

Are There Cultural Effects on Savings?: Cross Sectional Evidence

Rhee, Byung-Kun and Changyong Rhee

Working Paper No. 256
December 1990

University of
Rochester

**Are There Cultural Effects on Savings?:
Cross Sectional Evidence**

Byung-Kun Rhee and Changyong Rhee

Rochester Center for Economic Research
Working Paper No. 256

Are there Cultural Effects on Savings?:
Cross Sectional Evidence

Byung-Kun Rhee
and
Changyong Rhee

University of Rochester

Rochester Center for Economic Research
Working Paper No. 256

October, 1990
Revised March, 1991

** We have benefitted from the comments of seminar participants, especially our discussant Stephen Zeldes, at the NBER Economic Fluctuation Meeting at Hoover Institution, Feb. 8, 1991. We are thankful to Olivier Blanchard, Stanley Engerman, Bruce Hansen, Hanan Jacoby, Masao Ogaki, Adrian Pagan, Rangarajan Sundaram, and especially Lawrence Summers for helpful discussions. Mr. Ulysse Nevraumont at Statistics of Canada gratefully recategorized the immigrants groups in the 1982 Survey of Family Expenditures tape into the format of the 1986 tape.

***** Abstract *****

Why are there such large differences in saving rates across countries? Since many proposed economic explanations have been only partially successful when confronted with the data, economists have reluctantly paid lip service to the possibility of *cultural effects* on savings: individuals in each country may have different tastes for savings.

The purpose of this paper is to test the existence of cultural effects explicitly by comparing the saving patterns of immigrants across countries of origin and/or with native borns. For example, if the saving patterns of Japanese immigrants in the U.S. are significantly different from others after considering other economic factors such as income, education, immigration year, etc., it can be regarded as evidence for the cultural effects.

From the cross section data taken from the 1982 and 1986 Survey of Family Expenditures in Canada, we find that the saving patterns of immigrants in Canada are not dissimilar across countries of origin. From the 1980-85 Consumer Expenditure Survey in the U.S., we find that the saving rate of Asians is not different from that of Whites, whereas Blacks save more than Whites within comparable classes. Supplementing Hayashi's macro evidence that the savings rate gap between Japan and the U.S. is a statistical illusion due to different accounting method, our findings provide micro evidence *against* the existence of cultural effects on savings.

I. Introduction

For most of the post World War period, the American savings rate has been considered low by international standards. During the 1970's, the average net national savings rate in the U.S. (8.0 percent) was only 53 percent of that in the OECD countries in Europe (15.1 percent) and 31 percent of that in Japan (25.5 percent). Why are there such large differences in aggregate savings rate across countries?

Many explanations have been proposed. To name a few, differences in economic growth rate, social security system, tax incentives, and land and housing prices have been part of the answer. Recently, however, Hayashi (1986, 1989) has convincingly demonstrated that much of the savings rate gap between Japan and the U.S. is a statistical illusion arising due to conceptual differences in national income accounting; using the U.S. definition which treats all types of government expenditure as consumption and values depreciation at replacement cost, the adjusted national savings rate of Japan was not extraordinarily high by international standards except for the high growth period of 1965-75. Hayashi's finding is crucial since it reduces the magnitude of the measured savings rate gap, making it more likely that economic factors alone, and not cultural factors, are capable of explaining the cross-country differences. If the resort to cultural factors is indeed necessary to explain such an important economic variable as the savings rate differential, economists could not expect to learn much from cross-country comparison. It is no wonder that economists have reluctantly paid lip service to the possibility that individuals in each country may have different tastes for savings: "If all else fails, there is a cultural explanation. The Japanese are simply different. I refuse to comment on this

explanation." (Hayashi, 1986)

The purpose of this paper is to explicitly examine empirical evidence for cultural effects by comparing the saving patterns of native borns and immigrants (across countries of origin) in Canada and the U.S.¹ For example, if the saving patterns of Japanese immigrants and others in the U.S. are significantly different after considering other economic factors such as income, immigration year, etc., it can be regarded as evidence for cultural effects since our samples share the same institutional circumstances.² This methodology is free from the trouble due to conceptual differences in accounting or the choice of the savings rate, which plague international comparisons based on national data.³ However, we should admit that this methodology is not free from an adverse selection bias: The very act of immigration might imply that immigrants are "different" from those who do not

¹ Our definition of cultural effect may be confusing to some readers. For clarity, think of a Korean immigrant to the U.S. who changes his consumption pattern by imitating yuppie style of life. One could argue that this is the cultural effect of America on the immigrant. Whereas, we will say in this paper there is no permanent (Korean) cultural effect on him or cultural effect is temporary. On the other hand, our definition of cultural effect is *not* so broad as the concept implied in the following statement: If one society has a higher capital gains tax and thereby lower savings than the other, the difference should be regarded as reflecting cultural factors; The choice of a tax system must be influenced by the society's cultural background by voting etc.

² This methodology is widely used in epidemiology to examine ethnic differences in disease patterns. For example, Hughes, Lun and Yeo (1990) reports that Indians have higher mortality from Ischaemic heart disease than Chinese and Malays in Singapore. In economics, Kumcu (1989) studies a similar idea by comparing the different saving behavior of Turkish "guest workers" in Germany to native residents of Germany and Turkey.

³ For example, since the relative importance of incorporated businesses differs among countries, if households can see through the corporate veil, the international comparison of personal (household) saving may be misleading.

immigrate. Additionally, immigration policy itself might lend bias since it might be concentrated towards admission of certain types of individuals.

Our analysis is greatly limited by the available data. To examine the evidence for cultural effects, one needs information not only on individual savings rates but also on individual countries of origin. Unfortunately, there seems to be no suitable data set covering both pieces of information. The Consumer Expenditure Survey (CES henceforth) in the U.S. and The Survey of Family Expenditures (SFE henceforth) in Canada have reasonable data for consumption expenditures and income, but countries of origins are grouped. In the SFE in Canada, they are categorized as (1) Canada, (2) North and West Europe (with USA), (3) South and East Europe, (4) China and South-East Asia, (5) Other Asia, and (6) Others. In The CES in the U.S., relevant information is the following race code: (1) Whites, (2) Blacks, (3) Asians, (4) American Indians, and (5) Others. On the other hand, despite the broad categorization, the bulk of immigrants within the Asian groups in both data sets come from relatively few countries so that sufficient homogeneity obtains at least within those groups. (see the discussion in section II.) Keeping this limited power of the data in mind, this paper examines whether the saving patterns among these categories are different: If one believes that cultural factors are unimportant in an economic decision such as savings, saving patterns should not be significantly different across ethnic origins or races.

From the cross sectional data taken from the 1982 and 1986 SFE in Canada, we find that the saving patterns of immigrants in Canada are *not different across countries of origin* after controlling for their duration of residence as well as other characteristics. There is some evidence that, independently of their origin, new immigrants save less than Canadian borns,

and that this immigration effect is temporary. From the cross sectional data taken from The CES in the U.S. (1980-1985), we also find that the savings rate of Asians is not different from that of Whites, whereas Blacks save more than Whites within comparable income classes. Together with Canadian evidence, the finding that newly immigrated Asians, rather than Blacks, show similar saving behavior with Whites suggests that differences in tastes are not a major reason for saving rate differentials. However, nothing in our finding denies possible cultural effects on other behavior. For example, we find that Asian immigrants spend proportionally more on education and there are more international marriage couples in the North and West European group in the SFE.

The rest of the paper is organized as follows. Section II describes the data sets and discusses the relative homogeneity of countries in each category. Section III presents the evidence from The CES (1980-1985) in the U.S. The evidence from The SFE (1986) in Canada is presented in section IV. As a related issue, the differences in wealth holding across races and ethnic origins are discussed in section V. Section VI contains brief concluding remarks.

II. Data

The CES in the U.S. and The SFE in Canada provide detailed information on consumption expenditures, selective assets, income, and demographic characteristics. In order to yield enough Asian cases, we pooled the CES data for the years from 1980 to 1985.⁴ The Canadian data come from the 1982 and

⁴ All nominal figures in each month are deflated by the relevant component

1986 SFE in Canada.

As mentioned in the introduction, the CES has race codes for (1) Whites, (2) Blacks, (3) Asians, (4) American Indians, and (5) Others. Since the CES does not report information on immigration histories, the second or the later generation of Asian immigrants can not be distinguished, and the analysis with the CES has certain limitations: Even though regressions might show the different saving pattern of Asians from those of other races, it might be due to immigration effects instead of cultural effects considering that most of Asians are recently immigrated. The SFE in Canada has a more suitable categorization for our analysis. First, it divides countries of birth into six groups: (1) Canada, (2) North and West Europe (with USA), (3) South and East Europe, (4) China and South-East Asia, (5) Other Asia, and (6) Others. In China and South East Asia group, only six countries are included: China, Taiwan, Hong Kong, Japan, Korea, and Vietnam. Other Asia includes Philippines and South Asian countries (mostly India).⁵ The SFE also contains the information on immigrant arrival year. Therefore, after controlling for the duration of residence, cultural effects can be separated from immigration effects by comparing the saving patterns of immigrants across countries of origin.

