



Consumption dynamics of Latinos and Asians in the US

Costanza Naguib*

University of Bern, WVI, Bern, Schanzeneckstrasse 1, Postfach, 3001 Bern, Switzerland
 Università della Svizzera italiana (USI), Faculty of Economics, Lugano, Switzerland



ARTICLE INFO

Article history:

Received 26 March 2022
 Received in revised form 20 April 2022
 Accepted 21 April 2022
 Available online 28 April 2022

JEL classification:
 E21
 D12

Keywords:

Consumption
 Income
 Partial insurance
 Wealth

ABSTRACT

We document differences in the degree of partial insurance of consumption vs permanent income shocks between Caucasians, Latinos and Asians in the US. Caucasian and Asian individuals share a rather high degree of partial insurance, Asians being slightly more insured than the Caucasians. On the other hand, Latinos are the less insured group, with around 80% of a permanent income shock reverberating into their consumption.

© 2022 The Author(s). Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

The evolution of income inequality is a hot topic in the current economic debate (see e.g. [Piketty and Saez, 2003](#), [Bonhomme and Robin, 2009](#) and [Chetty et al., 2014](#)). Many scholars also underline that one should not only care about earnings equality, but also and foremost about consumption inequality, since consumption directly enters the individual's utility function (see e.g. [Blundell and Preston, 1998](#), [Blundell et al., 2008](#), [Attanasio and Pistaferri, 2014](#)).

While there is a wide literature about earnings differentials between Black and White individuals in the US (see e.g. [Blau and Beller, 1992](#), [Card and Krueger, 1992](#), [Heywood and Parent, 2012](#) and many others), the analysis of racial differences in consumption patterns is still a rather unexplored area. De [Giorgi et al. \(2020\)](#) analyze Black/White differentials in savings and consumption patterns in the US. However, the analysis of such differences for other ethnic groups, such as people with a Latino descent and Asians is still an open question.

2. The data

We use data from the Panel Study of Income Dynamics (PSID). We focus our analysis on household heads, since those are the individuals with the richest set of variables. The main variables

that we consider in this paper are income, consumption, savings, wealth, age, gender and education, as well as different measures of insurance (e.g. annual health insurance premium paid, or annual car insurance premium paid) and measures of financial market participation, such as the amounts of stocks held. Many of our variables of interest are consistently available in the PSID only starting in 1999 (e.g. consumption variables, wealth or insurance premiums). For this reason, our analysis is for the period 1999–2017.

We define an individual as Latino if she self-reports having a latino descent for the majority of the years in which she is in the dataset. Similarly, we define an individual as Asian if she reports being asian for the majority of years in which she appears in the dataset. To effectively compare pairwise latinos with caucasians and asians with caucasians, we drop from our dataset all individuals who identify themselves as blacks, native Indian or pacific islander or other (non-specified) race. Our full sample, using all waves of data for our period of interest, 1999–2017, includes 60'056 individual-year observations, 8'774 of which are relative to individuals with a latino descent and 2'032 are relative to asians.

Income is defined in the PSID as the household's total monetary income, i.e. the sum of the taxable income of the head and wife, the total transfers of the head and the wife, the taxable income of other family unit members, and the transfer income of other family unit members. Total family Social Security income is also included. Any negative or zero values are recorded to \$1 in the PSID. To convert nominal incomes to real terms, we divide the nominal measure by the Consumer Price Index (CPI). In order to

* Correspondence to: University of Bern, WVI, Bern, Schanzeneckstrasse 1, Postfach, 3001 Bern, Switzerland.
 E-mail address: costanza.naguib@vwi.unibe.ch.

