCE	Total mortgages outstanding
5	FILENO2	File reference
6	INTPMO	Interest payable on demand note
7	INTRATE	Weighted average interest rate on Total FINANCE.
8	PURCHTYPE	Type of purchaser: 1 = Individual 2 = 2 or more individuals. 3 = Holding or management co. 4 = Developer or construction co. 5 = Couple 6 = Co-operative 7 = Financial institution 8 = Miscellaneous co.
9	PURCHLOC	Address of purchaser: 1 = Vancouver westside 2 = Vancouver eastside 3 = CBD 4 = West Vancouver 5 = North Vancouver 6 = Richmond 7 = Burnaby 8 = Elsewhere in GVRD 9 = Elsewhere in B.C. 10 = Elsewhere in Canada
10	AGE	Year Building was completed.

Table A-1 (cont'd)

Variable Number	Symbol	Description
11	SUITES	Number of suites in building
12	AREA	Total gross floor area of building
13	AVERAGE	Average suite size
14	LOTSIZE	Square footage of site
15	BACHS	Number of bachelor suites
16	ONES	Number of one-bedroom suites
17	TWOS	Number of two-bedroom suites
18	THREES	Number of three-bedroom suites
19	FOURS	Number of four-bedroom suites
20	CONSTN	Type of construction: 0 = Frame 1 = Concrete
21	HEATING	Type of heating: 0 = Oil 1 = Electric 2 = Gas
22	STOREYS	Number of storeys
23	PARKING	0 = None 1 = Above Ground 2 = Underground 3 = Both
24	LAUNDRY	Dummy variable: 1 = Yes 0 = No
25	ELEV	Number of elevators in building
26	BALC	Dummy variable: 1 = Yes 0 = No
27	POOLREC	Dummy variable: 1 = Yes 0 = No

Table A-1 (cont'd)

Variable Number	Symbol	Description
28	SAUNA	Dummy variable: 1 = Yes 0 = No
29	PENTHS	Number of PH suites
30	FILENO3	File reference
31	TAXSHELT	M.U.R.B. dummy variable
32	GI	Gross income of building
33	EXPENSES	Operating expenses
34	NOI	Net operating income
35	RENTCONT	Dummy variable: 1 = Yes 0 = No
36	MTGPMT	Annual pmt on FINANCE
37	ARPSUPP	Amount of ARP subsidy (if applicable)
38	ECC	Estimated construction cost of building (per building permit)
39	RVALUE	Replacement value of building (per B.C. assessment)
40	ACC	Actual construction cost (per owner)
41	ARPSTAT	Dummy variable: 1 = Yes 0 = No
42	INCDATE	Date GI applicable
43	FINDATR	Registration date of financing
44	FINDATC	Cancellation date of financing
45	FINAMT	Financing amount
46	LVRATIO	FINANCE/PRICE x 100
47	REALAGE	No. of years since completion

Table A-1 (cont'd)

Variable Number	Symbol	Description
48	SPPSF	Selling price per square foot of building area
49	SPPSTE	Selling price per suite
50	OERATIO	Operating expense ratio

1) Sources of data: B.C. Assessment Authority records, B.C. Land Title Office, Statistics Canada, Real Estate Board of Greater Vancouver. This file contains M.U.R.B. apartment block resales and a matching sample of non-M.U.R.B. apartment block sales in the same time period.

Table A-2

LIST OF VARIABLES "LANDSALES" FILE[1]

Variable Number	Symbol	Description
1	FILENO1	File Reference: #5001-6050
2	QUARTER	Quarter in series: 1 = 1st Qtr, 1963 . . . 72 - 4th Qtr, 1980
3	PRICE	Selling price of lot
4	LOTSIZE	Total square footage of lot
5	FRONTAGE	Frontage of lot in feet
6	DEPTH	Depth of lot in feet
7	WESTEND	Dummy variable: 1 = Yes 0 = No
8	KITS	as above
9	EASTVAN	as above
10	MARPOLE	as above
11	KERRISDL	as above
12	BCPOP	Estimate of B.C. population in quarter x.
13	BCPERINC	Estimate of per capita personal income for B.C. during quarter x.
14	UNEMPLUA	Unadjusted unemployment rate in B.C. during quarter x.
15	UNEMPLSA	Seasonally adjusted unemployment rate in B.C. during quarter x.
16	COMPLVAN	Total dwelling completions in the City of Vancouver during quarter x.
17	FILENO2	File reference: #5001-6050

Table A-2 (cont'd)

Variable Number	Symbol	Description
18	COMPLBC	Total dwelling completions in B.C.
19	CPIALL	Consumer Price Index - All items; City of Vancouver, during quarter x.
20	CPIHOUSG	Consumer Price Index - Housing Component; City of Vancouver, during quarter x.
21	NONFAMHH	Non-family households as a proportion of total households in quarter x; non-family households defined as those in the 15-19, 20-24, and 65+ age groups; extrapolation of census data used to arrive at estimates.
22	VACRATE	Apartment vacancy rate (in buildings completed for at least 6 months) in the City of Vancouver during quarter x.
23	NHARATE	N.H.A. interest rate on approved lender rental properties during quarter x.
24	CONVRATE	Conventional mortgage lending rate during quarter x.
25	MURBSTAT	Dummy variable (0=No; 1+Yes) indicating whether MURB legislation was in effect (or pending) during quarter x.
26	CCASTAT	Dummy variable indicating whether C.C.A. allowances were permitted as tax shelters on all rental properties during quarter x.
27	CCANEW	Dummy variable indicating whether C.C.A. allowances were permitted as tax shelters on new rental properties; this reflects both pre-1971 and post 1974 situations.
28	CCANEWWP	Same as variable 27, except that allowance is made for the White Paper re-leased in the 4th quarter of 1969, which introduced the first possibility that tax shelters on rental properties might be removed.
29	ARPSTAT	Dummy variable indicating whether ARP benefits were available during quarter x.

Table A-2 (cont'd)

Variable Number	Symbol	Description
30	RENTCONT	Dummy variable indicating whether rent control legislation (of any form) was in effect in British Columbia during quarter x.
31	HOLDPER	Holding period of lot x prior to construction of apartment building (in years).
32	SPPERSF	Selling price per square foot of lot x.
33	SPPERFF	Selling price per front foot of lot x.
34	SPPERDF	Selling price per foot of depth of lot x.
35	DEFLATOR	Apartment Sales price index (from Transactions File).
36	REALSP	PRICE/DEFLATOR
37	REALPPSF	REALSP/LOTSIZE
38	CPINEW	CPIALL/100
39	NEWREALP	SPPSF/CPINEW
40	RLINTRTE	NHARATE/CPINEW
41	POPGRRTE	Growth in B.C. population since 01/71.
42	REALINC	BCPERINC/CPINEW.
43	INCGRRTE	Growth in real B.C. income per capita since 01/71.
44	NEWQTR	Categorical variable for QUARTER.
45	RENTLEVEL	Average nominal monthly rents in Vancouver apartments, weighted by local area.
46	GRRTRENT	Growth rate in RENTLEVEL since 01/71.
47	CONSTNCOST	Construction cost index for Canada.
48	GRRTCOST	Growth rate in CONSTNCOST since 01/71.
49	RENTGRTH	Growth since last quarter in nominal rent levels.

Table A-2 (cont'd)

Variable Number	Symbol	Description
50	COSTGRTH	Growth since last quarter in construction cost index for Canada.
51	POPGRTH	Growth since last quarter in B.C. population.
52	GRRLINC	Growth since last quarter in B.C. real per capita income.
53	INFLATION	Growth since last quarter in CPIALL, on an annualized basis.
54	GRRLRENT	Growth since last quarter in real rents in Vancouver apartments.
55	REALINT	NHARATE - INFLATION
56	REALRENT	Average monthly real rent (RENTLEVEL/ CPINEW) in Vancouver apartments.
57	CCOSTBC	Growth since last quarter in construction cost index for B.C.
58	RNTGRTH2	Growth since last quarter in rent index for Vancouver (Statistics Canada).
59	RNTGRTH3	Growth since last quarter in rents in a sample of Vancouver apartments less than 5 years old (from Transactions File).
60	LAGRENT	One quarter lag in real rent index growth since previous quarter (RNTGRTH2 - INFLATION).
61	LAGCOSTS	One quarter lag in real construction cost index growth since previous quarter (CCOSTBC - INFLATION).
62	RNTGRTH4	Real growth since last quarter in Vancouver rent index (RNTGRTH2 - INFLATION).
63	CCOSTBC2	Real growth since last quarter in B.C. construction cost index (CCOSTBC - INFLATION).
64	CAPRATE	The real capitalization rate (nominal - INFLATION) being achieved by a standard Vancouver apartment block in quarter x (from Transactions File).

Table A-2 (cont'd)

Variable Number	Symbol	Description
65	CAPRTLAG	One quarter lag in CAPRATE.
66	NOMCAPRT	The nominal capitalization rate being achieved by a standard Vancouver apartment block in quarter x (from Transactions File).
67	CAPGAIN	Real capital gain from a sample of Vancouver apartment blocks since last quarter (from Transactions File).
68	CAPGNLAG	One quarter lag in CAPGAIN.
69	POPLAG	One quarter lag in POPGRTH.
70	RLAPTRTN	Excess returns earned on Vancouver apartment blocks (CAPRATE - REALINT).
71	RLINCLAG	One quarter lag in GRRLINC.
72	VACRTLAG	One quarter lag in VACRATE.
73	RLINTLAG	One quarter lag in REALINT.
74	APRTNLAG	One quarter lag in RLAPTRTN.
75	INFLALAG	One quarter lag in INFLATION.
76	INTCHGE	Change since last quarter in NHARATE.
77	APTCOMCH	Net change since last quarter in apartment stock in the City of Vancouver (defined as apartment completions minus apartment demolitions).
78	HHCHANGE	Quarterly increase in total households in the City of Vancouver (based on interpolation of census data).
79	RLINTCHG	Change since last quarter in REALINT.
80	ERCHANGE	Change since last quarter in RLAPTRTN.
81	APTSTSCH	Change since last quarter in apartment starts in the City of Vancouver.
82	NEWWE	Categorical variable for WESTEND.

Table A-2 (cont'd)

Variable Number	Symbol	Description
83	NEWKITS	Categorical variable for KITS.
84	NEWEV	Categorical variable for EASTVAN.
85	NEWMAR	Categorical variable for MARPOLE.
86	NEWKERR	Categorical variable for KERRISDL.
87	SUBVACRT	Vacancy rate in apartments 6 months or older in the sub-area and quarter in which the land sale observation occurred.
88	NEWVACCH	Change since last quarter in the stock of newly completed (in past six months) and unoccupied apartment and row dwellings in the City of Vancouver.
89	REZONING	Dummy variable reflecting the major down-zoning of the West End enacted in August, 1975.
90	VACRTCHG	Change since last quarter in VACRATE.
91	NEWHH	Change since the last quarter in the number of main residence telephone listings in the City of Vancouver.
92	NEWVRATE	Vacancy rate in newly completed multiple family dwellings in the City of Vancouver - defined as the stock of newly completed and unoccupied multiple family dwellings divided by multiple family completions over the previous four quarters.
93	RLRENT2	Level of the Statistics Canada Rent Index for Vancouver (in real terms).
94	STARTS	The number of apartment dwellings starts in the City of Vancouver in quarter x.
95	REALCOST	Level of the Statistics Canada Construction Cost Index for B.C. (in real terms).
96	NEWVRLAG	A one quarter lag in NEWVRATE.
97	RLRNTLAG	A one quarter lag in RLRENT2.

Table A-2 (cont'd)

Variable Number	Symbol	Description
98	RLCSTLAG	A one quarter lag in REALCOST.
99	NEWVACMF	The number of newly completed and unoccupied multiple family dwellings in the City of Vancouver in quarter x.

1) Sources of data: B.C. Assessment Authority records, B.C. Land Title Office, Statistics Canada, Real Estate Board of Greater Vancouver.

APPENDIX "B"

DESCRIPTIVE STATISTICS

Table B-1

DESCRIPTIVE STATISTICS
"RESALES" FILE

Variable	N	Minimum	Maximum	Mean	Standard Deviation
1.FILENO1	59	103.00	1112.0	816.19	344.92
2.MONTH	59	4.0000	16.000	13.458	2.5415
3.PRICE	59	66666.	.30000 +7	.78522 +6	.70338 +6
4.FINANCE	58	0.	.75000 +7	.60342 +6	.10686 +7
5.FILENO2	59	103.00	1112.0	816.19	344.92
6.INTPMO	37	0.	26250.	2404.4	5248.5
7.INTRATE	58	0.	17.200	10.993	3.5687
8.PURCHTYP	57	0.	8.0000	2.4561	1.5592
9.PURCHLOC	44	1.0000	10.000	2.9091	2.2805
10.AGE	59	5.0000	79.000	53.915	24.883
11.SUITES	59	5.0000	93.000	27.220	19.111
12.AREA	59	4200.0	57229.	18760.	13480.
13.AVERAGE	59	196.00	1241.0	674.41	169.16
14.LOTSIZE	58	3050.0	35000.	10566.	6184.2
15.BACHS	54	0.	60.000	7.2593	12.189
16.ONES	54	0.	68.000	17.463	14.457
17.TWOS	54	0.	21.000	2.1852	4.2563
18.THREES	54	0.	7.0000	.27778	1.2196
19.FOURS	54	0.	1.0000	.18519 -1	.13608
20.CONSTN	56	0.	1.0000	.19643	.40089
21.HEATING	58	0.	2.0000	1.3276	.80324
22.STOREYS	59	1.0000	17.000	3.5763	2.6209
23.PARKING	59	0.	3.0000	1.4746	1.0061
24.LAUNDRY	50	0.	1.0000	.92000	.27405
25.ELEV	59	0.	2.0000	.49153	.59807
26.BALC	55	0.	1.0000	.50909	.50452
27.POOLREC	58	0.	1.0000	.51724 -1	.22340

Table B-1 (Cont'd)

DESCRIPTIVE STATISTICS
"RESALES" FILE

Variable	N	Minimum	Maximum	Mean	Standard Deviation
28.SAUNA	58	0.	1.0000	.51724 -1	.22340
29.PENTHS	58	0.	2.0000	.12069	.37825
30.FILENO3	59	103.00	1112.0	816.19	344.92
31.TAXSHELT	59	0.	10.000	.45763	1.3432
32.GI	55	.25000	.25348 +6	72979.	59494.
33.EXPENSES	28	2904.0	56240.	21305.	18268.
34.NOI	27	9697.0	.14212 +6	39329.	30589.
35.RENTCONT	58	0.	1.0000	.74138	.44170
36.MTGPMT	56	0.	.32562 +6	60456.	82411.
37.ARPSUPP	11	0.	76263.	19802.	25419.
38.ECC	12	.10000 +6	.43600 +7	.85451 +6	.11690 +7
39.RVALUE	49	74150.	.20690 +7	.51253 +6	.41474 +6
40.ACC	5	.25250 +6	.17800 +7	.99806 +6	.59411 +6
41.ARPSTAT	59	0.	1.0000	.13559	.34529
42.INCDATE	55	0.	127.00	49.436	23.899
43.FINDATR	51	1.0000	193.00	98.275	33.404
44.FINDATC	5	42.000	131.00	104.60	37.753
45.FINAMT	50	21000.	.23100 +7	.38676 +6	.42146 +6
46.FILENO4	59	103.00	1112.0	815.83	344.62
47.SOLD77	59	0.	1.0000	.16949 -1	.13019
48.SOLD78	59	0.	1.0000	.16949 -1	.13019
49.SOLD79	59	0.	1.0000	.32203	.47127
50.SOLD80	59	0.	1.0000	.64407	.48290
51.REALAGE	59	0.	75.000	26.492	25.549
52.LVRATIO	58	0.	112.50	2.5335	14.698
53.SPPSF	59	3.1503	93.329	40.343	17.129
54.SPPSTE	59	3072.7	61000.	27606.	10766.
55.OERATIO	28	.13158	.21638 +6	7728.3	40893.
56.GIPERSTE	55	.71429 -2	6231.3	2766.9	1101.6

Table B-2

DESCRIPTIVE STATISTICS
"LANDSALES" FILE

Variable	N	Minimum	Maximum	Mean	Standard Deviation
1.FILENO1	115	1001.0	6025.0	2220.5	1992.2
2.QUARTER	115	37.000	63.000	54.652	7.1390
3.PRICE	115	18000.	.15000 +7	.15293 +6	.20603 +6
4.LOTSIZE	115	2950.0	67054.	9285.1	11446.
5.FRONTAGE	115	25.000	400.00	72.817	75.698
6.DEPTH	115	100.00	168.00	123.06	9.0934
7.WESTEND	115	0.	1.0000	.86957 -1	.28300
8.KITS	115	0.	1.0000	.28696	.45432
9.EASTVAN	115	0.	1.0000	.60870	.49018
10.MARPOLE	115	0.	1.0000	.17391 -1	.13130
11.KERRISDL	115	0.	0.	0.	
12.BCPOP	115	2223.6	2533.2	2451.8	86.515
13.BCPERINC	115	3859.3	8677.8	7094.3	1360.9
14.UNEMPLUA	115	6.0000	9.6300	8.1999	.62711
15.UNEMPLSA	115	5.5300	9.0700	8.3520	.52081
16.COMPLVAN	115	104.00	1353.0	755.77	219.22
17.FILENO2	115	1001.0	6025.0	2220.5	1992.2
18.COMPLBC	115	5846.0	12091.	8187.6	1201.5
19.CPIALL	115	102.70	176.27	150.83	20.648
20.CPIHOUSG	115	101.33	170.50	147.17	21.184
21.NONFAMHH	115	26.640	28.870	28.297	.60357
22.VACRATE	115	.10000	2.0000	.84000	.49187
23.NHARATE	115	8.8900	11.880	10.620	.83352
24.CONVRATE	115	8.9800	11.980	10.583	.82093
25.MURBSTAT	115	0.	1.0000	.85217	.35648
26.CCASTAT	115	0.	1.0000	.34783 -1	.18403
27.CCANEW	115	0.	1.0000	.86087	.34760
28.CCANEWWP	115	0.	1.0000	.85217	.35648
29.ARPSTAT	115	0.	1.0000	.85217	.35648
30.RENTCONT	115	0.	1.0000	.86957	.33826
31.HOLDPER	102	0.	5.0000	1.2255	.70229

Table B-2 (Cont'd)

DESCRIPTIVE STATISTICS
"LANDSALES" FILE

Variable	N	Minimum	Maximum	Mean	Standard Deviation
32.SPPERSF	115	4.2853	33.898	16.585	6.2763
33.SPPERFF	115	539.77	4242.4	2039.7	794.80
34.SPPERDF	115	150.00	8928.6	1198.0	1399.7
35.DEFLATOR	115	1.2470	2.6520	2.0897	.45541
36.REALSP	115	14320.	.70588 +6	75246.	.10029 +6
37.REALPPSF	115	2.1200	15.863	7.9269	2.7262
38.CPINEW	115	1.0270	1.7627	1.5083	.20648
39.NEWREALP	115	2.7578	21.541	10.807	3.5675
40.RLINTRTE	115	5.9454	8.7537	7.1474	.87049
41.POPGRRTE	115	1.0084	1.1488	1.1119	.39234 -1
42.REALINC	115	3757.8	4923.0	4658.8	336.06
43.INCGRRTE	115	1.0168	1.3320	1.2605	.90929 -1
44.NEWQTR	115	37.000	63.000	54.652	7.1390
45.RENTLEVE	112	168.80	278.00	251.02	32.821
46.GRRTRENT	112	1.6880	2.7800	2.5102	.32821
47.CONSTNCO	112	105.10	194.50	162.67	24.040
48.GRRTCOST	112	1.0510	1.9450	1.6267	.24040
49.RENTGRTH	112	0.	14.900	5.6250	2.8106
50.COSTGRTH	112	2.0000	20.100	8.3714	5.2952
51.POPGRTH	112	.77000	4.0100	1.5454	.63257
52.GRRLINC	112	-1.8000	9.0400	3.5627	2.6694
53.INFLATIO	112	3.8500	12.230	7.5704	1.9916
54.GRRLRNT	112	-8.0200	11.840	-1.8899	3.2739
55.REALINT	112	-1.6100	5.2900	3.0391	1.4552
56.REALRENT	112	157.71	182.02	166.31	3.1433
57.CCOSTBC	112	3.2600	21.320	9.1174	4.9600
58.RNTGRTH2	112	1.1900	7.9500	4.9119	1.9262
59.RNTGRTH3	112	-14.890	17.410	7.6050	7.2952
60.LAGRENT	112	-9.9900	1.7700	-2.0659	2.9628
61.LAGCOSTS	112	-7.8800	7.6400	3.4312	4.6865

Table B-2 (Cont'd)

DESCRIPTIVE STATISTICS
"LANDSALES" FILE

Variable	N	Minimum	Maximum	Mean	Standard Deviation
62.RNTGRTH4	112	-5.8300	-1.1800	-2.6585	1.1913
63.CCOSTBC2	112	-3.8100	12.370	1.5471	4.7458
64.CAPRATE	112	-4.9000	10.520	5.0375	3.1156
65.CAPRTLAG	112	-5.1000	10.410	5.1224	3.3439
66.NOMCAPRT	112	11.000	13.780	12.735	.73109
67.CAPGAIN	112	-5.9000	13.030	5.7133	6.1479
68.CAPGNLAG	112	-6.9400	13.030	3.2793	5.0261
69.POPLAG	112	.77000	3.4000	1.5371	.77142
70.RLAPTRTN	112	-5.4300	5.2300	1.9984	2.3157
71.RLINCLAG	112	-1.8000	9.6900	3.9503	2.4711
72.VACRTLAG	112	.10000	2.1000	.84241	.55905
73.RLINTLAG	112	-5.8900	6.3800	3.4554	2.5880
74.APRTNLAG	112	-.88000	5.1400	1.6670	1.4522
75.INFLALAG	112	2.7300	15.900	7.2872	2.8396
76.INTCHGE	112	-.65000	.83000	-.13321	.27534
77.APTCOMCH	112	-908.00	613.00	19.491	258.36
78.HHCHANGE	115	341.00	663.00	559.40	151.08
79.RLINTCHG	112	-8.8200	10.010	-.54357	3.7617
80.ERCHANGE	112	-2.3100	2.1300	.45866	1.2049
81.APTSTSCH	112	-737.00	698.00	243.66	427.35
82.NEWWE	10	1.0000	1.0000	1.0000	
83.NEWKITS	33	1.0000	1.0000	1.0000	
84.NEWEV	70	1.0000	1.0000	1.0000	
85.NEWMAR	2	1.0000	1.0000	1.0000	
86.NEWKERR	0				
87.SUBVACRT	112	-.70000	.55000	.15670	.22546
88.NEWVACCH	112	-221.00	156.00	-13.911	80.628
89.REZONING	115	0.	1.0000	.77391	.42013
90.VACRTCHG	112	-.75000	.30000	.17411 -1	.19759

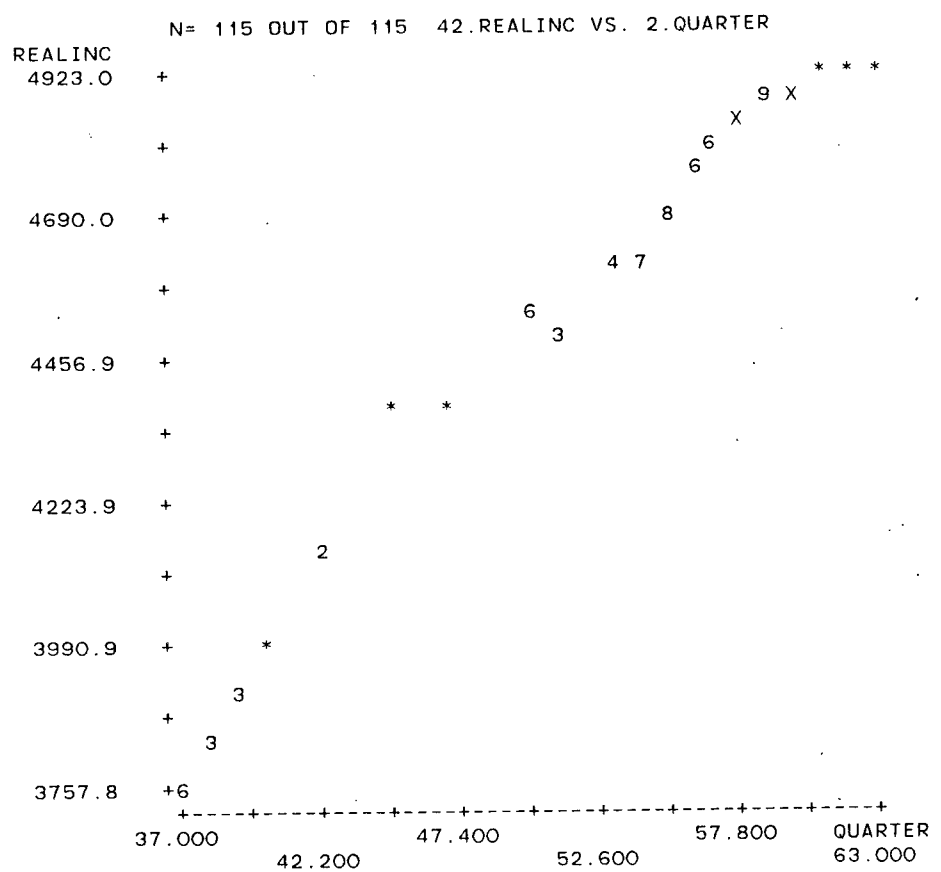
Table B-2 (Cont'd)

DESCRIPTIVE STATISTICS
"LANDSALES" FILE

Variable	N	Minimum	Maximum	Mean	Standard Deviation
91.NEWHH	112	-418.00	2133.0	192.93	760.19
92.NEWVRATE	112	1.1200	29.200	16.625	7.1638
93.RLRENT2	112	34.070	91.020	48.012	16.272
94.STARTS	112	32.000	1385.0	822.13	437.97
95.REALCOST	112	112.24	153.67	131.27	11.740
96.NEWVRLAG	112	1.1200	29.200	17.184	7.8095
97.RLRNTLAG	112	35.450	95.160	49.755	16.754
98.RLCSTLAG	112	103.11	151.46	129.91	14.404
99.NEWVACMF	112	31.000	553.00	349.99	137.33

APPENDIX "C"

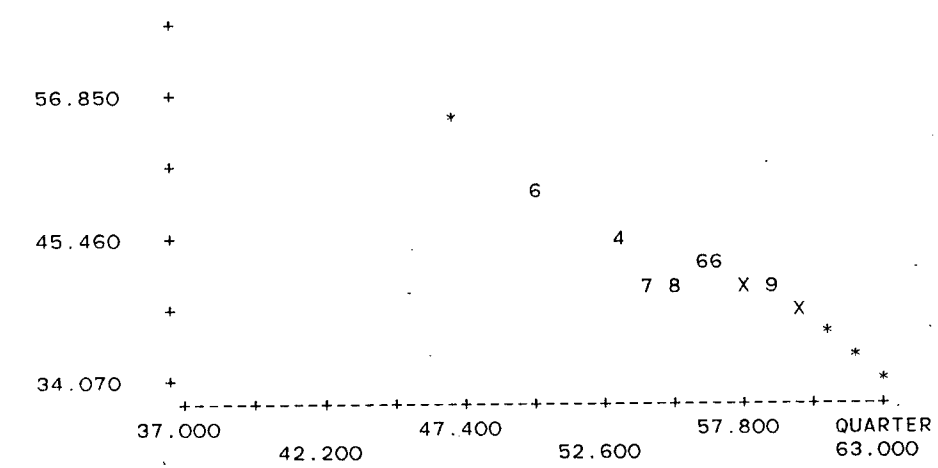
SCATTER PLOTS



COMMAND
?SCATTER V=93,2 CASES=380-388,390-396,398-496

SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 93.RLRENT2 VS. 2.QUARTER

RLRENT2
91.020
79.630
68.240




```
 COMMAND
?SCATTER V=93,25 CASES=380-388,390-396,398-496

 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
          N= 112 OUT OF 115  93.RLRENT2 VS. 25.MURBSTAT
 RLRENT2
  91.020   +6
            6
            *
           +


  79.630   +

            2
           +


  68.240   +
            *

           +


  56.850   +
            *

           +
                                                      6

  45.460   +                                          4
                                                      X
                                                      X
           +                                          X
                                                      *
                                                      *
  34.070   +                                          *
            +----+----+----+----+----+----+----+----+----+
```

```
         O.                  .40000              .80000    MURBSTAT
                    .20000             .60000              1.0000


 COMMAND
?SCATTER V=22,92 CASES=380-388,390-396,398-496

 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  22.VACRATE VS. 92.NEWVRATE
 VACRATE
  2.0000    +6

                     3
            +

  1.6200    +

            +

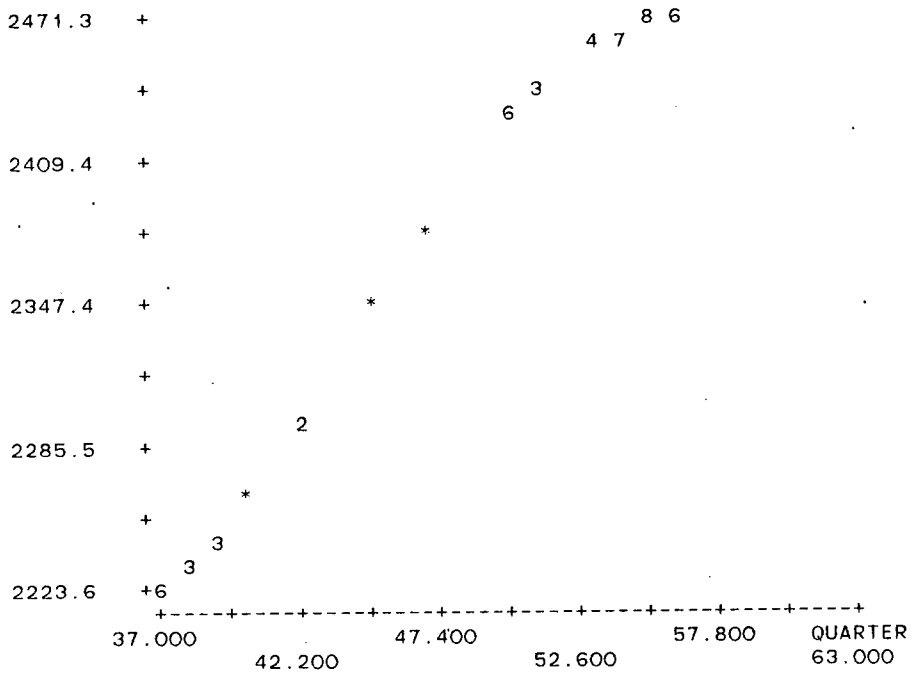
  1.2400    +
                     3          *                *
                                              X      *
            +                                 9
                                        X

  .86000    +
                                                               6

            +
                     2
  .48000    +                                            6
                  *
                                                8
            +
                *                 7
                       4    *
  .10000    +                                            6
             +----+----+----+----+----+----+----+----+----+----+
          1.1200              12.352              23.584    NEWVRATE
                    6.7360              17.968              29.200

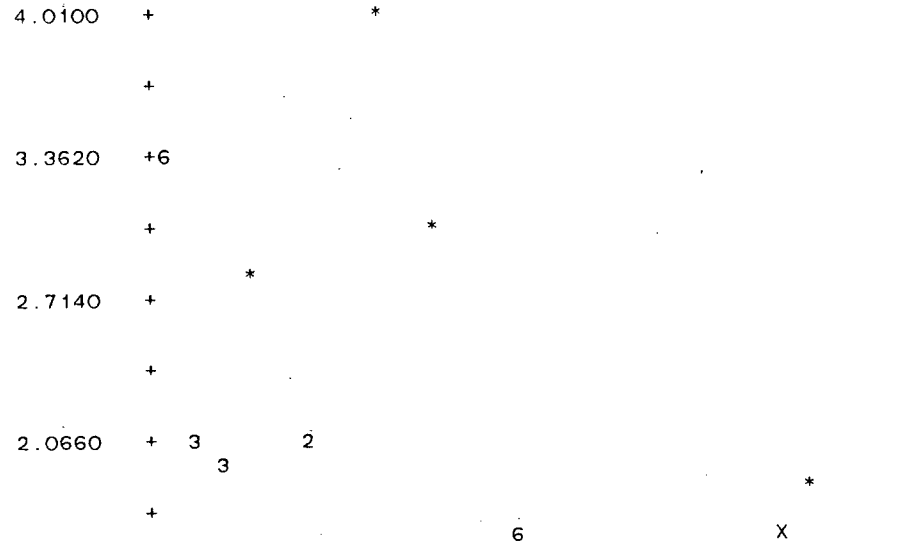

 COMMAND
?SCATTER V=12,2 CASES=380-388,390-396,398-496

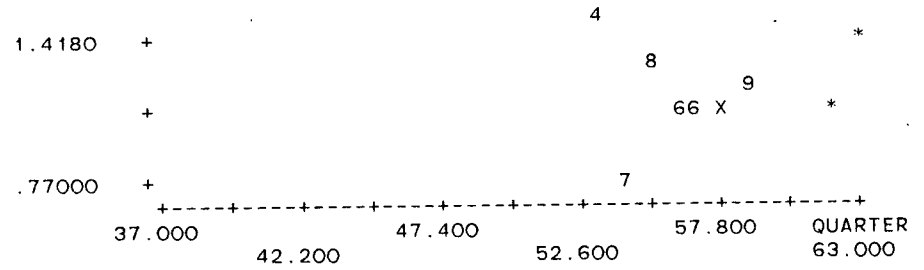
 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 115 OUT OF 115  12.BCPOP VS. 2.QUARTER
 BCPOP
  2533.2    +                                                  *
                                                             *
                                                           *
            +                                            X
                                                     X 9
                                                   6
```