Despite the broad categorization in each data set, the bulk of immigrants within Asian groups in both data sets come from relatively few countries so that sufficient homogeneity obtains at least within those

of the nonseasonally adjusted monthly CPI index.

⁵ The children of immigrants, if they were born in Canada, are listed as Canadians. Since an immigrant is defined as a permanent resident of Canada who does not have a Canadian citizenship by birth, the sample does not include temporary residents who might have different saving objectives.

groups. Among the six countries in the China and S.E. Asia group in the SFE, Taiwanese and people from Hong kong are mainly of chinese origin. With Koreans, Japanese, and Vietnamese, they constituted 5.5 percent of the total immigrant population in Canada in 1986, and the majority of them are recent immigrants.⁶ According to 1980 U.S. Census, 92 percent of the U.S. Asian population are immigrants from one of the following six countries: Japan (20 %), China (23 %), Philippines (22 %), Korea (10 %), India (10 %), and Vietnam (7 %).

In order to check whether the Asians as a group have a higher saving rate than the others, Table 1 presents figures on gross national saving rates for the countries from which large proportion of immigrants in the micro data sets came. Using the data in Summers and Heston (1988), the national savings rate is calculated as the proportion of Gross Domestic Product minus private and government consumption expenditures over Gross Domestic Product.⁷ The reported figures are the average rates for the period from 1970 to 1985. The second column reports the ratio of each country's GDP per capita (measured in 1980 relative international prices) to the U.S. GDP.

Using the proportions in the 1980 U.S. population as weights, the weighted savings rate of Asian countries in table 1 is 26.0 percent, which is higher than that of the U.S. but not much higher than the Canadian rate, 23.5

⁶ In Canada, the proportion of immigrants in the population has remained at 16 percent since 1951, but recent immigrants are much less likely to be born in Europe. Before 1961, 87 percent were from Europe, 3 percent from Asia, and 7 percent from the U.S. In the group of recent immigrants during 1981 to 1988, 43 percent came from Asia, 29 percent from Europe and 7 percent from the U.S. (White (1986), p39, Ethnic Diversity in Canada)

⁷ In calculating savings rate, we used GDP, consumption, and government consumption series valued in countries' own domestic prices rather than in a common set of international prices.

percent. One may be tempted to conclude that Asians as a group do not have a different savings pattern from that of Canadians. However, we think that the simple comparison of aggregate savings rate across countries is misleading, judging from the enormous GDP gap in the second column. What one should look at is the residuals after controlling for the other economic factors such as growth rate of income, dependency rates, etc.

In the first regression in table 1, average saving rates of 16 European countries, the U.S. and 6 Asian countries during 1970 to 1985 are regressed on the ratio of each country's GDP per capita to the U.S. GDP per capita, the average growth rate of real GDP per capita, and an Asian country dummy. In the second regression, instead of using average values, a fixed (Asian country) effect model is estimated with panel data. In both regressions, positive coefficient of asian dummies indicate that asians as a group have a higher saving rate after controlling for growth and relative income, despite the broad categorization.

However, we do not think this approach is fruitful or could provide conclusive evidence for cultural effects. Despite econometric issues such as omitted variables, a reverse causation running from saving to growth, etc., this approach is based on national data and is not free from the problem which Hayashi pointed out -- conceptual differences in accounting.⁸ Instead of pursuing this macro line of approach further, we will adopt an alternative approach which is based on micro data from a single country and, therefore,

⁸ Also, with national data, it is not clear what variables should be in a regression. For example, even the effect of income growth on saving rate is ambiguous depending on relative magnitude of intra-generation income growth (slope of age-earning profile), intergenerational growth, and population structure.

free from the above accounting problem. Regardless of the national savings rate differentials, our strategy of comparing the savings pattern of immigrants is a superior methodology for testing cultural effects: if a small savings rate differential across countries in macro data implies insignificant cultural effects, the savings patterns of immigrants from these countries would not be different in micro data.

In sum, for our micro approach to be meaningful, countries in each category need to have homogeneous cultural backgrounds, but are not required to have similar aggregate savings rate. A thorough investigation of what constitutes cultural backgrounds seems to be more in the realm of sociology than economics. But, however the term is defined in sociology, we would not be wide off the mark in assuming homogeneous cultural backgrounds among the six countries in the China and South East Asia category.

III. The Consumer Expenditure Survey in the U.S., 1980-85.

Our sample consists of 15619 households, 13297 of whom are Whites, 1808 are Blacks, 448 are Asians, 66 are American Indians after the following exclusions: Observations are deleted if the household was part of the survey for less than six month, if the household is a mixed race couple, if the age of the head is less than 20 or greater than 70, if the reported after tax income is less than 2,000 or greater than 150,000 dollars, and if housing tenure is student housing. All dollar values are expressed in terms of 1983 dollars.

For each household, expenditures (approximately 500 narrow categories in the CES) are grouped into three broad categories of services, non-durables, and durables following the definitions used in Mace (1988). Income is defined

as after tax income excluding deductions for social security. Savings are defined in two ways, depending on whether durable expenditures are included in savings or not.⁹ Compared with the detailed information on consumption expenditures, the information on wealth in the CES is limited. Our measure of wealth consists of three components: financial assets which are reported in the CES, housing equity, and pension wealth. Equity in housing and pension wealth are calculated using the information on housing values and pension payments based on the assumptions similar to those in Skinner (1985).¹⁰

Some sample means are reported in table 2. The average income of Blacks is only 70 percent of that of Whites. The average savings rate of Blacks is the lowest, not surprisingly, considering their lower income and wealth. Asians' savings rate is lower than Whites' even though their average income is 5 percent higher.¹¹ On average, table 2 shows that Blacks have only 50

⁹ Housing rents and mortgage interest payments are treated as consumption. For homeowners without mortgage payments, we imputed implicit rents to income as well as consumption. The paper reports the results without this imputation, since it did not change the conclusions. Weil (1989) discusses the problem of using mortgage interest payments as a measure of housing consumption for homeowners.

¹⁰ Following Skinner (1985), we assume that homeowners younger than 31 have 20 percent equity in the house. From age 31, equity is assumed to grow linearly until age 65, at which point 100 percent equity is assumed. (In our data, among homeowners who are paying mortgages, only 3 percent are above 65.) Pension wealth is estimated in the following way. If the individual is still working, social security and pension wealth is estimated by assuming that it is the accumulated payment from age 20 to the family head's current age at 2.3 percent (in U.S.A.) and 2.5 percent (in Canada) interest rate. If the individual is retired, the present value of pension wealth is calculated by assuming that the current receipts would continue until age 85, and discounting at the same rates. Maximum component is used if the households both received and paid into a pension plan or social security. For the canadian data where the immigration arrival year is available, social security and pension wealth are the accumulated payment from the arrival year.

¹¹ The reported average saving rates include durable expenditures which are

percent of the wealth accumulation of Whites whereas Asians have 18 percent more wealth than Whites. This Black-White wealth ratio seems too high compared with the ratios (20 percent) found in other previous studies (Terrell (1967), Blau and Graham (1990), Smith (1967)). It may be due to an underreporting tendency in survey data on financial assets, especially on stocks, which are mostly held by Whites.¹² To examine this point, table 2 reports "financial assets (II)" which is the capitalized value of interest income and dividend income by six month T bill rate and dividend yields rate respectively. The large gap between "financial assets (I)", which is a reported value, and "financial assets (II)" confirms a underreporting tendency. However, the Black-White wealth ratio is still 40 percent. This large difference casts doubt on the quality of our wealth measure, even after considering the different coverage of samples and assets between previous studies and ours. More discussion on the wealth variable will be postponed to section V.¹³ Before the regression analysis, figure 1 shows how savings rate of each race changes for seven income classes.¹⁴ In each of the seven classes, Blacks save more than Whites, but the saving rate differentials among Asians, Whites, and American Indians do not have a consistent pattern.

about one sixth of total expenditures.

¹² For an evidence of underreporting, refer to Ferber (1966) and Ferber et.al. (1969).