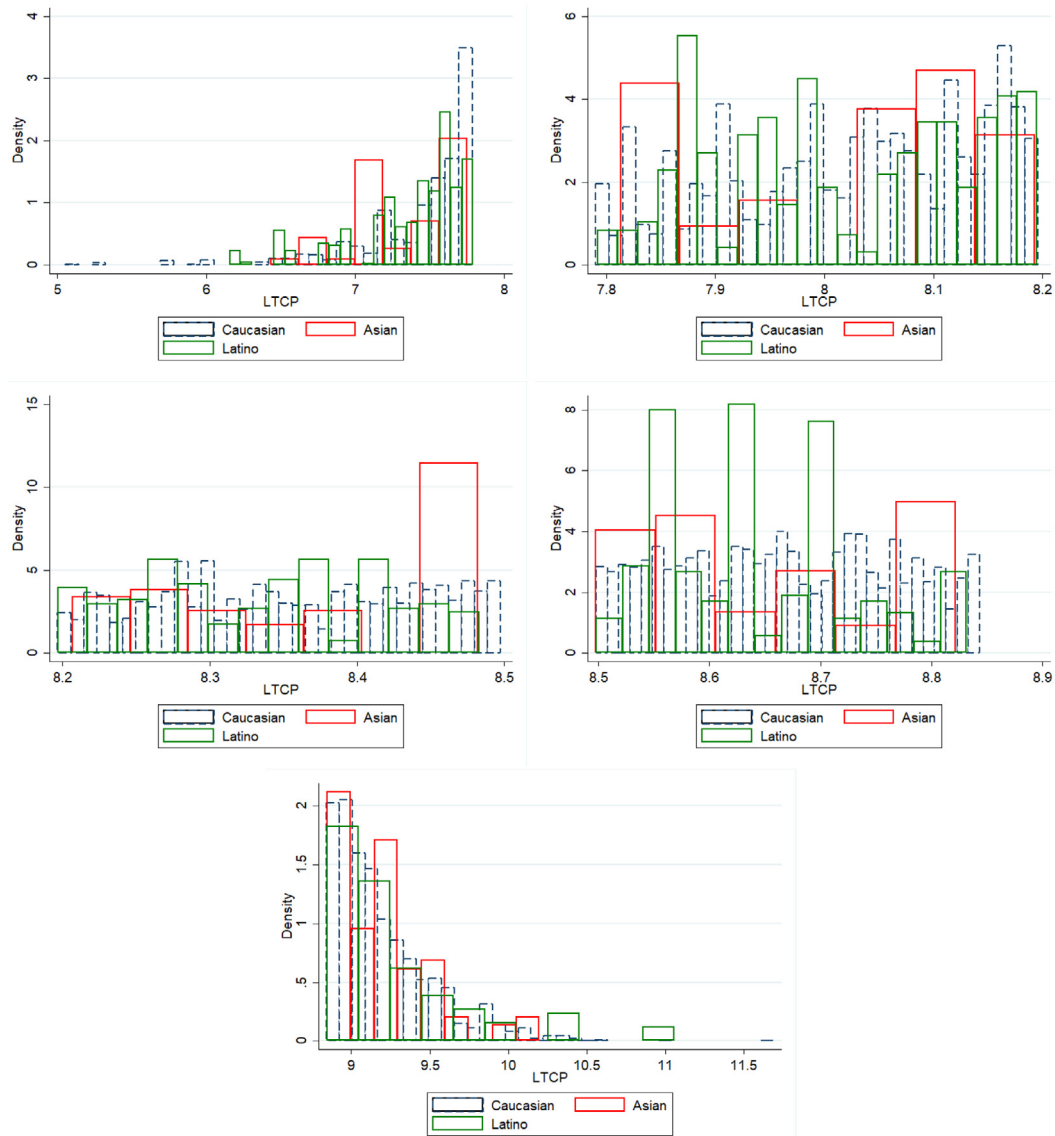


Fig. 1. Histogram of log TCP by TCP quintile and race, in year 1999.

create a per capita measure, we then divide total family income by an Adult Equivalent scale, given by:

$$AE = 1 + 0.7(A - 1) + 0.5K \tag{1}$$

where A is the number of adults in the household and K is the number of children. This scale assigns a value of 1 to the first household member, of 0.7 to each other adult in the household and 0.5 to each child. This scale, which is sometimes called the “Oxford scale”, has been first proposed by the OECD in 1982. Our measure of real adjusted family income (TFA) is

$$TFA_i = \left(\frac{Nominal\ Family\ Income_i \times 100}{CPI \times AEscale} \right). \tag{2}$$