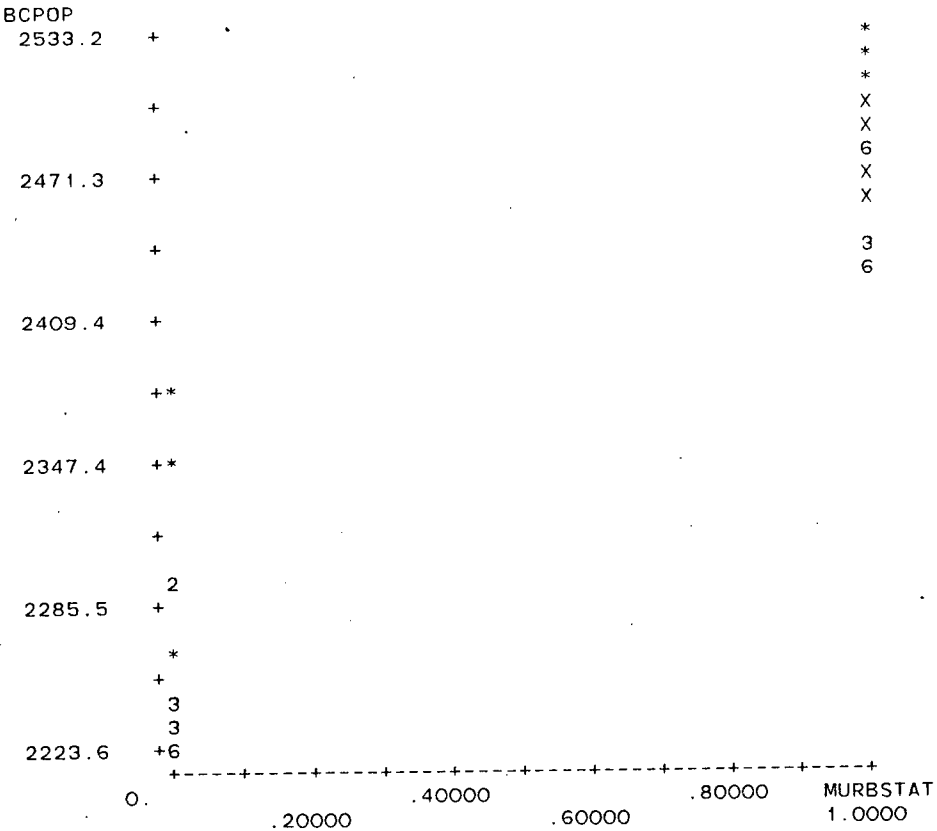
COMMAND
?SCATTER V=51,2 CASES=380-388,390-396,398-496

SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 51.POPGRTH VS. 2.QUARTER






```
 COMMAND
?SCATTER V=12,25 CASES=380-388,390-396,398-496
```

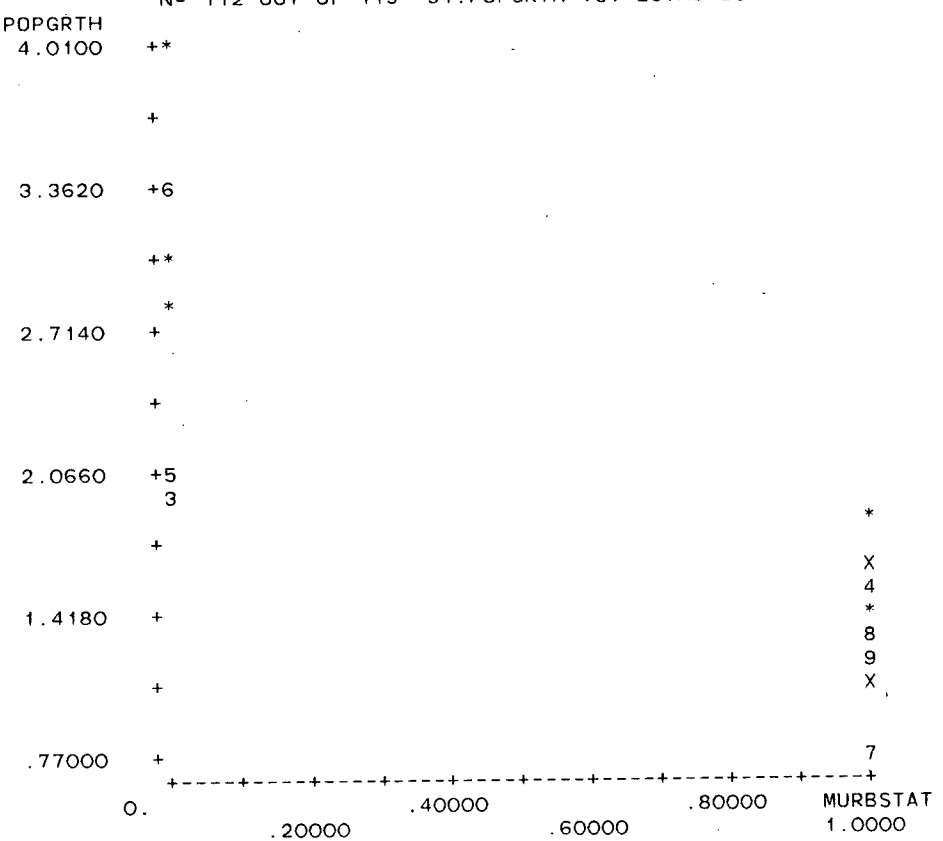



```
 COMMAND
?SCATTER V=51,25 CASES=380-388,390-396,398-496
```

APPENDIX "D"

RESIDUAL PLOTS

SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 51.POPGRTH VS. 25.MURBSTAT



COMMAND
?REG V=39,7,9,25,22,92,42,55,93,94,95,51,70 CASES=380-388,390-396,398-496

LEAST SQUARES REGRESSION CASES=CASE#:380-388,390-396,398-496

ANALYSIS OF VARIANCE OF 39.NEWREALP N= 112 OUT OF 115

SOURCE	DF	SUM SQRS	MEAN SQR	F-STAT	SIGNIF
REGRESSION	12	852.31	71.026	11.984	.0000
ERROR	99	586.76	5.9268		
TOTAL	111	1439.1			

MULT R= .76959 R-SQR= .59227 SE= 2.4345

VARIABLE	PARTIAL	COEFF	STD ERROR	T-STAT	SIGNIF
CONSTANT		-252.63	61.277	-4.1228	.0001

Run Number 1

7.WESTEND	.17877	1.8095		1.0009		1.8078	.0737
9.EASTVAN	-.48526	-3.2618		.59069		-5.5220	.0000
25.MURBSTAT	-.14320	-5.6441		3.9203		-1.4397	.1531
22.VACRATE	-.15886	-1.6637		1.0392		-1.6010	.1126
92.NEWVRATE	.06005	.49941	-1	.83433	-1	.59857	.5508
42.REALINC	.40488	.58387	-1	.13252	-1	4.4057	.0000
55.REALINT	-.07194	-.34626		.48247		-.71767	.4746
93.RLRENT2	.33421	.84497		.23949		3.5282	.0006
94.STARTS	-.36522	-.35193	-2	.90157	-3	-3.9035	.0002
95.REALCOST	-.36422	-.30203		.77618	-1	-3.8912	.0002
51.POPGRTH	.13345	1.4186		1.0589		1.3398	.1834
70.RLAPTRTN	-.21386	-.37337		.17140		-2.1783	.0318

```
 COMMAND
?SAVE V100=RESIDUAL
 LABEL FOR THE RESULT VARIABLE(S)
=RESIDUAL
 CASES TO SELECT
=380-388,390-396,398-496

 RESIDUAL USING: REGRESS   CASES=CASE#:380-388,390-396,398-496

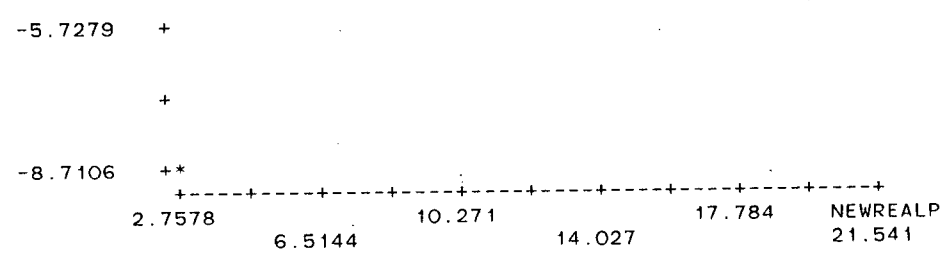
      VARIABLE  TOTAL  VALID   MISS

  100.RESIDUAL    115    112      3


 COMMAND
?SCATTER V=100,39 CASES=380-388,390-396,398-496

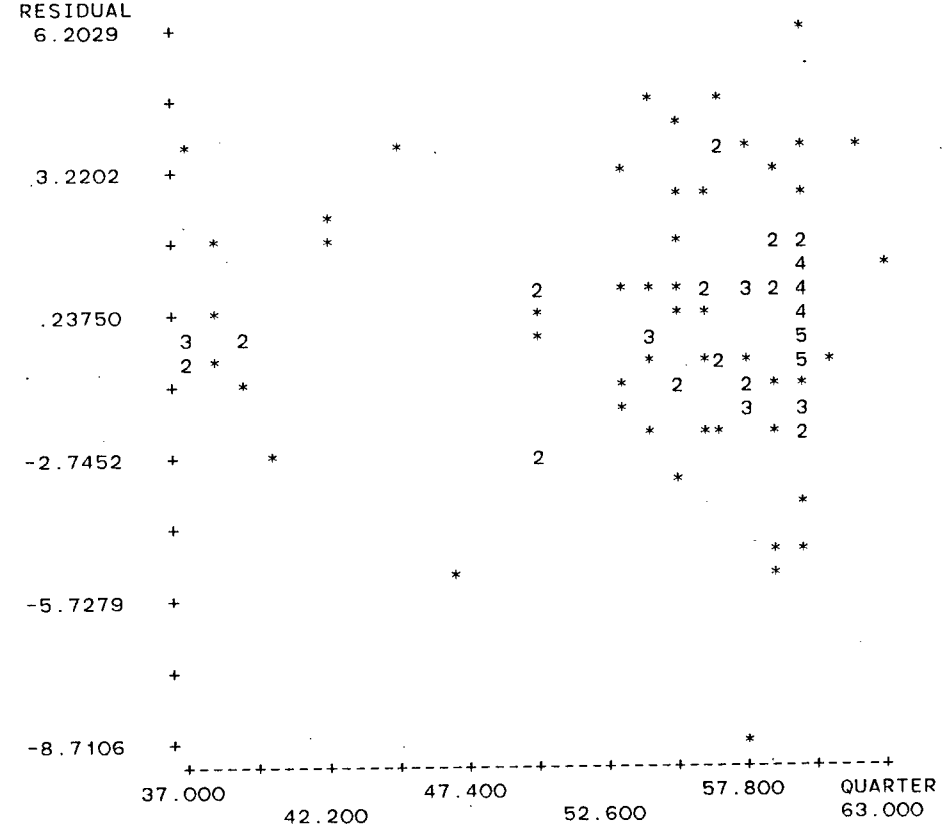

 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  100.RESIDUAL VS. 39.NEWREALP
 RESIDUAL
  6.2029   +                                  *


           +                                         *       *
                                                 *
                                 *      *       * 2      *  *
  3.2202   +                             2
                                     ** *
                              *
           +       *      *      *2 *        *
                                 **      2*
                               2522*       *       3
  .23750   +          *       22 *     2
                 *    3    *  53      *
                    *2     *2* * *        2    *2
           +    *         ** *  2  * *
                         *** *2    *
                         ***    2  *
 -2.7452   +        * *        *
                     *
                             *
           +
                   *      *
                           *     *
```



COMMAND
?SCATTER V=100,2 CASES=380-388,390-396,398-496

SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 100.RESIDUAL VS. 2.QUARTER



COMMAND
?HISTOGRAM V=100 INT=10 OP=HIST%
CASES TO SELECT
=380-388,390-396,398-496

```
HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

MIDPOINT    HIST%  COUNT FOR 100.RESIDUAL  (EACH X= 1)

-8.7106       .9      1 +X
-7.0535      0.       0 +
-5.3965      3.6      4 +XXXX
-3.7394      2.7      3 +XXX
-2.0824     16.1     18 +XXXXXXXXXXXXXXXXXX
-.42532     34.8     39 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 1.2317     26.8     30 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 2.8888      9.8     11 +XXXXXXXXXXX
 4.5458      4.5      5 +XXXXX
 6.2029       .9      1 +X

 MISSING              3
 TOTAL              115  (INTERVAL WIDTH= 1.6571)


 COMMAND
?TRANS V101=V100/2.4345
 LABEL FOR THE RESULT VARIABLE(S)
=STANDRES
 CASES TO SELECT
=380-388,390-396,398-496


 DIVIDE TRANSFORMATION  CASES=CASE#:380-388,390-396,398-496

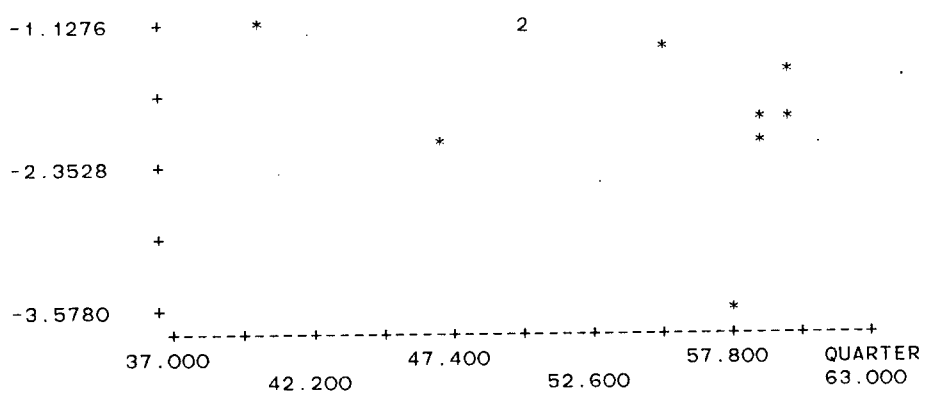
     VARIABLE  TOTAL  VALID   MISS

  101.STANDRES    115    112      3


 COMMAND
?SCATTER V=101,2 CASES=380-388,390-396,398-496


 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  101.STANDRES VS. 2.QUARTER
 STANDRES
 2.5479   +                                            *

          +                                 *    *
                                              *
           *              *                      2 *   *   *
 1.3227   +                               *          *
                                              * *      *
                     *
          +  *       *                        *      2 2
                                                       4     *
                                    2     * * * 2  3 2 4
 .97556 -1+  *                      *         * *      4
           3   2                    *       3          5
           2 *                              *   *2 *   5 *
          +    *                          *   2    2 * *
                                          *        3   3
                                            *   **   * 2
```



COMMAND
?REG V=39,7,9,25,22,92,52,55,60,94,95,51,70 CASES=380-388,390-396,398-496

LEAST SQUARES REGRESSION CASES=CASE#:380-388,390-396,398-496

ANALYSIS OF VARIANCE OF 39.NEWREALP N= 112 OUT OF 115

SOURCE	DF	SUM SQRS	MEAN SQR	F-STAT	SIGNIF
REGRESSION	12	765.63	63.803	9.3794	.0000
ERROR	99	673.44	6.8024		
TOTAL	111	1439.1			

MULT R= .72941 R-SQR= .53203 SE= 2.6081

VARIABLE	PARTIAL	COEFF	STD ERROR	T-STAT	SIGNIF
CONSTANT		-8.6634	5.2630	-1.6461	.1029
7.WESTEND	.25848	2.7661	1.0390	2.6623	.0091
9.EASTVAN	-.44710	-3.1317	.62970	-4.9733	.0000
25.MURBSTAT	.32397	8.3651	2.4551	3.4072	.0010
22.VACRATE	.01123	.17959	1.6069	.11177	.9112
92.NEWVRATE	.15198	.13919	.90979 -1	1.5299	.1292
52.GRRLINC	.19347	.68528	.34927	1.9621	.0526
55.REALINT	-.04331	-.26336	.61060	-.43131	.6672
60.LAGRENT	.21939	.23084	.10317	2.2374	.0275
94.STARTS	-.18856	-.17540 -2	.91811 -3	-1.9104	.0590
95.REALCOST	.23555	.74282 -1	.30802 -1	2.4116	.0177
51.POPGRTH	.19694	2.2256	1.1136	1.9986	.0484
70.RLAPTRTN	-.27027	-.65161	.23329	-2.7931	.0063

COMMAND
?SAVE V100=RESIDUAL LABEL=RESIDUAL CASES=380-388,390-396,398-496

RESIDUAL USING: REGRESS CASES=CASE#:380-388,390-396,398-496

VARIABLE TOTAL VALID MISS

Run Number 2

```
  100.RESIDUAL    115    112      3*

 * CASES CHANGED IN EXISTING VARIABLE


 COMMAND
?SCATTER V=100,39 CASES=380-388,390-396,398-496

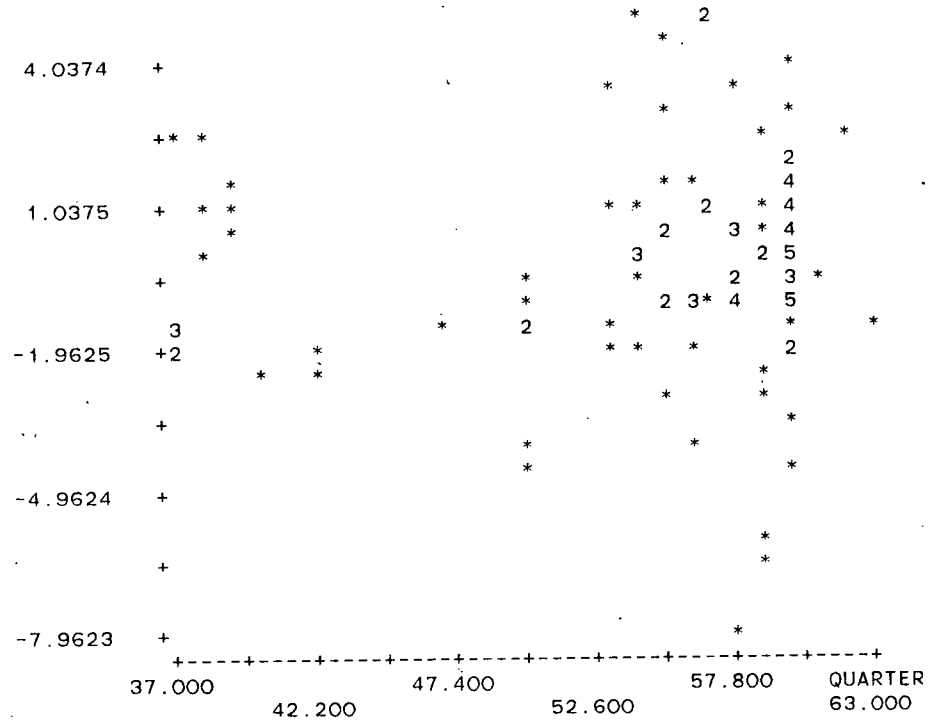

 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
          N= 112 OUT OF 115  100.RESIDUAL VS. 39.NEWREALP
 RESIDUAL
  7.0373    +                                                 *
                                               *
                                                               *
            +
                                                    2  *
                                                  *
  4.0374    +                            *
                                          *                *
                                      **
            +              *      *       *      *
                                   2
                            *     2*     ***
  1.0375    +     *    *         4 2          *  2
                 *             *3    *  2           3
                     *         53   *       *
            +               *2  *3*
                           2*  *3 3 3       2    *
                       3  *   **  *     *  *
 -1.9625    +         2    ** ** 2
                    **                 *
                      *     *
            +                 *
                          *      *
                       *   *
 -4.9624    +

                    *
            +               *


 -7.9623    +*
             +----+----+----+----+----+----+----+----+----+----+
          2.7578              10.271               17.784    NEWREALP
                    6.5144              14.027              21.541


  COMMAND
 ?SCATTER V=100,2 CASES=380-388,390-396,398-496


  SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  100.RESIDUAL VS. 2.QUARTER
  RESIDUAL
   7.0373    +               *
                                                         *
                                                   *
             +
```




```
 COMMAND
?HISTOGRAM V=100 INT=10 OP=HIST%
 CASES TO SELECT
=380-388,390-396,398-496

 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

 MIDPOINT   HIST%  COUNT FOR 100.RESIDUAL  (EACH X= 1)

 -7.9623       .9      1 +X
 -6.2957      1.8      2 +XX
 -4.6290      2.7      3 +XXX
 -2.9624      7.1      8 +XXXXXXXX
 -1.2958     33.0     37 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  .37081     31.3     35 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  2.0374     13.4     15 +XXXXXXXXXXXXXXX
  3.7040      4.5      5 +XXXXX
  5.3707      2.7      3 +XXX
  7.0373      2.7      3 +XXX

  MISSING              3
  TOTAL              115  (INTERVAL WIDTH= 1.6666)


 COMMAND
?TRANS V101=V100/2.6081 CASES=380-388,390-396,398-496
 LABEL FOR THE RESULT VARIABLE(S)
```

=STANDRES

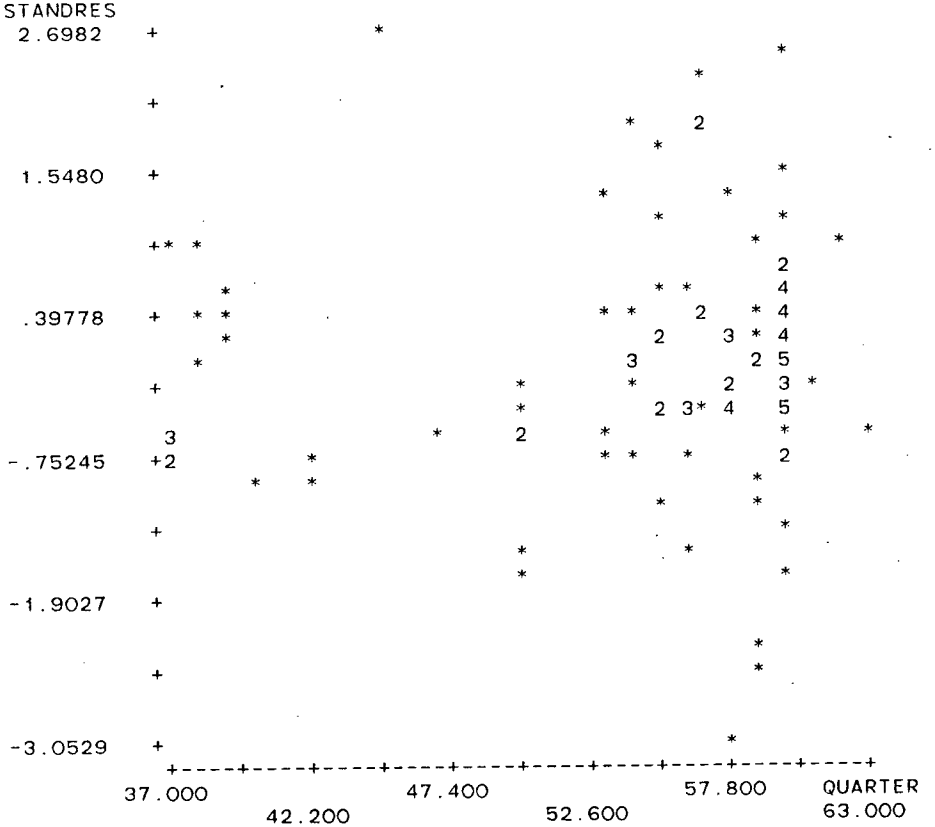
DIVIDE TRANSFORMATION CASES=CASE#:380-388,390-396,398-496

VARIABLE	TOTAL	VALID	MISS
101.STANDRES	115	112	3*

* CASES CHANGED IN EXISTING VARIABLE

COMMAND
?SCATTER V=101,2 CASES=380-388,390-396,398-496

SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 101.STANDRES VS. 2.QUARTER



COMMAND
?REG V=39,7,9,25,22,92,52,55,93,94,63,51,70 CASES=380-388,390-396,398-496

LEAST SQUARES REGRESSION CASES=CASE#:380-388,390-396,398-496

ANALYSIS OF VARIANCE OF 39.NEWREALP N= 112 OUT OF 115

SOURCE	DF	SUM SQRS	MEAN SQR	F-STAT	SIGNIF
REGRESSION	12	777.58	64.799	9.6980	.0000
ERROR	99	661.48	6.6816		
TOTAL	111	1439.1			

MULT R= .73508 R-SQR= .54034 SE= 2.5849

VARIABLE	PARTIAL	COEFF	STD ERROR	T-STAT	SIGNIF
CONSTANT		10.362	7.1117	1.4571	.1483
7.WESTEND	.22442	2.4837	1.0839	2.2914	.0241
9.EASTVAN	-.45866	-3.1962	.62236	-5.1356	.0000
25.MURBSTAT	.01987	.64773	3.2757	.19774	.8437
22.VACRATE	-.12310	-1.9362	1.5687	-1.2342	.2200
92.NEWVRATE	.32202	.33336	.98500 -1	3.3843	.0010
52.GRRLINC	.04208	.12366	.29512	.41901	.6761
55.REALINT	.18221	.99055	.53722	1.8438	.0682
93.RLRENT2	-.15570	-.11392	.72638 -1	-1.5683	.1200
94.STARTS	-.32828	-.41391 -2	.11970 -2	-3.4580	.0008
63.CCOSTBC2	-.22526	-.21603	.93908 -1	-2.3004	.0235
51.POPGRTH	.23632	2.7463	1.1349	2.4198	.0174
70.RLAPTRTN	-.15033	-.35266	.23309	-1.5129	.1335

Run Number 3

COMMAND
?SAVE V100=RESIDUAL LABEL=RESIDUAL CASES=380-388,390-396,398-496

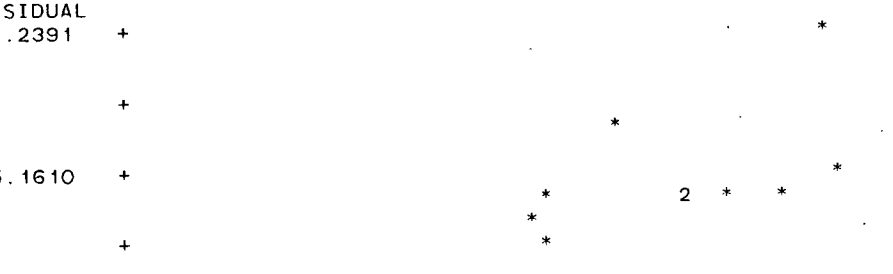
RESIDUAL USING: REGRESS CASES=CASE#:380-388,390-396,398-496

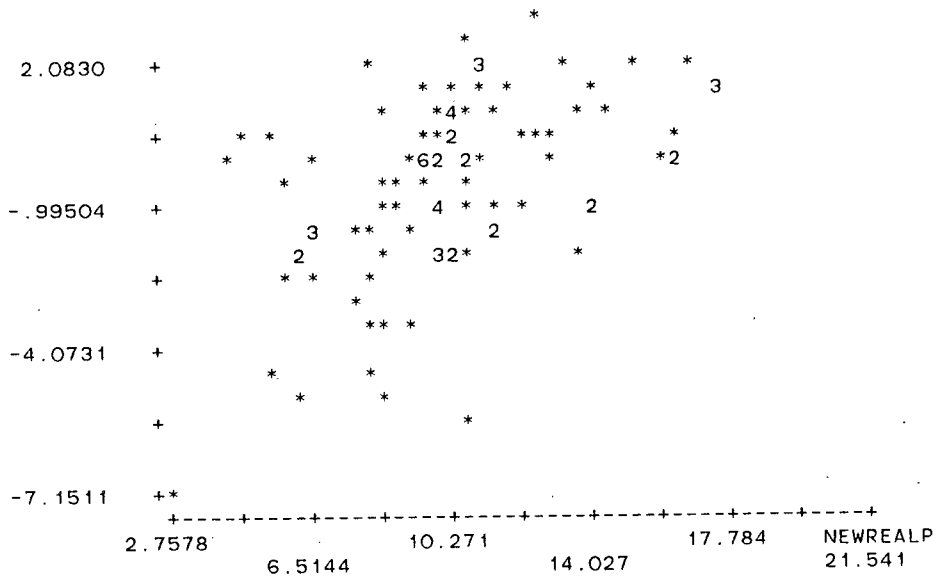
VARIABLE	TOTAL	VALID	MISS
100.RESIDUAL	115	112	3*

* CASES CHANGED IN EXISTING VARIABLE

COMMAND
?SCATTER V=100,39 CASES=380-388,390-396,398-496

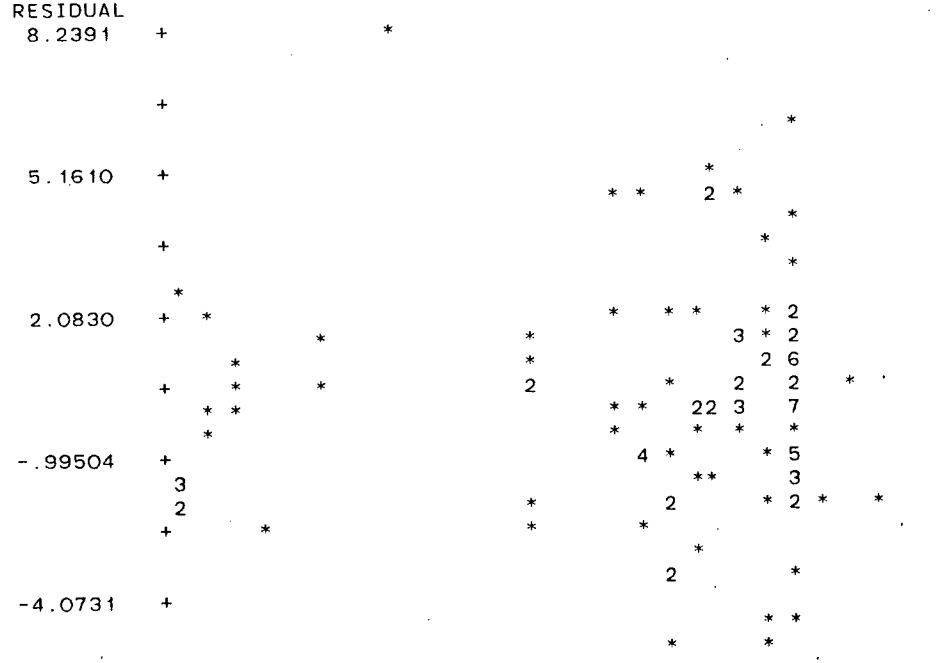
SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 100.RESIDUAL VS. 39.NEWREALP