¹³ One interesting statistic is educational expenses. Note that the fraction of educational expenses in income of Asians is twice as much as those of Whites and Blacks. However, these figures are not adjusted by the number of children and, therefore, a simple comparison can be misleading. After controlling for the number of children and other household characteristics in the regression, we finds that asians spend significantly more on education than the others.

¹⁴ The seven classes are: 2,000 - 10,000, 10,000 - 20,000, 20,000 - 30,000, 30,000 - 40,000, 40,000 - 50,000, 50,000 - 60,000, above 60,000 dollars.

The surprising finding that Blacks save more than Whites within comparable income classes was recognized a long time ago (Mendershausen(1940), Brady and Friedman (1947), Klein and Mooney (1953)) and played an important role in the development of consumption theories. In his "relative income" theory of consumption, Duesenberry (1949) argued that Blacks with a given level of income would rank higher in the income distribution of Black communities, and, therefore, have less demonstration pressure on consumption; To Friedman (1957), the black-white differential implies that Blacks have lower "permanent income" at the same measured income; According to Tobin (1951), the differential is due to the larger dissaving among Whites: Blacks do not save more; Whites merely dissave more since Blacks have smaller financial resources other than income so that they are less able to dissave as frequently or as much as Whites.

Though our focus is not to test each theory, we can evaluate Tobin's argument by stratifying our sample into savers and dissavers. Figure 2 and 3 plot savings rate among savers and dissavers, respectively. Our evidence is against Tobin. Even among savers, Blacks save more than Whites consistently.¹⁵ Still, we do not find any consistent saving rate differentials among the other races. Figure 3 of dissavers suggests that Tobin's argument does not apply to Asians.¹⁶

¹⁵ Galeson (1972) found the opposite results from the 1960-61 Survey of Consumer Expenditures. We think the difference comes from the fact that she measures savings from the reported value of changes in assets and liabilities, which is generally less reliable.

¹⁶ To keep the sample more homogeneous, we further divided household types into married-couple families, families headed by single males or females, and one person households. Similar conclusions hold except the difficulties due to the small number of observations in Asian groups.

We now turn to econometrics. A structural approach which explicitly specifies the source of cultural effects (for examples, differences in time preference, bequest motives, etc.) would be desirable, but not feasible given the limit of data availability. Instead we have to revert to old fashioned econometric specification of a saving function. While we cannot think of a structural interpretation, we control for characteristics of households such as income, wealth, age, dependency rate, education, location, occupation etc., and examine whether unexplained residuals in saving (or saving rate) regressions can be attributed to race dummy variables. The first problem of this approach is that there may be too many uncontrolled variables to warrant the conclusion that race alone is responsible for unexplained residuals. Second, as Friedman (1957) pointed out, if permanent income is correlated with race, regression with current income instead of permanent income will bias the coefficients of race dummies. Though we cannot correct much of the first problem, we get around the second problem by constructing permanent income and transitory income by running income (or earning) regressions.¹⁷ Following Blau and Graham (1990), permanent income is set to predicted income evaluated at age equal to 40. Transitory income is defined as the difference between current income and predicted income evaluated at the actual age. Marginal propensity to save from transitory income is expected to be higher than that from permanent income in the saving regressions.¹⁸

¹⁷ In the income (or earning) regressions, the explanatory variables include age, age squared, education, occupation, location, sex of the head, marriage, and race.

¹⁸ One may object the use of a single equation for all races. The coefficients of independent variables other than race dummies may not be the same. In fact, with stratified samples, a Chow test rejects the null hypothesis that Blacks and Whites have the same coefficients. This suggests

The regression results are presented in Table 3. We run two stage Aitken estimation to correct the heteroscedasticity problem in the regressions. The OLS results are qualitatively similar. The image they give is similar to that given in figure 1. Both savings and saving rate regressions show a significant positive coefficient on a Black dummy and insignificant coefficients on Asians and American Indians dummies. The argument that the coefficient of Asians is biased downward if Asians have higher permanent income than Whites does not seem to be a plausible explanation for this finding: When measured income is regressed on other characteristics including dummy variables for race, Asians as well as Blacks and American Indians have negative signs, implying that the unmeasured portion of permanent income of Asians is lower, not higher, than those of Whites.¹⁹ In the third and the fourth columns, the regressions with permanent and transitory income are reported. As expected, the marginal propensity to save from transitory income is higher than that from permanent income, and, if there is any saving rate differential, the evidence is that Blacks save more and Asians save less than

that we should estimate separate equations and employ a standard means-coefficients analysis. (Blinder (1973), Birnbaum and Weston (1974)) However, in means-coefficients analysis, the reason for different coefficients is not explicit. Since our focus is not to estimate effect of a certain variable, we prefer to use dummy variables which capture the weighted average of race effects from all independent variables in a single equation. Also, a means - coefficients analysis would not be powerful considering the limited number of Asian observations.

¹⁹ The conjecture that Asians may have a stronger precautionary savings motive does not seem to be a plausible explanation either. Occupational dummies are included in the regressions to control for income risk. Moreover, as shown in section V, Asians hold more assets relative to labor income than Whites, and precautionary savings of Asians must be smaller, if they exist, within a comparable income risk group. See Zeldes (1989) for the implication of asset holdings for precautionary savings.

Whites contrary to our prior conjecture.²⁰ The comparison between the third and the fourth regression, which excludes durable expenditures from savings, suggests that Whites spend relatively more on durables than Asians or Blacks.²¹

Interpreting the above results as implying no cultural effects seems premature. Most Asians are recently immigrated. The temporary surge of consumption in the initial stage of immigration may have offset a possible positive cultural effect. This motivates the investigation of the Canadian SFE which has information on immigrant arrival years.

IV. The Survey of Family Expenditures in Canada, 1986.

The Canadian sample consists of 15458 households. Among them, 13789 are Canadian-borns, 742 are North and Western Europeans, 557 are South and East Europeans, 192 are Chinese and South-East Asians, and 178 are Other Asians, after the following exclusions: Observations are deleted if there is missing variable, if the household is a mixed group couple, if the age of the head is less than 20 or greater than 65, and if the reported after tax income is less than 3,000 or greater than 150,000 Canadian dollars. All dollar values are expressed in terms of 1986 Canadian dollars. The wealth variable is calculated in the same way as in the CES with two modifications. First, the

²⁰ Our measure of permanent income is a generated regressor and t-statistics are biased upward. (Pagan(1984)) Correcting this bias would make the race effect even more insignificant.

²¹ Lawrence Summers suggested that we test the view that Asians spend more on education which should be treated as savings. We found that it is true that Asians spend significantly more on education with the CES as well as the SFE data. However, treating educational expenses as savings did not change our regression results: the Asian dummy is insignificantly negative.

financial asset variable is the capitalized value of the income from investment since financial asset holdings are not directly reported. Second, the pension wealth variable includes only the accumulated payments at 2.5 percent interest rate from age 20 to the family head's current age. For immigrants, it is the accumulated payments since the immigration arrival year.²² A few sample means are reported in table 4.

The weighted average income of immigrant families is 8 percent higher than natives' average income. Based on the 1971 and 1981 Canadian censuses, Bloom and Gunderson (1989) found that the relatively higher income of immigrants is the result of a small to moderate assimilation effect: immigrants make low entry wages relative to "comparable" natives, but they overtake native earnings within roughly 13 to 22 years after entry into Canada.²³ Note the large differences in duration of residence among immigrants: the average duration of South East Asians is only 46 percent of that of North and West Europeans.²⁴

Figure 4 shows savings rate differentials across countries of birth after controlling for income. Figure 5 plots average savings rate among

²² In SFE data, the Canada/Quebec Pension Plan and other government retirement pensions benefits are reported together with unemployment insurance, income from other government transfer programs and other money income. If we treat this total amount as pension benefits, the calculated present value of benefits almost doubles our measure of pension wealth. In order to avoid this overestimation, we exclude households over age 65 since they are likely to receive most of the pension benefits, and calculate pension wealth as the accumulated value of payments only.

²³ For theoretical reasoning and estimates of the immigrant assimilation effect, see Chiswick (1978), Borjas (1982), and Bloom and Gunderson (1989).

²⁴ Interestingly, the N.W. Europe sample has relatively more mixed group marriages. The exclusion of these mixed group couples explains the low percentage of married couple in N.W. Europe sample. It should also be noted that the China and S.E. Asia group spends proportionally more on education.

savers. The small number of observations for South East Asians and Other Asians makes it hard to divide them into more refined groups, such as savers vs. dissavers, as the erratic movements in the savings rate in the figures indicate. However, the impression is that the saving rate differentials among immigrants do not show a consistent pattern in figure 4 and 5.