We multiply Family income by 100 to preserve the scale of the variable given that CPI is equal to 100 in the base year. Similarly, we construct the following measure of real adjusted wealth as:

$$RealAdjWealth_i = \left(\frac{Nominal\ Wealth_i \times 100}{CPI \times AEscale} \right). \tag{3}$$

Starting in 1999, the PSID includes information on annual expenditure on the following categories of goods, always at the household level: food at home, food out, food stamps (if used),

rent, home insurance, electricity, heating, water, other utilities, car insurance, car repairs, gas, parking, bus, train, cab, other transportation, cost of school, cost of childcare, health insurance, expenditures on hospitals, doctors, and drugs. Descriptives of log consumption by ethnic group are reported in Fig. 1. In the wake of [Attanasio and Pistaferri \(2014\)](#), We define total consumption as the sum of all these expenditure categories. Then, also in this case, we deflate this measure by CPI and we divide it by the same equivalence scale as above, in order to take adequately into account different family compositions. Real adjusted family consumption is hence defined as

$$TC_i = \left(\frac{Nominal\ Family\ Consumption_i \times 100}{CPI \times AEscale} \right). \tag{4}$$

We multiply Family consumption by 100 to preserve the scale of the variable given that CPI is equal to 100 in the base year.

3. Results and discussion

In this section we aim at assessing if the degree of partial insurance vs permanent, respectively transitory income shocks varies for caucasian, asian and latino individuals. In order to do