COMMAND
?SCATTER V=100,2 CASES=380-388,390-396,398-496

SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 100.RESIDUAL VS. 2.QUARTER



```
          +                   *



 -7.1511  +                                               *
           +----+----+----+----+----+----+----+----+----+----+
        37.000            47.400            57.800      QUARTER
                  42.200            52.600              63.000


 COMMAND
?HISTOGRAM V=100 INT=10 OP=HIST%
 CASES TO SELECT
=380-388,390-396,398-496


 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

 MIDPOINT   HIST%  COUNT FOR 100.RESIDUAL  (EACH X= 1)

 -7.1511      .9      1 +X
 -5.4411     3.6      4 +XXXX
 -3.7311     4.5      5 +XXXXX
 -2.0210    18.8     21 +XXXXXXXXXXXXXXXXXXXXX
 -.31103    35.7     40 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  1.3990    25.0     28 +XXXXXXXXXXXXXXXXXXXXXXXXXXXX
  3.1090     3.6      4 +XXXX
  4.8190     6.3      7 +XXXXXXX
  6.5291      .9      1 +X
  8.2391      .9      1 +X

  MISSING             3
  TOTAL             115   (INTERVAL WIDTH= 1.7100)


 COMMAND
?TRANS V101=V100/2.5849 LABEL=STANDRES CASES=380-388,390-396,398-496


 DIVIDE TRANSFORMATION  CASES=CASE#:380-388,390-396,398-496

     VARIABLE  TOTAL  VALID   MISS

  101.STANDRES    115    112      3*

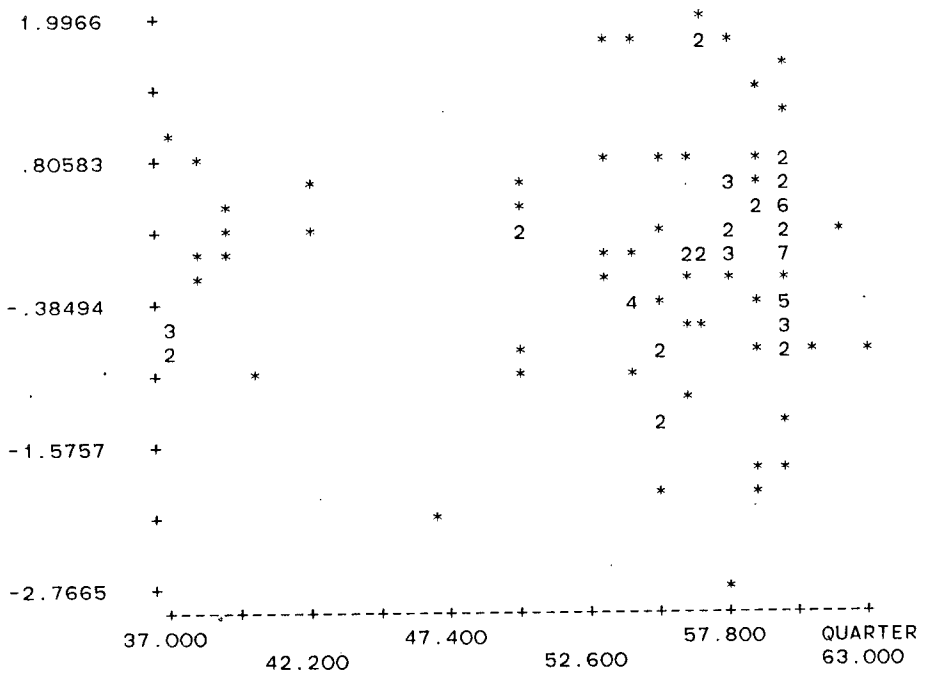
 * CASES CHANGED IN EXISTING VARIABLE


 COMMAND
?SCATTER V=101,2 CASES=380-388,390-396,398-496


 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115   101.STANDRES VS. 2.QUARTER
 STANDRES
  3.1874    +               *



            +                                       *
```



COMMAND
?REG V=39,7,9,25,22,92,52,55,60,94,63,51,70 CASES=380-388,390-396,398-496

LEAST SQUARES REGRESSION CASES=CASE#:380-388,390-396,398-496

ANALYSIS OF VARIANCE OF 39.NEWREALP N= 112 OUT OF 115

SOURCE	DF	SUM SQRS	MEAN SQR	F-STAT	SIGNIF
REGRESSION	12	784.78	65.398	9.8953	.0000
ERROR	99	654.29	6.6090		
TOTAL	111	1439.1			

MULT R= .73847 R-SQR= .54534 SE= 2.5708

VARIABLE	PARTIAL	COEFF	STD ERROR	T-STAT	SIGNIF
CONSTANT		.56185	3.5761	.15711	.8755
7.WESTEND	.29935	3.2022	1.0258	3.1216	.0024
9.EASTVAN	-.46335	-3.2222	.61937	-5.2024	.0000
25.MURBSTAT	.21785	5.2002	2.3414	2.2210	.0286
22.VACRATE	-.16632	-2.4589	1.4652	-1.6783	.0965
92.NEWVRATE	.35359	.35300	.93856 -1	3.7611	.0003
52.GRRLINC	.06619	.19922	.30184	.65999	.5108
55.REALINT	.17967	.96650	.53185	1.8172	.0722
60.LAGRENT	.18669	.18379	.97205 -1	1.8908	.0616
94.STARTS	-.30850	-.38300 -2	.11869 -2	-3.2270	.0017

Run Number 4

63.CCOSTBC2	-.28695	-.27091	.90895	-1	-2.9804	.0036
51.POPGRTH	.28434	3.2185	1.0907		2.9509	.0040
70.RLAPTRTN	-.18637	-.43530	.23063		-1.8875	.0620

COMMAND
?SAVE V100=RESIDUAL LABEL=RESIDUAL CASES=380-388,390-396,398-496

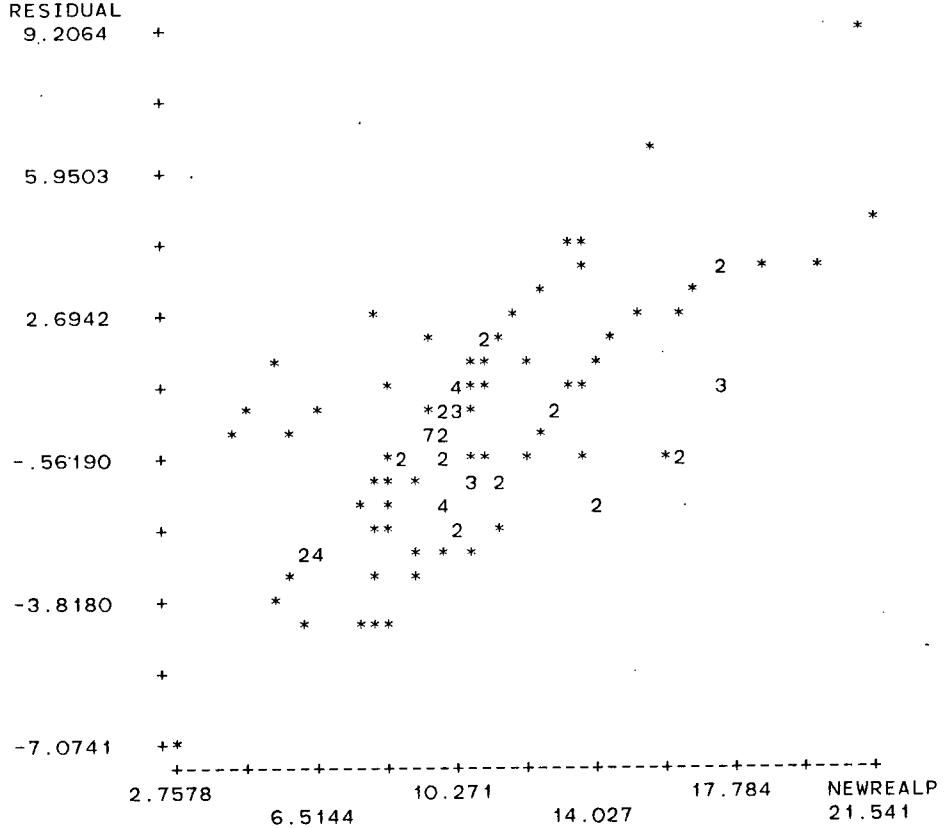
RESIDUAL USING: REGRESS CASES=CASE#:380-388,390-396,398-496

VARIABLE	TOTAL	VALID	MISS
100.RESIDUAL	115	112	3*

* CASES CHANGED IN EXISTING VARIABLE

COMMAND
?SCATTER V=100,39 CASES=380-388,390-396,398-496

SCATTER PLOT CASES=CASE#:380-388,390-396,398-496
N= 112 OUT OF 115 100.RESIDUAL VS. 39.NEWREALP



```
COMMAND
?SCATTER V=100,2 CASES=380-388,390-396,398-496

SCATTER PLOT   CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115   100.RESIDUAL VS. 2.QUARTER
RESIDUAL
 9.2064    +               *


           +

                                                        *
 5.9503    +

                                                  *
           +                                          * *
                                           * *    2 *
                                               *        *
 2.6942    +  *                                       2     *
                      *                               2 2
            *         *                        *        2
           +    *                          *     *  3   6
              * *                    2         *    2   4
              * *                    2              3   5
 -.56190   +                                 * 2  2 * * 3 *   *
                                           *     3    * 3
                                           * 4          3
           +                                   2  *     2
            5                  *     2           *
                  *                          *          *
 -3.8180   +                                          *
                                               * *    * *

           +


 -7.0741   +                                        *
            +----+----+----+----+----+----+----+----+----+----+
         37.000              47.400              57.800  QUARTER
                   42.200              52.600            63.000

COMMAND
?HISTOGRAM V=100 INT=10 OP=HIST%
 CASES TO SELECT
=380-388,390-396,398-496

HISTOGRAM   CASES=CASE#:380-388,390-396,398-496

MIDPOINT    HIST%  COUNT FOR 100.RESIDUAL  (EACH X= 1)

-7.0741       .9      1 +X
-5.2652       .9      1 +X
-3.4562     14.3     16 +XXXXXXXXXXXXXXXX
-1.6473     20.5     23 +XXXXXXXXXXXXXXXXXXXXXXX
  .16168    35.7     40 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 1.9706     17.0     19 +XXXXXXXXXXXXXXXXXXX
```

```
  3.7796       8.0      9 +XXXXXXXXX
  5.5885       1.8      2 +XX
  7.3975       0.       0 +
  9.2064        .9      1 +X

  MISSING               3
  TOTAL               115  (INTERVAL WIDTH= 1.8090)


 COMMAND
?TRANS V101=V100/2.5708 LABEL=STANDRES CASES=380-388,390-396,398-496


 DIVIDE TRANSFORMATION  CASES=CASE#:380-388,390-396,398-496

      VARIABLE  TOTAL  VALID   MISS

  101.STANDRES    115    112      3*

 * CASES CHANGED IN EXISTING VARIABLE


 COMMAND
?HISTOGRAM V=101 INT=10 CASES=380-388,390-396,398-496 OP=HIST%


 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

 MIDPOINT   HIST%  COUNT FOR 101.STANDRES  (EACH X= 1)

 -2.7517       .9     1 +X
 -2.0481       .9     1 +X
 -1.3444     14.3    16 +XXXXXXXXXXXXXXX
 -.64076     20.5    23 +XXXXXXXXXXXXXXXXXXXXXX
  .62893 -1  35.7    40 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  .76655     17.0    19 +XXXXXXXXXXXXXXXXXX
  1.4702      8.0     9 +XXXXXXXXX
  2.1739      1.8     2 +XX
  2.8775      0.      0 +
  3.5812       .9     1 +X

  MISSING              3
  TOTAL              115  (INTERVAL WIDTH= .70365)

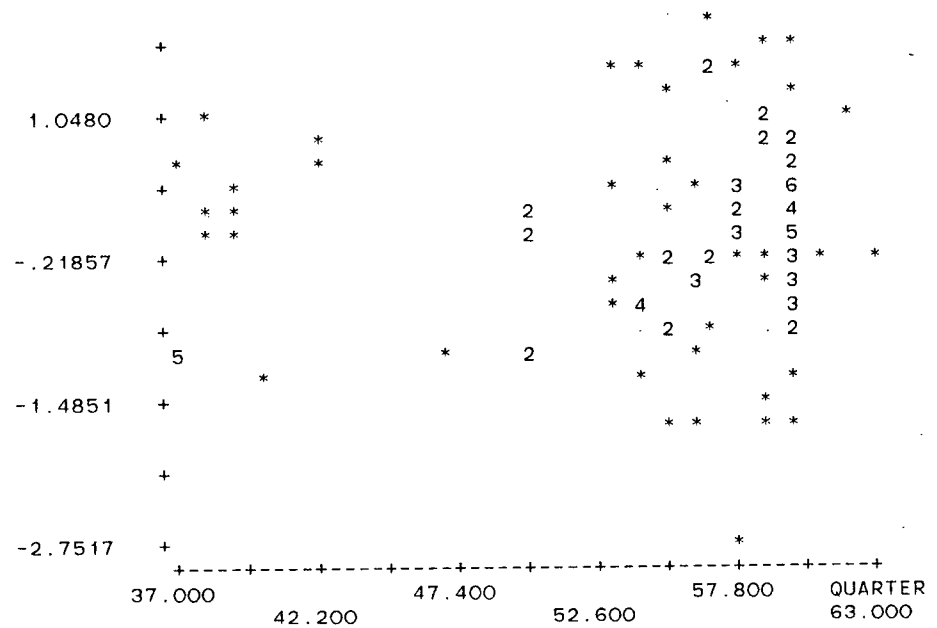

 COMMAND
?SCATTER V=101,2 CASES=380-388,390-396,398-496


 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  101.STANDRES VS. 2.QUARTER
 STANDRES
  3.5812   +                *


           +


                                                  *

  2.3146   +
```




```
 COMMAND
?REG V=39,25 CASES=380-388,390-396,398-496

 LEAST SQUARES REGRESSION  CASES=CASE#:380-388,390-396,398-496

 ANALYSIS OF VARIANCE OF 39.NEWREALP  N= 115 OUT OF 115

      SOURCE              DF  SUM SQRS   MEAN SQR   F-STAT    SIGNIF

      REGRESSION           1  181.88     181.88     16.195     .0001
      ERROR              113  1269.0     11.230
      TOTAL              114  1450.9

      MULT R= .35405  R-SQR= .12535 SE= 3.3512

      VARIABLE      PARTIAL    COEFF    STD ERROR   T-STAT    SIGNIF

      CONSTANT                 7.7878     .81278    9.5817     .0000
   25.MURBSTAT       .35405    3.5432     .88046    4.0243     .0001

 COMMAND
?REG V=39,7,9,25,22,92,52,55,60,94,63,51,70,38 CASES=380-388,390-396,398-496

 LEAST SQUARES REGRESSION  CASES=CASE#:380-388,390-396,398-496

 ANALYSIS OF VARIANCE OF 39.NEWREALP  N= 112 OUT OF 115
```

```
* CASES CHANGED IN EXISTING VARIABLE

VARIABLE TRANSFORMATION  STRAT=NEWQTR:51

     VARIABLE  TOTAL  VALID   MISS

  98.RLCSTLAG      3      3      0*

* CASES CHANGED IN EXISTING VARIABLE

End of command file "*SOURCE*" at line 999  Ω

 COMMAND
?REG V=39,25 CASES=380-388,390-396,398-496 STRATA=NONE

LEAST SQUARES REGRESSION  CASES=CASE#:380-388,390-396,398-496

ANALYSIS OF VARIANCE OF 39.NEWREALP  N= 115 OUT OF 115

     SOURCE              DF  SUM SQRS   MEAN SQR   F-STAT    SIGNIF

     REGRESSION           1  181.88     181.88     16.195     .0001
     ERROR              113  1269.0     11.230
     TOTAL              114  1450.9

     MULT R= .35405  R-SQR= .12535 SE= 3.3512

     VARIABLE     PARTIAL    COEFF    STD ERROR   T-STAT    SIGNIF

     CONSTANT                7.7878     .81278    9.5817     .0000
  25.MURBSTAT      .35405    3.5432     .88046    4.0243     .0001

 COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380-388,390-396,398-496

RESIDUAL USING: REGRESS  CASES=CASE#:380-388,390-396,398-496

     VARIABLE  TOTAL  VALID   MISS     DW     #VAR

 200.RESIDUAL    115    115      0     1.4775    1

 COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380-388,390-396,398-496

 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

 MIDPOINT   HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

 -8.5732      .9      1 +X
 -7.4127      0.      0 +
```

Run Number 9

```
 -6.2522      .9      1 +X
 -5.0918     1.7      2 +XX
 -3.9313     3.5      4 +XXXX
 -2.7708    13.9     16 +XXXXXXXXXXXXXXXX
 -1.6103    28.7     33 +XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 -.44979    16.5     19 +XXXXXXXXXXXXXXXXXXX
  .71070     7.0      8 +XXXXXXXX
  1.8712     7.8      9 +XXXXXXXXX
  3.0317     5.2      6 +XXXXXX
  4.1922     2.6      3 +XXX
  5.3527     3.5      4 +XXXX
  6.5132     4.3      5 +XXXXX
  7.6737      .9      1 +X
  8.8341      .9      1 +X
  9.9946      .9      1 +X
  11.155    0.        0 +
  12.316    0.        0 +
  13.476      .9      1 +X

  TOTAL              115  (INTERVAL WIDTH= 1.1605)


 COMMAND
?SCATTER V=200,2 CASES=380-388,390-396,398-496


 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
          N= 115 OUT OF 115  200.RESIDUAL VS. 2.QUARTER
 RESIDUAL
  13.476    +               *


            +
                                                   *
  9.0662    +                                        *
                                              *
            +
                                                   2 3
                                                *           *
  4.6564    +                                      2 *   *
                                                       *
                                *                      *
            +*                              *          * 5     *
                       *                          *      2
                                      * *       *      * *
  .24651    +  * *                                 *   2 2
                                            * * * 3      4 *
             3 *                      3       4 *    4   7
            +2 *   *                  *         * *  *   7
                       *                2   2          * 3
                 2                            * 2 *    * 3
 -4.1634    +
                                      *         *
                                                       *
            +

 -8.5732    +                                        *
```

```
+----+----+----+----+----+----+----+----+----+----+
37.000              47.400              57.800    QUARTER
          42.200              52.600              63.000

 COMMAND
?REG V=39,7,9,25,22,92,52,55,60,94,63,51,70,53 CASES=380-388,390-396,398-496

 LEAST SQUARES REGRESSION  CASES=CASE#:380-388,390-396,398-496

 ANALYSIS OF VARIANCE OF 39.NEWREALP  N= 112 OUT OF 115

      SOURCE              DF  SUM SQRS   MEAN SQR   F-STAT    SIGNIF

      REGRESSION          13  844.46     64.958     10.706     .0000
      ERROR               98  594.61     6.0675
      TOTAL              111  1439.1

      MULT R= .76603  R-SQR= .58681 SE= 2.4632

      VARIABLE     PARTIAL    COEFF     STD ERROR   T-STAT    SIGNIF

      CONSTANT                33.083     10.921     3.0293     .0031
    7.WESTEND       .37307    4.0617     1.0204     3.9806     .0001
    9.EASTVAN      -.44450   -2.9469      .59991   -4.9123     .0000
   25.MURBSTAT      .36552   13.287      3.4179     3.8875     .0002
   22.VACRATE      -.30921   -5.4805     1.7027    -3.2188     .0017
   92.NEWVRATE      .43885    .47177     .97577 -1  4.8348     .0000
   52.GRRLINC       .23838    .87753     .36114     2.4299     .0169
   55.REALINT      -.19115   -2.1565     1.1186    -1.9278     .0568
   60.LAGRENT       .26034    .25613     .95951 -1  2.6693     .0089
   94.STARTS       -.41933   -.79959 -2  .17486 -2 -4.5726     .0000
   63.CCOSTBC2     -.40256   -.66067     .15176    -4.3535     .0000
   51.POPGRTH       .36235   4.1977      1.0907     3.8486     .0002
   70.RLAPTRTN     -.32428   -.90736     .26737    -3.3936     .0010
   53.INFLATIO     -.30201   -3.7397     1.1924    -3.1362     .0023

 COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380-388,390-396,398-496

 RESIDUAL USING: REGRESS  CASES=CASE#:380-388,390-396,398-496

      VARIABLE  TOTAL  VALID   MISS     DW     #VAR

  200.RESIDUAL    115    112     3*     2.0430   13

 * CASES CHANGED IN EXISTING VARIABLE

 COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380-388,390-396,398-496

 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496
```

With INFLATION variable

```
MIDPOINT   HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

-6.7265      .9      1 +X
-5.9522     0.       0 +
-5.1779     0.       0 +
-4.4035     1.8      2 +XX
-3.6292     4.5      5 +XXXXX
-2.8549     6.3      7 +XXXXXXX
-2.0805     8.9     10 +XXXXXXXXXX
-1.3062    10.7     12 +XXXXXXXXXXXX
-.53189    12.5     14 +XXXXXXXXXXXXXX
 .24243    17.9     20 +XXXXXXXXXXXXXXXXXXXX
 1.0168    13.4     15 +XXXXXXXXXXXXXXX
 1.7911     7.1      8 +XXXXXXXX
 2.5654     4.5      5 +XXXXX
 3.3397     6.3      7 +XXXXXXX
 4.1141     3.6      4 +XXXX
 4.8884     0.       0 +
 5.6627     0.       0 +
 6.4371      .9      1 +X
 7.2114     0.       0 +
 7.9857      .9      1 +X

 MISSING             3
 TOTAL             115   (INTERVAL WIDTH= .77433)


 COMMAND
?SCATTER V=200,2 CASES=380-388,390-396,398-496


 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  200.RESIDUAL VS. 2.QUARTER
RESIDUAL
 7.9857   +               *


          +                                            *


 5.0433   +
                                                     *
                                            *          *
          +   *                            *   *  * *
                                                *    * *
                                                     *     *
 2.1008   +                                      2   2
            * *                               *        5
              *                            *        *   2
          +     *              *              * 3  5   6
                      *             2              2 * 6
                *                   2       * *
-.84162   +     *     *                    *   * *  * * 4
                                          * 3          2 *   *
                                            *    2     3
          +3                                  2 *      2
            2     *                 *
                                    *       *          *
-3.7841   +                                      *   2
                                              *        *
```

```
          +
-6.7265   +                                        *
          +----+----+----+----+----+----+----+----+----+----+
         37.000              47.400              57.800    QUARTER
                   42.200              52.600              63.000

 COMMAND
?REG V=39,7,9,8,25,22,92,52,55,60,94,63,51,70 CASES=380-388,390-396,398-496

 LEAST SQUARES REGRESSION  CASES=CASE#:380-388,390-396,398-496

 ANALYSIS OF VARIANCE OF 39.NEWREALP  N= 112 OUT OF 115

      SOURCE              DF  SUM SQRS    MEAN SQR    F-STAT     SIGNIF

      REGRESSION          13  784.79      60.368      9.0421      .0000
      ERROR               98  654.28      6.6763
      TOTAL              111  1439.1

      MULT R= .73847  R-SQR= .54534 SE= 2.5839

      VARIABLE     PARTIAL    COEFF     STD ERROR   T-STAT     SIGNIF

      CONSTANT                .62439     4.0269      .15505     .8771
    7.WESTEND       .14929    3.1392     2.1004      1.4946     .1382
    9.EASTVAN      -.16813   -3.2857     1.9460     -1.6884     .0945
    8.KITS         -.00348   -.68919 -1  2.0010     -.34441 -1  .9726
   25.MURBSTAT      .21712    5.1946     2.3591      2.2019     .0300
   22.VACRATE      -.16621   -2.4621     1.4756     -1.6686     .0984
   92.NEWVRATE      .35253    .35330     .94738 -1   3.7293     .0003
   52.GRRLINC       .06616    .19913     .30339      .65635     .5131
   55.REALINT       .17873    .96881     .53873      1.7983     .0752
   60.LAGRENT       .18669    .18391     .97763 -1   1.8812     .0629
   94.STARTS       -.30657   -.38353 -2  .12029 -2  -3.1884     .0019
   63.CCOSTBC2     -.27979   -.27169     .94174 -1  -2.8850     .0048
   51.POPGRTH       .28410    3.2206     1.0979      2.9333     .0042
   70.RLAPTRTN     -.18640   -.43538     .23181     -1.8782     .0633

 COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380-388,390-396,398-496

 RESIDUAL USING: REGRESS  CASES=CASE#:380-388,390-396,398-496

      VARIABLE  TOTAL  VALID   MISS     DW     #VAR

  200.RESIDUAL    115    112     3*     1.9642   13

 * CASES CHANGED IN EXISTING VARIABLE

 COMMAND
```

With KITS variable

```
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380-388,390-396,398-496


 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

 MIDPOINT    HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

 -7.0724       .9     1 +X
 -6.2154      0.      0 +
 -5.3585      0.      0 +
 -4.5015      3.6     4 +XXXX
 -3.6446      2.7     3 +XXX
 -2.7876     10.7    12 +XXXXXXXXXXXX
 -1.9306      8.0     9 +XXXXXXXXX
 -1.0737     14.3    16 +XXXXXXXXXXXXXXXX
 -.21672     15.2    17 +XXXXXXXXXXXXXXXXX
  .64024     17.0    19 +XXXXXXXXXXXXXXXXXXX
  1.4972      9.8    11 +XXXXXXXXXXX
  2.3542      7.1     8 +XXXXXXXX
  3.2111      1.8     2 +XX
  4.0681      6.3     7 +XXXXXXX
  4.9250       .9     1 +X
  5.7820      0.      0 +
  6.6390       .9     1 +X
  7.4959      0.      0 +
  8.3529      0.      0 +
  9.2098       .9     1 +X

  MISSING             3
  TOTAL             115  (INTERVAL WIDTH= .85696)

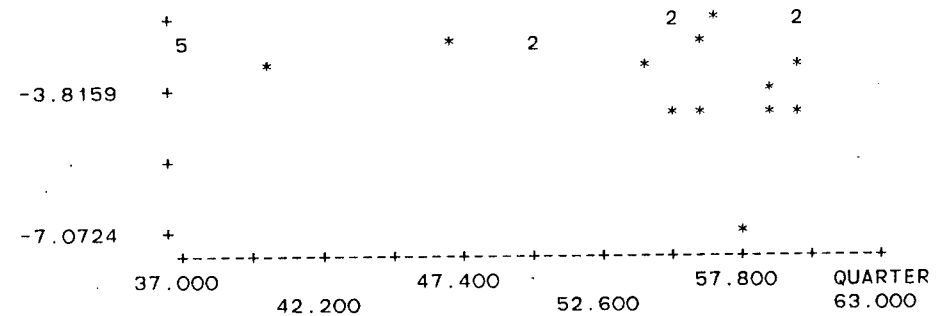

 COMMAND
?SCATTER V=200,2 CASES=380-388,390-396,398-496


 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
            N= 112 OUT OF 115  200.RESIDUAL VS. 2.QUARTER
 RESIDUAL
  9.2098   +               *


           +
                                                       *

  5.9534   +

                                                 *
                                                     * *
           +                                * *    2 *
                                               *       *
  2.6969   +  *                                      2     *
                      *                              2 2
            *         *                        *       2
           +    *                           *    *   3   6
              * *                    2         *     2   3
              * *                    2               3   6
 -.55950   +                                  * 2 2 * * 3 *   *
                                            *    3     * 3
                                            * 4          3
```




```
 COMMAND
?REG V=39,7,9,10,25,22,92,52,55,60,94,63,51,70 CASES=380-388,390-396,398-496

 LEAST SQUARES REGRESSION  CASES=CASE#:380-388,390-396,398-496

 ANALYSIS OF VARIANCE OF 39.NEWREALP  N= 112 OUT OF 115

      SOURCE              DF  SUM SQRS    MEAN SQR    F-STAT     SIGNIF

      REGRESSION          13  784.79      60.368      9.0421      .0000
      ERROR               98  654.28      6.6763
      TOTAL              111  1439.1

      MULT R= .73847  R-SQR= .54534 SE= 2.5839


      VARIABLE     PARTIAL    COEFF     STD ERROR    T-STAT     SIGNIF

      CONSTANT                .55547     3.5990      .15434      .8777
    7.WESTEND      .29616    3.2081      1.0451      3.0696      .0028
    9.EASTVAN     -.45155   -3.2168       .64207    -5.0100      .0000
   10.MARPOLE      .00348    .68919 -1   2.0010       .34441 -1  .9726
   25.MURBSTAT     .21712    5.1946      2.3591      2.2019      .0300
   22.VACRATE     -.16621   -2.4621      1.4756     -1.6686      .0984
   92.NEWVRATE     .35253    .35330      .94738 -1   3.7293      .0003
   52.GRRLINC      .06616    .19913      .30339       .65635     .5131
   55.REALINT      .17873    .96881      .53873      1.7983      .0752
   60.LAGRENT      .18669    .18391      .97763 -1   1.8812      .0629
   94.STARTS      -.30657   -.38353 -2   .12029 -2  -3.1884      .0019
   63.CCOSTBC2    -.27979   -.27169      .94174 -1  -2.8850      .0048
   51.POPGRTH      .28410    3.2206      1.0979      2.9333      .0042
   70.RLAPTRTN    -.18640   -.43538      .23181     -1.8782      .0633


 COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380-388,390-396,398-496

 RESIDUAL USING: REGRESS  CASES=CASE#:380-388,390-396,398-496

      VARIABLE  TOTAL  VALID   MISS     DW     #VAR

  200.RESIDUAL    115    112     3*     1.9642   13
```

With MARPOLE variable

```
* CASES CHANGED IN EXISTING VARIABLE


COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380-388,390-396,398-496


HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

MIDPOINT   HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

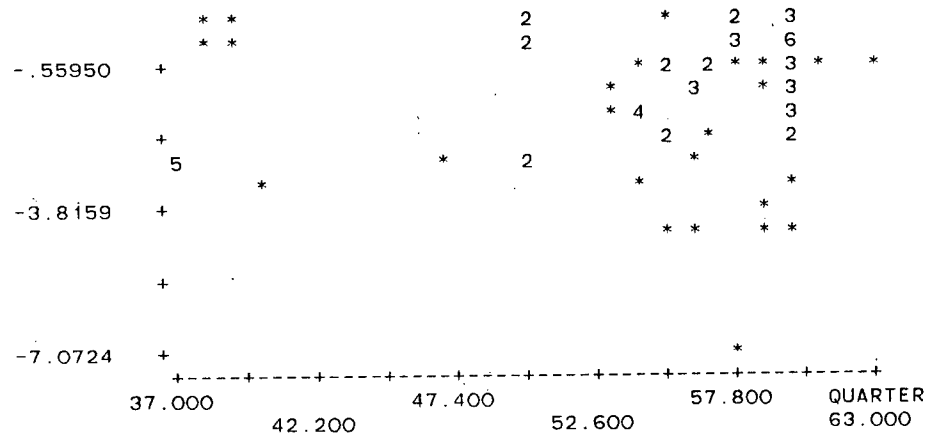
-7.0724      .9      1 +X
-6.2154     0.       0 +
-5.3585     0.       0 +
-4.5015     3.6      4 +XXXX
-3.6446     2.7      3 +XXX
-2.7876    10.7     12 +XXXXXXXXXXXX
-1.9306     8.0      9 +XXXXXXXXX
-1.0737    14.3     16 +XXXXXXXXXXXXXXXX
-.21672    15.2     17 +XXXXXXXXXXXXXXXXX
 .64024    17.0     19 +XXXXXXXXXXXXXXXXXXX
 1.4972     9.8     11 +XXXXXXXXXXX
 2.3542     7.1      8 +XXXXXXXX
 3.2111     1.8      2 +XX
 4.0681     6.3      7 +XXXXXXX
 4.9250      .9      1 +X
 5.7820     0.       0 +
 6.6390      .9      1 +X
 7.4959     0.       0 +
 8.3529     0.       0 +
 9.2098      .9      1 +X

 MISSING             3
 TOTAL             115  (INTERVAL WIDTH= .85696)


COMMAND
?SCATTER V=200,2 CASES=380-388,390-396,398-496


SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
          N= 112 OUT OF 115  200.RESIDUAL VS. 2.QUARTER
RESIDUAL
 9.2098    +               *

           +
                                                         *
 5.9534    +
                                                   *
           +                                           * *
                                            * *    2 *
                                                *        *
 2.6969    +  *                                        2     *
                      *                                2 2
            *         *                         *        2
           +    *                           *     *  3   6
```




```
 COMMAND
?REG V=39,7,9,25,22,92,52,55,93,94,63,51,70 CASES=380-388,390-396,398-496

 LEAST SQUARES REGRESSION  CASES=CASE#:380-388,390-396,398-496

 ANALYSIS OF VARIANCE OF 39.NEWREALP  N= 112 OUT OF 115

      SOURCE              DF  SUM SQRS    MEAN SQR    F-STAT     SIGNIF

      REGRESSION          12  777.58      64.799      9.6980      .0000
      ERROR               99  661.48      6.6816
      TOTAL              111  1439.1

      MULT R= .73508  R-SQR= .54034 SE= 2.5849

      VARIABLE     PARTIAL    COEFF     STD ERROR    T-STAT     SIGNIF

      CONSTANT                10.362     7.1117      1.4571      .1483
    7.WESTEND      .22442     2.4837     1.0839      2.2914      .0241
    9.EASTVAN     -.45866    -3.1962      .62236    -5.1356      .0000
   25.MURBSTAT     .01987     .64773     3.2757       .19774     .8437
   22.VACRATE     -.12310    -1.9362     1.5687     -1.2342      .2200
   92.NEWVRATE     .32202     .33336     .98500 -1   3.3843      .0010
   52.GRRLINC      .04208     .12366     .29512       .41901     .6761
   55.REALINT      .18221     .99055     .53722      1.8438      .0682
   93.RLRENT2     -.15570    -.11392     .72638 -1  -1.5683      .1200
   94.STARTS      -.32828    -.41391 -2  .11970 -2  -3.4580      .0008
   63.CCOSTBC2    -.22526    -.21603     .93908 -1  -2.3004      .0235
   51.POPGRTH      .23632     2.7463     1.1349      2.4198      .0174
   70.RLAPTRTN    -.15033    -.35266     .23309     -1.5129      .1335

 COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380-388,390-396,398-496

 RESIDUAL USING: REGRESS  CASES=CASE#:380-388,390-396,398-496
```