Using the information on duration of residence, we now estimate the following regression:

$$S_i = a + b X_i + \sum_{j=1}^4 (\alpha_j + \beta_j D_i) R_{ij} + \varepsilon_i,$$

where S_i is savings or savings rate of household i , X_i is a vector of household characteristics, R_{ij} is a dummy variable for country of birth of group j , and D_i denotes the duration of residence for household i . We can regard the coefficient α_j as the sum of "immigration effects at the time of entry (I_0)" and "cultural effects at the time of entry (c_{0j})."²⁵ By the immigration effect (I_0), we mean the immigration related effect on savings which is common across all immigrants. The portion which is country-of-birth specific is called the cultural effect (c_{0j}). The coefficient β_j captures the assimilation speed of these two effects. If cultural effects and/or immigration effects are washed out gradually, the coefficients α_j will have a different sign from the coefficients β_j . The implied magnitude $-\alpha_j/\beta_j$ will denote the crossover period for full assimilation.

A non-zero α_j implies a different saving pattern of the immigrant group j from that of native borns, but it may be either because of an immigration effect or a cultural effect at the time of entry. Since the immigration

²⁵ Although not reported in table 5, we also estimated equations with non-linear effects from D_j , but they did not change the qualitative results.

effect is common across groups, the cultural effect can be identified by examining differences of α_j 's across immigrant groups. If a cultural effect does not exist but an immigration effect does, α_j will be non-zero but the same across immigrant groups.

The message in Table 5 is similar to that given in Figure 4. In the first column, a savings regression without controlling for the duration of residence indicates that immigrants save less in general than comparable Canadian borns. F tests cannot reject the hypothesis that there is no saving rate differential. In the second column, we test the existence of permanent cultural effects and temporary immigration effects: The assimilation speeds β_j 's are assumed to be independent of the countries of birth. The results show that new immigrants save less than those born in Canada at the time of entry. Together with the fact that the F tests cannot reject the hypothesis of no cultural effects (common α_j 's), this indicates the presence of "negative and temporary" immigration effects on savings. The third column shows the regression result when different assimilation speeds are considered. Still, we cannot reject the hypothesis that all the α_j 's are equal across immigrant groups at the 8 percent significance level. For readers who might think 8 percent is significant enough, we report that one cannot reject the hypothesis that South Asians, which is the most homogeneous group, have the same savings pattern from the others, especially North-West Europeans at the 1 percent level. Moreover, if there is any saving rate differential, the evidence is that South East Asians save less than others contrary to our prior conjecture. In the fourth and fifth regressions with permanent income and transitory income, we could not find evidence for

significantly different savings patterns across immigrants.²⁶

V. Differences in Wealth

Since wealth is the accumulation of savings, people who have higher savings rates with similar characteristics such as income, wealth, education, etc, are expected to own higher levels of wealth in the long run. But previous studies show that this is not necessarily the case for black people. (Terrell (1967), Blau and Graham (1990), Smith (1967)) They found that Blacks have on average less than one fifth of wealth holdings of Whites, and part of this racial difference persists even after controlling for a variety of characteristics. Often cited sources of this difference include differences in past history of income (permanent income), intergenerational transfers, and a different set of investment opportunities which has been fostered by an information gap or discrimination. Without aiming at explaining the relationship between racial differences in savings rate and wealth holdings, this section will focus on the wealth difference itself across races, especially for Asians.

Total wealth and individual asset regressions for the U.S. data are reported in Table 6. Although not reported, regressions with estimated permanent income did not change the result. As was found by other studies, Blacks hold far less wealth than "comparable" Whites in all categories of wealth. American Indians seem to have less wealth, but the difference is not statistically significant. Asians show an interesting pattern. They are not

²⁶ Since the regressions with saving rates do not change any qualitative results, they are not reported for parsimony of presentation.

much different from Whites in their total wealth or financial wealth holdings, but their share of real estate is significantly higher than Whites'. This pattern is suggestive considering the high land and housing prices in Asian countries.

For the Canadian data, we estimate

$$W_i = a + b X_i + \sum_{j=1}^4 (c_j + d_j D_i) R_{ij} + \epsilon_i,$$

where W_i represents wealth of household i , X_i is a vector of household characteristics, R_{ij} is a dummy variables for immigrant group j , and D_i denotes a duration of residence. The coefficient c_j represents average wealth holding of immigrant group j at the time of entry to Canada. The wealth accumulation speed of each immigrant group is captured by d_j . Including the square of D_i and estimated permanent and transitory income in our regressions did not change the following results reported in Table 7.

In Table 7, the first two columns compare the differences in wealth without considering duration of residence. European immigrants seem wealthier than "comparable" natives or asian immigrants. Total wealth holdings of S.E. Asians are less than or not different from natives' but their share of housing and financial wealth is larger. However, as the third to fifth column show, immigrant arrival year changes this picture drastically. When they first enter Canada, all immigrants own less wealth than natives, but they accumulate faster. The implied catch up periods are 27, 17, 20 and 20 years for N.W. European, S.E. European, S.E. Asian and Other Asian immigrants, respectively. However, as in the saving regressions, F test cannot reject the hypothesis that the speed of accumulation and the initial wealth holdings, respectively, are equal across immigrant groups. Note that immigrants

accumulate wealth significantly faster than natives after their entry.

VI. Conclusion

If economists should rely on the weak explanation of cultural effects as a reason for savings rate differentials across countries, not much can be expected from cross country studies. That explains why Hayashi's (1986, 1989) arguments are whole-heartedly welcomed by economists: much of the savings rate gap between Japan and the U.S. is a statistical illusion due to the conceptual differences in national income accounting. In fact, cultural effects, if they exist, may not be wholly exogenous: "Under the lingering influence of Keynes, concern about stagnation due to oversavings has perhaps had more influence on national attitudes towards savings in the U.S. and U.K., than in Japan or continental Europe." (Summers (1985))

The purpose of this paper was to test the existence of cultural effects explicitly by comparing the saving patterns of immigrants. With the cross sectional data from the 1982 and 1986 Survey of Family Expenditures in Canada, we find that the saving patterns of immigrants are not dissimilar across countries of origin after controlling for their immigration arrival year as well as other socio-demographic characteristics. With the cross sectional data from the 1980-85 Consumer Expenditure Survey in the U.S., we also find that the savings rate of Asians is not different from that of Whites, whereas Blacks save more than Whites within comparable income classes. Together with the Canadian evidence, we think our finding that newly immigrated Asians, rather than Blacks, show similar saving behavior with Whites provides micro evidence against cultural effects on savings supplementing Hayashi's macro evidence. However, nothing in our finding

denies possible cultural effects on other behavior. For example, we find that Asian immigrants spend proportionally more on education and that there are more international marriage couples among North and West European immigrants.

To be sure, some of our conclusions are premature partly because of the insufficient observations for Asian immigrants in the Canadian SFE data and partly because of the cross sectional nature of our sample. In particular, the questions of an adverse selection bias still remains: The very act of immigration might imply that immigrants are "different" from those who do not immigrate. If a data set were available which provided information on pre-immigration saving patterns of the participants, then adverse selection effects could be tested. Unfortunately, we are not aware of the existence of such a data set.

REFERENCES

- Birnbaum, Howard, and Rafael Weston (1974), "Home Ownership and the Wealth Position of Black and White Americans," Review of Income and Wealth, XX, pp 103-18.
- Blau, Francine and John W. Graham (1990), "Black-White differences in Wealth and Asset Composition," The Quarterly Journal of Economics Vol. CV, May, pp321-340.
- Blinder, Alan S. (1973), "Wage Discrimination: Reduced Form and Structured Estimates," Journal of Human Resources, VIII, PP 436-55.
- Bloom, David E., and Morley Gunderson (1989), "An Analysis of the Earnings of Canadian Immigrants," mimeo, Columbia University.
- Borjas, George J. (1985), "Assimilation, Changes in Cohort Quality, and the Earnings of Immigrants," Journal of Labor Economics, Vol. 3, pp 463-89.
- Chiswick, Barry R (1978), "The Effect of Americanization on the Earnings of Foreign-born Men," Journal of Political Economy, 86, October, no 5. pp 897-921.
- Brady, D.S. and R.D. Friedman (1947), "Savings and the Income Distribution," in NBER Studies in Income and Wealth Vol.10, New York, pp. 247-65.
- Duesenberry, James S. (1967), Income, Saving and the Theory of Consumer Behavior, New York.
- Friedman, Milton (1957), A Positive Theory of Consumption Function Princeton: Princeton University Press.
- Galeson, Marjorie (1972), "Do Blacks Save More?" American Economic Review LXII, pp211-16.
- Hayashi, Fumio (1986), "Why Japan's Saving Rate So Apparently High?" NBER Macroeconomics Annual, pp. 147-210.
- _____ (1989), "Japan's Saving Rate: New Data and Reflections," NBER Working Paper #3205.
- Hughes, Kenneth, K.C. Lun, and Peter Yeo (1990), "Cardiovascular Diseases in Chinese, Malays, and Indians in Singapore. I. Differences in Mortality," Journal of Epidemiology and Community Health, 44, pp. 24-28.
- Klein, Laurence R. and H.W. Mooney (1953), "Negro-White Savings Differentials and the Consumption Function Problem," Econometrica 21. pp. 425-56.
- Kumcu, M.Ercan (1989), "The Savings Behavior of Migrant Workers -Turkish