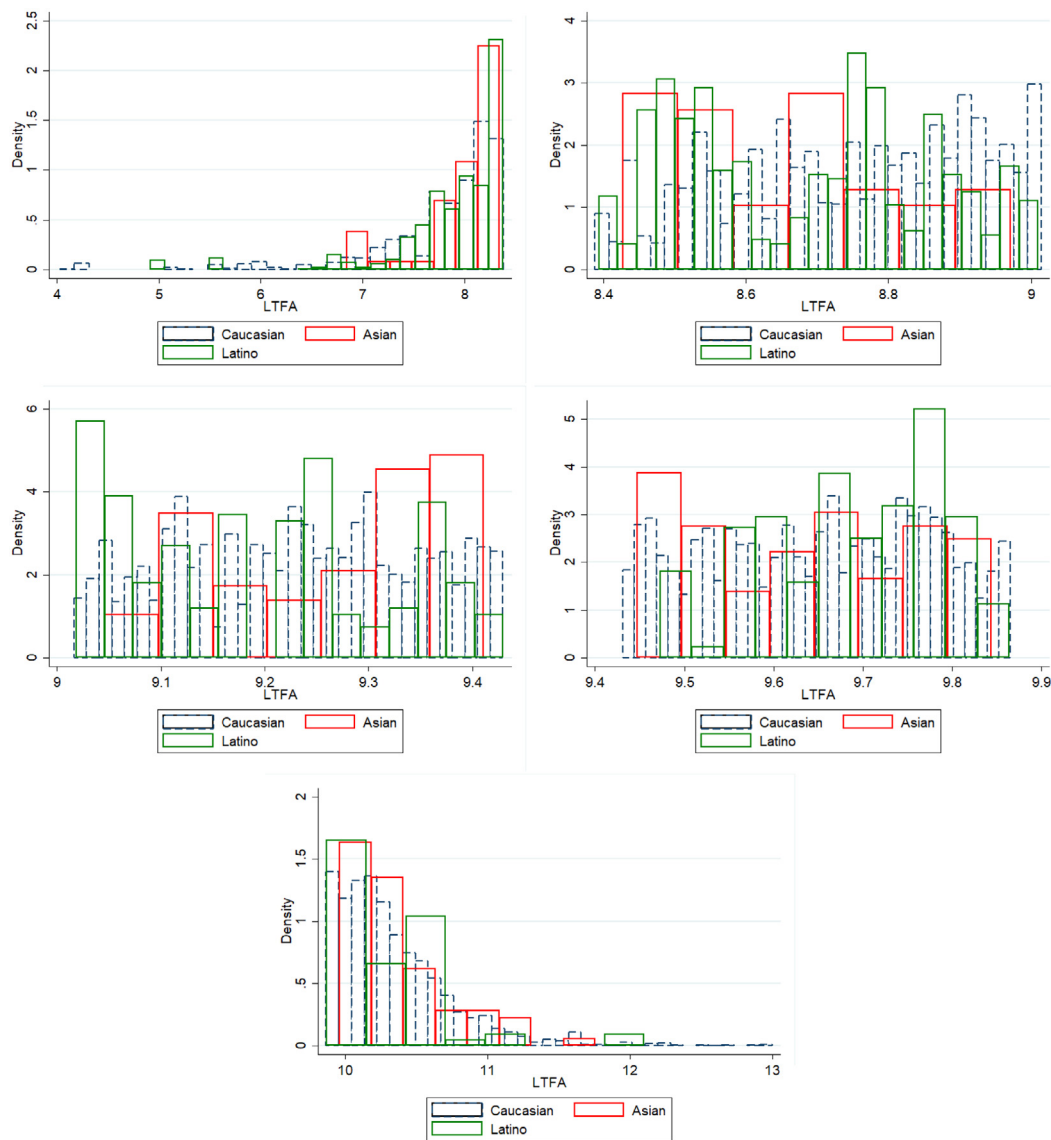


Fig. 2. Histogram of log TFA by TFA quintile and race, in year 1999.

so, we apply the model developed by [Blundell et al. \(2008\)](#) for the estimation of the degree of partial insurance.

In line with that work, we disentangle the permanent and transitory income component and we allow the variances of the permanent and transitory factors to vary over time. Further, we assume that the permanent component follows a random walk. Suppose log income, $\log Y_t$ can be decomposed into a permanent component P and a mean-reverting transitory component v . Then the income process for an household i is:

$$\log Y_t = Z'_{i,t} \varphi_{i,t} + P_{i,t} + v_{i,t} \tag{5}$$

where Z is a set of observable income characteristics such as demographic, education, race, and other variables. We allow the effect of these characteristics to shift with calendar time and we also allow for cohort effect. The impact of the deterministic effects $Z_{i,t}$ on log income and log consumption is removed by separate preliminary regressions of these variables on year and year-of-birth dummies, and on a set of observable family characteristics (dummies for education, race, family size, number of children, region, employment status, residence in a large city, outside dependent, and presence of income recipients other than husband and wife). Following [Blundell et al. \(2008\)](#), we work with

the residuals of these regressions. We assume that the permanent component follows the process:

$$P_{i,t} = P_{i,t-1} + \zeta_{i,t} \tag{6}$$

where $\zeta_{i,t}$ is serially uncorrelated and the transitory component $v_{i,t}$ follows an MA(q) process, whose order is established empirically. We are interested in assessing how income shocks differently transmit to consumption for caucasian, latino and asian household heads. We write unexplained change in log consumption as:

$$\Delta c_{i,t} = \phi_{i,t} \zeta_{i,t} + \psi_{i,t} \varepsilon_{i,t} + \xi_{i,t} \tag{7}$$

where $c_{i,t}$ is the log of real consumption net of its predictable components. We allow permanent income shocks ($\zeta_{i,t}$) to have an impact on consumption with a loading factor of $\phi_{i,t}$. On the other hand, the impact of transitory income shocks $\varepsilon_{i,t}$ is measured via the factor loading $\psi_{i,t}$. The random term $\xi_{i,t}$ represents innovations in consumption that are independent of those in income (this may be measurement error in consumption, preference shocks, etc.). Our aim is to estimate $\phi_{i,t}$ and $\psi_{i,t}$, which are our insurance parameters. In case of full insurance, they would be both equal to zero, whereas in case of no insurance they would