Run Number 3

```
     VARIABLE   TOTAL   VALID    MISS      DW     #VAR

  200.RESIDUAL     115     112       3*     2.0508    12

 * CASES CHANGED IN EXISTING VARIABLE


 COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380-388,390-396,398-496


 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

 MIDPOINT   HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

 -7.1511       .9      1 +X
 -6.3411.      0.      0 +
 -5.5311       2.7     3 +XXX
 -4.7211       1.8     2 +XX
 -3.9111       1.8     2 +XX
 -3.1011       2.7     3 +XXX
 -2.2911       8.9    10 +XXXXXXXXXX
 -1.4810      13.4    15 +XXXXXXXXXXXXXXX
 -.67103       9.8    11 +XXXXXXXXXXX
  .13898      21.4    24 +XXXXXXXXXXXXXXXXXXXXXXXX
  .94899      13.4    15 +XXXXXXXXXXXXXXX
  1.7590      11.6    13 +XXXXXXXXXXXXX
  2.5690       1.8     2 +XX
  3.3790       1.8     2 +XX
  4.1890       4.5     5 +XXXXX
  4.9990       1.8     2 +XX
  5.8090       0.      0 +
  6.6191        .9     1 +X
  7.4291       0.      0 +
  8.2391        .9     1 +X

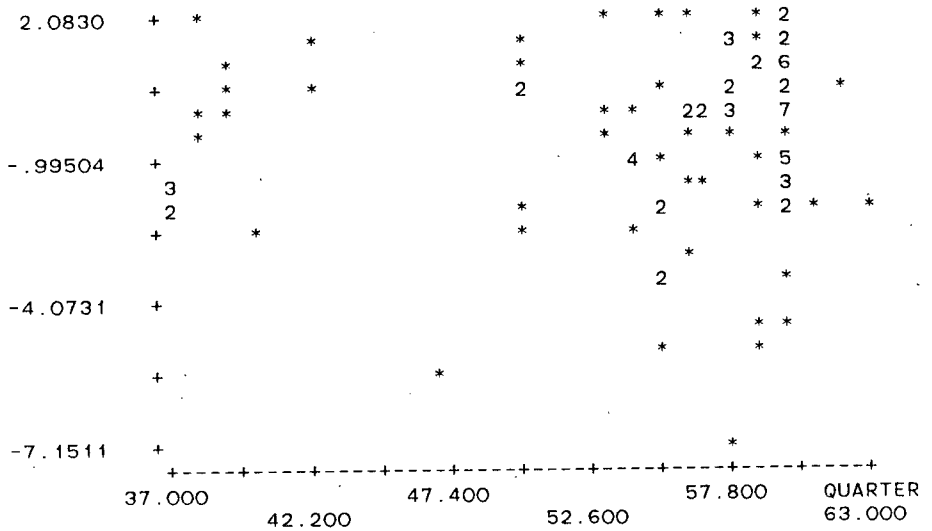
  MISSING              3
  TOTAL              115  (INTERVAL WIDTH= .81001)


 COMMAND
?SCATTER V=200,2 CASES=380-388,390-396,398-496


 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  200.RESIDUAL VS. 2.QUARTER
 RESIDUAL
  8.2391   +                *


           +                                          *

  5.1610   +                                    *
                                        * *     2 *
           +                                          *
                                                 *
                                                   *
            *
```



COMMAND
?REG V=39,7,9,25,22,92,52,55,93,94,95,51,70 CASES=380-388,390-396,398-496

LEAST SQUARES REGRESSION. CASES=CASE#:380-388,390-396,398-496

ANALYSIS OF VARIANCE OF 39.NEWREALP N= 112 OUT OF 115

SOURCE	DF	SUM SQRS	MEAN SQR	F-STAT	SIGNIF
REGRESSION	12	743.57	61.964	8.8202	.0000
ERROR	99	695.50	7.0252		
TOTAL	111	1439.1			

MULT R= .71882 R-SQR= .51670 SE= 2.6505

VARIABLE	PARTIAL	COEFF	STD ERROR	T-STAT	SIGNIF
CONSTANT		9.2826	12.666	.73290	.4654
7.WESTEND	.19305	2.1747	1.1109	1.9577	.0531
9.EASTVAN	-.44551	-3.1841	.64309	-4.9513	.0000
25.MURBSTAT	.03837	1.7167	4.4936	.38204	.7033
22.VACRATE	-.04253	-.66655	1.5736	-.42358	.6728
92.NEWVRATE	.23020	.20433	.86815 -1	2.3537	.0206
52.GRRLINC	.09476	.30075	.31753	.94714	.3459
55.REALINT	.07257	.42219	.58313	.72399	.4708
93.RLRENT2	-.13018	-.12725	.97400 -1	-1.3064	.1944
94.STARTS	-.24088	-.24046 -2	.97377 -3	-2.4694	.0152
95.REALCOST	.04391	.17583 -1	.40203 -1	.43735	.6628
51.POPGRTH	.18965	2.1902	1.1396	1.9218	.0575
70.RLAPTRTN	-.18555	-.46718	.24866	-1.8788	.0632

COMMAND

Run Number 6

```
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380-388,390-396,398-496

 RESIDUAL USING: REGRESS  CASES=CASE#:380-388,390-396,398-496

      VARIABLE  TOTAL  VALID   MISS     DW    #VAR

  200.RESIDUAL    115    112      3*    1.9386   12

 * CASES CHANGED IN EXISTING VARIABLE

 COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380-388,390-396,398-496

 HISTOGRAM  CASES=CASE#:380-388,390-396,398-496

 MIDPOINT   HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

 -7.8277       .9     1 +X
 -7.0181      0.      0 +
 -6.2084       .9     1 +X
 -5.3988       .9     1 +X
 -4.5892      2.7     3 +XXX
 -3.7796       .9     1 +X
 -2.9700      5.4     6 +XXXXXX
 -2.1603      5.4     6 +XXXXXX
 -1.3507     13.4    15 +XXXXXXXXXXXXXX
 -.54109     17.0    19 +XXXXXXXXXXXXXXXXXX
  .26853     19.6    22 +XXXXXXXXXXXXXXXXXXXXX
 1.0782      14.3    16 +XXXXXXXXXXXXXX
 1.8878       6.3     7 +XXXXXXX
 2.6974       3.6     4 +XXXX
 3.5070        .9     1 +X
 4.3166       2.7     3 +XXX
 5.1263        .9     1 +X
 5.9359       1.8     2 +XX
 6.7455       1.8     2 +XX
 7.5551        .9     1 +X

 MISSING             3
 TOTAL             115  (INTERVAL WIDTH= .80962)

 COMMAND
?SCATTER V=200,2 CASES=380-388,390-396,398-496

 SCATTER PLOT  CASES=CASE#:380-388,390-396,398-496
           N= 112 OUT OF 115  200.RESIDUAL VS. 2.QUARTER
 RESIDUAL
  7.5551   +              *

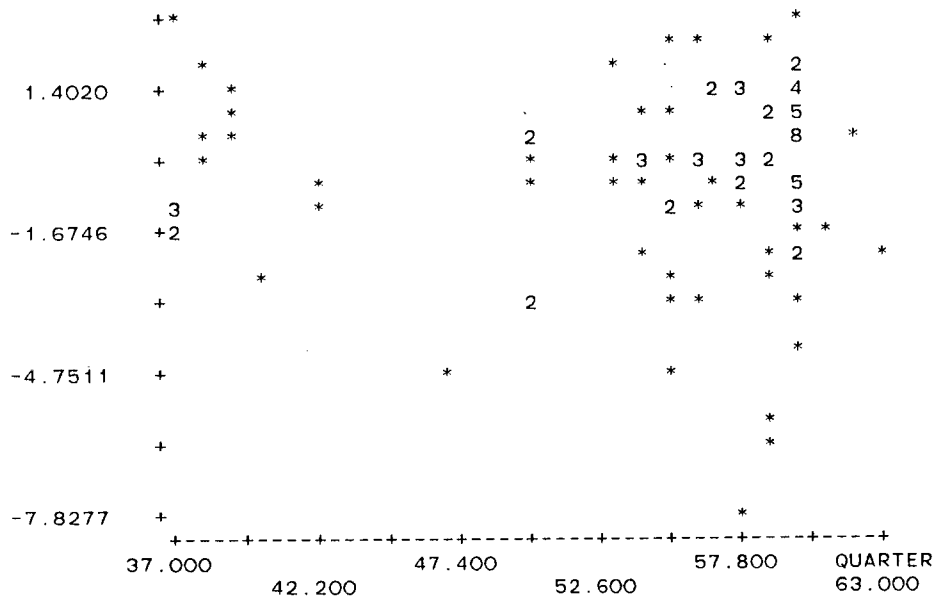
                                                *     *

           +

                                                2

                                          *

  4.4786   +                             *       *
                                                    *
```

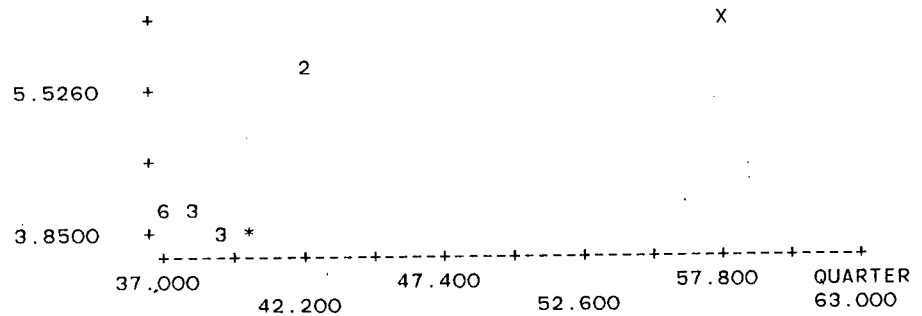


COMMAND
?CORRELATE V=39,7,8,9,10,25,22,92,42,52,55,93,97,60,94,95,63,51,70,12,53 CASES=380-388,390-396,398-496

CORRELATION MATRIX CASES=CASE#:380-388,390-396,398-496

N= 112 DF= 110 R@ .0500= .1857 R@ .0100= .2425

VARIABLE						
39.NEWREALP	1.0000					
7.WESTEND	.3899	1.0000				
8.KITS	.0931	-.1910	1.0000			
9.EASTVAN	-.3227	-.3675	-.8035	1.0000		
10.MARPOLE	.0692	-.0399	-.0871	-.1676	1.0000	
25.MURBSTAT	.3592	.0335	-.4362	.3730	.0570	1.0000
22.VACRATE	-.1656	.0725	.3697	-.3638	-.0799	-.4390
92.NEWVRATE	.3794	.0178	-.3200	.2582	.1126	.7542
42.REALINC	.4204	.1252	-.3930	.2936	.0130	.9143
52.GRRLINC	-.2679	-.1790	.2359	-.1188	-.0065	-.6092
55.REALINT	-.1810	.0147	.2124	-.1686	-.1395	-.2924




```
 COMMAND
?REG V=101,102,25,22,64,93,103,95 CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496


 LEAST SQUARES REGRESSION  CASES=CASE#:380,386,390,393,394,396,398,399,
 405,408,412,419,427,433,439,450,459,494,495,496


 ANALYSIS OF VARIANCE OF 101.RLAVGSP  N= 20 OUT OF 20

      SOURCE              DF  SUM SQRS    MEAN SQR   F-STAT    SIGNIF

      REGRESSION           7  123.60      17.658     1.3824     .2966
      ERROR               12  153.28      12.773
      TOTAL               19  276.88

      MULT R= .66814  R-SQR= .44642 SE= 3.5739


      VARIABLE      PARTIAL    COEFF     STD ERROR   T-STAT    SIGNIF

      CONSTANT                23.479     22.602     1.0388     .3194
  102.LOCINDEX       .05842    .16037     .79108     .20272     .8428
   25.MURBSTAT      -.21313  -5.2688      6.9723    -.75567     .4644
   22.VACRATE       -.00503  -.42969 -1  2.4660    -.17424 -1  .9864
   64.CAPRATE       -.04032  -.41806 -1  .29907     -.13979     .8911
   93.RLRENT2       -.33074  -.21299     .17544    -1.2140     .2481
  103.NEWRMLAG       .06222   .13219     .61214     .21595     .8327
   95.REALCOST       .08560   .25976 -1  .87283 -1  .29760     .7711


 COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496


 RESIDUAL USING: REGRESS  CASES=CASE#:380,386,390,393,394,396,398,399,
 405,408,412,419,427,433,439,450,459,494,495,496

      VARIABLE  TOTAL  VALID   MISS     DW     #VAR

  200.RESIDUAL    20     20      0*    2.7524    7

 * CASES CHANGED IN EXISTING VARIABLE
```

Run Number 10

```
 COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496


 HISTOGRAM  CASES=CASE#:380,386,390,393,394,396,398,399,405,408,412,
 419,427,433,439,450,459,494,495,496

 MIDPOINT   HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

 -4.2056      5.0     1 +X
 -3.5245      0.      0 +
 -2.8433      5.0     1 +X
 -2.1622     15.0     3 +XXX
 -1.4811      0.      0 +
 -.79993     35.0     7 +XXXXXXX
 -.11880      0.      0 +
  .56234     25.0     5 +XXXXX
  1.2435      0.      0 +
  1.9246      0.      0 +
  2.6057      5.0     1 +X
  3.2869      0.      0 +
  3.9680      0.      0 +
  4.6491      0.      0 +
  5.3303      5.0     1 +X
  6.0114      0.      0 +
  6.6925      0.      0 +
  7.3737      0.      0 +
  8.0548      0.      0 +
  8.7359      5.0     1 +X

 TOTAL              20  (INTERVAL WIDTH= .68113)


 COMMAND
?SCATTER V=200,2 CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496


 SCATTER PLOT  CASES=CASE#:380,386,390,393,394,396,398,399,405,408,412,
 419,427,433,439,450,459,494,495,496
           N= 20 OUT OF 20  200.RESIDUAL VS. 2.QUARTER
 RESIDUAL
  8.7359   +                *


           +

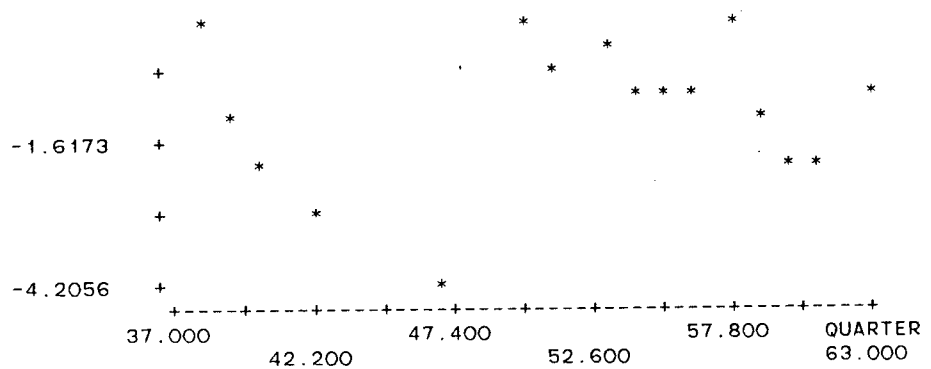

  6.1476   +


           +                                  *


  3.5593   +


           +                                          *


  .97102   +*
```




```
COMMAND
?REG V=101,102,25,92,64,93,103,95 CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496

LEAST SQUARES REGRESSION  CASES=CASE#:380,386,390,393,394,396,398,399,
405,408,412,419,427,433,439,450,459,494,495,496

ANALYSIS OF VARIANCE OF 101.RLAVGSP  N= 20 OUT OF 20

     SOURCE              DF  SUM SQRS    MEAN SQR    F-STAT     SIGNIF

     REGRESSION           7  124.13      17.733      1.3932      .2927
     ERROR               12  152.75      12.729
     TOTAL               19  276.88

     MULT R= .66957  R-SQR= .44833 SE= 3.5678


     VARIABLE     PARTIAL    COEFF     STD ERROR   T-STAT     SIGNIF

     CONSTANT                22.467     22.865      .98259     .3452
  102.LOCINDEX      .08121    .18308     .64868      .28224     .7826
   25.MURBSTAT     -.22112  -5.4127      6.8914     -.78544     .4474
   92.NEWVRATE      .05898   .34752 -1   .16978      .20469     .8412
   64.CAPRATE      -.06024  -.62205 -1   .29756     -.20905     .8379
   93.RLRENT2      -.31196  -.20337      .17880     -1.1374     .2776
  103.NEWRMLAG      .08587   .14289      .47860      .29855     .7704
   95.REALCOST      .09215   .27510 -1   .85813 -1   .32058     .7540

COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496

RESIDUAL USING: REGRESS  CASES=CASE#:380,386,390,393,394,396,398,399,
405,408,412,419,427,433,439,450,459,494,495,496

     VARIABLE  TOTAL  VALID   MISS     DW     #VAR

  200.RESIDUAL   20     20      0*     2.7901    7

* CASES CHANGED IN EXISTING VARIABLE
```

With NEWVRATE variable

```
 COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496


 HISTOGRAM  CASES=CASE#:380,386,390,393,394,396,398,399,405,408,412,
 419,427,433,439,450,459,494,495,496

 MIDPOINT    HIST%  COUNT FOR 200.RESIDUAL  (EACH X= 1)

 -4.3017      5.0      1 +X
 -3.6085      0.       0 +
 -2.9152      5.0      1 +X
 -2.2220     10.0      2 +XX
 -1.5287      5.0      1 +X
 -.83546     35.0      7 +XXXXXXX
 -.14221      0.       0 +
  .55104     25.0      5 +XXXXX
  1.2443      0.       0 +
  1.9375      0.       0 +
  2.6308      5.0      1 +X
  3.3240      0.       0 +
  4.0173      0.       0 +
  4.7105      5.0      1 +X
  5.4038      0.       0 +
  6.0970      0.       0 +
  6.7903      0.       0 +
  7.4835      0.       0 +
  8.1768      0.       0 +
  8.8700      5.0      1 +X

  TOTAL               20  (INTERVAL WIDTH= .69325)


 COMMAND
?SCATTER V=200,2 CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496


 SCATTER PLOT  CASES=CASE#:380,386,390,393,394,396,398,399,405,408,412,
 419,427,433,439,450,459,494,495,496
           N= 20 OUT OF 20  200.RESIDUAL VS. 2.QUARTER
 RESIDUAL
  8.8700   +                *

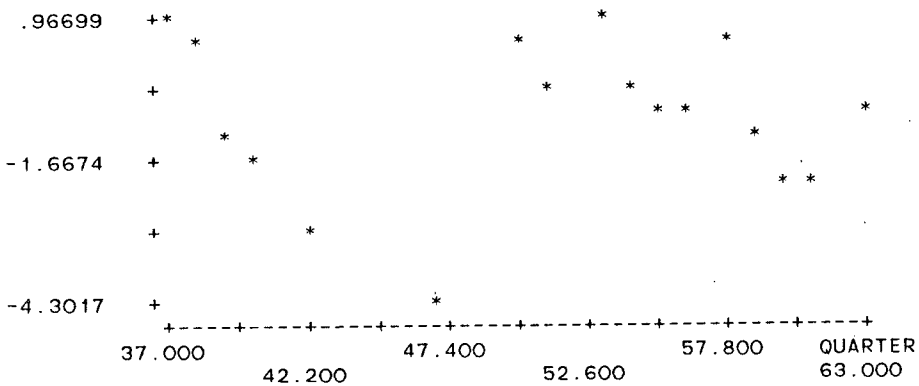

           +


  6.2357   +


           +                          *


  3.6013   +


           +                                    *
```




```
COMMAND
?CORRELATE V=101,102,25,22,92,64,93,103,95 CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496

CORRELATION MATRIX  CASES=CASE#:380,386,390,393,394,396,398,399,405,
408,412,419,427,433,439,450,459,494,495,496

N= 20  DF= 18  R@ .0500= .4438  R@ .0100= .5614
```

VARIABLE						
101.RLAVGSP	1.0000					
102.LOCINDEX	.1777	1.0000				
25.MURBSTAT	.3230	-.3980	1.0000			
22.VACRATE	-.1968	.1987	-.2010	1.0000		
92.NEWVRATE	.3067	-.3673	.8094	-.1610	1.0000	
64.CAPRATE	-.3466	-.1202	-.1811	.5806	-.0774	1.0000
93.RLRENT2	-.5363	.1566	-.9047	.3221	-.7573	.3989
103.NEWRMLAG	-.0149	-.3542	.1849	.5312	.1092	.4183
95.REALCOST	.3561	.3531	-.1082	.0703	-.0613	.0563
	101. RLAVGSP	102. LOCINDEX	25. MURBSTAT	22. VACRATE	92. NEWVRATE	64. CAPRATE
93.RLRENT2	1.0000					
103.NEWRMLAG	-.0571	1.0000				
95.REALCOST	-.1337	.1925	1.0000			
	93.	103.	95.			

Correlation Matrix
Small Sample Variables

RLRENT2 NEWRMLAG REALCOST

COMMAND
?REG V=101,25 CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496

LEAST SQUARES REGRESSION CASES=CASE#:380,386,390,393,394,396,398,399,
405,408,412,419,427,433,439,450,459,494,495,496

ANALYSIS OF VARIANCE OF 101.RLAVGSP N= 20 OUT OF 20

SOURCE	DF	SUM SQRS	MEAN SQR	F-STAT	SIGNIF
REGRESSION	1	28.895	28.895	2.0973	.1648
ERROR	18	247.99	13.777		
TOTAL	19	276.88			

MULT R= .32304 R-SQR= .10436 SE= 3.7117

Run Number 11

VARIABLE	PARTIAL	COEFF	STD ERROR	T-STAT	SIGNIF
CONSTANT		9.3184	1.4029	6.6422	.0000
25.MURBSTAT	.32304	2.5200	1.7401	1.4482	.1648

COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496

RESIDUAL USING: REGRESS CASES=CASE#:380,386,390,393,394,396,398,399,
405,408,412,419,427,433,439,450,459,494,495,496

VARIABLE	TOTAL	VALID	MISS	DW	#VAR
200.RESIDUAL	20	20	0*	1.6831	1

* CASES CHANGED IN EXISTING VARIABLE

COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496

HISTOGRAM CASES=CASE#:380,386,390,393,394,396,398,399,405,408,412,
419,427,433,439,450,459,494,495,496

MIDPOINT	HIST%	COUNT FOR 200.RESIDUAL (EACH X= 1)	
-3.6651	10.0	2	+XX
-2.8435	0.	0	+
-2.0219	30.0	6	+XXXXXX
-1.2003	20.0	4	+XXXX
-.37866	10.0	2	+XX
.44295	0.	0	+
1.2646	10.0	2	+XX
2.0862	5.0	1	+X

```
  2.9078      0.         0 +
  3.7294      0.         0 +
  4.5510     10.0        2 +XX
  5.3726      0.         0 +
  6.1943      0.         0 +
  7.0159      0.         0 +
  7.8375      0.         0 +
  8.6591      0.         0 +
  9.4807      0.         0 +
  10.302      0.         0 +
  11.124      0.         0 +
  11.946      5.0        1 +X

  TOTAL                 20  (INTERVAL WIDTH= .82161)


 COMMAND
?SCATTER V=200,2 CASES=380,386,390,393,394,396,398,399,405,408,412,419,427,433,439,450,459,494,495,496


 SCATTER PLOT  CASES=CASE#:380,386,390,393,394,396,398,399,405,408,412,
 419,427,433,439,450,459,494,495,496
           N= 20 OUT OF 20  200.RESIDUAL VS. 2.QUARTER
 RESIDUAL
    11.946  +               *


            +


    8.8234  +


            +


    5.7013  +

                                                   *         *
            +


    2.5791  +

                                *                              *
            +                                        *


   -.54299  +                                 *        *
                                            *            * *
                                                * *
            +* *       *              *  *

                   *
   -3.6651  +    *
             +----+----+----+----+----+----+----+----+----+----+
          37.000              47.400              57.800    QUARTER
                    42.200              52.600              63.000
```

ANALYSIS OF VARIANCE OF 101.RLAVGSP N= 19 OUT OF 19

SOURCE	DF	SUM SQRS	MEAN SQR	F-STAT	SIGNIF
REGRESSION	7	125.89	17.984	5.0520	.0088
ERROR	11	39.157	3.5597		
TOTAL	18	165.04			

MULT R= .87335 R-SQR= .76275 SE= 1.8867

VARIABLE	PARTIAL	COEFF	STD ERROR	T-STAT	SIGNIF
CONSTANT		16.141	12.002	1.3448	.2058
102.LOCINDEX	.38000	.57781	.42408	1.3625	.2003
25.MURBSTAT	.11942	1.5448	3.8725	.39892	.6976
22.VACRATE	.11670	.50876	1.3055	.38971	.7042
64.CAPRATE	-.07805	-.40996 -1	.15788	-.25966	.7999
93.RLRENT2	-.28716	-.94411 -1	.94955 -1	-.99427	.3415
103.NEWRMLAG	.22198	.24446	.32376	.75505	.4661
95.REALCOST	-.01928	-.29651 -2	.46360 -1	-.63958 -1	.9502

Run Number 10
(excluding outlier)

COMMAND
?SAVE V200=RESIDUAL OPTION=TEST LABEL=RESIDUAL CASES=380,386,390,393,394,398,399,405,408,412,419,427,433,439,450,459,494,495,496 STR

RESIDUAL USING: REGRESS CASES=CASE#:380,386,390,393,394,398,399,405,
408,412,419,427,433,439,450,459,494,495,496

VARIABLE	TOTAL	VALID	MISS	DW	#VAR
200.RESIDUAL	19	19	0	2.2702	7

COMMAND
?HISTOGRAM V=200 INT=20 OP=HIST% CASES=380,386,390,393,394,398,399,405,408,412,419,427,433,439,450,459,494,495,496

HISTOGRAM CASES=CASE#:380,386,390,393,394,398,399,405,408,412,419,
427,433,439,450,459,494,495,496

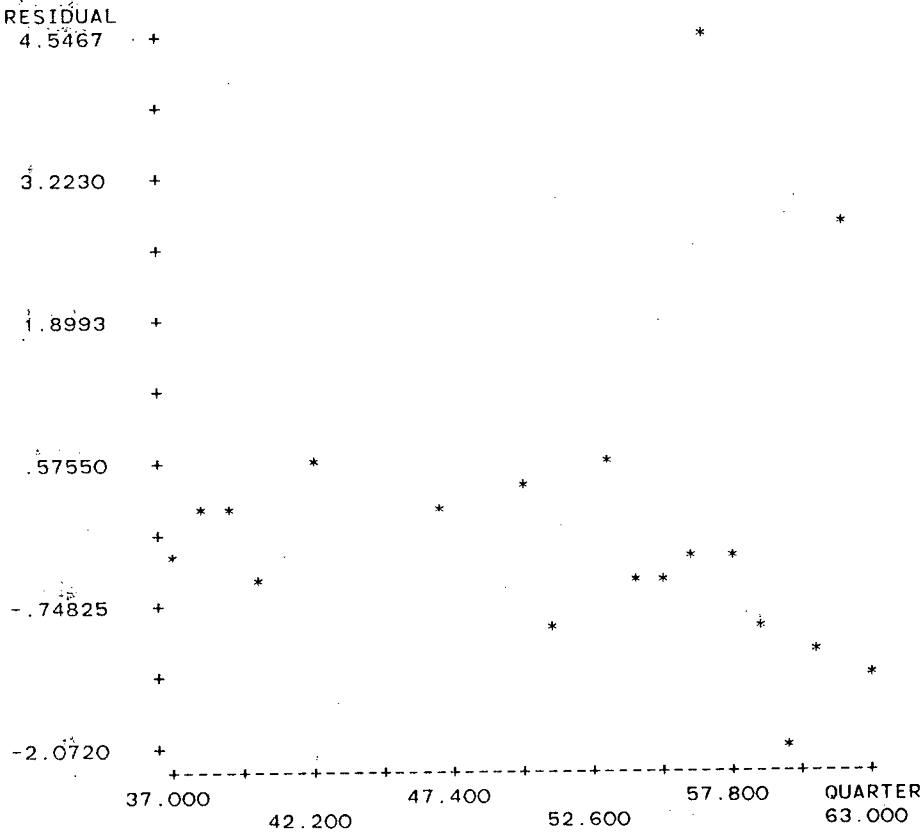
MIDPOINT	HIST%	COUNT FOR 200.RESIDUAL (EACH X= 1)
-2.0720	5.3	1 +X
-1.7236	0.	0 +
-1.3753	5.3	1 +X
-1.0269	15.8	3 +XXX
-.67858	10.5	2 +XX
-.33022	21.1	4 +XXXX
.18134 -1	15.8	3 +XXX
.36649	10.5	2 +XX
.71484	5.3	1 +X
1.0632	0.	0 +
1.4116	0.	0 +
1.7599	0.	0 +
2.1083	0.	0 +
2.4566	0.	0 +

```
2.8050      5.3      1 +X
3.1533      0.       0 +
3.5017      0.       0 +
3.8500      0.       0 +
4.1984      0.       0 +
4.5467      5.3      1 +X

TOTAL               19  (INTERVAL WIDTH= .34836)
```

```
COMMAND
?SCATTER V=200,2 CASES=380,386,390,393,394,398,399,405,408,412,419,427,433,439,450,459,494,495,496

SCATTER PLOT  CASES=CASE#:380,386,390,393,394,398,399,405,408,412,419,
427,433,439,450,459,494,495,496
           N= 19 OUT OF 19  200.RESIDUAL VS. 2.QUARTER
```




```
COMMAND
?REG V=101,102,25,22,64,93,103,95 CASES=380,386,390,393,394,398,399,405,408,412,419,427,439,450,459,494,495,496

LEAST SQUARES REGRESSION  CASES=CASE#:380,386,390,393,394,398,399,405,
408,412,419,427,439,450,459,494,495,496
```

APPENDIX "E"