- Workers in West Germany," Journal of Development Economics 30, pp. 273-86.
- Mace, Barbara J. (1988), "Consumption Volatility : Full Insurance in the Presence of Aggregate Uncertainty," Doctoral Dissertation, University of Chicago.
- Mendershausen, Horst (1940), "Differences in Family Savings Between Cities of Different Size and Location, Whites and Negroes," Review of Economics and Statistics 22, pp. 122-37.
- Pagan, A. R. (1984), "Econometric Issues in the Analysis of Regressions with Generated Regressors," International Economic Review, 25, pp 221-47.
- Skinner, Jonathan (1985), "Variable Lifespan and the Intertemporal Elasticity of Consumption," Review of Economics and Statistics 67, pp. 616-23.
- Smith, James D. (1975), "White Wealth and Black People: The Distribution of Wealth in Washington D.C. in 1967," in The Personal Distribution of Income and Wealth, James D. Smith, ed., New York: Columbia University Press.
- Summers, Lawrence H. (1985), "Issues in National Savings Policy," Discussion Paper No. 1170, Harvard University.
- Summers, Robert and Alan Heston (1988), "A New Set of International Comparisons of Real Product and Price Levels Estimates for 130 Countries, 1950-1985," The Review of Income and Wealth, Vol. (?), pp. 1-25.
- Terrell, Henry S. (1971), "Wealth Accumulation and Black and White Families: The Empirical Evidence," Journal of Finance, XXVI, May, pp363-77.
- Tobin, James (1951), "Relative Income, Absolute Income, and Savings," in Money, Trade and Economic Growth, New York pp. 135-56.
- Weil, David (1989), "Age and Saving in Micro and Macro Data," mimeo, Harvard University.
- White, Pamela M. (1990), Ethnic Diversity in Canada: 1986 Census of Canada, Statistics Canada, Ottawa, Canada.
- Zeldes, Stephen P. (1989), "Optimal Consumption with Stochastic Income: Deviations from Certainty Equivalence," The Quarterly Journal of Economics, Vol. CIV, May, pp275-98.

TABLE 1 : Average Saving Rates of Each Country (1970-85)

Country	(GDP-C-G)/GDP	$\frac{\text{GDP per Capita}}{\text{U.S. GDP per Capita}}$
U.S. A.	0.143	-
Canada	0.235	0.94
<u>South East Asia</u>		
Japan	0.314	0.67
Korea	0.231	0.19
Taiwan	0.303	0.22
Hongkong	0.322	0.53
<u>Other Asia</u>		
Philippines	0.207	0.12
India	0.180	0.05
<u>North-West Europe</u>		
United Kingdom	0.191	0.67
France	0.229	0.79
Germany	0.243	0.80
Finland	0.261	0.69
Austria	0.257	0.67
Sweden	0.225	0.78
<u>South Europe</u>		
Greece	0.151	0.35
Italy	0.229	0.57
Spain	0.229	0.50
Portugal	0.162	0.31

REGRESSION RESULTS				
	Y_i/Y_{us}	g_i	Asia Dummy	R^2
REGRESSION 1	0.00132 (3.32)	1.6090 (2.47)	0.05991 (2.18)	0.5160
REGRESSION 2 (PANEL)	0.00131 (10.98)	0.4843 (6.31)	0.07998 (10.77)	0.3523

1) G includes only government consumption expenditures, not investment expenditures. In the first column, the ratio is calculated using figures denominated by countrys' own domestic prices. The second column measures the average of the ratio using 1980 relative international prices. [source : Summers-Heston(1988)]

2) In the regressions, Y_i and g_i are the level and the growth rate of real GDP per capita for country i, respectively. The countries included in the regressions but not reported in tables are Australia, Belgium, Norway, Netherlands, Switzerland.

TABLE 2 : Descriptive Statistics (U.S.A.)

Variables	Total	White	Black	Asian	American Indian
No. of Obs.	15619	13297	1808	448	66
Income	20605	21343	14925	22448	15008
Saving Rate w/ Durables	0.1616	0.1699	0.0887	0.1363	0.0115
Total Wealth	94855	99321	57537	118923	54032
{ Financial Asset(I)*	1062	1168	216	1374	652
{ Housing Wealth	23078	24117	12695	35375	14735
{ Pension Wealth	70715	74035	44625	82174	38644
Age of Head	40.35	40.36	40.18	40.68	39.06
Marriage(%)	63.00	65.19	46.40	68.30	46.96
Financial Asset(II)*	8094	9226	536	6013	1092
Edicational Expenses	336	340	214	707	242

* Financial Asset I is the sum of the reported values of checking account, savings account, US savings bond, stocks and other securities and money owed. Financial asset II is a calculated number by capitalizing interest income and dividend income. Housing and social security wealth are constructed as described in the footnote 9.

TABLE 3 : Estimated Saving Equations (U.S.)

Dependent Var	Savings with Durables	Saving Rate with Durables	Savings with Durables (Permanent I)	Savings w/o Durables (Permanent I)
Income (or Permanent I)	0.5230 (42.72)	0.000036 (66.39)	0.4197 (16.91)	0.2378 (7.19)
Income ² or Permanent I ²	0.000002 (8.53)	-3.17*10 ⁻¹⁰ (-40.24)	-9.69*10 ⁻⁷ (-1.61)	-0.0000024 (-2.93)
Transitory Income			0.6455 (117.2)	0.5017 (64.13)
Transitory Income ²			6.13*10 ⁻⁷ (2.09)	7.69*10 ⁻⁷ (1.87)
Dependency Rate	-1711.24 (-11.11)	-0.1418 (-18.65)		
Marriage	-2240.99 (-24.4)	-0.0830 (-16.29)		
Financial Wealth	-0.0279 (-1.54)	-4.66*10 ⁻⁷ (-0.74)		
Housing Wealth	-0.0289 (-11.58)	-7.79*10 ⁻⁷ (-9.67)		
Pension Wealth	-0.0030 (-3.58)	1.65*10 ⁻⁸ (0.92)		
Black	430.68 (4.27)	0.0272 (4.05)	144.40 (1.28)	591.58 (4.01)
American Indian	22.90 (0.03)	-0.0301 (-0.71)	-1107.59 (-1.64)	-1862.44 (-1.74)
Asian	-326.03 (-0.95)	-0.0210 (-1.72)	-889.42 (-2.76)	-341.76 (-0.86)
R ²	0.5248	0.4863	0.5365	0.2236

* Other variables included are constant, education dummies, occupation dummies, age and age square of the head, and year dummies. Numbers in parenthesis are t-values. (GLS regression)

TABLE 4 : Descriptive Statistics (Canada)

Variables	Total	Canadian	U.S., N.W. Europe	S.E. Europe	S.E. Asia	Other Asia
No. of Obs.	15458	13789	742	557	192	178
Income	31167	30893	32566	33165	33855	37398
Saving Rate with Durable	0.2692	0.2700	0.2653	0.2694	0.2452	0.2545
Saving Rate w/o Durable	0.1198	0.1200	0.1232	0.1265	0.0967	0.0965
Total Wealth	98061	94797	128220	144229	93631	85541
{ Financial Asset(II)	14150	13503	16340	25743	19683	12922
{ Housing Wealth	33194	30252	53938	71107	49344	38521
{ Pension Wealth	50717	51041	57941	47377	24603	34097
Private Pension	31554	31542	38440	31149	15841	21946
Age of Head	40.7	40.1	46.8	47.5	41.3	38.7
Marriage(%)	67.9	68.1	53.9	76.3	75.5	78.6
Duration of Residence	.	.	23.4	22.5	10.9	11.3
Educational Expenses	288	266	403	388	1066	358