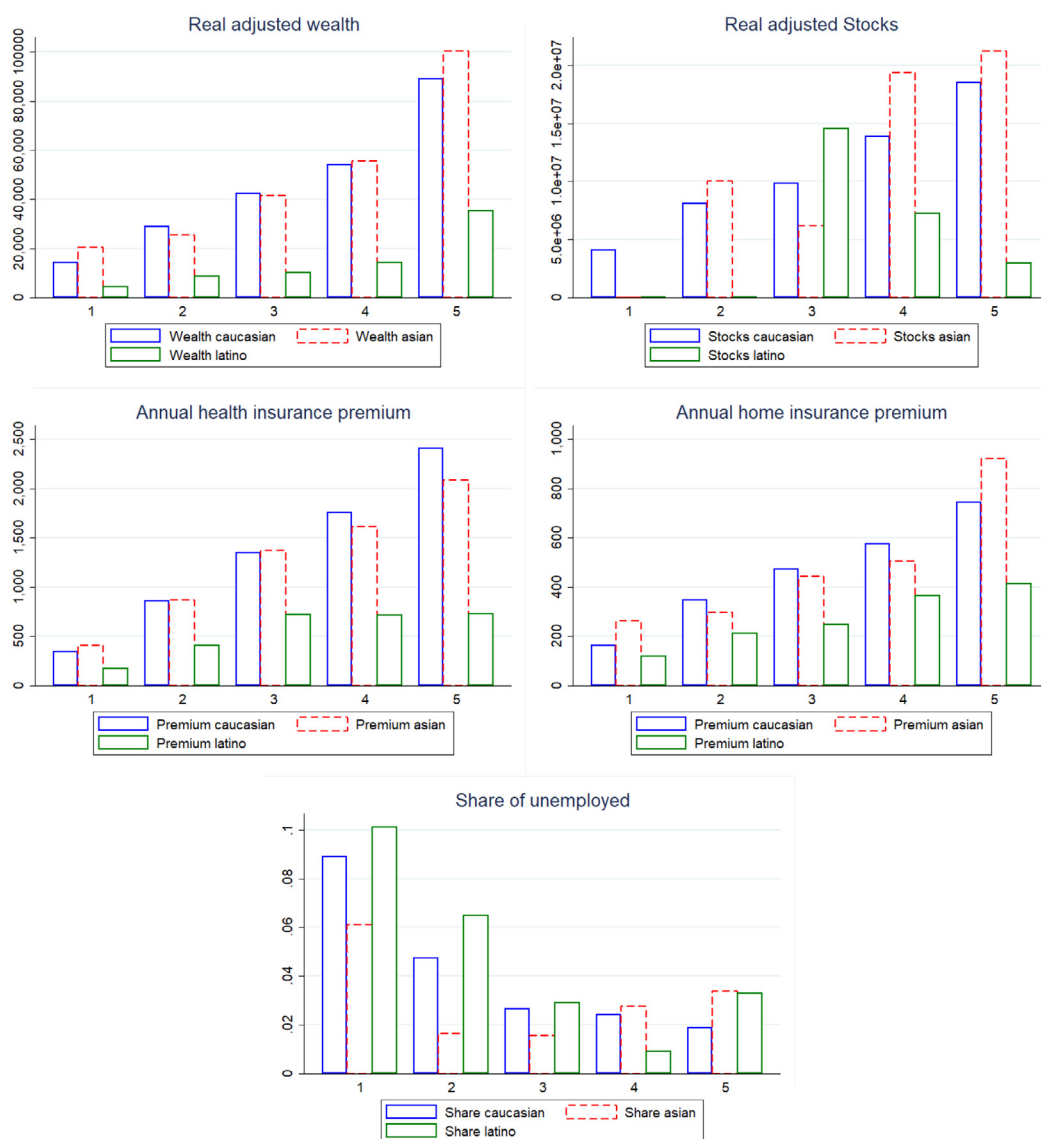


Fig. 3. Descriptive statistics: upper left panel: average real wealth, by race and by 1999 consumption quintile. Upper right panel: average stock holdings, by race and by 1999 consumption quintile. Middle left panel: average health insurance premium, by race and by 1999 consumption quintile. Middle right panel: average home insurance premium, by race and by 1999 consumption quintile. Bottom panel: share of unemployed individuals, by race and by 1999 consumption quintile. Data for the period 1999–2017.

be both equal to 1. These parameters are estimated by diagonally weighted minimum distance.

The parameter ϕ represents the degree of insurance with respect to permanent income shocks, and the parameter ψ stands for the degree of insurance with respect to transitory income shocks. In both cases, the lower the value of the parameter, the higher the degree of partial insurance, the smoother the consumption profile and the smaller the consumption responses to both types of income change.