DATA FILE LISTINGS

```
 MTS (DH4A/ANNA/10267)
#SIG GAU
#Enter user password.
?
#**Last signon was: 14:14:37
# User "GAU." signed on at  14:19:06 on Tue Apr 20/82
 NO MESSAGES
 ------------------------------------------------------
 |CTL-P - *PRINT*   CTL-F - *FTN     CTL-O - %PAGE     |
 |CTL-T - FORT.TABS CTL-R - R MIDAS  CTL-G - %WF=36    |
 |CTL-W - *STATUS   CTL-Q - PORTRAT  CTL-Y - %UC       |
 |CTL-U - %DUPLEX   CTL-L - *LISTER  CTL-Z - %LC       |
 |CTL-S - SIG $     CTL-X - CANCEL   CTL-V - S $=ON     |
 |   -  - %WF        α    - %WB=36                     |
 |   <  - %WL        >    - %WR=60                     |
 |                  PROUTE=ANGS                       |
 |CTL-D - DEL LINE  CTL-B - PAUSE     CTL-H - LEFT     |
 |CTL-E - DEL END   CTL-M - RETURN    CTL-I - RIGHT    |
 |CTL-C - EOF       CTL-K - HOME      CTL-N - UP       |
 |CTL-A - INSERT                      CTL-J - DOWN     |
 ------------------------------------------------------
#SET PROUTE=CNTR
#   $.04,    $.07T
#CONTROL *PRINT* LANDSCAPE ONESIDED COPIES=3
#*PRINT* assigned job number 523752
#*PRINT* RM523752 held
#   $.09,    $.15T
#LIST RESALES
>      1     100432464621205825 EAST 7TH          LA W53'B98,DL264A,P5738        1611785821000000
>      2     1004   975913.7500 3 277 36 24117    670  6466                     1 4 2 1 1 1 0 0 0
>      3     1004 1111900               1 147548  35489 600000 804550           1 44101    369148
>      3.5   1004 00 00 00 01 03
>      4     1011317607234501556 CHARLES          L 5-12 B49,DL264A,P430         161876000 963287
>      5     1011       10.7500 2 277 47 33792    719 25254                  0 2 4 2 1 1 1 1 0 0
>      6     1011 1151620               0 211597  0000005850001155100            1 34184    328248
>      6.5   1011 00 00 00 01 03
>      7     1016321234633011925 WOODLAND         L17-20,B74,DL264A,P442         1511380000000000
>      8     1016         0.0000 4 277 30 21152    705 16104                  0 2 4 2 1 1 1 0 0 0
>      9     1016 1 89220               0 123662   32844360000                  1 29193    901246
>      9.5   1016 00 00 00 01 03
>     10     1034317631234431545 E 2ND            L'A',B65,DL264A,PL16291        1613900001257988
>     11     1034       11.7500 2 276 48 26698    556 20130 29 19  0  0  0 0 1 3 2 1 1 1 0 0 0
>     12     1034 1134940               0 188549  52775 757000        921895 1 24 95    308900
>     12.5   1034 00 00 00 01 04
>     13     1037263144832998777 HUDSON ST        L'D',B9,DL318,P1749 & 16599    1630000000000000
>     14     1037         0.0000 2 278 75 52022    694 35000  3 68  4  0  0 1 2 4 2 1 1 1 0 0 0
>     15     1037 1251880               0 320475  762631500000       1780000 1 40 24 422310018
>     15.5   1037 00 00 00 01 02
>     16     1042337770235701574-78KINGSWAY       L'1&2',B7,9&11,DL352,PL2170   15 327000 322052
>     17     1042       10.6666 4 278 10  6536    654  4925  0  8  0  0  0 0 1 3 3 1 0 1 0 0 0
>     18     1042 1 24000               0  44923    8883 100000                  1 44103
>     18.5   1042 00 00 00 01 02
>     19     1046606606116651331 NELSON           L'17',B34,DL185,P92             15  666667500000
>     20     1046    61215.0000 4 178 17 21162    715  8646                  0 1 3 2 1 1 1 0 0 0
>     21     1046 1 75120               0  19058        260000                  0 46
>     21.5   1046 00 00 00 01 02
>     22     104832364419454334 E 5TH             L'G',B28,DL200A,P15786         13 985000 130900
>     23     1048   971912.5000 2 276 32 23752    742 18117  3 27  2  0  0 0 2 4 2 1 1 1 0 0 0
>     24     1048 1102282               0  18948        320000        673000 0 37 96      21000
```

```
>    24.5   1048 00 00 00 01 04
>    25     1050207648095951905 W 8TH          L'11',B306,DL526,P590          04  80000  27228
>    26     1050   160512.2356 1 278  5  6092  1218  6000  0  0  2  3  0   1 3 2 1 0 1 0 1 0
>    27     1050 1 30300              0  27228        260000        252496 0036
>    27.5   1050 01 00 00 00 00
>    28     1060212683146972885 SPRUCE         L'A',DL526,B414,VR542,P17065 0719910001697994
>    29     1060   797410.7500 4 277 40 26878   672 18750  0 39  1  0  0 0 1 4 2 1 1 1 0 0 0
>    30     1060 1                    0 183755                      1362920 0
>    30.5   1060 00 01 00 00 01
>    31     1065512969003853 3663 W 16TH       L'A' B112 DL540 P17099         13 4180001131135
>    32     1065       010.6250030378 30 18060   602         0 30  0  0  0      302  01  0000 0
>    33     1065 0186940  4482014212000      0  27000         885510        01 42 97   1131135
>    33.5   1065 00 00 00 01 02
>    34     041531763123205 1421 E 2ND         L21&22&24 B66 DL264A P448     1211730001170000
>    35     0415        10.2066010677 33 18022   546 16104  6 27  0  0  00001 30201 101000000
>    36     041501100848              00 100764        656400 888950        00 34 92 961066618
>    36.5   0415 00 00 01 00 02
>    37     042132164123416 1602-06 E 6TH      L13 B154 DL264A P1141          12 275000 184250
>    38     0421        11.0000010179 12  7356   613  9863  6  6  0  0  00001 3020100010000000
>    39     042101 36000   7269 28731 0  21368                339700        00 64 94    185000
>    39.5   0421 00 00 01 00 00
>    40     014521165412095 1705 W 10TH        L11 B348 DL526 P1949           12 155000       0
>    41     0145         0.0000020125  5  4739   947  6250                  0002 2000000000000000
>    42     014501 15600   3000 12600 1       0                142350        00 58121    600000
>    42.5   0145 00 00 01 00 54
>    43     012321214665492 1195 W 11TH        LA-C 19&20 B374 DL526 P2014   11 800000 621382
>    44     0123        10.4561010178 18 14878   827 12400  0 14  4  0  0000103020101010000000
>    45     012301 75372                65892         755775 775750        00 58 97    623295
>    45.5   0123 00 00 01 00 01
>    46     010321213465093 2555 HEMLOCK       LA 17&18 B351 DL526 P2334     121060000 643707
>    47     0103        10.5000010279 24 15267   636 12500  3 20  1  0  00001 40201 101000000
>    48     010301                    0  68187                851600        00   106    645000
>    48.5   0103 00 00 01 00 00
>    49     041231723460605 1209 WOODLAND      L5 B 41 DL264A P399&1771       11 197000 128000
>    50     0412       012.7500010178  5  4780   956  6250  0  0  5  0  00001 2010100010000000
>    51     0412 1 22800   3000 19800 0       0                191600        00 52116    128000
>    51.5   0412 00 00 01 00 01
>    52     012221168312467 1535 W 13TH        L19&20 B410 DL526 P1949        10 390000 157417
>    53     0122       0 9.7617010441 17 10891   640  9375  1 16  0  0  00002 2010100000000000
>    54     0122 0 37878              1  17172                334400        00 34 90    160000
>    54.5   0122 00 00 01 00 38
>    55     013621568612470 1536 W 14TH        L7&8 B450 DL526 P11949         11 435000 245700
>    56     0136       010.2500020128 21 13632   649  9375 10 10  1  0  00002 2010100000000000
>    57     0136 0 51084  14727 36357 1                     322300        00 59 94    250000
>    57.5   0136 00 00 01 00 51
>    58     030526014483004 8606-20 HUDSON     L11&12 B17 DL318 P1749         12 190000       0
>    59     0305       0 0.0000010144  6 24167   587 11500  0  0  0  5  10002 101000000000000
>    60     0305 0  8820              1       0                164800        00 00
>    60.5   0305 00 00 01 00 35
>    61     044232767023483 1657 E 12TH        L88 B161 DL264A P222           12 240000 187751
>    62     0442       010.9768010412 11  6327   575  6350 11  0  0  0  0000102000010000000000
>    63     0442 0 29000              1   1626    3750         216800        00 56 95     90000
>    63.5   0442 00 00 01 00 67
>    64     043032465021438 938 E BROADWAY     LC B158 DL264A P9068           12 212000 126000
>    65     0430      0013.4762010255 10  8200   820  6710  0  9  1  0  00002 2020000000000000
>    66     0430 0 26328   5809 20518 1                     178300        00 55 55    120000
>    66.5   0430 00 00 01 00 24
>    67     041431763023026 1344 E 1ST         L9-12 B67 DL264A P442          11 630000 590993
>    68     0414       010.6749010270 30 19833   632 15708  6 24  0  0  00002 20201 101000000
>    69     0414 0 73980              1  90958                548700        00 51 71    201000
```

```
>    69.5   0414 00 00 01 00 09
>    70     040931058026504 2200 DUNDAS          L1-3 B24 DL184 P178          12 788000 499000
>    71     0409       011.3191010169 35 22514    640 18117  6 28  1  0  00002 202    1  000000
>    72     040910.2500   54096        1   4908                642390        00   116     460000
>    72.5   0409 00 00 01 00 10
>    73     060321917070205 3707 CAMBIE          L2 B600 DL526 P2976          12 190000  45056
>    74     0603        9.5000 000149  8  5176   647  3757  2  6  0  0  00000 2000100001000000
>    75     0603 0 15852   6154  9697 1   6072                143500        00 60 41      55000
>    75.5   0603 00 00 01 00 30
>    76     043733918872899 4899 QUEBEC          L8 B4 DL634 P1426            11 109000  95693
>    77     0437       011.555901  10  6  4200   700  3848  0  5  1  0  00002 2010100000000000
>    78     0437 0 15900                1    928   1500         105000        00 57 93      78300
>    78.5   0437.00 00 01 00 69
>    79     041832163423411 1515 E 4TH           L33 B145 DL264A P222         10 153000 110000
>    80     0418       011.7243010955  7  5180   740  6100  1  5  1  0  00002 2010000000000000
>    81     0418 0 14880   3030 11849 1   1640       0         111500        00 57 18      65000
>    81.5   0418 00 00 01 00 24
>    82     040221469018667 137 E 16TH           L12 B55 DL 302 P198          12 155000  79160
>    83     0402       012.0000030164  8  4765   595  5440  2  5  1  0  00002 2010100001000000
>    84     0402 0 17472   3656 13816 1  10216                142850        00 43 67      82500
>    84.5   0402 00 00 01 00 15
>    85     031226313883350 8860 MONTCALM        L13&14 B6 DL318 P1749        12 430000
>    86     0312       0 7.0000010264 24 17917   630 14000  9 14  1  0  00000 302010001000001
>    87     0312 0 31980                1                   464200        00 00
>    87.5   0312 00 00 01 00 15
>    88     030726014583046 8650 SELKIRK         L8&9 B'P' DL318 P1903        11 440000 414378
>    89     0307       011.2590010859 21 20952   680 10996  2 18  1  0  00002 2010100000000000
>    90     0307 0 49936  13004 36932 1  32304                398300        00 47103     290000
>    90.5   0307 00 00 01 00 20
>    91     104221266413425 1373 W 11TH          L18 B372 DL526 P991          15 275000 106142
>    92     1042         15.5000080307  8  4384   548  6250  2  2  4  0  00000 201  0000000000
>    93     1042 0 28400   5153 21297 1  13836                164150        00 49 83     110000
>    93.5   1042 00 00 00 01 71
>    94     105521265414965 1035 W 10TH          L14 B355 DL526 P991          16 389000  84000
>    95     1055       011.5000051060 10  7645   764  6250  1  8  1  0  00002 2010100000000000
>    96     1055 0 17856                1  10572                232200        00 00112      84000
>    96.5   1055 00 00 00 01 20
>    97     102460260611357 1655 NELSON          L24-28 B58 DL185 P92         1425000002500726
>    98     1024  1312512.6697030372 75 53507   713 26959 24 43  8  0  00002 4020101010000000
>    99     1024 0253476                1 325620                1629650       00 63119    1500000
>    99.5   1024 00 00 00 01 08
>   100     103660661511805 1320 BUTE            L18 E HLF&19 B58 DL185 P92   1326070002385077
>   101     1036         10.143903  67 93 57229   615 17292 60 33  0  0  0010117030102010101 00
>   102     1036 0179276                1  63645                2068950       00 01 01     725000
>   102.5   1036 00 00 00 01 13
>   103     103760260611063 1735 NELSON          L11&12 B26 DL185 P92         1625000000575074
>   104     1037   281311.0000020269 62 38114   615 12969  0 62  0  0  0010011030102010 1  02
>   105     1037 0108822  41740 67082 1 160424                1361300       00 56101     598500
>   105.5   1037 00 00 00 01 11
>   106     108030757919862 662 ALEXANDER        L13 B43 DL196 P196           15  75000       0
>   107     1080       014.7768011012 12  4276   356  3050 12  0  0  0  00002 300  0000000000
>   108     1080 0 14280   2904 11376 1       0                 74150        00 56128      50000
>   108.5   1080 00 00 00 01 68
>   109     102760360711596 1091 BROUGHTON       L1 B 48 DL185 P92            151200000 950000
>   110     1027   477311.5000030312 40 49657  1241  8646  0 28 12  0  00002 60001 100000000
>   111     1027 0174763                1  61476                939400        00 67 75     130000
>   111.5   1027 00 00 00 01 68
>   112     107331159619834 634 E GEORGIA        L7 B91 DL196 P196            14 169000 135000
>   113     1073       013.864201  05 55 10800   196  3050 42 13  0  0  00002 400  0000000000
>   114     1073 0 49200  15277 33923 1  13793                158500        00 41123      95000
```

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>   114.5   1073 00 00 00 01 75
>   115     101060661311647 1345 BURNABY        L16 B38 DL185 P92            15 394000 148055
>   116     1010       011.250005  60 15  9133   608  8646  0 15  0  0  00002 201010001000001
>   117     1010 0 36448   8153 28295 1  23580                247500        00 36 91     152000
>   117.5   1010 00 00 00 01 20
>   118     101460360511765 1231 BARCLAY        L24 B33 DL185 P92            15 625000 521000
>   119     1014       0 8.000005  62 21 13149   625  8646  2 19  0  0  00000 3010100000000000
>   120     1014 0 61584  23402 38182 1  23100                383500        00127107     200000
>   120.5   1014 00 00 00 01 18
>   121     101560260511425 1549 BARCLAY        L12 B45 DL185 P92            16 460000 250000
>   122     1015   291614.0000030358 21 12077   575  8646  2 18  1  0  00002 3010100000000000
>   123     1015 0 56280  24200 32080 1       0                339500        00 72130     250000
>   123.5   1015 00 00 00 01 22
>   124     110030923558826 322&326 WOODLAND    LB B15 SUB'C' DL183 P5443     08 170000 114361
>   125     1100                 03  10 32 11880   383  4455 32  0  0  0  00000 300  0000000000
>   126     1100 0 32520  14756 17764 1    1070                156500        00 58 95      80000
>   126.2   1100 00 00 00 01 70
>   127     111232568319404 310 E 13TH          L1&2 B112 DL301 P187         16 735000 605000
>   128     1112         12.000001  60 26 15732   605 12078  2 24  0  0  00002 2010100  000000
>   129     1112 0 70800                 1  35516                439800        00 71107     285000
>   129.5   1112 00 00 00 01 20
>   130     107820964816318 686 W 8TH           L2 B339 DL526 P7916          14 368000 257500
>   131     1078         13.000001  26 18  9936   552  5850  0 18  0  0  00002 300  0000000000
>   132     1078 0 48384  15240 33144 1  35988                286650        00 66122     189500
>   132.5   1078 00 00 00 01 54
>   133     111121468718604 3122 QUEBEC         LD OF SUB1&2 B55 DL302 P6105 15 365000 228000
>   134     1111       011.500001  59 13  8920   685  7663  1 12  0  0  00000 2010100  000000
>   135     1111 0 33600                 1  13860                263700        00 69107     120000
>   135.5   1090 00 00 00 01 70
>   136     109031058825536 2026 FRANKLIN       L3 B39 DL184 P178            15 164000 123218
>   137     1090       011.255205  10  8  4484   560  6034  0  8  0  0  00101 2010100000000000
>   138     1090 0 20904   3842 17062 1  14832                128600        00 72 96     126000
>   138.5   1090 00 00 00 01 70
>   139     100760360711796 1065&1085 BUTE      L1 B36 DL185 P92             16 585000 407000
>   140     1007         13.6229030339 26 14088   542  8646 21  5  0  0  00002 2000100000000000
>   141     1007 0 62145  26722 35423 1  47292                372900        00 67129     307000
>   141.5   1007 00 00 00 01 41
>   142     101660260711317 1675 COMOX          L23 B59 DL185 P92            16 660000  65000
>   143     1016         14.000002  61 21 13250   630  8646  0 21  0  0  00002 2010100000000000
>   144     1016 0 58884  25320 33564 1  37008                377300        00 77122     263000
>   144.5   1016 00 00 00 01 19
>   145     107720864813045 1455 W 8TH          L11 B311 DL526 P590          14 400000 291756
>   146     1077  2625012.4483040312 25 17611   653  6000  5 16  4  0  00000 3000100000000000
>   147     1077 0 51220                 1  26412                332150        00 17 71131 203000
>   147.5   1077 00 00 00 01 68
>   148     103460660911784 1222 PENDRELL       L2 B37 DL185 P92           151440000 769069
>   149     1034         10.2879030365 43 25653   596  8646  1 40  2  0  00102 90301 101000001
>   150     1034 0119709                 1  83136                884500        00 56101     600000
>   150.5   1034 00 00 00 01 15
>   151     103560360311825 1155 HARO           L14 B19 DL185 P 92         16180000001254882
>   152     1035         12.3988040368 50 25240   505  8646 34 15  1  0  00100 803010100  01
>   153     1035 0148000  56240 91760 1 313904                                 00 75101     281972
>   153.5   1035 00 00 00 01 12
>   154     106012064208485 2211 W 5TH          L23-26 B243 DL526 P590       131060000 190564
>   155     1060       0 7.750003  67 35 23242   664 16800  7 27  1  0  00002 2020101010000000
>   156     1060 0131940  52776 79164 1  21972                657550        00 74
>   156.5   1060 00 00 00 01 13
>   157     106112064808727 2185 W 8TH          L18&19 B304 DL526 P590       14 600000 350000
>   158     1061       014.000005  66 20 12696   633 12000  5 13  2  0  00002 203010001000001
>   159     1061 0 72162  28865 43297 1  24620                389700        00 75 65125 213150
```

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>    159.5    1061 00 00 00 01 14
>    160      102960360711955 1041 COMOX          L14 B8 DL185 P92              1610800000785809
>    161      1029        12.6600030311 34 32768   963  8646  7  6 21  0  00100 400010100000000
>    162      1029 0103884                  1  10548                 689400       00 58106     470490
>    162.5    1029 00 00 00 01 69
>    163      103160260610920 1872 NELSON         L6 B69 DL185 P 92               15 930000 249241
>    164      1031       0 9.0000030359 35 25176   716  8646 14 21  0  0  00102 70301 101000000
>    165      1031 0105564  41170 64394 1  28814                 667050       00 71
>    165.5    1031 00 00 00 01 21
>    166      103060360711697 1075 JERVIS         L19 B35 DL185 P92             151075000 750000
>    167      1030    620817.2000040358 37 28663   772  8646  0 30  7  0  00100 803  0100000000
>    168      1030 0 57924                  1  74496                 698800       00 00117129 650000
>    168.5    1030 00 00 00 01 22
>    169      103260260510796 2010 BARCLAY        LB 14-16 B68 DL185 P8501      161070000 350000
>    170      1032       015.0000     52 39 34801   892 12965 18 15  6  0  00102 403010100000001
>    171      1032 0133884  52215 81669 1       0                 755150       00 72130     370000
>    171.5    1032 00 00 00 01 28
>    172      102851659711704 610 JERVIS          LC B30 DL185 P92              161550000 955088
>    173      1028    320814.0748030310 51 47149   922  9108  0 25 19  7  00100 600  0200000000
>    174      1028 0                        1 167304                 607100       00 12111     815000
>    174.5    1028 00 00 00 01 70
>    175      1042                                                              16 610000 268000
>    176      1042         10.7500     78 10  6536   654  4925  0  8  2  0  0 0 1 3 3 1 0 1 0 0 0
>    177      1042 1                        0  44923   8883 100000                    1
>    178      1042 00 00 00 01 02
#End of File
#    $.09,     $.25T
#$C *MSOURCE*@SP *PRINT*
```

```
 University of British Columbia Computing Centre - Device: DSE7   Task:    168
# THE SYSTEM WILL BE IN UNATTENDED MODE FROM MIDNIGHT TO 4 AM TONITE***
# sig gau
# Enter user password.
?
# **Last signon was: 18:37:27
#  User "GAU." signed on at  19:18:54 on Fri Apr 23/82
  NO MESSAGES
# set proute=cntr
#    $.02,     $.03T
# control *print* landscape onesided copies=2
 *** THE XEROX 9700 IS TEMPORARILY DOWN****
# *PRINT* assigned job number 533737
# *PRINT* RM533737 held
#    $.10,     $.13T
# list landsales(759,992)
>     759      6004  037    0120000 018000 150 120 00 01 00 00 00 2223.6 3859.3 8.17 7.57 0341
>     760      6004  06639 102.70 101.33 26.64 2.00 08.99 08.98 0.0 0.0 0.0 0.0 0.0 0.0
>     761      6005  037    0112500 018000 150 120 00 01 00 00 00 2223.6 3859.3 8.17 7.57 0341
>     762      6005  06639 102.70 101.33 26.64 2.00 08.99 08.98 0.0 0.0 0.0 0.0 0.0 0.0
>     763      5007  037    0130000 012000 100 120 00 01 00 00 00 2223.6 3859.3 8.17 7.57 0341
>     764      5007  06639 102.70 101.33 26.64 2.00 08.99 08.98 0.0 0.0 1.0 0.0 0.0 0.0 01
>     765      5038  037    0112500 018000 150 120 00 01 00 00 00 2223.6 3859.3 8.17 7.57 0341
>     766      5038  06639 102.70 101.33 26.64 2.00 08.99 08.98 0.0 0.0 0.0 0.0 0.0 0.0 00
>     767      5039  037    0120000 018000 150 120 00 01 00 00 00 2223.6 3859.3 8.17 7.57 0341
>     768      5039  06639 102.70 101.33 26.64 2.00 08.99 08.98 0.0 0.0 0.0 0.0 0.0 0.0 00
>     769      5039  037    0020000 003000 025 120 00 01 00 00 00 2223.6 3859.3 8.17 7.57 0341
>     770      5039  06639 102.70 101.33 26.64 2.00 08.99 08.98 0.0 0.0 0.0 0.0 0.0 0.0 00
>     771      5058  038    0018000 003000 025 120 00 01 00 00 00 2235.3 3973.5 7.87 7.97 0484
>     772      5058  06531 103.70 101.73 26.77 1.90 08.89 09.19 0.0 0.0 0.0 0.0 0.0 0.0 01
>     773      5058  038    0020000 003000 025 120 00 01 00 00 00 2235.3 3973.5 7.87 7.97 0484
>     774      5058  06531 103.70 101.73 26.77 1.90 08.89 09.19 0.0 0.0 0.0 0.0 0.0 0.0 01
>     775      5304  038    0053000 006250 050 125 00 01 00 00 00 2235.3 3973.5 7.87 7.97 0484
>     776      5304  06531 103.70 101.73 26.77 1.90 08.89 09.19 0.0 0.0 0.0 0.0 0.0 0.0 01
>     777      6008  038    0760000 023793 198 131 01 00 00 00 00 2235.3 3973.5 7.87 7.97 0484
>     778      6008  06531 103.70 101.73 26.77 1.90 08.89 09.19 0.0 0.0 0.0 0.0 0.0 0.0
>     779      6006  039    0031500 006534 050 132 00 00 01 00 00 2245.9 4087.8 7.37 8.03 0656
>     780      6006  08486 104.40 102.30 26.91 1.15 09.11 09.40 0.0 0.0 0.0 0.0 0.0 0.0
>     781      6007  039    0056000 013068 099 132 00 00 01 00 00 2245.9 4087.8 7.37 8.03 0656
>     782      6007  08486 104.40 102.30 26.91 1.15 09.11 09.40 0.0 0.0 0.0 0.0 0.0 0.0
>     783      5304  039    0107500 012500 100 125 00 01 00 00 00 2245.9 4087.8 7.37 8.03 0656
>     784      5304  08486 104.40 102.30 26.91 1.15 09.11 09.40 0.0 0.0 0.0 0.0 0.0 0.0 01
>     785      5011  040    0075000 012000 100 120 00 01 00 00 00 2261.3 4202.0 7.83 7.93 0507
>     786      5011  09441 105.23 103.07 27.04 0.40 09.14 09.29 0.0 0.0 0.0 0.0 0.0 0.0 02
>     787      1006  042      64000   10692   99 108 00 00 01 00 00 2292.1 4562.0 6.67 6.70 0799
>     788      1006  07742 109.83 105.00 27.30 0.60 08.97 09.32 0.0 0.0 0.0 0.0 0.0 0.0 05
>     789      5011  042    0062500 006000 050 120 00 01 00 00 00 2292.1 4562.0 6.67 6.70 0799
>     790      5011  07742 109.83 105.00 27.30 0.60 08.97 09.32 0.0 0.0 0.0 0.0 0.0 0.0 02
>     791      6003  045    0300000 012000 100 120 00 01 00 00 00 2349.8 5131.8 6.10 5.53 0945
>     792      6003  09710 117.57 110.93 27.69 0.20 09.67 10.02 0.0 0.0 0.0 0.0 0.0 1.0
>     793      6027  045    0075000 002000 040 050 00 01 00 00 00 2349.8 5131.8 6.10 5.53 0945
>     794      6027  09710 117.57 110.93 27.69 0.20 09.67 10.02 0.0 0.0 0.0 0.0 0.0 1.0
>     795      6025  047    0085000 006288 048 131 01 00 00 00 00 2382.5 5551.3 6.00 6.47 0629
>     796      6025  08055 126.23 118.53 27.95 0.15 10.62 11.83 0.0 0.0 0.0 0.0 0.0 1.0
>     797      6002  050    0305000 018000 150 120 00 01 00 00 00 2427.9 6125.0 7.93 8.03 0905
>     798      6002  06917 135.37 126.77 28.35 0.10 10.30 10.96 1.0 0.0 1.0 1.0 1.0 1.0
>     799      1016  050      36000    4092   33 124 00 00 01 00 00 2427.9 6125.0 7.93 8.03 0905
>     800      1016  06917 135.37 126.77 28.35 0.10 10.30 10.96 1.0 0.0 1.0 1.0 1.0 1.0 02
>     801      1038  050      63500    4688   38 125 00 00 00 01 00 2427.9 6125.0 7.93 8.03 0905
>     802      1038  06917 135.37 126.77 28.35 0.10 10.30 10.96 1.0 0.0 1.0 1.0 1.0 1.0 03
```