* Other variables included are constant, education dummies, occupational dummies, age and age square of the head, and year dummies. Numbers in parenthesis are t-values. (GLS regression)

TABLE 5 : Estimated Saving Equations (Canada)

Dependent Var	Savings w/ Durables	Savings w/ Durables	Savings w/ Durables	Savings w/ Durables Permanent I	Savings w/ Durables Permanent I
Income (Permanent I)	0.3649 (42.38)	0.3646 (42.34)	0.3651 (42.39)	0.0883 (5.54)	0.0889 (5.58)
Income ² (Permanent I ²)	0.00000110 (12.22)	0.0000011 (12.25)	0.0000011 (12.22)	0.0000036 (15.01)	0.0000036 (14.98)
Transitory Income				0.3685 (90.89)	0.3689 (90.95)
Transitory Income ²				0.0000026 (17.30)	0.0000026 (17.24)
U.S. & N.W. Europe	-346.49 (-1.81)	-645.81 (-1.87)	-1276.06 (-2.91)	-1359.27 (-3.60)	-2174.06 (-4.53)
S.E. Europe	-276.53 (-1.19)	-563.81 (-1.56)	206.56 (0.40)	-1395.56 (-3.53)	-581.15 (-1.03)
S.E. Asia	-381.84 (-1.00)	-503.91 (-1.27)	-1054.88 (-1.81)	-2020.23 (-4.66)	-2165.24 (-3.41)
Other Asia	-978.38 (-2.40)	-1114.70 (-2.60)	123.89 (0.17)	-2219.84 (-4.75)	-902.04 (-1.18)
Duration of Residence COMMON SPEED		12.570 (1.04)		66.626 (5.04)	
U.S. & N.W. Europe			38.623 (2.34)		101.069 (5.56)
S.E. Europe			-20.542 (-1.03)		30.811 (1.40)
S.E. Asia			70.330 (1.52)		82.451 (1.58)
Other Asia			-105.68 (-1.95)		-62.545 (-1.03)
R ²	0.6224	0.6224	0.6227	0.5374	0.5378
p values for Ho : all race dummies are equal	0.4912	0.6690	0.0830	0.2815	0.0913

* Other variables included are constant, education dummies, occupational dummies, age and age square of the head, and year dummies, etc. Numbers in parenthesis are t-values. (GLS regression)

TABLE 6 : Estimated Wealth Equations (U.S.)

Dependent Var	Financial	Housing	Pension	Financial + Housing	Total Wealth
Income	0.0566 (11.17)	0.2583 (5.26)	3.2696 (30.86)	0.3150 (6.32)	3.5846 (28.90)
Income ²	-1.87*10 ⁻⁷ (-2.00)	0.000006 (7.14)	-6.36*10 ⁻⁷ (-0.32)	0.000006 (6.83)	0.000005 (2.46)
Age	-27.87 (-2.57)	366.61 (3.48)	-869.81 (-3.83)	338.74 (3.17)	-531.07 (-2.00)
Age ²	0.5596 (4.43)	6.0395 (4.94)	36.74 (13.94)	6.5992 (5.32)	43.34 (14.04)
Urban	-0.7158 (-0.010)	-3612.04 (-5.29)	188.55 (0.12)	-3612.76 (-5.22)	-3424.20 (-1.98)
Dependency Rate	-24.28 (-0.30)	-792.05 (-1.03)	-6147.41 (-3.71)	-816.33 (-1.04)	-6963.75 (-3.59)
Marriage	-112.72 (-2.31)	8980.58 (19.06)	4511.25 (4.44)	8867.87 (18.56)	13379.13 (11.24)
Black	-314.75 (-5.69)	-2604.54 (-4.86)	-4811.51 (-4.16)	-2919.29 (-5.37)	-7730.80 (-5.71)
American Indian	-165.57 (-0.64)	-1464.22 (-0.59)	-4019.46 (-0.75)	-1629.80 (-0.64)	-5649.26 (-0.90)
Asian	-46.46 (-0.37)	4420.35 (3.70)	-2085.85 (-0.81)	4373.88 (3.61)	2288.02 (0.75)
p-values	0.1141	0.0001	0.6106	0.0001	0.0079
R ²	0.3417	0.3417	0.5088	0.3507	0.5696

* Other variables included are constant, education dummies, occupation dummies, and year dummies, etc. Numbers in parenthesis are t-values. (GLS regression)

TABLE 7 : Estimated Wealth Equations (CANADA)

Dependent Var	Financial + Housing	Total Wealth	Housing	Financial + Housing	Total Wealth
Income	1.4800 (20.61)	2.6179 (19.42)	1.1293 (24.39)	1.4593 (20.34)	2.5720 (19.09)
Income ²	0.0000072 (8.69)	0.0000173 (11.10)	0.0000017 (3.19)	0.0000073 (8.86)	0.000017 (11.32)
N.W Europe	5570.56 (3.52)	-4867.5 (-1.58)	-3211.9 (-1.34)	-6164.49 (-1.66)	-35733.7 (-5.14)
S.E. Europe	27612.57 (13.82)	9576.6 (2.55)	4124.5 (1.47)	3074.60 (0.71)	-29877.2 (-3.68)
S.E. Asia	10725.76 (3.35)	-11930.3 (-1.98)	-1543.2 (-0.49)	581.08 (0.11)	-22326.8 (-2.43)
Other Asia	308.82 (0.09)	-18521.1 (-2.86)	-6639.4 (-1.76)	-4262.79 (-0.72)	-37285.6 (-3.39)
Duration of Residence					
N.W Europe			441.11 (4.85)	511.14 (3.62)	1318.24 (4.98)
S.E. Europe			751.00 (6.88)	1085.72 (6.41)	1747.55 (5.50)
S.E. Asia			1083.20 (4.18)	1086.32 (2.71)	1098.57 (1.46)
Other Asia			747.62 (2.49)	423.38 (0.91)	1790.46 (2.05)
R ²	0.4116	0.4867	0.4394	0.4139	0.4708
p values for Ho : all race dummies are equal	0.0001	0.0002	0.0875	0.3747	0.6400

* Other variables included are constant, education dummies, occupational dummies, age and age square of the head, and year dummies, etc. Numbers in parenthesis are t-values. (GLS regression)

all samples: durables (U.S.A.)