From Table 1,¹ it emerges that there are not relevant differences in the degree of partial insurance as far as transitory income shocks are concerned. On the contrary, there are some sizeable racial differences in the degree of partial insurance vs permanent income shocks. Asian individuals are the most insured, whereas

¹ The estimated coefficients for Caucasians presented here differ from the ones reported in De Giorgi et al. (2020), as a trimmed dataset has been used there.

Table 1
Degree of partial insurance of caucasian, latino and asian individuals towards permanent vs transitory income shocks.

	Latinos	Caucasian	Asian
ϕ	0.81*** (0.10)	0.57*** (0.10)	0.51*** (0.13)
ψ	0.12*** (0.04)	0.11* (0.07)	0.10* (0.05)

latinos are the less insured. The degree of insurance of asians and caucasians is however similar (0.51 vs 0.57).

Note that these racial differences in the estimated coefficients for partial insurance are statistically significant at the 90% confidence level for the coefficient representing insurance vs permanent income shocks. On the other hand, differences in the coefficient standing for insurance vs transitory income shocks are

not statistically significant. This has been assessed by performing 300 bootstrap replications of the estimation presented above.

The difference in the parameter for insurance towards permanent shocks is not only statistically, but also economically highly relevant. Indeed, a 1 USD permanent shock translates into a 81 cents consumption fall for latinos, whereas it only translates into a 57 cents consumption fall for Caucasians and into a 51 cents consumption fall for the asians. On the other hand, a 1 USD temporary income shocks causes a reduction in consumption of around 10–12 cents, for all the three groups considered. In [Appendix](#), as additional data analysis, we show that latinos are effectively less insured than caucasians against income shocks. Indeed, they own way less wealth than the caucasians, and have in general less stock holdings, especially in the fourth and in the fifth top consumption quintiles. Further, latinos pay less health insurance and home insurance premium than the caucasians and are subject to a higher risk of becoming unemployed than the caucasians. This is consistent with latino individuals being less insured than the caucasian ones against permanent income shocks. On the other hand, asian individuals hold in general slightly more wealth and stocks than the caucasian ones, they pay similar insurance premia and they share similar probabilities (or lower, in the bottom part of the consumption distribution) of being unemployed. These stylized facts are consistent with the asians being (slightly) more insured than the caucasians against permanent income shocks.

Appendix. Additional data analysis

See [Figs. 2](#) and [3](#).

References

- Attanasio, O., Pistaferri, L., 2014. Consumption inequality over the last half century: some evidence using the new PSID consumption measure. *Amer. Econ. Rev.* 104 (5), 122–126.
- Blau, F.D., Beller, A.H., 1992. Black-white earnings over the 1970s and 1980s: Gender differences in trends. *Rev. Econ. Stat.* 74 (2), 276–286.
- Blundell, R., Pistaferri, L., Preston, I., 2008. Consumption inequality and partial insurance. *Amer. Econ. Rev.* 98 (5), 1887–1921.
- Blundell, R., Preston, I., 1998. Consumption inequality and income uncertainty. *Q. J. Econ.* 113 (2), 603–640.
- Bonhomme, S., Robin, J.M., 2009. Assessing the equalizing force of mobility using short panels: France, 1990–2000. *Rev. Econom. Stud.* 76 (1), 63–92.
- Card, D., Krueger, A.B., 1992. School quality and black-white relative earnings: A direct assessment. *Q. J. Econ.* 107 (1), 151–200.
- Chetty, R., Hendren, N., Kline, P., Saez, E., 2014. Where is the land of opportunity? The geography of intergenerational mobility in the United States. *Q. J. Econ.* 129 (4), 1553–1623.
- Giorgi, G.De., Gambetti, L., Naguib, C., 2020. Life-Cycle Inequality: Blacks and Whites Differentials in Life Expectancy, Savings, Income, and Consumption. Working paper.
- Heywood, J.S., Parent, D., 2012. Performance pay and the white-black wage gap. *J. Labor Econ.* 30 (2), 249–290.
- Piketty, T., Saez, E., 2003. Income inequality in the United States, 1913–1998. *Q. J. Econ.* 118 (1), 1–41.