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>  803  1020  050    54500   4026  33 122 00 00 01 00 00 2427.9 6125.0 7.93 8.03 0905
>  804  1020  06917 135.37 126.77 28.35 0.10 10.30 10.96 1.0 0.0 1.0 1.0 1.0 1.0 03
>  805  1020  050    55500   4026  33 122 00 00 01 00 00 2427.9 6125.0 7.93 8.03 0905
>  806  1020  06917 135.37 126.77 28.35 0.10 10.30 10.96 1.0 0.0 1.0 1.0 1.0 1.0 03
>  807  1020  050    78000   6039  50 122 00 00 01 00 00 2427.9 6125.0 7.93 8.03 0905
>  808  1020  06917 135.37 126.77 28.35 0.10 10.30 10.96 1.0 0.0 1.0 1.0 1.0 1.0 03
>  809  1011  051    61500   4880  40 122 00 00 01 00 00 2437.5 6307.0 8.30 8.93 1034
>  810  1011  07371 140.17 130.50 28.48 0.10 11.03 11.60 1.0 0.0 1.0 1.0 1.0 1.0 02
>  811  1011  051    55000   4697  39 122 00 00 01 00 00 2437.5 6307.0 8.30 8.93 1034
>  812  1011  07371 140.17 130.50 28.48 0.10 11.03 11.60 1.0 0.0 1.0 1.0 1.0 1.0 02
>  813  6001  051  0150000 008646 066 131 01 00.00 00 00 2437.5 6307.0 8.30 8.93 1034
>  814  6001  07371 140.17 130.50 28.48 0.10 11.03 11.60 1.0 0.0 1.0 1.0 1.0 1.0
>  815  1034  053    80000   4026  33 122 00 00 01 00 00 2457.1 6709.8 9.63 8.67 0104
>  816  1034  05846 145.27 139.03 28.74 0.15 11.81 11.85 1.0 1.0 1.0 1.0 1.0 1.0 00
>  817  1034  053    52625   4026  33 122 00 00 01 00 00 2457.1 6709.8 9.63 8.67 0104
>  818  1034  05846 145.27 139.03 28.74 0.15 11.81 11.85 1.0 1.0 1.0 1.0 1.0 1.0 00
>  819  1034  053    50000   4026  33 122 00 00 01 00 00 2457.1 6709.8 9.63 8.67 0104
>  820  1034  05846 145.27 139.03 28.74 0.15 11.81 11.85 1.0 1.0 1.0 1.0 1.0 1.0 00
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>  822  1016  05846 145.27 139.03 28.74 0.15 11.81 11.85 1.0 1.0 1.0 1.0 1.0 1.0 01
>  823  1060  054   175000   6250  63 100 00 01 00 00 00 2461.8 6930.5 9.03 9.07 0712
>  824  1060  07968 150.73 143.87 28.87 0.20 11.88 11.98 1.0 0.0 1.0 1.0 1.0 1.0 02
>  825  1016  054    49750   4026  33 122 00 00 01 00 00 2461.8 6930.5 9.03 9.07 0712
>  826  1016  07968 150.73 143.87 28.87 0.20 11.88 11.98 1.0 0.0 1.0 1.0 1.0 1.0 01
>  827  1011  054    90000   6100  50 122 00 00 01 00 00 2461.8 6930.5 9.03 9.07 0712
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>  829  1003  054   722000  43548 357 122 00 00 01 00 00 2461.8 6930.5 9.03 9.07 0712
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>  831  1018  054    89000   5917  49 122 00 00 01 00 00 2461.8 6930.5 9.03 9.07 0712
>  832  1018  07968 150.73 143.87 28.87 0.20 11.88 11.98 1.0 0.0 1.0 1.0 1.0 1.0 02
>  833  1018  054    89000   5917  49 122 00 00 01 00 00 2461.8 6930.5 9.03 9.07 0712
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>  835  1018  054    89000   5917  49 122 00 00 01 00 00 2461.8 6930.5 9.03 9.07 0712
>  836  1018  07968 150.73 143.87 28.87 0.20 11.88 11.98 1.0 0.0 1.0 1.0 1.0 1.0 02
>  837  1016  055    60000   4026  33 122 00 00 01 00 00 2469.6 7151.3 8.10 8.67 0562
>  838  1016  09005 152.87 146.47 28.79 0.35 11.79 11.82 1.0 0.0 1.0 1.0 1.0 1.0 01
>  839  1018  055    88000   5917  49 122 00 00 01 00 00 2469.6 7151.3 8.10 8.67 0562
>  840  1018  09005 152.87 146.47 28.79 0.35 11.79 11.82 1.0 0.0 1.0 1.0 1.0 1.0 02
>  841  1001  055   830000  67054 400 168 00 00 01 00 00 2469.6 7151.3 8.10 8.67 0562
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>  843  1022  055    55000   5742  50 116 00 00 01!00 00 2469.6 7151.3 8.10 8.67 0562
>  844  1022  09005 152.87 146.47 28.79 0.35 11.79 11.82 1.0 0.0 1.0 1.0 1.0 1.0 02
>  845  6016  055  0480000 018750 150 125 00 01 00 00 00 2469.6 7151.3 8.10 8.67 0562
>  846  6016  09005 152.87 146.47 28.79 0.35 11.79 11.82 1.0 0.0 1.0 1.0 1.0 1.0
>  847  1009  055    76000   6039  50 122 00 00 01 00 00 2469.6 7151.3 8.10 8.67 0562
>  848  1009  09005 152.87 146.47 28.79 0.35 11.79 11.82 1.0 0.0 1.0 1.0 1.0 1.0 01
>  849  1009  055    56000   3020  25 122 00 00 01 00 00 2469.6 7151.3 8.10 8.67 0562
>  850  1009  09005 152.87 146.47 28.79 0.35 11.79 11.82 1.0 0.0 1.0 1.0 1.0 1.0 01
>  851  1009  055    50000   3020  25 122 00 00 01 00 00 2469.6 7151.3 8.10 8.67 0562
>  852  1009  09005 152.87 146.47 28.79 0.35 11.79 11.82 1.0 0.0 1.0 1.0 1.0 1.0 01
>  853  1009  056   123000   6039  50 122 00 00 01 00 00 2476.1 7372.0 7.70 8.00 0938
>  854  1009  12091 155.23 151.07 28.71 0.50 11.76 11.48 1.0 0.0 1.0 1.0 1.0 1.0 01
>  855  1009  056    50000   3020  25 122 00 00 01 00 00 2476.1 7372.0 7.70 8.00 0938
>  856  1009  12091 155.23 151.07 28.71 0.50 11.76 11.48 1.0 0.0 1.0 1.0 1.0 1.0 01
>  857  1001  056   965000  67054 400 168 00 00 01 00 00 2476.1 7372.0 7.70 8.00 0938
>  858  1001  12091 155.23 151.07 28.71 0.50 11.76 11.48 1.0 0.0 1.0 1.0 1.0 1.0 02
>  859  1002  056    68500   4191  33 127 00 00 01 00 00 2476.1 7372.0 7.70 8.00 0938
>  860  1002  12091 155.23 151.07 28.71 0.50 11.76 11.48 1.0 0.0 1.0 1.0 1.0 1.0 01
>  861  1002  056    50000   4191  33 127 00 00 01 00 00 2476.1 7372.0 7.70 8.00 0938
>  862  1002  12091 155.23 151.07 28.71 0.50 11.76 11.48 1.0 0.0 1.0 1.0 1.0 1.0 01
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>    863    1002  056     69500   4191  33 127 00 00 01 00 00 2476.1 7372.0 7.70 8.00 0938
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>    865    1010  057     94800   5368  44 122 00 00 01 00 00 2482.6 7561.0 9.53 8.53 1034
>    866    1010  08137 157.37 154.27 28.63 0.80 11.11 10.42 1.0 0.0 1.0 1.0 1.0 1.0 01
>    867    5016  057   0150000 005900 050 118 00 01 00 00 00 2482.6 7561.0 9.53 8.53 1034
>    868    5016  08137 157.37 154.27 28.63 0.80 11.11 10.42 1.0 0.0 1.0 1.0 1.0 1.0 01
>    869    5016  057   0150000 005900 050 118 00 01 00 00 00 2482.6 7561.0 9.53 8.53 1034
>    870    5016  08137 157.37 154.27 28.63 0.80 11.11 10.42 1.0 0.0 1.0 1.0 1.0 1.0 01
>    871    5016  057   0200000 005900 050 118 00 01 00 00 00 2482.6 7561.0 9.53 8.53 1034
>    872    5016  08137 157.37 154.27 28.63 0.80 11.11 10.42 1.0 0.0 1.0 1.0 1.0 1.0 01
>    873    1013  057    550000  20130 165 122 00 00 01 00 00 2482.6 7561.0 9.53 8.53 1034
>    874    1013  08137 157.37 154.27 28.63 0.80 11.11 10.42 1.0 0.0 1.0 1.0 1.0 1.0 01
>    875    1014  057    550000  20130 165 122 00 00 01 00 00 2482.6 7561.0 9.53 8.53 1034
>    876    1014  08137 157.37 154.27 28.63 0.80 11.11 10.42 1.0 0.0 1.0 1.0 1.0 1.0 01
>    877    1062  058    126667   8052  66 122 00 00 01 00 00 2489.2 7750.0 8.33 8.33 0972
>    878    1062  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    879    1043  058    120000   4323  33 131 01 00 00 00 00 2489.2 7750.0 8.33 8.33 0972
>    880    1043  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    881    1043  058    120000   4323  33 131 01 00 00 00 00 2489.2 7750.0 8.33 8.33 0972
>    882    1043  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    883    1043  058    110000   4323  33 131 01 00 00 00 00 2489.2 7750.0 8.33 8.33 0972
>    884    1043  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    885    1043  058    140000   4323  33 131 01 00 00 00 00 2489.2 7750.0 8.33 8.33 0972
>    886    1043  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    887    1043  058    120000   4323  33 131 01 00 00 00 00 2489.2 7750.0 8.33 8.33 0972
>    888    1043  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    889    1010  058     95000  21472 176 122 00 00 01 00 00 2489.2 7750.0 8.33 8.33 0972
>    890    1010  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    891    1033  058     60000   3660  30 122 00 00 01 00 00 2489.2 7750.0 8.33 8.33 0972
>    892    1033  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    893    1023  058     49500   3113  25 125 00 00 01 00 00 2489.2 7750.0 8.33 8.33 0972
>    894    1023  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    895    1023  058     48000   3113  25 125 00 00 01 00 00 2489.2 7750.0 8.33 8.33 0972
>    896    1023  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    897    1062  058    135000   8052  66 122 00 00 01 00 00 2489.2 7750.0 8.33 8.33 0972
>    898    1062  08032 160.43 158.33 28.55 1.10 10.50 10.33 1.0 0.0 1.0 1.0 1.0 1.0 01
>    899    1065  059    320000  16104 132 122 00 01 00 00 00 2496.5 7939.0 8.07 8.60 0791
>    900    1065  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    901    1065  059     95000   4026  33 122 00 01 00 00 00 2496.5 7939.0 8.07 8.60 0791
>    902    1065  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    903    1018  059    465000  23909 196 122 00 00 01 00 00 2496.5 7939.0 8.07 8.60 0791
>    904    1018  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    905    1015  059    514000  27765 228 120 00 00 01 00 00 2496.5 7939.0 8.07 8.60 0791
>    906    1015  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    907    1005  059     36000   4026  33 122 00 00 01 00 00 2496.5 7939.0 8.07 8.60 0791
>    908    1005  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    909    1001  059   1500000  67054 400 168 00 00 01 00 00 2496.5 7939.0 8.07 8.60 0791
>    910    1001  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    911    1028  059     55000   4026  33 122 00 00 01 00 00 2496.5 7939.0 8.07 8.60 0791
>    912    1028  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    913    1038  059    350000  13988 112 125 00 00 00 01 00 2496.5 7939.0 8.07 8.60 0791
>    914    1038  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 01
>    915    5036  059   0080400 006000 050 120 00 01 00 00 00 2496.5 7939.0 8.07 8.60 0791
>    916    5036  08864 163.13 161.17 28.48 1.05 10.51 10.35 1.0 0.0 1.0 1.0 1.0 1.0 02
>    917    1050  060     80000   6000  50 120 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>    918    1050  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>    919    1029  060    125000   6039  50 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>    920    1029  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>    921    1029  060     76000   5319  44 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>    922    1029  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
```

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>  923  1029  060    80000   6039  50 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  924  1029  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  925  1019  060    57000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  926  1019  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  927  1064  060   200000   8646  66 131 01 00 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  928  1064  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 02
>  929  1064  060   200000   8646  66 131 01 00 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  930  1064  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 02
>  931  1005  060    63500   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  932  1005  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  933  1005  060    63000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  934  1005  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  935  1005  060    58000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  936  1005  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  937  1005  060    90000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  938  1005  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  939  1063  060   215000  12480 125 100 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  940  1063  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  941  1040  060    68500   3000  25 120 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  942  1040  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  943  1040  060    64000   3000  25 120 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  944  1040  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  945  1040  060   112000   6000  50 120 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  946  1040  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  947  1031  060    75000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  948  1031  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  949  1031  060    63000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  950  1031  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  951  1031  060    63000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  952  1031  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  953  1031  060    63000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  954  1031  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  955  1031  060    70500   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  956  1031  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  957  1031  060    66500   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  958  1031  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  959  1024  060   105000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  960  1024  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  961  1024  060    63250   4026  33 122 00!00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  962  1024  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  963  1024  060    69000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  964  1024  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  965  1024  060    68000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  966  1024  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  967  1024  060    68000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  968  1024  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  969  1024  060    75000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  970  1024  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  971  1021  060   365000  20149 165 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  972  1021  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  973  1019  060    52000   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  974  1019  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  975  1019  060    68500   4026  33 122 00 00 01 00 00 2506.4 8128.0 8.10 8.53 0751
>  976  1019  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  977  5092  060  0090000 006000 050 120 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  978  5092  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  979  5025  060  0068500 002950 025 118 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  980  5025  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>  981  5025  060  0064000 002950 025 118 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>  982  5025  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
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>    984      5025  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0 01
>    985      6019  060   0215000 012480 125 100 00 01 00 00 00 2506.4 8128.0 8.10 8.53 0751
>    986      6019  08198 166.20 164.17 28.40 1.00 10.51 10.34 1.0 0.0 1.0 1.0 1.0 1.0
>    987      6023  061   0337000 018649 173 108 00 00 01 00 00 2517.6 8311.3 9.43 8.40 1353
>    988      6023  06708 169.10 166.33 28.32 1.10 10.34 10.32 1.0 0.0 1.0 1.0 1.0 1.0
>    989      6017  062   0510000 018000 150 120 00 01 00 00 00 2524.1 8494.5 7.73 7.80 1003
>    990      6017  08105 173.03 168.37 28.24 1.20 10.45 10.39 1.0 0.0 1.0 1.0 1.0 1.0
>    991      6024  063   0150000 006288 048 131 01 00 00 00 00 2533.2 8677.8 7.67 8.27 1057
>    992      6024  07950 176.27 170.50 28.16 1.15 10.48 10.43 1.0 0.0 1.0 1.0 1.0 1.0
>    993      6022  063   0335000 020130 165 122 00 00 01 00 00 2533.2 8677.8 7.67 8.27 1057
>    994      6022  07950 176.27 170.50 28.16 1.15 10.48 10.43 1.0 0.0 1.0 1.0 1.0 1.0
#End of File
#   $.07,    $.17T
#LIST LAND.MIDAS.2
>      1      $RUN M:MIDAS
>      2       READ VAR=1-31 CASES=1-496 FILE=LANDSALES FORMAT=(F4.0,2X,F3.0,3X,F7.0,&
>      3      1X,F6.0,1X,F3.0,1X,F3.0,5(1X,F2.0),2(1X,F6.1),1X,F4.2,1X,F4.2,1X,F4.0,&
>      4      2X,/,F4.0,2X,F5.0,2(1X,F6.2),1X,F5.2,1X,F4.2,1X,F5.2,1X,F5.2,1X,F3.1,&
>      5      5(1X,F3.1),1X,F2.0) LABELS=FILENO1,QUARTER,PRICE,LOTSIZE,FRONTAGE,DEPTH,&
>      6      WESTEND,KITS,EASTVAN,MARPOLE,KERRISDL,BCPOP,BCPERINC,UNEMPLUA,UNEMPLSA,&
>      7      COMPLVAN,FILENO2,COMPLBC,CPIALL,CPIHOUSG,NONFAMHH,VACRATE,NHARATE,&
>      8      CONVRATE,MURBSTAT,CCASTAT,CCANEW,CCANEWWP,ARPSTAT,RENTCONT,HOLDPER
>      9      TRANS V32=V3/V4 LABEL=SPPERSF
>     10      TRANS V33=V3/V5 LABEL=SPPERFF
>     11      TRANS V34=V3/V6 LABEL=SPPERDF
>     12      TRANS V35=1.000 CASES=287-320 LABEL=DEFLATOR
>     13      TRANS V35=1.137 CASES=321-333 LABEL=DEFLATOR
>     14      TRANS V35=1.171 CASES=334-344 LABEL=DEFLATOR
>     15      TRANS V35=1.160 CASES=345-348 LABEL=DEFLATOR
>     16      TRANS V35=1.142 CASES=349-352 LABEL=DEFLATOR
>     17      TRANS V35=1.231 CASES=353-355 LABEL=DEFLATOR
>     18      TRANS V35=1.170 CASES=356 LABEL=DEFLATOR
>     19      TRANS V35=1.142 CASES=357 LABEL=DEFLATOR
>     20      TRANS V35=1.077 CASES=358-372 LABEL=DEFLATOR
>     21      TRANS V35=1.104 CASES=373-374 LABEL=DEFLATOR
>     22      TRANS V35=1.193 CASES=375-377 LABEL=DEFLATOR
>     23      TRANS V35=1.101 CASES=378-379 LABEL=DEFLATOR
>     24      TRANS V35=1.247 CASES=380-385 LABEL=DEFLATOR
>     25      TRANS V35=1.257 CASES=386-389 LABEL=DEFLATOR
>     26      TRANS V35=1.310 CASES=390-392 LABEL=DEFLATOR
>     27      TRANS V35=1.293 CASES=393 LABEL=DEFLATOR
>     28      TRANS V35=1.382 CASES=394-395 LABEL=DEFLATOR
>     29      TRANS V35=1.576 CASES=396-397 LABEL=DEFLATOR
>     30      TRANS V35=1.681 CASES=398 LABEL=DEFLATOR
>     31      TRANS V35=1.662 CASES=399-404 LABEL=DEFLATOR
>     32      TRANS V35=1.803 CASES=405-407 LABEL=DEFLATOR
>     33      TRANS V35=1.752 CASES=408-411 LABEL=DEFLATOR
>     34      TRANS V35=1.944 CASES=412-418 LABEL=DEFLATOR
>     35      TRANS V35=1.887 CASES=419-426 LABEL=DEFLATOR
>     36      TRANS V35=2.063 CASES=427-432 LABEL=DEFLATOR
>     37      TRANS V35=2.152 CASES=433-438 LABEL=DEFLATOR
>     38      TRANS V35=2.087 CASES=439-449 LABEL=DEFLATOR
>     39      TRANS V35=2.125 CASES=450-458 LABEL=DEFLATOR
>     40      TRANS V35=2.652 CASES=459-493 LABEL=DEFLATOR
>     41      TRANS V35=2.196 CASES=494 LABEL=DEFLATOR
>     42      TRANS V35=2.118 CASES=495 LABEL=DEFLATOR
>     43      TRANS V35=2.218 CASES=496 LABEL=DEFLATOR
>     44      TRANS V36=V3/V35 CASES=ALL LABEL=REALSP
>     45      TRANS V37=V36/V4  LABEL=REALPPSF
>     46      TRANS V38=V19/100.0 LABEL=CPINEW
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>     47      TRANS V39=V32/V38 LABEL=NEWREALP
>     48      TRANS V40=V23/V38 LABEL=RLINTRTE
>     49      TRANS V41=V12/2205.1 LABEL=POPGRRTE
>     50      TRANS V42=V13/V38 LABEL=REALINC
>     51      TRANS V43=V42/3695.85 LABEL=INCGRRTE
>     52      CODE V44=V2 LABEL=NEWQTR
>     53      TRANS V45=167.5 STRATA=V44:36 LABEL=RENTLEVEL
>     54      TRANS V45=168.8 STRATA=V44:37 LABEL=RENTLEVEL
>     55      TRANS V45=170.0 STRATA=V44:38 LABEL=RENTLEVEL
>     56      TRANS V45=176.0 STRATA=V44:39 LABEL=RENTLEVEL
>     57      TRANS V45=182.0 STRATA=V44:40 LABEL=RENTLEVEL
>     58      TRANS V45=194.0 STRATA=V44:42 LABEL=RENTLEVEL
>     59      TRANS V45=214.0 STRATA=V44:45 LABEL=RENTLEVEL
>     60      TRANS V45=220.0 STRATA=V44:47 LABEL=RENTLEVEL
>     61      TRANS V45=229.0 STRATA=V44:50 LABEL=RENTLEVEL
>     62      TRANS V45=247.0 STRATA=V44:53 LABEL=RENTLEVEL
>     63      TRANS V45=253.0 STRATA=V44:54 LABEL=RENTLEVEL
>     64      TRANS V45=256.5 STRATA=V44:55 LABEL=RENTLEVEL
>     65      TRANS V45=260.0 STRATA=V44:56 LABEL=RENTLEVEL
>     66      TRANS V45=263.5 STRATA=V44:57 LABEL=RENTLEVEL
>     67      TRANS V45=267.0 STRATA=V44:58 LABEL=RENTLEVEL
>     68      TRANS V45=269.8 STRATA=V44:59 LABEL=RENTLEVEL
>     69      TRANS V45=272.5 STRATA=V44:60 LABEL=RENTLEVEL
>     70      TRANS V45=275.3 STRATA=V44:61 LABEL=RENTLEVEL
>     71      TRANS V45=278.0 STRATA=V44:62 LABEL=RENTLEVEL
>     72      TRANS V45=278.0 STRATA=V44:63 LABEL=RENTLEVEL
>     73      TRANS V46=V45/100.0 STRATA=NONE LABEL=GRRTRENT
>     74      TRANS V47=103.5 STRATA=V44:36 LABEL=CONSTNCOST
>     75      TRANS V47=105.1 STRATA=V44:37 LABEL=CONSTNCOST
>     76      TRANS V47=108.2 STRATA=V44:38 LABEL=CONSTNCOST
>     77      TRANS V47=111.1 STRATA=V44:39 LABEL=CONSTNCOST
>     78      TRANS V47=116.3 STRATA=V44:40 LABEL=CONSTNCOST
>     79      TRANS V47=123.6 STRATA=V44:42 LABEL=CONSTNCOST
>     80      TRANS V47=130.3 STRATA=V44:45 LABEL=CONSTNCOST
>     81      TRANS V47=137.0 STRATA=V44:47 LABEL=CONSTNCOST
>     82      TRANS V47=141.5 STRATA=V44:50 LABEL=CONSTNCOST
>     83      TRANS V47=154.5 STRATA=V44:53 LABEL=CONSTNCOST
>     84      TRANS V47=159.3 STRATA=V44:54 LABEL=CONSTNCOST
>     85      TRANS V47=162.6 STRATA=V44:55 LABEL=CONSTNCOST
>     86      TRANS V47=165.6 STRATA=V44:56 LABEL=CONSTNCOST
>     87      TRANS V47=168.5 STRATA=V44:57 LABEL=CONSTNCOST
>     88      TRANS V47=174.0 STRATA=V44:58 LABEL=CONSTNCOST
>     89      TRANS V47=179.5 STRATA=V44:59 LABEL=CONSTNCOST
>     90      TRANS V47=180.4 STRATA=V44:60 LABEL=CONSTNCOST
>     91      TRANS V47=184.2 STRATA=V44:61 LABEL=CONSTNCOST
>     92      TRANS V47=189.9 STRATA=V44:62 LABEL=CONSTNCOST
>     93      TRANS V47=194.5 STRATA=V44:63 LABEL=CONSTNCOST
>     94      TRANS V48=V47/100.0 STRATA=NONE LABEL=GRRTCOST
>     95      TRANS V49=2.9 STRATA=V44:36 LABEL=RENTGRTH
>     96      TRANS V49=3.1 STRATA=V44:37 LABEL=RENTGRTH
>     97      TRANS V49=2.9 STRATA=V44:38 LABEL=RENTGRTH
>     98      TRANS V49=14.9 STRATA=V44:39 LABEL=RENTGRTH
>     99      TRANS V49=14.3 STRATA=V44:40 LABEL=RENTGRTH
>    100      TRANS V49=13.4 STRATA=V44:42 LABEL=RENTGRTH
>    101      TRANS V49=5.8 STRATA=V44:45 LABEL=RENTGRTH
>    102      TRANS V49=5.6 STRATA=V44:47 LABEL=RENTGRTH
>    103      TRANS V49=5.4 STRATA=V44:50 LABEL=RENTGRTH
>    104      TRANS V49=10.3 STRATA=V44:53 LABEL=RENTGRTH
>    105      TRANS V49=10.1 STRATA=V44:54 LABEL=RENTGRTH
>    106      TRANS V49=5.6 STRATA=V44:55 LABEL=RENTGRTH
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>    107      TRANS V49=5.6 STRATA=V44:56 LABEL=RENTGRTH
>    108      TRANS V49=5.5 STRATA=V44:57 LABEL=RENTGRTH
>    109      TRANS V49=5.4 STRATA=V44:58 LABEL=RENTGRTH
>    110      TRANS V49=4.3 STRATA=V44:59 LABEL=RENTGRTH
>    111      TRANS V49=4.1 STRATA=V44:60 LABEL=RENTGRTH
>    112      TRANS V49=4.2 STRATA=V44:61 LABEL=RENTGRTH
>    113      TRANS V49=4.0 STRATA=V44:62 LABEL=RENTGRTH
>    114      TRANS V49=0.0 STRATA=V44:63 LABEL=RENTGRTH
>    115      TRANS V50=10.7 STRATA=V44:36 LABEL=COSTGRTH
>    116      TRANS V50=6.3 STRATA=V44:37 LABEL=COSTGRTH
>    117      TRANS V50=11.5 STRATA=V44:38 LABEL=COSTGRTH
>    118      TRANS V50=11.2 STRATA=V44:39 LABEL=COSTGRTH
>    119      TRANS V50=20.1 STRATA=V44:40 LABEL=COSTGRTH
>    120      TRANS V50=17.2 STRATA=V44:42 LABEL=COSTGRTH
>    121      TRANS V50=6.4 STRATA=V44:45 LABEL=COSTGRTH
>    122      TRANS V50=4.5 STRATA=V44:47 LABEL=COSTGRTH
>    123      TRANS V50=18.2 STRATA=V44:50 LABEL=COSTGRTH
>    124      TRANS V50=9.3 STRATA=V44:53 LABEL=COSTGRTH
>    125      TRANS V50=13.0 STRATA=V44:54 LABEL=COSTGRTH
>    126      TRANS V50=8.5 STRATA=V44:55 LABEL=COSTGRTH
>    127      TRANS V50=7.6 STRATA=V44:56 LABEL=COSTGRTH
>    128      TRANS V50=7.2 STRATA=V44:57 LABEL=COSTGRTH
>    129      TRANS V50=13.7 STRATA=V44:58 LABEL=COSTGRTH
>    130      TRANS V50=13.3 STRATA=V44:59 LABEL=COSTGRTH
>    131      TRANS V50=2.0 STRATA=V44:60 LABEL=COSTGRTH
>    132      TRANS V50=8.7 STRATA=V44:61 LABEL=COSTGRTH
>    133      TRANS V50=13.0 STRATA=V44:62 LABEL=COSTGRTH
>    134      TRANS V50=10.0 STRATA=V44:63 LABEL=COSTGRTH
>    136      TRANS V51=3.13 STRATA=V44:36 CASES=ALL LABEL=POPGRTH
>    137      TRANS V51=3.40 STRATA=V44:37 LABEL=POPGRTH
>    138      TRANS V51=2.12 STRATA=V44:38 LABEL=POPGRTH
>    139      TRANS V51=1.91 STRATA=V44:39 LABEL=POPGRTH
>    140      TRANS V51=2.77 STRATA=V44:40 LABEL=POPGRTH
>    141      TRANS V51=2.10 STRATA=V44:42 LABEL=POPGRTH
>    142      TRANS V51=4.01 STRATA=V44:45 LABEL=POPGRTH
>    143      TRANS V51=3.08 STRATA=V44:47 LABEL=POPGRTH
>    144      TRANS V51=1.60 STRATA=V44:50 LABEL=POPGRTH
>    145      TRANS V51=1.51 STRATA=V44:53 LABEL=POPGRTH
>    146      TRANS V51=0.77 STRATA=V44:54 LABEL=POPGRTH
>    147      TRANS V51=1.27 STRATA=V44:55 LABEL=POPGRTH
>    148      TRANS V51=1.06 STRATA=V44:56 LABEL=POPGRTH
>    149      TRANS V51=1.05 STRATA=V44:57 LABEL=POPGRTH
>    150      TRANS V51=1.07 STRATA=V44:58 LABEL=POPGRTH
>    151      TRANS V51=1.18 STRATA=V44:59 LABEL=POPGRTH
>    152      TRANS V51=1.60 STRATA=V44:60 LABEL=POPGRTH
>    153      TRANS V51=1.80 STRATA=V44:61 LABEL=POPGRTH
>    154      TRANS V51=1.04 STRATA=V44:62 LABEL=POPGRTH
>    155      TRANS V51=1.45 STRATA=V44:63 LABEL=POPGRTH
>    156      TRANS V52=6.20 STRATA=V44:36 LABEL=GRRLINC
>    157      TRANS V52=6.88 STRATA=V44:37 LABEL=GRRLINC
>    158      TRANS V52=8.10 STRATA=V44:38 LABEL=GRRLINC
>    159      TRANS V52=9.04 STRATA=V44:39 LABEL=GRRLINC
>    160      TRANS V52=8.17 STRATA=V44:40 LABEL=GRRLINC
>    161      TRANS V52=8.20 STRATA=V44:42 LABEL=GRRLINC
>    162      TRANS V52=6.84 STRATA=V44:45 LABEL=GRRLINC
>    163      TRANS V52=1.51 STRATA=V44:47 LABEL=GRRLINC
>    164      TRANS V52=3.86 STRATA=V44:50 LABEL=GRRLINC
>    165      TRANS V52=4.21 STRATA=V44:53 LABEL=GRRLINC
>    166      TRANS V52=-1.80 STRATA=V44:54 LABEL=GRRLINC
>    167      TRANS V52=7.15 STRATA=V44:55 LABEL=GRRLINC
```