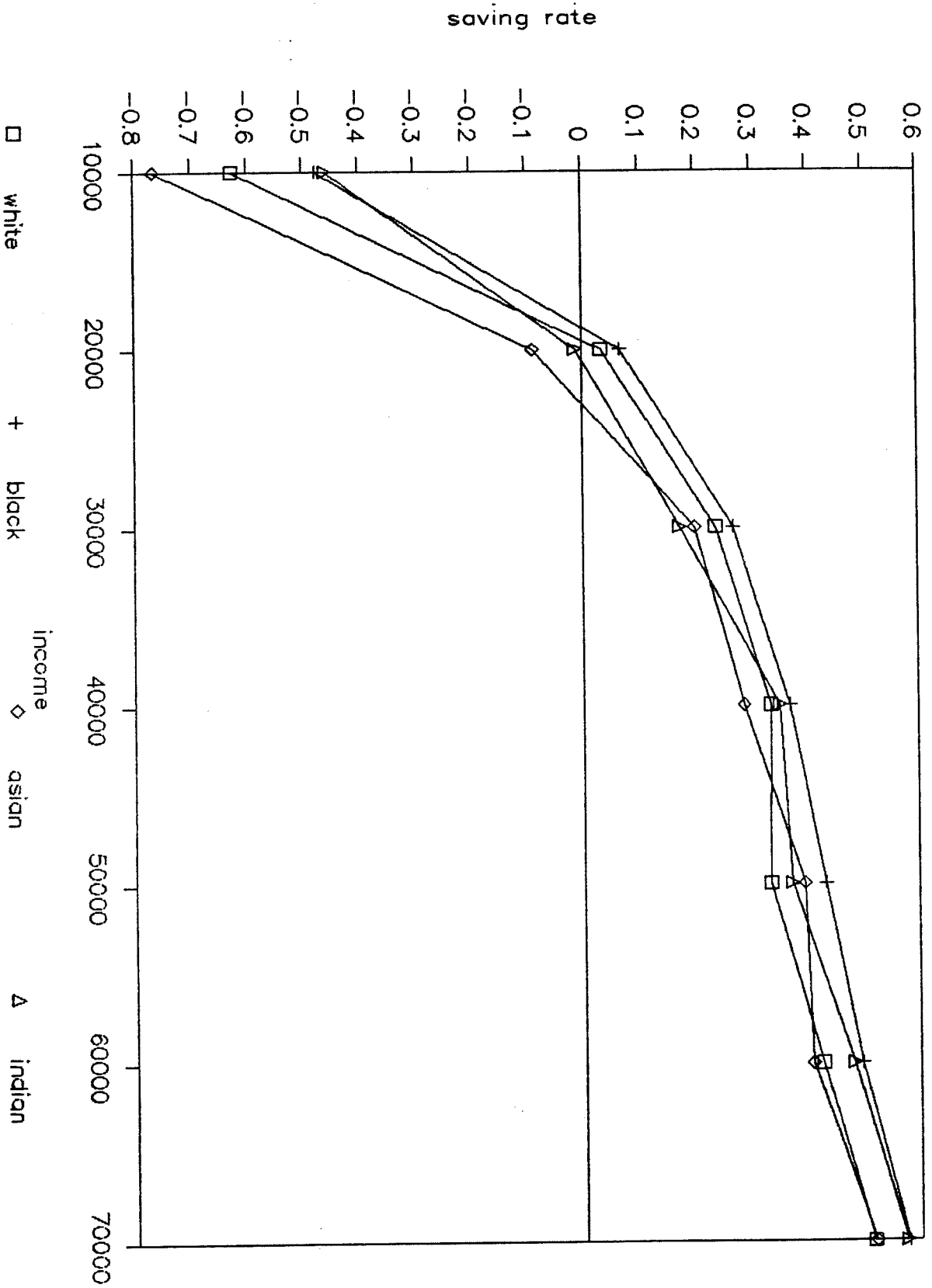


Figure 1

all samples with durables: saver (U.S.A.)

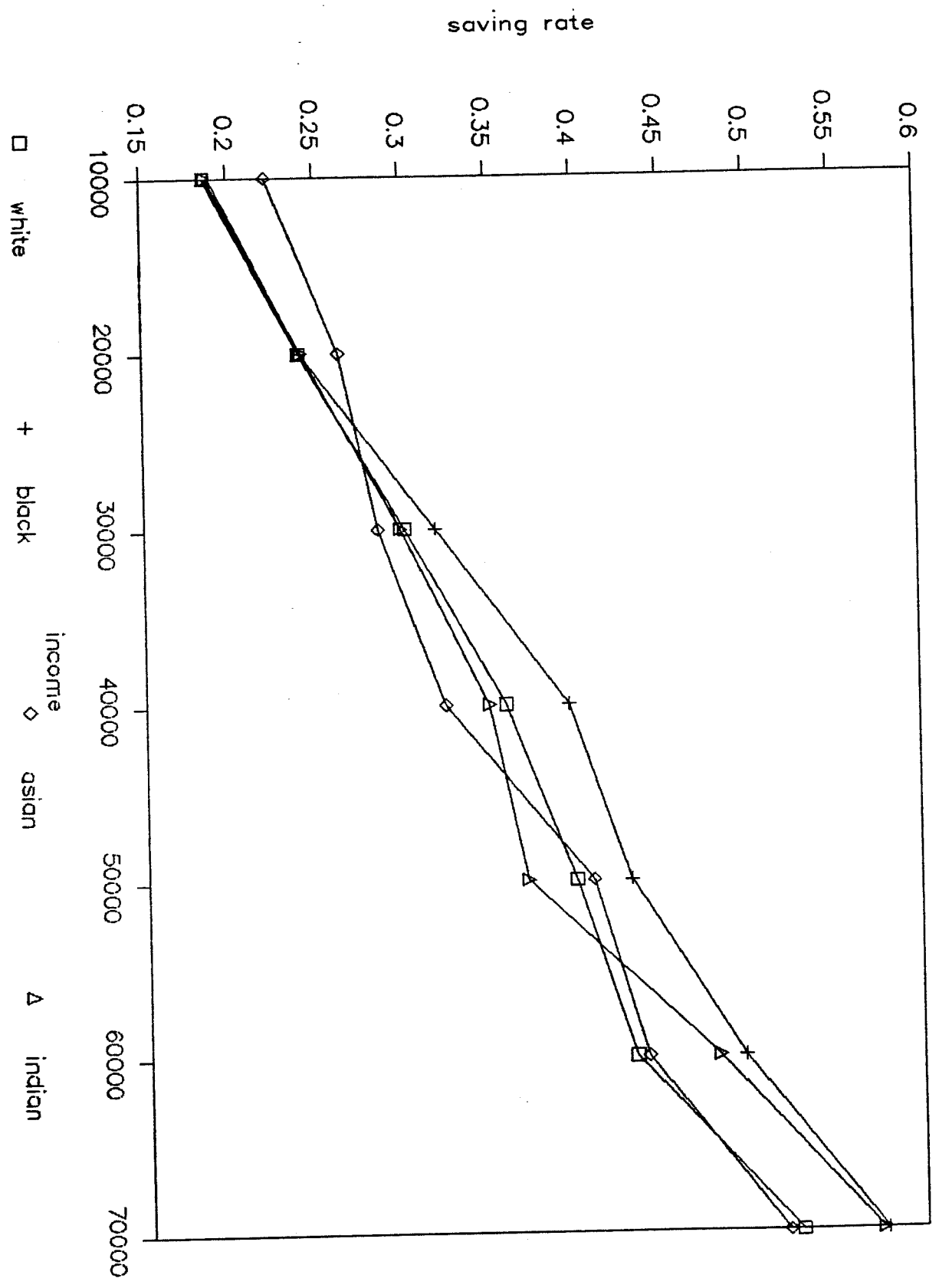


Figure 2

all samples with durables: dissaver (u.s.a)

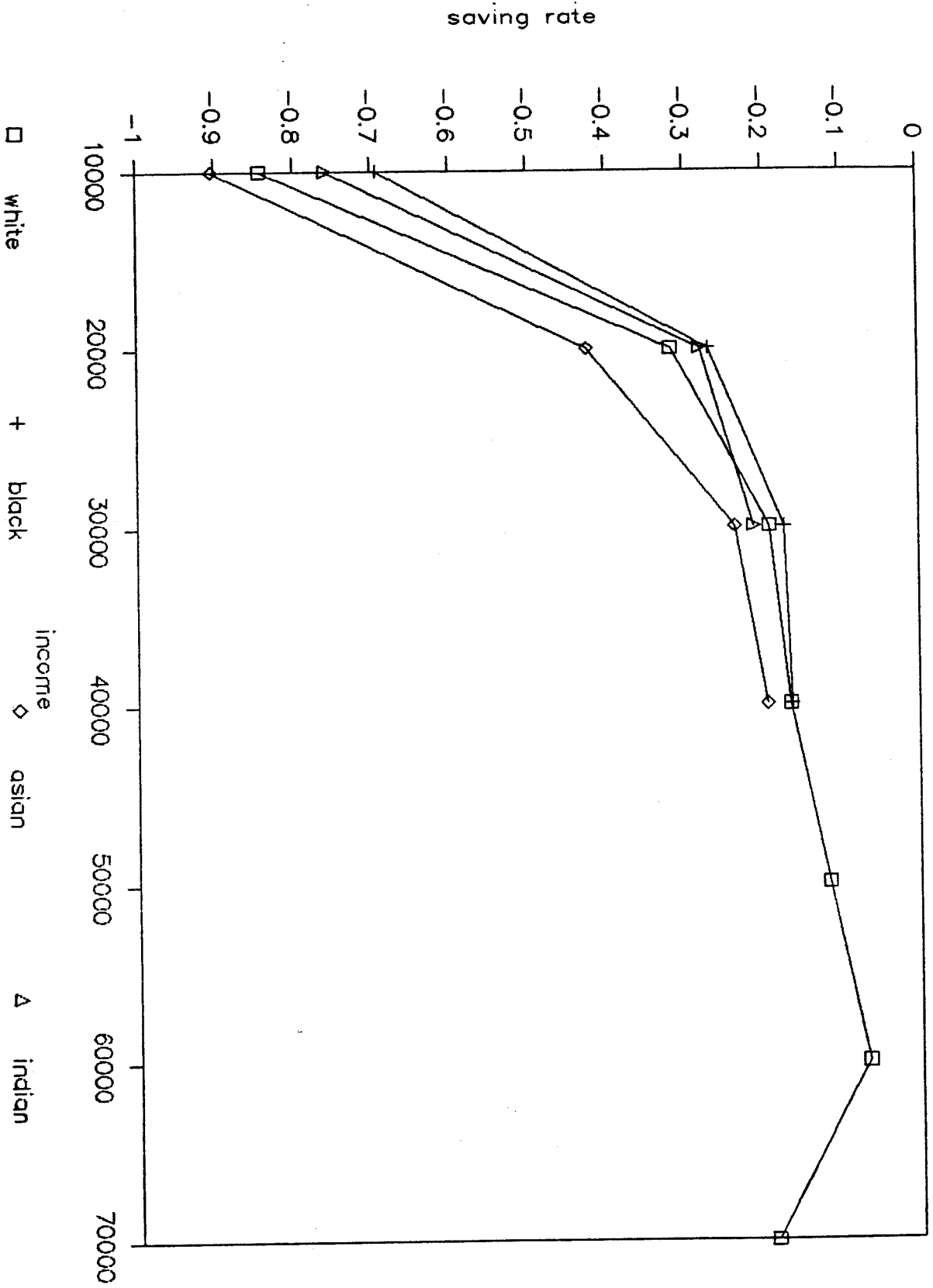


Figure 3

all samples (canada)

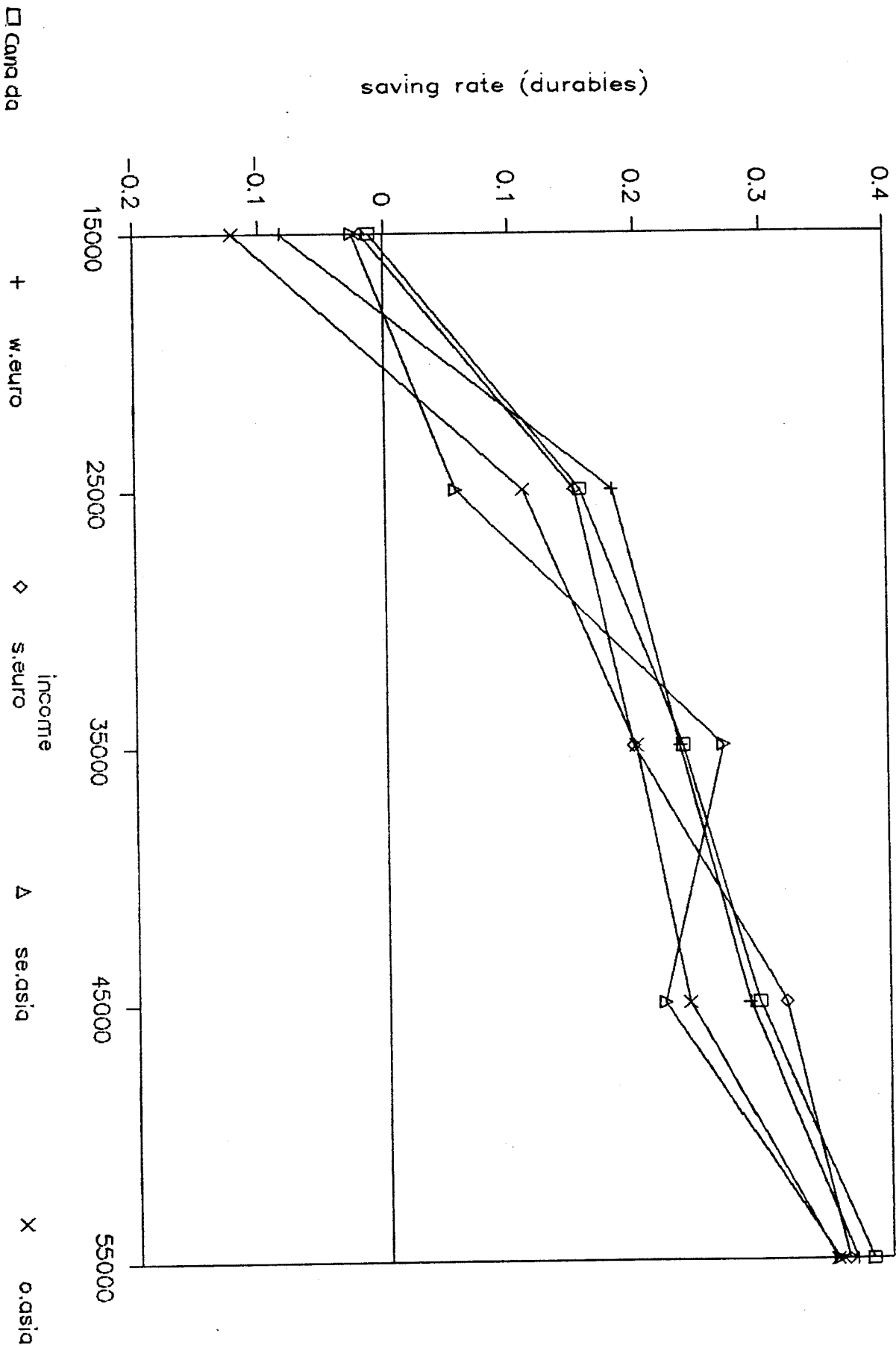


Figure 4

savers (canada)

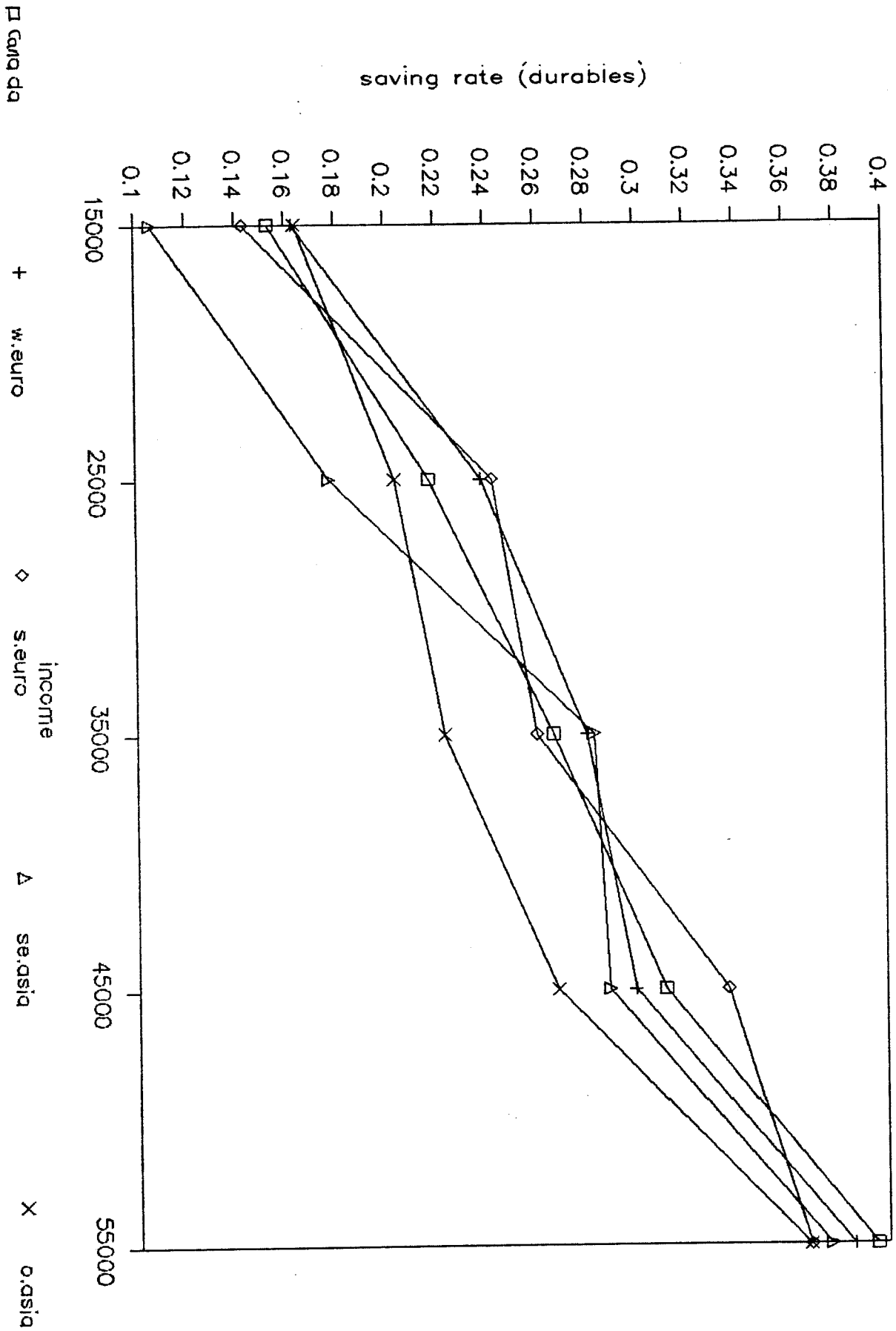


Figure 5