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>  168    TRANS V52=6.22 STRATA=V44:56 LABEL=GRRLINC
>  169    TRANS V52=4.76 STRATA=V44:57 LABEL=GRRLINC
>  170    TRANS V52=2.20 STRATA=V44:58 LABEL=GRRLINC
>  171    TRANS V52=3.01 STRATA=V44:59 LABEL=GRRLINC
>  172    TRANS V52=1.97 STRATA=V44:60 LABEL=GRRLINC
>  173    TRANS V52=2.02 STRATA=V44:61 LABEL=GRRLINC
>  174    TRANS V52=-0.47 STRATA=V44:62 LABEL=GRRLINC
>  175    TRANS V52=1.13 STRATA=V44:63 LABEL=GRRLINC
>  176    TRANS V53=3.96 STRATA=V44:36 LABEL=INFLATION
>  177    TRANS V53=4.16 STRATA=V44:37 LABEL=INFLATION
>  178    TRANS V53=4.19 STRATA=V44:38 LABEL=INFLATION
>  179    TRANS V53=3.85 STRATA=V44:39 LABEL=INFLATION
>  180    TRANS V53=3.85 STRATA=V44:40 LABEL=INFLATION
>  181    TRANS V53=5.91 STRATA=V44:42 LABEL=INFLATION
>  182    TRANS V53=9.64 STRATA=V44:45 LABEL=INFLATION
>  183    TRANS V53=12.23 STRATA=V44:47 LABEL=INFLATION
>  184    TRANS V53=11.02 STRATA=V44:50 LABEL=INFLATION
>  185    TRANS V53=9.78 STRATA=V44:53 LABEL=INFLATION
>  186    TRANS V53=11.35 STRATA=V44:54 LABEL=INFLATION
>  187    TRANS V53=9.06 STRATA=V44:55 LABEL=INFLATION
>  188    TRANS V53=8.68 STRATA=V44:56 LABEL=INFLATION
>  189    TRANS V53=8.33 STRATA=V44:57 LABEL=INFLATION
>  190    TRANS V53=6.44 STRATA=V44:58 LABEL=INFLATION
>  191    TRANS V53=6.71 STRATA=V44:59 LABEL=INFLATION
>  192    TRANS V53=7.07 STRATA=V44:60 LABEL=INFLATION
>  193    TRANS V53=7.45 STRATA=V44:61 LABEL=INFLATION
>  194    TRANS V53=7.85 STRATA=V44:62 LABEL=INFLATION
>  195    TRANS V53=8.05 STRATA=V44:63 LABEL=INFLATION
>  196    TRANS V54=-0.17 STRATA=V44:36 LABEL=GRRLRNT
>  197    TRANS V54=-2.37 STRATA=V44:37 LABEL=GRRLRNT
>  198    TRANS V54=-1.04 STRATA=V44:38 LABEL=GRRLRNT
>  199    TRANS V54=11.84 STRATA=V44:39 LABEL=GRRLRNT
>  200    TRANS V54=10.78 STRATA=V44:40 LABEL=GRRLRNT
>  201    TRANS V54=3.05 STRATA=V44:42 LABEL=GRRLRNT
>  202    TRANS V54=-4.38 STRATA=V44:45 LABEL=GRRLRNT
>  203    TRANS V54=-8.02 STRATA=V44:47 LABEL=GRRLRNT
>  204    TRANS V54=-3.74 STRATA=V44:50 LABEL=GRRLRNT
>  205    TRANS V54=3.12 STRATA=V44:53 LABEL=GRRLRNT
>  206    TRANS V54=-5.03 STRATA=V44:54 LABEL=GRRLRNT
>  207    TRANS V54=-0.14 STRATA=V44:55 LABEL=GRRLRNT
>  208    TRANS V54=-0.71 STRATA=V44:56 LABEL=GRRLRNT
>  209    TRANS V54=-0.12 STRATA=V44:57 LABEL=GRRLRNT
>  210    TRANS V54=-2.39 STRATA=V44:58 LABEL=GRRLRNT
>  211    TRANS V54=-2.48 STRATA=V44:59 LABEL=GRRLRNT
>  212    TRANS V54=-3.41 STRATA=V44:60 LABEL=GRRLRNT
>  213    TRANS V54=-2.80 STRATA=V44:61 LABEL=GRRLRNT
>  214    TRANS V54=-5.13 STRATA=V44:62 LABEL=GRRLRNT
>  215    TRANS V54=-7.17 STRATA=V44:63 LABEL=GRRLRNT
>  216    TRANS V55=V23-V53 STRATA=NONE LABEL=REALINT
>  217    TRANS V56=V45/V38 STRATA=NONE CASES=378-496 LABEL=REALRENT
>  218    TRANS V57=8.17 STRATA=V44:36 CASES=ALL LABEL=CCOSTBC
>  219    TRANS V57=6.06 STRATA=V44:37 LABEL=CCOSTBC
>  220    TRANS V57=9.44 STRATA=V44:38 LABEL=CCOSTBC
>  221    TRANS V57=10.37 STRATA=V44:39 LABEL=CCOSTBC
>  222    TRANS V57=16.22 STRATA=V44:40 LABEL=CCOSTBC
>  223    TRANS V57=11.52 STRATA=V44:42 LABEL=CCOSTBC
>  224    TRANS V57=13.92 STRATA=V44:45 LABEL=CCOSTBC
>  225    TRANS V57=11.84 STRATA=V44:47 LABEL=CCOSTBC
>  226    TRANS V57=21.32 STRATA=V44:50 LABEL=CCOSTBC
>  227    TRANS V57=11.58 STRATA=V44:53 LABEL=CCOSTBC
```

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>  228     TRANS V57=8.02 STRATA=V44:54 LABEL=CCOSTBC
>  229     TRANS V57=10.77 STRATA=V44:55 LABEL=CCOSTBC
>  230     TRANS V57=11.52 STRATA=V44:56 LABEL=CCOSTBC
>  231     TRANS V57=9.94 STRATA=V44:57 LABEL=CCOSTBC
>  232     TRANS V57=13.17 STRATA=V44:58 LABEL=CCOSTBC
>  233     TRANS V57=13.72 STRATA=V44:59 LABEL=CCOSTBC
>  234     TRANS V57=3.26 STRATA=V44:60 LABEL=CCOSTBC
>  235     TRANS V57=10.84 STRATA=V44:61 LABEL=CCOSTBC
>  236     TRANS V57=13.03 STRATA=V44:62 LABEL=CCOSTBC
>  237     TRANS V57=8.72 STRATA=V44:63 LABEL=CCOSTBC
>  238     TRANS V58=1.20 STRATA=V44:36 LABEL=RNTGRTH2
>  239     TRANS V58=1.19 STRATA=V44:37 LABEL=RNTGRTH2
>  240     TRANS V58=1.59 STRATA=V44:38 LABEL=RNTGRTH2
>  241     TRANS V58=1.98 STRATA=V44:39 LABEL=RNTGRTH2
>  242     TRANS V58=1.97 STRATA=V44:40 LABEL=RNTGRTH2
>  243     TRANS V58=3.53 STRATA=V44:42 LABEL=RNTGRTH2
>  244     TRANS V58=3.81 STRATA=V44:45 LABEL=RNTGRTH2
>  245     TRANS V58=7.15 STRATA=V44:47 LABEL=RNTGRTH2
>  246     TRANS V58=7.95 STRATA=V44:50 LABEL=RNTGRTH2
>  247     TRANS V58=7.12 STRATA=V44:53 LABEL=RNTGRTH2
>  248     TRANS V58=5.97 STRATA=V44:54 LABEL=RNTGRTH2
>  249     TRANS V58=7.57 STRATA=V44:55 LABEL=RNTGRTH2
>  250     TRANS V58=7.43 STRATA=V44:56 LABEL=RNTGRTH2
>  251     TRANS V58=6.96 STRATA=V44:57 LABEL=RNTGRTH2
>  252     TRANS V58=5.26 STRATA=V44:58 LABEL=RNTGRTH2
>  253     TRANS V58=4.88 STRATA=V44:59 LABEL=RNTGRTH2
>  254     TRANS V58=3.90 STRATA=V44:60 LABEL=RNTGRTH2
>  255     TRANS V58=2.37 STRATA=V44:61 LABEL=RNTGRTH2
>  256     TRANS V58=2.95 STRATA=V44:62 LABEL=RNTGRTH2
>  257     TRANS V58=3.82 STRATA=V44:63 LABEL=RNTGRTH2
>  258     TRANS V59=1.31 STRATA=V44:36 LABEL=RNTGRTH3
>  259     TRANS V59=-0.94 STRATA=V44:37 LABEL=RNTGRTH3
>  260     TRANS V59=0.50 STRATA=V44:38 LABEL=RNTGRTH3
>  261     TRANS V59=-7.62 STRATA=V44:39 LABEL=RNTGRTH3
>  262     TRANS V59=-8.12 STRATA=V44:40 LABEL=RNTGRTH3
>  263     TRANS V59=-13.96 STRATA=V44:42 LABEL=RNTGRTH3
>  264     TRANS V59=10.27 STRATA=V44:45 LABEL=RNTGRTH3
>  265     TRANS V59=-6.21 STRATA=V44:47 LABEL=RNTGRTH3
>  266     TRANS V59=-2.00 STRATA=V44:50 LABEL=RNTGRTH3
>  267     TRANS V59=10.20 STRATA=V44:53 LABEL=RNTGRTH3
>  268     TRANS V59=1.08 STRATA=V44:54 LABEL=RNTGRTH3
>  269     TRANS V59=17.41 STRATA=V44:55 LABEL=RNTGRTH3
>  270     TRANS V59=15.54 STRATA=V44:56 LABEL=RNTGRTH3
>  271     TRANS V59=15.13 STRATA=V44:57 LABEL=RNTGRTH3
>  272     TRANS V59=11.57 STRATA=V44:58 LABEL=RNTGRTH3
>  273     TRANS V59=10.92 STRATA=V44:59 LABEL=RNTGRTH3
>  274     TRANS V59=9.29 STRATA=V44:60 LABEL=RNTGRTH3
>  275     TRANS V59=9.18 STRATA=V44:61 LABEL=RNTGRTH3
>  276     TRANS V59=6.09 STRATA=V44:62 LABEL=RNTGRTH3
>  277     TRANS V59=-14.89 STRATA=V44:63 LABEL=RNTGRTH3
>  278     TRANS V60=-2.88 STRATA=V44:36 LABEL=LAGRENT
>  279     TRANS V60=-2.02 STRATA=V44:37 LABEL=LAGRENT
>  280     TRANS V60=-4.33 STRATA=V44:38 LABEL=LAGRENT
>  281     TRANS V60=-2.36 STRATA=V44:39 LABEL=LAGRENT
>  282     TRANS V60=-0.75 STRATA=V44:40 LABEL=LAGRENT
>  283     TRANS V60=-5.86 STRATA=V44:42 LABEL=LAGRENT
>  284     TRANS V60=-4.07 STRATA=V44:45 LABEL=LAGRENT
>  285     TRANS V60=-9.99 STRATA=V44:47 LABEL=LAGRENT
>  286     TRANS V60=-2.63 STRATA=V44:50 LABEL=LAGRENT
>  287     TRANS V60=0.16 STRATA=V44:53 LABEL=LAGRENT
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>   288     TRANS V60=0.11 STRATA=V44:54 LABEL=LAGRENT
>   289     TRANS V60=-9.93 STRATA=V44:55 LABEL=LAGRENT
>   290     TRANS V60=1.77 STRATA=V44:56 LABEL=LAGRENT
>   291     TRANS V60=1.11 STRATA=V44:57 LABEL=LAGRENT
>   292     TRANS V60=1.33 STRATA=V44:58 LABEL=LAGRENT
>   293     TRANS V60=-2.75 STRATA=V44:59 LABEL=LAGRENT
>   294     TRANS V60=-2.02 STRATA=V44:60 LABEL=LAGRENT
>   295     TRANS V60=-3.84 STRATA=V44:61 LABEL=LAGRENT
>   296     TRANS V60=-4.79 STRATA=V44:62 LABEL=LAGRENT
>   297     TRANS V60=-6.68 STRATA=V44:63 LABEL=LAGRENT
>   298     TRANS V61=6.37 STRATA=V44:36 LABEL=LAGCOSTS
>   299     TRANS V61=4.95 STRATA=V44:37 LABEL=LAGCOSTS
>   300     TRANS V61=0.54 STRATA=V44:38 LABEL=LAGCOSTS
>   301     TRANS V61=5.49 STRATA=V44:39 LABEL=LAGCOSTS
>   302     TRANS V61=7.64 STRATA=V44:40 LABEL=LAGCOSTS
>   303     TRANS V61=5.17 STRATA=V44:42 LABEL=LAGCOSTS
>   304     TRANS V61=2.24 STRATA=V44:45 LABEL=LAGCOSTS
>   305     TRANS V61=-5.15 STRATA=V44:47 LABEL=LAGCOSTS
>   306     TRANS V61=-7.12 STRATA=V44:50 LABEL=LAGCOSTS
>   307     TRANS V61=-0.24 STRATA=V44:53 LABEL=LAGCOSTS
>   308     TRANS V61=4.57 STRATA=V44:54 LABEL=LAGCOSTS
>   309     TRANS V61=-7.88 STRATA=V44:55 LABEL=LAGCOSTS
>   310     TRANS V61=4.97 STRATA=V44:56 LABEL=LAGCOSTS
>   311     TRANS V61=5.20 STRATA=V44:57 LABEL=LAGCOSTS
>   312     TRANS V61=4.31 STRATA=V44:58 LABEL=LAGCOSTS
>   313     TRANS V61=5.16 STRATA=V44:59 LABEL=LAGCOSTS
>   314     TRANS V61=6.82 STRATA=V44:60 LABEL=LAGCOSTS
>   315     TRANS V61=-4.48 STRATA=V44:61 LABEL=LAGCOSTS
>   316     TRANS V61=3.68 STRATA=V44:62 LABEL=LAGCOSTS
>   317     TRANS V61=3.40 STRATA=V44:63 LABEL=LAGCOSTS
>   318     TRANS V62=V58-V53 LABEL=RNTGRTH4 STRATA=NONE
>   319     TRANS V63=V57-V53 LABEL=CCOSTBC2 STRATA=NONE
>   320     TRANS V64=10.41 STRATA=V44:36 LABEL=CAPRATE
>   321     TRANS V64=7.72 STRATA=V44:37 LABEL=CAPRATE
>   322     TRANS V64=9.83 STRATA=V44:38 LABEL=CAPRATE
>   323     TRANS V64=10.20 STRATA=V44:39 LABEL=CAPRATE
>   324     TRANS V64=10.52 STRATA=V44:40 LABEL=CAPRATE
>   325     TRANS V64=1.74 STRATA=V44:42 LABEL=CAPRATE
>   326     TRANS V64=1.20 STRATA=V44:45 LABEL=CAPRATE
>   327     TRANS V64=-2.76 STRATA=V44:47 LABEL=CAPRATE
>   328     TRANS V64=3.64 STRATA=V44:50 LABEL=CAPRATE
>   329     TRANS V64=4.81 STRATA=V44:53 LABEL=CAPRATE
>   330     TRANS V64=-4.90 STRATA=V44:54 LABEL=CAPRATE
>   331     TRANS V64=6.48 STRATA=V44:55 LABEL=CAPRATE
>   332     TRANS V64=6.63 STRATA=V44:56 LABEL=CAPRATE
>   333     TRANS V64=6.20 STRATA=V44:57 LABEL=CAPRATE
>   334     TRANS V64=5.34 STRATA=V44:58 LABEL=CAPRATE
>   335     TRANS V64=5.06 STRATA=V44:59 LABEL=CAPRATE
>   336     TRANS V64=5.44 STRATA=V44:60 LABEL=CAPRATE
>   337     TRANS V64=6.61 STRATA=V44:61 LABEL=CAPRATE
>   338     TRANS V64=2.73 STRATA=V44:62 LABEL=CAPRATE
>   339     TRANS V64=5.73 STRATA=V44:63 LABEL=CAPRATE
>   340     TRANS V65=9.84 STRATA=V44:36 LABEL=CAPRTLAG
>   341     TRANS V65=10.41 STRATA=V44:37 LABEL=CAPRTLAG
>   342     TRANS V65=7.72 STRATA=V44:38 LABEL=CAPRTLAG
>   343     TRANS V65=9.83 STRATA=V44:39 LABEL=CAPRTLAG
>   344     TRANS V65=10.20 STRATA=V44:40 LABEL=CAPRTLAG
>   345     TRANS V65=6.34 STRATA=V44:42 LABEL=CAPRTLAG
>   346     TRANS V65=4.43 STRATA=V44:45 LABEL=CAPRTLAG
>   347     TRANS V65=-5.10 STRATA=V44:47 LABEL=CAPRTLAG
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>   348     TRANS V65=5.24 STRATA=V44:50 LABEL=CAPRTLAG
>   349     TRANS V65=5.92 STRATA=V44:53 LABEL=CAPRTLAG
>   350     TRANS V65=4.81 STRATA=V44:54 LABEL=CAPRTLAG
>   351     TRANS V65=-4.90 STRATA=V44:55 LABEL=CAPRTLAG
>   352     TRANS V65=6.48 STRATA=V44:56 LABEL=CAPRTLAG
>   353     TRANS V65=6.63 STRATA=V44:57 LABEL=CAPRTLAG
>   354     TRANS V65=6.20 STRATA=V44:58 LABEL=CAPRTLAG
>   355     TRANS V65=5.34 STRATA=V44:59 LABEL=CAPRTLAG
>   356     TRANS V65=5.06 STRATA=V44:60 LABEL=CAPRTLAG
>   357     TRANS V65=5.44 STRATA=V44:61 LABEL=CAPRTLAG
>   358     TRANS V65=6.61 STRATA=V44:62 LABEL=CAPRTLAG
>   359     TRANS V65=2.73 STRATA=V44:63 LABEL=CAPRTLAG
>   360     TRANS V66=13.63 STRATA=V44:36 LABEL=NOMCAPRT
>   361     TRANS V66=13.24 STRATA=V44:37 LABEL=NOMCAPRT
>   362     TRANS V66=13.78 STRATA=V44:38 LABEL=NOMCAPRT
>   363     TRANS V66=12.93 STRATA=V44:39 LABEL=NOMCAPRT
>   364     TRANS V66=13.74 STRATA=V44:40 LABEL=NOMCAPRT
>   365     TRANS V66=11.80 STRATA=V44:42 LABEL=NOMCAPRT
>   366     TRANS V66=11.86 STRATA=V44:45 LABEL=NOMCAPRT
>   367     TRANS V66=12.11 STRATA=V44:47 LABEL=NOMCAPRT
>   368     TRANS V66=13.15 STRATA=V44:50 LABEL=NOMCAPRT
>   369     TRANS V66=11.82 STRATA=V44:53 LABEL=NOMCAPRT
>   370     TRANS V66=11.00 STRATA=V44:54 LABEL=NOMCAPRT
>   371     TRANS V66=12.28 STRATA=V44:55 LABEL=NOMCAPRT
>   372     TRANS V66=12.95 STRATA=V44:56 LABEL=NOMCAPRT
>   373     TRANS V66=11.83 STRATA=V44:57 LABEL=NOMCAPRT
>   374     TRANS V66=13.35 STRATA=V44:58 LABEL=NOMCAPRT
>   375     TRANS V66=11.96 STRATA=V44:59 LABEL=NOMCAPRT
>   376     TRANS V66=13.18 STRATA=V44:60 LABEL=NOMCAPRT
>   377     TRANS V66=13.77 STRATA=V44:61 LABEL=NOMCAPRT
>   378     TRANS V66=12.36 STRATA=V44:62 LABEL=NOMCAPRT
>   379     TRANS V66=13.43 STRATA=V44:63 LABEL=NOMCAPRT
>   380     TRANS V67=-6.94 STRATA=V44:36 LABEL=CAPGAIN
>   381     TRANS V67=-5.19 STRATA=V44:37 LABEL=CAPGAIN
>   382     TRANS V67=1.42 STRATA=V44:38 LABEL=CAPGAIN
>   383     TRANS V67=3.69 STRATA=V44:39 LABEL=CAPGAIN
>   384     TRANS V67=10.92 STRATA=V44:40 LABEL=CAPGAIN
>   385     TRANS V67=2.23 STRATA=V44:42 LABEL=CAPGAIN
>   386     TRANS V67=0.18 STRATA=V44:45 LABEL=CAPGAIN
>   387     TRANS V67=4.33 STRATA=V44:47 LABEL=CAPGAIN
>   388     TRANS V67=2.31 STRATA=V44:50 LABEL=CAPGAIN
>   389     TRANS V67=-1.41 STRATA=V44:53 LABEL=CAPGAIN
>   390     TRANS V67=-5.90 STRATA=V44:54 LABEL=CAPGAIN
>   391     TRANS V67=2.72 STRATA=V44:55 LABEL=CAPGAIN
>   392     TRANS V67=3.84 STRATA=V44:56 LABEL=CAPGAIN
>   393     TRANS V67=9.21 STRATA=V44:57 LABEL=CAPGAIN
>   394     TRANS V67=3.87 STRATA=V44:58 LABEL=CAPGAIN
>   395     TRANS V67=6.49 STRATA=V44:59 LABEL=CAPGAIN
>   396     TRANS V67=13.03 STRATA=V44:60 LABEL=CAPGAIN
>   397     TRANS V67=7.73 STRATA=V44:61 LABEL=CAPGAIN
>   398     TRANS V67=2.44 STRATA=V44:62 LABEL=CAPGAIN
>   399     TRANS V67=1.63 STRATA=V44:63 LABEL=CAPGAIN
>   400     TRANS V68=-6.99 STRATA=V44:36 LABEL=CAPGNLAG
>   401     TRANS V68=-6.94 STRATA=V44:37 LABEL=CAPGNLAG
>   402     TRANS V68=-5.19 STRATA=V44:38 LABEL=CAPGNLAG
>   403     TRANS V68=1.42 STRATA=V44:39 LABEL=CAPGNLAG
>   404     TRANS V68=3.69 STRATA=V44:40 LABEL=CAPGNLAG
>   405     TRANS V68=4.77 STRATA=V44:42 LABEL=CAPGNLAG
>   406     TRANS V68=-0.51 STRATA=V44:45 LABEL=CAPGNLAG
>   407     TRANS V68=-3.41 STRATA=V44:47 LABEL=CAPGNLAG
```

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>    408      TRANS V68=7.69 STRATA=V44:50 LABEL=CAPGNLAG
>    409      TRANS V68=-1.00 STRATA=V44:53 LABEL=CAPGNLAG
>    410      TRANS V68=-1.41 STRATA=V44:54 LABEL=CAPGNLAG
>    411      TRANS V68=-5.90 STRATA=V44:55 LABEL=CAPGNLAG
>    412      TRANS V68=2.72 STRATA=V44:56 LABEL=CAPGNLAG
>    413      TRANS V68=3.84 STRATA=V44:57 LABEL=CAPGNLAG
>    414      TRANS V68=9.21 STRATA=V44:58 LABEL=CAPGNLAG
>    415      TRANS V68=3.87 STRATA=V44:59 LABEL=CAPGNLAG
>    416      TRANS V68=6.49 STRATA=V44:60 LABEL=CAPGNLAG
>    417      TRANS V68=13.03 STRATA=V44:61 LABEL=CAPGNLAG
>    418      TRANS V68=7.73 STRATA=V44:62 LABEL=CAPGNLAG
>    419      TRANS V68=2.44 STRATA=V44:63 LABEL=CAPGNLAG
>    420      TRANS V69=1.89 STRATA=V44:36 LABEL=POPLAG
>    421      TRANS V69=3.13 STRATA=V44:37 LABEL=POPLAG
>    422      TRANS V69=3.40 STRATA=V44:38 LABEL=POPLAG
>    423      TRANS V69=2.12 STRATA=V44:39 LABEL=POPLAG
>    424      TRANS V69=1.91 STRATA=V44:40 LABEL=POPLAG
>    425      TRANS V69=3.39 STRATA=V44:42 LABEL=POPLAG
>    426      TRANS V69=3.39 STRATA=V44:45 LABEL=POPLAG
>    427      TRANS V69=2.53 STRATA=V44:47 LABEL=POPLAG
>    428      TRANS V69=2.95 STRATA=V44:50 LABEL=POPLAG
>    429      TRANS V69=1.72 STRATA=V44:53 LABEL=POPLAG
>    430      TRANS V69=1.51 STRATA=V44:54 LABEL=POPLAG
>    431      TRANS V69=0.77 STRATA=V44:55 LABEL=POPLAG
>    432      TRANS V69=1.27 STRATA=V44:56 LABEL=POPLAG
>    433      TRANS V69=1.06 STRATA=V44:57 LABEL=POPLAG
>    434      TRANS V69=1.05 STRATA=V44:58 LABEL=POPLAG
>    435      TRANS V69=1.07 STRATA=V44:59 LABEL=POPLAG
>    436      TRANS V69=1.18 STRATA=V44:60 LABEL=POPLAG
>    437      TRANS V69=1.60 STRATA=V44:61 LABEL=POPLAG
>    438      TRANS V69=1.80 STRATA=V44:62 LABEL=POPLAG
>    439      TRANS V69=1.04 STRATA=V44:63 LABEL=POPLAG
>    440      TRANS V70=V64-V55 STRATA=NONE CASES=378-496 LABEL=RLAPTRTN
>    441      TRANS V71=5.55 STRATA=V44:36 LABEL=RLINCLAG CASES=ALL
>    442      TRANS V71=6.20 STRATA=V44:37 LABEL=RLINCLAG
>    443      TRANS V71=6.88 STRATA=V44:38 LABEL=RLINCLAG
>    444      TRANS V71=8.10 STRATA=V44:39 LABEL=RLINCLAG
>    445      TRANS V71=9.04 STRATA=V44:40 LABEL=RLINCLAG
>    446      TRANS V71=9.69 STRATA=V44:42 LABEL=RLINCLAG
>    447      TRANS V71=7.56 STRATA=V44:45 LABEL=RLINCLAG
>    448      TRANS V71=1.47 STRATA=V44:47 LABEL=RLINCLAG
>    449      TRANS V71=5.16 STRATA=V44:50 LABEL=RLINCLAG
>    450      TRANS V71=3.89 STRATA=V44:53 LABEL=RLINCLAG
>    451      TRANS V71=4.21 STRATA=V44:54 LABEL=RLINCLAG
>    452      TRANS V71=-1.80 STRATA=V44:55 LABEL=RLINCLAG
>    453      TRANS V71=7.15 STRATA=V44:56 LABEL=RLINCLAG
>    454      TRANS V71=6.22 STRATA=V44:57 LABEL=RLINCLAG
>    455      TRANS V71=4.76 STRATA=V44:58 LABEL=RLINCLAG
>    456      TRANS V71=2.20 STRATA=V44:59 LABEL=RLINCLAG
>    457      TRANS V71=3.01 STRATA=V44:60 LABEL=RLINCLAG
>    458      TRANS V71=1.97 STRATA=V44:61 LABEL=RLINCLAG
>    459      TRANS V71=2.02 STRATA=V44:62 LABEL=RLINCLAG
>    460      TRANS V71=-0.47 STRATA=V44:63 LABEL=RLINCLAG
>    461      TRANS V72=2.90 STRATA=V44:36 LABEL=VACRTLAG
>    462      TRANS V72=2.10 STRATA=V44:37 LABEL=VACRTLAG
>    463      TRANS V72=2.00 STRATA=V44:38 LABEL=VACRTLAG
>    464      TRANS V72=1.90 STRATA=V44:39 LABEL=VACRTLAG
>    465      TRANS V72=1.15 STRATA=V44:40 LABEL=VACRTLAG
>    466      TRANS V72=0.50 STRATA=V44:42 LABEL=VACRTLAG
>    467      TRANS V72=0.20 STRATA=V44:45 LABEL=VACRTLAG
```

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>    468      TRANS V72=0.20 STRATA=V44:47 LABEL=VACRTLAG
>    469      TRANS V72=0.10 STRATA=V44:50 LABEL=VACRTLAG
>    470      TRANS V72=0.10 STRATA=V44:53 LABEL=VACRTLAG
>    471      TRANS V72=0.15 STRATA=V44:54 LABEL=VACRTLAG
>    472      TRANS V72=0.20 STRATA=V44:55 LABEL=VACRTLAG
>    473      TRANS V72=0.35 STRATA=V44:56 LABEL=VACRTLAG
>    474      TRANS V72=0.50 STRATA=V44:57 LABEL=VACRTLAG
>    475      TRANS V72=0.80 STRATA=V44:58 LABEL=VACRTLAG
>    476      TRANS V72=1.10 STRATA=V44:59 LABEL=VACRTLAG
>    477      TRANS V72=1.05 STRATA=V44:60 LABEL=VACRTLAG
>    478      TRANS V72=1.00 STRATA=V44:61 LABEL=VACRTLAG
>    479      TRANS V72=1.10 STRATA=V44:62 LABEL=VACRTLAG
>    480      TRANS V72=1.20 STRATA=V44:63 LABEL=VACRTLAG
>    481      TRANS V73=5.22 STRATA=V44:36 LABEL=RLINTLAG
>    482      TRANS V73=6.11 STRATA=V44:37 LABEL=RLINTLAG
>    483      TRANS V73=3.47 STRATA=V44:38 LABEL=RLINTLAG
>    484      TRANS V73=4.94 STRATA=V44:39 LABEL=RLINTLAG
>    485      TRANS V73=6.38 STRATA=V44:40 LABEL=RLINTLAG
>    486      TRANS V73=1.20 STRATA=V44:42 LABEL=RLINTLAG
>    487      TRANS V73=1.60 STRATA=V44:45 LABEL=RLINTLAG
>    488      TRANS V73=-5.89 STRATA=V44:47 LABEL=RLINTLAG
>    489      TRANS V73=3.18 STRATA=V44:50 LABEL=RLINTLAG
>    490      TRANS V73=3.93 STRATA=V44:53 LABEL=RLINTLAG
>    491      TRANS V73=4.80 STRATA=V44:54 LABEL=RLINTLAG
>    492      TRANS V73=-4.02 STRATA=V44:55 LABEL=RLINTLAG
>    493      TRANS V73=5.99 STRATA=V44:56 LABEL=RLINTLAG
>    494      TRANS V73=5.44 STRATA=V44:57 LABEL=RLINTLAG
>    495      TRANS V73=5.48 STRATA=V44:58 LABEL=RLINTLAG
>    496      TRANS V73=2.49 STRATA=V44:59 LABEL=RLINTLAG
>    497      TRANS V73=3.61 STRATA=V44:60 LABEL=RLINTLAG
>    498      TRANS V73=2.77 STRATA=V44:61 LABEL=RLINTLAG
>    499      TRANS V73=3.18 STRATA=V44:62 LABEL=RLINTLAG
>    500      TRANS V73=0.82 STRATA=V44:63 LABEL=RLINTLAG
>    501      TRANS V74=4.62 STRATA=V44:36 LABEL=APRTNLAG
>    502      TRANS V74=4.30 STRATA=V44:37 LABEL=APRTNLAG
>    503      TRANS V74=4.25 STRATA=V44:38 LABEL=APRTNLAG
>    504      TRANS V74=4.89 STRATA=V44:39 LABEL=APRTNLAG
>    505      TRANS V74=3.82 STRATA=V44:40 LABEL=APRTNLAG
>    506      TRANS V74=5.14 STRATA=V44:42 LABEL=APRTNLAG
>    507      TRANS V74=2.83 STRATA=V44:45 LABEL=APRTNLAG
>    508      TRANS V74=0.79 STRATA=V44:47 LABEL=APRTNLAG
>    509      TRANS V74=2.06 STRATA=V44:50 LABEL=APRTNLAG
>    510      TRANS V74=1.99 STRATA=V44:53 LABEL=APRTNLAG
>    511      TRANS V74=0.01 STRATA=V44:54 LABEL=APRTNLAG
>    512      TRANS V74=-0.88 STRATA=V44:55 LABEL=APRTNLAG
>    513      TRANS V74=0.49 STRATA=V44:56 LABEL=APRTNLAG
>    514      TRANS V74=1.19 STRATA=V44:57 LABEL=APRTNLAG
>    515      TRANS V74=0.72 STRATA=V44:58 LABEL=APRTNLAG
>    516      TRANS V74=2.85 STRATA=V44:59 LABEL=APRTNLAG
>    517      TRANS V74=1.45 STRATA=V44:60 LABEL=APRTNLAG
>    518      TRANS V74=2.67 STRATA=V44:61 LABEL=APRTNLAG
>    519      TRANS V74=3.43 STRATA=V44:62 LABEL=APRTNLAG
>    520      TRANS V74=1.91 STRATA=V44:63 LABEL=APRTNLAG
>    521      TRANS V75=4.08 STRATA=V44:36 LABEL=INFLALAG
>    522      TRANS V75=3.22 STRATA=V44:37 LABEL=INFLALAG
>    523      TRANS V75=5.52 STRATA=V44:38 LABEL=INFLALAG
>    524      TRANS V75=3.95 STRATA=V44:39 LABEL=INFLALAG
>    525      TRANS V75=2.73 STRATA=V44:40 LABEL=INFLALAG
>    527      TRANS V75=7.82 STRATA=V44:42 LABEL=INFLALAG
>    528      TRANS V75=7.91 STRATA=V44:45 LABEL=INFLALAG
```

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>    529      TRANS V75=15.68 STRATA=V44:47 LABEL=INFLALAG
>    530      TRANS V75=7.70 STRATA=V44:50 LABEL=INFLALAG
>    531      TRANS V75=7.81 STRATA=V44:53 LABEL=INFLALAG
>    532      TRANS V75=7.01 STRATA=V44:54 LABEL=INFLALAG
>    533      TRANS V75=15.90 STRATA=V44:55 LABEL=INFLALAG
>    534      TRANS V75=5.80 STRATA=V44:56 LABEL=INFLALAG
>    535      TRANS V75=6.32 STRATA=V44:57 LABEL=INFLALAG
>    536      TRANS V75=5.63 STRATA=V44:58 LABEL=INFLALAG
>    537      TRANS V75=8.01 STRATA=V44:59 LABEL=INFLALAG
>    538      TRANS V75=6.90 STRATA=V44:60 LABEL=INFLALAG
>    539      TRANS V75=7.74 STRATA=V44:61 LABEL=INFLALAG
>    540      TRANS V75=7.16 STRATA=V44:62 LABEL=INFLALAG
>    541      TRANS V75=9.63 STRATA=V44:63 LABEL=INFLALAG
>    542      TRANS V76=.03 STRATA=V44:36 LABEL=INTCHGE
>    543      TRANS V76=-.34 STRATA=V44:37 LABEL=INTCHGE
>    544      TRANS V76=-.10 STRATA=V44:38 LABEL=INTCHGE
>    545      TRANS V76=.22 STRATA=V44:39 LABEL=INTCHGE
>    546      TRANS V76=.03 STRATA=V44:40 LABEL=INTCHGE
>    547      TRANS V76=-.05 STRATA=V44:42 LABEL=INTCHGE
>    548      TRANS V76=.16 STRATA=V44:45 LABEL=INTCHGE
>    549      TRANS V76=.83 STRATA=V44:47 LABEL=INTCHGE
>    550      TRANS V76=-.58 STRATA=V44:50 LABEL=INTCHGE
>    551      TRANS V76=.07 STRATA=V44:53 LABEL=INTCHGE
>    552      TRANS V76=.07 STRATA=V44:54 LABEL=INTCHGE
>    553      TRANS V76=-.09 STRATA=V44:55 LABEL=INTCHGE
>    554      TRANS V76=-.03 STRATA=V44:56 LABEL=INTCHGE
>    555      TRANS V76=-.65 STRATA=V44:57 LABEL=INTCHGE
>    556      TRANS V76=-.61 STRATA=V44:58 LABEL=INTCHGE
>    557      TRANS V76=.01 STRATA=V44:59 LABEL=INTCHGE
>    558      TRANS V76=.00 STRATA=V44:60 LABEL=INTCHGE
>    559      TRANS V76=-.17 STRATA=V44:61 LABEL=INTCHGE
>    560      TRANS V76=.11 STRATA=V44:62 LABEL=INTCHGE
>    561      TRANS V76=.03 STRATA=V44:63 LABEL=INTCHGE
>    562      TRANS V77=-69 STRATA=V44:36 LABEL=APTCOMCH
>    563      TRANS V77=-209 STRATA=V44:37 LABEL=APTCOMCH
>    564      TRANS V77=174 STRATA=V44:38 LABEL=APTCOMCH
>    565      TRANS V77=126 STRATA=V44:39 LABEL=APTCOMCH
>    566      TRANS V77=-123 STRATA=V44:40 LABEL=APTCOMCH
>    567      TRANS V77=283 STRATA=V44:42 LABEL=APTCOMCH
>    568      TRANS V77=156 STRATA=V44:45 LABEL=APTCOMCH
>    569      TRANS V77=313 STRATA=V44:47 LABEL=APTCOMCH
>    570      TRANS V77=245 STRATA=V44:50 LABEL=APTCOMCH
>    571      TRANS V77=-908 STRATA=V44:53 LABEL=APTCOMCH
>    572      TRANS V77=497 STRATA=V44:54 LABEL=APTCOMCH
>    573      TRANS V77=-57 STRATA=V44:55 LABEL=APTCOMCH
>    574      TRANS V77=64 STRATA=V44:56 LABEL=APTCOMCH
>    575      TRANS V77=208 STRATA=V44:57 LABEL=APTCOMCH
>    576      TRANS V77=-163 STRATA=V44:58 LABEL=APTCOMCH
>    577      TRANS V77=-140 STRATA=V44:59 LABEL=APTCOMCH
>    578      TRANS V77=54 STRATA=V44:60 LABEL=APTCOMCH
>    579      TRANS V77=613 STRATA=V44:61 LABEL=APTCOMCH
>    580      TRANS V77=-331 STRATA=V44:62 LABEL=APTCOMCH
>    581      TRANS V77=13 STRATA=V44:63 LABEL=APTCOMCH
>    582      TRANS V78=341 STRATA=V44:36-54 LABEL=HHCHANGE
>    583      TRANS V78=663 STRATA=V44:55-63 LABEL=HHCHANGE
>    584      TRANS V79=.89 STRATA=V44:36 LABEL=RLINTCHG
>    585      TRANS V79=-2.64 STRATA=V44:37 LABEL=RLINTCHG
>    586      TRANS V79=1.47 STRATA=V44:38 LABEL=RLINTCHG
>    587      TRANS V79=1.44 STRATA=V44:39 LABEL=RLINTCHG
>    588      TRANS V79=-.46 STRATA=V44:40 LABEL=RLINTCHG
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>    589      TRANS V79=-2.29 STRATA=V44:42 LABEL=RLINTCHG
>    590      TRANS V79=-2.59 STRATA=V44:45 LABEL=RLINTCHG
>    591      TRANS V79=1.64 STRATA=V44:47 LABEL=RLINTCHG
>    592      TRANS V79=-2.39 STRATA=V44:50 LABEL=RLINTCHG
>    593      TRANS V79=.87 STRATA=V44:53 LABEL=RLINTCHG
>    594      TRANS V79=-8.82 STRATA=V44:54 LABEL=RLINTCHG
>    595      TRANS V79=10.01 STRATA=V44:55 LABEL=RLINTCHG
>    596      TRANS V79=-.55 STRATA=V44:56 LABEL=RLINTCHG
>    597      TRANS V79=.04 STRATA=V44:57 LABEL=RLINTCHG
>    598      TRANS V79=-2.99 STRATA=V44:58 LABEL=RLINTCHG
>    599      TRANS V79=1.12 STRATA=V44:59 LABEL=RLINTCHG
>    600      TRANS V79=-.84 STRATA=V44:60 LABEL=RLINTCHG
>    601      TRANS V79=.41 STRATA=V44:61 LABEL=RLINTCHG
>    602      TRANS V79=-2.36 STRATA=V44:62 LABEL=RLINTCHG
>    603      TRANS V79=1.96 STRATA=V44:63 LABEL=RLINTCHG
>    604      TRANS V80=-.32 STRATA=V44:36 LABEL=ERCHANGE
>    605      TRANS V80=-.05 STRATA=V44:37 LABEL=ERCHANGE
>    606      TRANS V80=.64 STRATA=V44:38 LABEL=ERCHANGE
>    607      TRANS V80=-1.07 STRATA=V44:39 LABEL=ERCHANGE
>    608      TRANS V80=.78 STRATA=V44:40 LABEL=ERCHANGE
>    609      TRANS V80=-2.31 STRATA=V44:42 LABEL=ERCHANGE
>    610      TRANS V80=-.64 STRATA=V44:45 LABEL=ERCHANGE
>    611      TRANS V80=.70 STRATA=V44:47 LABEL=ERCHANGE
>    612      TRANS V80=.79 STRATA=V44:50 LABEL=ERCHANGE
>    613      TRANS V80=-1.98 STRATA=V44:53 LABEL=ERCHANGE
>    614      TRANS V80=-.89 STRATA=V44:54 LABEL=ERCHANGE
>    615      TRANS V80=1.37 STRATA=V44:55 LABEL=ERCHANGE
>    616      TRANS V80=.70 STRATA=V44:56 LABEL=ERCHANGE
>    617      TRANS V80=-.47 STRATA=V44:57 LABEL=ERCHANGE
>    618      TRANS V80=2.13 STRATA=V44:58 LABEL=ERCHANGE
>    619      TRANS V80=-1.40 STRATA=V44:59 LABEL=ERCHANGE
>    620      TRANS V80=1.22 STRATA=V44:60 LABEL=ERCHANGE
>    621      TRANS V80=.76 STRATA=V44:61 LABEL=ERCHANGE
>    622      TRANS V80=-1.52 STRATA=V44:62 LABEL=ERCHANGE
>    623      TRANS V80=1.04 STRATA=V44:63 LABEL=ERCHANGE
>    624      TRANS V81=-87 STRATA=V44:36 LABEL=APTSTSCH
>    625      TRANS V81=-329 STRATA=V44:37 LABEL=APTSTSCH
>    626      TRANS V81=-303 STRATA=V44:38 LABEL=APTSTSCH
>    627      TRANS V81=131 STRATA=V44:39 LABEL=APTSTSCH
>    628      TRANS V81=173 STRATA=V44:40 LABEL=APTSTSCH
>    629      TRANS V81=659 STRATA=V44:42 LABEL=APTSTSCH
>    630      TRANS V81=-61 STRATA=V44:45 LABEL=APTSTSCH
>    631      TRANS V81=-689 STRATA=V44:47 LABEL=APTSTSCH
>    632      TRANS V81=342 STRATA=V44:50 LABEL=APTSTSCH
>    633      TRANS V81=-444 STRATA=V44:53 LABEL=APTSTSCH
>    634      TRANS V81=130 STRATA=V44:54 LABEL=APTSTSCH
>    635      TRANS V81=575 STRATA=V44:55 LABEL=APTSTSCH
>    636      TRANS V81=419 STRATA=V44:56 LABEL=APTSTSCH
>    637      TRANS V81=-456 STRATA=V44:57 LABEL=APTSTSCH
>    638      TRANS V81=30 STRATA=V44:58 LABEL=APTSTSCH
>    639      TRANS V81=-11 STRATA=V44:59 LABEL=APTSTSCH
>    640      TRANS V81=698 STRATA=V44:60 LABEL=APTSTSCH
>    641      TRANS V81=-737 STRATA=V44:61 LABEL=APTSTSCH
>    642      TRANS V81=-616 STRATA=V44:62 LABEL=APTSTSCH
>    643      TRANS V81=167 STRATA=V44:63 LABEL=APTSTSCH
>    644      CODE V82=V7 LABEL=NEWWE CASES=ALL STRATA=NONE
>    645      CODE V83=V8 LABEL=NEWKITS CASES=ALL STRATA=NONE
>    646      CODE V84=V9 LABEL=NEWEV CASES=ALL STRATA=NONE
>    647      CODE V85=V10 LABEL=NEWMAR CASES=ALL STRATA=NONE
>    648      CODE V86=V11 LABEL=NEWKERR  STRATA=NONE
```

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>    649      TRANS V87=-.3 STRATA=V44:36*V82:1 LABEL=SUBVACRT
>    651      TRANS V87=-.7 STRATA=V44:38*V82:1 LABEL=SUBVACRT
>    656      TRANS V87=.00 STRATA=V44:47*V82:1 LABEL=SUBVACRT
>    663      TRANS V87=.55 STRATA=V44:58*V82:1 LABEL=SUBVACRT
>    665      TRANS V87=-.1 STRATA=V44:60*V82:1 LABEL=SUBVACRT
>    668      TRANS V87=-.15 STRATA=V44:63*V82:1 LABEL=SUBVACRT
>    669      TRANS V87=-1.5 STRATA=V44:36*V83:1 LABEL=SUBVACRT
>    670      TRANS V87=.25 STRATA=V44:37*V83:1 LABEL=SUBVACRT
>    671      TRANS V87=.25 STRATA=V44:38*V83:1 LABEL=SUBVACRT
>    672      TRANS V87=-.5 STRATA=V44:39*V83:1 LABEL=SUBVACRT
>    673      TRANS V87=-.5 STRATA=V44:40*V83:1 LABEL=SUBVACRT
>    674      TRANS V87=.05 STRATA=V44:42*V83:1 LABEL=SUBVACRT
>    675      TRANS V87=.05 STRATA=V44:45*V83:1 LABEL=SUBVACRT
>    677      TRANS V87=.00 STRATA=V44:50*V83:1 LABEL=SUBVACRT
>    679      TRANS V87=-.05 STRATA=V44:54*V83:1 LABEL=SUBVACRT
>    680      TRANS V87=.05 STRATA=V44:55*V83:1 LABEL=SUBVACRT
>    682      TRANS V87=.1 STRATA=V44:57*V83:1 LABEL=SUBVACRT
>    684      TRANS V87=-.1 STRATA=V44:59*V83:1 LABEL=SUBVACRT
>    685      TRANS V87=-.1 STRATA=V44:60*V83:1 LABEL=SUBVACRT
>    687      TRANS V87=.00 STRATA=V44:62*V83:1 LABEL=SUBVACRT
>    692      TRANS V87=-.7 STRATA=V44:39*V84:1 LABEL=SUBVACRT
>    694      TRANS V87=.35 STRATA=V44:42*V84:1 LABEL=SUBVACRT
>    697      TRANS V87=.00 STRATA=V44:50*V84:1 LABEL=SUBVACRT
>    698      TRANS V87=.15 STRATA=V44:53*V84:1 LABEL=SUBVACRT
>    699      TRANS V87=.15 STRATA=V44:54*V84:1 LABEL=SUBVACRT
>    700      TRANS V87=.3 STRATA=V44:55*V84:1 LABEL=SUBVACRT
>    701      TRANS V87=.3 STRATA=V44:56*V84:1 LABEL=SUBVACRT
>    702      TRANS V87=.25 STRATA=V44:57*V84:1 LABEL=SUBVACRT
>    703      TRANS V87=.25 STRATA=V44:58*V84:1 LABEL=SUBVACRT
>    704      TRANS V87=.3 STRATA=V44:59*V84:1 LABEL=SUBVACRT
>    705      TRANS V87=.3 STRATA=V44:60*V84:1 LABEL=SUBVACRT
>    706      TRANS V87=-.05 STRATA=V44:61*V84:1 LABEL=SUBVACRT
>    717      TRANS V87=.00 STRATA=V44:50*V85:1 LABEL=SUBVACRT
>    724      TRANS V87=-.15 STRATA=V44:59*V85:1 LABEL=SUBVACRT
>    729      TRANS V88=-161 STRATA=V44:36 LABEL=NEWVACCH
>    730      TRANS V88=-78 STRATA=V44:37 LABEL=NEWVACCH
>    731      TRANS V88=76 STRATA=V44:38 LABEL=NEWVACCH
>    732      TRANS V88=-38 STRATA=V44:39 LABEL=NEWVACCH
>    733      TRANS V88=-17 STRATA=V44:40 LABEL=NEWVACCH
>    734      TRANS V88=33 STRATA=V44:42 LABEL=NEWVACCH
>    735      TRANS V88=-14 STRATA=V44:45 LABEL=NEWVACCH
>    736      TRANS V88=97 STRATA=V44:47 LABEL=NEWVACCH
>    737      TRANS V88=25 STRATA=V44:50 LABEL=NEWVACCH
>    738      TRANS V88=-172 STRATA=V44:53 LABEL=NEWVACCH
>    739      TRANS V88=119 STRATA=V44:54 LABEL=NEWVACCH
>    740      TRANS V88=131 STRATA=V44:55 LABEL=NEWVACCH
>    741      TRANS V88=56 STRATA=V44:56 LABEL=NEWVACCH
>    742      TRANS V88=-57 STRATA=V44:57 LABEL=NEWVACCH
>    743      TRANS V88=-1 STRATA=V44:58 LABEL=NEWVACCH
>    744      TRANS V88=4 STRATA=V44:59 LABEL=NEWVACCH
>    745      TRANS V88=-76 STRATA=V44:60 LABEL=NEWVACCH
>    746      TRANS V88=156 STRATA=V44:61 LABEL=NEWVACCH
>    747      TRANS V88=27 STRATA=V44:62 LABEL=NEWVACCH
>    748      TRANS V88=-221 STRATA=V44:63 LABEL=NEWVACCH
>    749      TRANS V89=1.0 STRATA=V44:53-63 LABEL=REZONING
>    750      TRANS V89=0.0 STRATA=V44:36-51 LABEL=REZONING
>    752      TRANS V90=-.80 STRATA=V44:36 LABEL=VACRTCHG
>    753      TRANS V90=-.10 STRATA=V44:37 LABEL=VACRTCHG
>    754      TRANS V90=-.10 STRATA=V44:38 LABEL=VACRTCHG
>    755      TRANS V90=-.75 STRATA=V44:39 LABEL=VACRTCHG
```

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>    756      TRANS V90=-.75 STRATA=V44:40 LABEL=VACRTCHG
>    757      TRANS V90=.10 STRATA=V44:42 LABEL=VACRTCHG
>    758      TRANS V90=.00 STRATA=V44:45 LABEL=VACRTCHG
>    759      TRANS V90=-.05 STRATA=V44:47 LABEL=VACRTCHG
>    760      TRANS V90=.00 STRATA=V44:50 LABEL=VACRTCHG
>    761      TRANS V90=.05 STRATA=V44:53 LABEL=VACRTCHG
>    762      TRANS V90=.05 STRATA=V44:54 LABEL=VACRTCHG
>    763      TRANS V90=.15 STRATA=V44:55 LABEL=VACRTCHG
>    764      TRANS V90=.15 STRATA=V44:56 LABEL=VACRTCHG
>    765      TRANS V90=.30 STRATA=V44:57 LABEL=VACRTCHG
>    766      TRANS V90=.30 STRATA=V44:58 LABEL=VACRTCHG
>    767      TRANS V90=-.05 STRATA=V44:59 LABEL=VACRTCHG
>    768      TRANS V90=-.05 STRATA=V44:60 LABEL=VACRTCHG
>    769      TRANS V90=.10 STRATA=V44:61 LABEL=VACRTCHG
>    770      TRANS V90=.10 STRATA=V44:62 LABEL=VACRTCHG
>    771      TRANS V90=-.05 STRATA=V44:63 LABEL=VACRTCHG
>    772      TRANS V91=1277 STRATA=V44:37 LABEL=NEWHH
>    773      TRANS V91=1277 STRATA=V44:38-40 LABEL=NEWHH
>    774      TRANS V91=1184 STRATA=V44:42 LABEL=NEWHH
>    775      TRANS V91=1426 STRATA=V44:45-47 LABEL=NEWHH
>    776      TRANS V91=1381 STRATA=V44:50 LABEL=NEWHH
>    777      TRANS V91=424 STRATA=V44:53-56 LABEL=NEWHH
>    778      TRANS V91=-418 STRATA=V44:57-60 LABEL=NEWHH
>    779      TRANS V91=2133 STRATA=V44:61-63 LABEL=NEWHH
>    780      TRANS V92=1.12 STRATA=V44:37 LABEL=NEWVRATE
>    781      TRANS V92=5.41 STRATA=V44:38 LABEL=NEWVRATE
>    782      TRANS V92=5.42 STRATA=V44:39 LABEL=NEWVRATE
>    783      TRANS V92=4.02 STRATA=V44:40 LABEL=NEWVRATE
>    784      TRANS V92=5.53 STRATA=V44:42 LABEL=NEWVRATE
>    785      TRANS V92=2.71 STRATA=V44:45 LABEL=NEWVRATE
>    786      TRANS V92=9.47 STRATA=V44:47 LABEL=NEWVRATE
>    787      TRANS V92=25.61 STRATA=V44:50 LABEL=NEWVRATE
>    788      TRANS V92=6.78 STRATA=V44:53 LABEL=NEWVRATE
>    789      TRANS V92=13.13 STRATA=V44:54 LABEL=NEWVRATE
>    790      TRANS V92=20.58 STRATA=V44:55 LABEL=NEWVRATE
>    791      TRANS V92=26.03 STRATA=V44:56 LABEL=NEWVRATE
>    792      TRANS V92=29.20 STRATA=V44:57 LABEL=NEWVRATE
>    793      TRANS V92=19.83 STRATA=V44:58 LABEL=NEWVRATE
>    794      TRANS V92=19.55 STRATA=V44:59 LABEL=NEWVRATE
>    795      TRANS V92=16.44 STRATA=V44:60 LABEL=NEWVRATE
>    796      TRANS V92=23.81 STRATA=V44:61 LABEL=NEWVRATE
>    797      TRANS V92=21.49 STRATA=V44:62 LABEL=NEWVRATE
>    798      TRANS V92=11.99 STRATA=V44:63 LABEL=NEWVRATE
>    799      TRANS V93=91.02 STRATA=V44:37 LABEL=RLRENT2
>    800      TRANS V93=88.89 STRATA=V44:38 LABEL=RLRENT2
>    801      TRANS V93=88.22 STRATA=V44:39 LABEL=RLRENT2
>    802      TRANS V93=87.12 STRATA=V44:40 LABEL=RLRENT2
>    803      TRANS V93=76.66 STRATA=V44:42 LABEL=RLRENT2
>    804      TRANS V93=65.71 STRATA=V44:45 LABEL=RLRENT2
>    805      TRANS V93=54.58 STRATA=V44:47 LABEL=RLRENT2
>    806      TRANS V93=49.04 STRATA=V44:50 LABEL=RLRENT2
>    807      TRANS V93=46.36 STRATA=V44:53 LABEL=RLRENT2
>    808      TRANS V93=41.76 STRATA=V44:54 LABEL=RLRENT2
>    809      TRANS V93=42.50 STRATA=V44:55 LABEL=RLRENT2
>    810      TRANS V93=42.97 STRATA=V44:56 LABEL=RLRENT2
>    811      TRANS V93=43.54 STRATA=V44:57 LABEL=RLRENT2
>    812      TRANS V93=42.34 STRATA=V44:58 LABEL=RLRENT2
>    813      TRANS V93=41.49 STRATA=V44:59 LABEL=RLRENT2
>    814      TRANS V93=38.90 STRATA=V44:60 LABEL=RLRENT2
>    815      TRANS V93=37.98 STRATA=V44:61 LABEL=RLRENT2
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>   816     TRANS V93=35.45 STRATA=V44:62 LABEL=RLRENT2
>   817     TRANS V93=34.07 STRATA=V44:63 LABEL=RLRENT2
>   818     TRANS V94=473 STRATA=V44:37 LABEL=STARTS
>   819     TRANS V94=170 STRATA=V44:38 LABEL=STARTS
>   820     TRANS V94=301 STRATA=V44:39 LABEL=STARTS
>   821     TRANS V94=474 STRATA=V44:40 LABEL=STARTS
>   822     TRANS V94=807 STRATA=V44:42 LABEL=STARTS
>   823     TRANS V94=222 STRATA=V44:45 LABEL=STARTS
>   824     TRANS V94=193 STRATA=V44:47 LABEL=STARTS
>   825     TRANS V94=508 STRATA=V44:50 LABEL=STARTS
>   826     TRANS V94=160 STRATA=V44:53 LABEL=STARTS
>   827     TRANS V94=290 STRATA=V44:54 LABEL=STARTS
>   828     TRANS V94=705 STRATA=V44:55 LABEL=STARTS
>   829     TRANS V94=1124 STRATA=V44:56 LABEL=STARTS
>   830     TRANS V94=668 STRATA=V44:57 LABEL=STARTS
>   831     TRANS V94=698 STRATA=V44:58 LABEL=STARTS
>   832     TRANS V94=687 STRATA=V44:59 LABEL=STARTS
>   833     TRANS V94=1385 STRATA=V44:60 LABEL=STARTS
>   834     TRANS V94=648 STRATA=V44:61 LABEL=STARTS
>   835     TRANS V94=32 STRATA=V44:62 LABEL=STARTS
>   836     TRANS V94=199 STRATA=V44:63 LABEL=STARTS
>   837     TRANS V95=112.24 STRATA=V44:37 LABEL=REALCOST
>   838     TRANS V95=118.40 STRATA=V44:38 LABEL=REALCOST
>   839     TRANS V95=127.45 STRATA=V44:39 LABEL=REALCOST
>   840     TRANS V95=144.01 STRATA=V44:40 LABEL=REALCOST
>   841     TRANS V95=153.67 STRATA=V44:42 LABEL=REALCOST
>   842     TRANS V95=147.60 STRATA=V44:45 LABEL=REALCOST
>   843     TRANS V95=135.76 STRATA=V44:47 LABEL=REALCOST
>   844     TRANS V95=115.28 STRATA=V44:50 LABEL=REALCOST
>   845     TRANS V95=122.14 STRATA=V44:53 LABEL=REALCOST
>   846     TRANS V95=112.51 STRATA=V44:54 LABEL=REALCOST
>   847     TRANS V95=118.10 STRATA=V44:55 LABEL=REALCOST
>   848     TRANS V95=124.25 STRATA=V44:56 LABEL=REALCOST
>   849     TRANS V95=129.60 STRATA=V44:57 LABEL=REALCOST
>   850     TRANS V95=136.29 STRATA=V44:58 LABEL=REALCOST
>   851     TRANS V95=145.58 STRATA=V44:59 LABEL=REALCOST
>   852     TRANS V95=139.06 STRATA=V44:60 LABEL=REALCOST
>   853     TRANS V95=144.18 STRATA=V44:61 LABEL=REALCOST
>   854     TRANS V95=149.08 STRATA=V44:62 LABEL=REALCOST
>   855     TRANS V95=150.60 STRATA=V44:63 LABEL=REALCOST
>   856     TRANS V96=3.51 STRATA=V44:37 LABEL=NEWVRLAG
>   857     TRANS V96=1.12 STRATA=V44:38 LABEL=NEWVRLAG
>   858     TRANS V96=5.41 STRATA=V44:39 LABEL=NEWVRLAG
>   859     TRANS V96=5.42 STRATA=V44:40 LABEL=NEWVRLAG
>   860     TRANS V96=3.25 STRATA=V44:42 LABEL=NEWVRLAG
>   861     TRANS V96=4.18 STRATA=V44:45 LABEL=NEWVRLAG
>   862     TRANS V96=2.20 STRATA=V44:47 LABEL=NEWVRLAG
>   863     TRANS V96=22.19 STRATA=V44:50 LABEL=NEWVRLAG
>   864     TRANS V96=13.68 STRATA=V44:53 LABEL=NEWVRLAG
>   865     TRANS V96=6.78 STRATA=V44:54 LABEL=NEWVRLAG
>   866     TRANS V96=13.13 STRATA=V44:55 LABEL=NEWVRLAG
>   867     TRANS V96=20.58 STRATA=V44:56 LABEL=NEWVRLAG
>   868     TRANS V96=26.03 STRATA=V44:57 LABEL=NEWVRLAG
>   869     TRANS V96=29.20 STRATA=V44:58 LABEL=NEWVRLAG
>   870     TRANS V96=19.83 STRATA=V44:59 LABEL=NEWVRLAG
>   871     TRANS V96=19.55 STRATA=V44:60 LABEL=NEWVRLAG
>   872     TRANS V96=16.44 STRATA=V44:61 LABEL=NEWVRLAG
>   873     TRANS V96=23.81 STRATA=V44:62 LABEL=NEWVRLAG
>   874     TRANS V96=21.49 STRATA=V44:63 LABEL=NEWVRLAG
>   875     TRANS V97=95.16 STRATA=V44:37 LABEL=RLRNTLAG
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>  876     TRANS V97=91.02 STRATA=V44:38 LABEL=RLRNTLAG
>  877     TRANS V97=88.89 STRATA=V44:39 LABEL=RLRNTLAG
>  878     TRANS V97=88.22 STRATA=V44:40 LABEL=RLRNTLAG
>  879     TRANS V97=82.01 STRATA=V44:42 LABEL=RLRNTLAG
>  880     TRANS V97=70.54 STRATA=V44:45 LABEL=RLRNTLAG
>  881     TRANS V97=59.14 STRATA=V44:47 LABEL=RLRNTLAG
>  882     TRANS V97=49.81 STRATA=V44:50 LABEL=RLRNTLAG
>  883     TRANS V97=46.31 STRATA=V44:53 LABEL=RLRNTLAG
>  884     TRANS V97=46.36 STRATA=V44:54 LABEL=RLRNTLAG
>  885     TRANS V97=41.76 STRATA=V44:55 LABEL=RLRNTLAG
>  886     TRANS V97=42.50 STRATA=V44:56 LABEL=RLRNTLAG
>  887     TRANS V97=42.97 STRATA=V44:57 LABEL=RLRNTLAG
>  888     TRANS V97=43.54 STRATA=V44:58 LABEL=RLRNTLAG
>  889     TRANS V97=42.34 STRATA=V44:59 LABEL=RLRNTLAG
>  890     TRANS V97=41.49 STRATA=V44:60 LABEL=RLRNTLAG
>  891     TRANS V97=38.90 STRATA=V44:61 LABEL=RLRNTLAG
>  892     TRANS V97=37.98 STRATA=V44:62 LABEL=RLRNTLAG
>  893     TRANS V97=35.45 STRATA=V44:63 LABEL=RLRNTLAG
>  894     TRANS V98=111.64 STRATA=V44:37 LABEL=RLCSTLAG
>  895     TRANS V98=112.24 STRATA=V44:38 LABEL=RLCSTLAG
>  896     TRANS V98=118.40 STRATA=V44:39 LABEL=RLCSTLAG
>  897     TRANS V98=127.45 STRATA=V44:40 LABEL=RLCSTLAG
>  898     TRANS V98=151.46 STRATA=V44:42 LABEL=RLCSTLAG
>  899     TRANS V98=142.94 STRATA=V44:45 LABEL=RLCSTLAG
>  900     TRANS V98=140.00 STRATA=V44:47 LABEL=RLCSTLAG
>  901     TRANS V98=103.11 STRATA=V44:50 LABEL=RLCSTLAG
>  902     TRANS V98=116.80 STRATA=V44:53 LABEL=RLCSTLAG
>  903     TRANS V98=122.14 STRATA=V44:54 LABEL=RLCSTLAG
>  904     TRANS V98=112.51 STRATA=V44:55 LABEL=RLCSTLAG
>  905     TRANS V98=118.10 STRATA=V44:56 LABEL=RLCSTLAG
>  906     TRANS V98=124.25 STRATA=V44:57 LABEL=RLCSTLAG
>  907     TRANS V98=129.60 STRATA=V44:58 LABEL=RLCSTLAG
>  908     TRANS V98=136.29 STRATA=V44:59 LABEL=RLCSTLAG
>  909     TRANS V98=145.58 STRATA=V44:60 LABEL=RLCSTLAG
>  910     TRANS V98=139.06 STRATA=V44:61 LABEL=RLCSTLAG
>  911     TRANS V98=144.18 STRATA=V44:62 LABEL=RLCSTLAG
>  912     TRANS V98=149.08 STRATA=V44:63 LABEL=RLCSTLAG
>  913     TRANS V99=31 STRATA=V44:37 LABEL=NEWVACMF
>  914     TRANS V99=107 STRATA=V44:38 LABEL=NEWVACMF
>  915     TRANS V99=69 STRATA=V44:39 LABEL=NEWVACMF
>  916     TRANS V99=52 STRATA=V44:40 LABEL=NEWVACMF
>  917     TRANS V99=74 STRATA=V44:42 LABEL=NEWVACMF
>  918     TRANS V99=39 STRATA=V44:45 LABEL=NEWVACMF
>  919     TRANS V99=138 STRATA=V44:47 LABEL=NEWVACMF
>  920     TRANS V99=449 STRATA=V44:50 LABEL=NEWVACMF
>  921     TRANS V99=194 STRATA=V44:53 LABEL=NEWVACMF
>  922     TRANS V99=313 STRATA=V44:54 LABEL=NEWVACMF
>  923     TRANS V99=444 STRATA=V44:55 LABEL=NEWVACMF
>  924     TRANS V99=500 STRATA=V44:56 LABEL=NEWVACMF
>  925     TRANS V99=443 STRATA=V44:57 LABEL=NEWVACMF
>  926     TRANS V99=442 STRATA=V44:58 LABEL=NEWVACMF
>  927     TRANS V99=446 STRATA=V44:59 LABEL=NEWVACMF
>  928     TRANS V99=370 STRATA=V44:60 LABEL=NEWVACMF
>  929     TRANS V99=526 STRATA=V44:61 LABEL=NEWVACMF
>  930     TRANS V99=553 STRATA=V44:62 LABEL=NEWVACMF
>  931     TRANS V99=332 STRATA=V44:63 LABEL=NEWVACMF
>  932     TRANS V100=7.222 STRATA=V44:37 LABEL=AVGPPSF
>  933     TRANS V100=7.429 STRATA=V44:38 LABEL=AVGPPSF
>  934     TRANS V100=5.902 STRATA=V44:39 LABEL=AVGPPSF
>  935     TRANS V100=6.250 STRATA=V44:40 LABEL=AVGPPSF
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>    936      TRANS V100=8.201 STRATA=V44:42 LABEL=AVGPPSF
>    937      TRANS V100=25.000 STRATA=V44:45 LABEL=AVGPPSF
>    938      TRANS V100=13.518 STRATA=V44:47 LABEL=AVGPPSF
>    939      TRANS V100=13.254 STRATA=V44:50 LABEL=AVGPPSF
>    940      TRANS V100=13.887 STRATA=V44:51 LABEL=AVGPPSF
>    941      TRANS V100=15.377 STRATA=V44:53 LABEL=AVGPPSF
>    942      TRANS V100=16.688 STRATA=V44:54 LABEL=AVGPPSF
>    943      TRANS V100=15.627 STRATA=V44:55 LABEL=AVGPPSF
>    944      TRANS V100=16.029 STRATA=V44:56 LABEL=AVGPPSF
>    945      TRANS V100=26.175 STRATA=V44:57 LABEL=AVGPPSF
>    946      TRANS V100=20.522 STRATA=V44:58 LABEL=AVGPPSF
>    947      TRANS V100=18.314 STRATA=V44:59 LABEL=AVGPPSF
>    948      TRANS V100=17.867 STRATA=V44:60 LABEL=AVGPPSF
>    949      TRANS V100=18.071 STRATA=V44:61 LABEL=AVGPPSF
>    950      TRANS V100=28.333 STRATA=V44:62 LABEL=AVGPPSF
>    951      TRANS V100=23.855 STRATA=V44:63 LABEL=AVGPPSF
>    952      TRANS V101=V100/V38 STRATA=NONE LABEL=RLAVGSP
>    953      TRANS V102=0.00 STRATA=V44:37 LABEL=LOCINDEX
>    954      TRANS V102=0.00 STRATA=V44:38 LABEL=LOCINDEX
>    955      TRANS V102=-2.00 STRATA=V44:39 LABEL=LOCINDEX
>    956      TRANS V102=0.00 STRATA=V44:40 LABEL=LOCINDEX
>    957      TRANS V102=-1.50 STRATA=V44:42 LABEL=LOCINDEX
>    958      TRANS V102=0.00 STRATA=V44:45 LABEL=LOCINDEX
>    959      TRANS V102=3.00 STRATA=V44:47 LABEL=LOCINDEX
>    960      TRANS V102=-2.00 STRATA=V44:50 LABEL=LOCINDEX
>    961      TRANS V102=-1.00 STRATA=V44:51 LABEL=LOCINDEX
>    962      TRANS V102=-3.00 STRATA=V44:53 LABEL=LOCINDEX
>    963      TRANS V102=-2.57 STRATA=V44:54 LABEL=LOCINDEX
>    964      TRANS V102=-2.63 STRATA=V44:55 LABEL=LOCINDEX
>    965      TRANS V102=-3.00 STRATA=V44:56 LABEL=LOCINDEX
>    966      TRANS V102=-1.50 STRATA=V44:57 LABEL=LOCINDEX
>    967      TRANS V102=-0.27 STRATA=V44:58 LABEL=LOCINDEX
>    968      TRANS V102=-1.67 STRATA=V44:59 LABEL=LOCINDEX
>    969      TRANS V102=-1.80 STRATA=V44:60 LABEL=LOCINDEX
>    970      TRANS V102=-3.00 STRATA=V44:61 LABEL=LOCINDEX
>    971      TRANS V102=0.00 STRATA=V44:62 LABEL=LOCINDEX
>    972      TRANS V102=3.00 STRATA=V44:63 LABEL=LOCINDEX
>    973      TRANS V103=-2.454 STRATA=V44:37 LABEL=NEWRMLAG
>    974      TRANS V103=-3.609 STRATA=V44:38 LABEL=NEWRMLAG
>    975      TRANS V103=-3.463 STRATA=V44:39 LABEL=NEWRMLAG
>    976      TRANS V103=-3.090 STRATA=V44:40 LABEL=NEWRMLAG
>    977      TRANS V103=-3.703 STRATA=V44:42 LABEL=NEWRMLAG
>    978      TRANS V103=-5.528 STRATA=V44:45 LABEL=NEWRMLAG
>    979      TRANS V103=-7.988 STRATA=V44:47 LABEL=NEWRMLAG
>    980      TRANS V103=-8.430 STRATA=V44:50 LABEL=NEWRMLAG
>    981      TRANS V103=-7.166 STRATA=V44:51 LABEL=NEWRMLAG
>    982      TRANS V103=-4.051 STRATA=V44:53 LABEL=NEWRMLAG
>    983      TRANS V103=-2.389 STRATA=V44:54 LABEL=NEWRMLAG
>    984      TRANS V103=-4.319 STRATA=V44:55 LABEL=NEWRMLAG
>    985      TRANS V103=-3.343 STRATA=V44:56 LABEL=NEWRMLAG
>    986      TRANS V103=-1.599 STRATA=V44:57 LABEL=NEWRMLAG
>    987      TRANS V103=-1.324 STRATA=V44:58 LABEL=NEWRMLAG
>    988      TRANS V103=-2.109 STRATA=V44:59 LABEL=NEWRMLAG
>    989      TRANS V103=-0.099 STRATA=V44:60 LABEL=NEWRMLAG
>    990      TRANS V103=-1.562 STRATA=V44:61 LABEL=NEWRMLAG
>    991      TRANS V103=-3.062 STRATA=V44:62 LABEL=NEWRMLAG
>    992      TRANS V103=-5.090 STRATA=V44:63 LABEL=NEWRMLAG
>    993      TRANS V92=17.87 STRATA=V44:51 LABEL=NEWVRATE
>    994      TRANS V64=-2.84 STRATA=V44:51 LABEL=CAPRATE
>    995      TRANS V66=12.12 STRATA=V44:51 LABEL=NOMCAPRT
```