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a Literature Review

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Abstract

We review the literature about the rich, the affluent and the top incomes focusing in two issues: identification and measurement, and the analysis of the determinants of richness. The review discusses data sources, indicators, populations and units of analysis used for the identification of the rich, approaches used to construct affluence lines and measures of richness. It also surveys empirical results about the composition of the incomes of the rich and the role of direct determinants of richness, such as individual characteristics, the State and the structure of production. We cover literature since the early twentieth century but give special attention to the research conducted after the 2000s.

Keywords

Income Inequality; Wealth Inequality; Top incomes; Rich; Affluence lines.

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1. Introduction

Studying the rich, the affluent or the top incomes helps us to better understand social inequality. They concentrate a very large share of the income and wealth of most societies and much inequality is due to differences between them and the rest of society. In many countries the richest 1% or 2% earn nearly the same income as the lowest half of the population combined. From those few countries for which we have information, wealth is even more concentrated on the rich than incomes. That makes the rich key players in the economy, with a strong capacity of determining trends in production and consumption. But more than making them an economic elite, money also brings political and cultural power, allowing the rich to exercise influence over many other domains of social life.

Concerns about such concentration of income and wealth are not new. Neither is the study of the rich. A systematic approach to the question of 'what makes someone rich?' can be traced back at least to the social scientists of the eighteenth century. The literature about the subject has a long history and has been growing rapidly in the last decades. In 1925 Sorokin wrote that "wealthy men as a specific social group have been studied very little up to this time"; things have changed and the number of studies about the rich can be counted in hundreds. And with the growing interest on the subject, better analytical tools and much more data available, these numbers will likely keep increasing at a fast pace.

In this paper we review only a part of the literature about the rich, the affluent and the top incomes. Our focus is on studies about what determines the income and wealth of individuals, particularly those which allow for some generalization at the country level and on studies that measure richness. However, given their relevance to the field, some of the topics we do not discuss deserve to be noted.

First, we do not review the literature on the levels and trends in overall inequality and top-end shares, since those surveys are already available. They point to an increasing concentration at the very top of the income distribution in Anglo-Saxon countries, India and China with its relative stability or slight concentration in continental Europe and Japan (Alvaredo, Atkinson, Piketty, & Saez, 2013; Atkinson, Piketty, & Saez, 2011; Piketty & Saez, 2006), and to a higher inequality in the distribution of wealth than in the distribution of incomes, with a

strong but decreasing concentration among the rich in several countries over most of the twentieth century (Atkinson, 2008; Davies, Sandström, Shorrocks, & Wolff, 2011; Davies, 2008; Ohlsson, Roine, & Waldenström, 2006; Wolff, 1996, 2006).

Second, we do not review the literature about the consequences of richness or how the rich relate to the behavior of income distribution over time, nor macroeconomic or structural analyses that could not be directly related to the rich as individuals, such as some studies on finance, taxation and the functional or factor distribution of incomes. Third, we also excluded some of the literature on the consequences of being rich, such as patterns of consumption, savings, and effects on subjective well-being. Neither did we cover case and local studies.

Research about the rich does not belong to a single discipline. On the contrary, it can be found in multiple areas of the social sciences, in part because the field of economics of inequality is increasingly recognizing the importance of non-market institutions in the dynamics of the economy at the same time as the sociology of stratification progressively treats income as a legitimate – and sometimes preferable – subject of analysis (Myles, 2003). For this reason we made no restrictions to the literature to be reviewed other than its substantive content.

The review has two core sections. One is concerned with the answers given to the question of 'how to count the rich'. It deals with issues of data sources, indicators, populations and units of analysis used for the identification of the rich and the construction of affluence lines, and with measures of richness. The other section deals with the answers given to the question of 'what makes someone rich', more specifically with empirical results regarding the composition of the incomes and the wealth of the rich and the role of some determinants such as individual characteristics, the State and the structure of production.

We should make a few remarks about terminology. First, the rich, the affluent and the top incomes are terms used to describe a group that in some studies is limited to the richest people in the world and in other studies may include millions of people. The terminological diversity may express some theoretical differences, but in this review the terms will be used interchangeably.

Second, the rich can be defined in terms of income, wealth or other indicators. It is only to avoid repetition that we use 'income' to refer to 'income or wealth' or even 'income, wealth or any other indicator". Similarly, we use 'country'

to refer to 'population or social group' and 'individual' and its synonyms to refer to 'persons, households, extended families or any other unit of analysis'.

Third, conclusions about the determinants of affluence depend on the way the rich are defined. For example, the rich are mostly 'working rich' when lower affluence lines are used but predominantly capitalists and rentiers when these lines are raised. Apart from the obvious indication that a rigorous comparison of different studies is possible only when definitions and data sources are harmonized, this shows that the rich are a heterogeneous group. We found no means of organizing the empirical evidence about the rich according to the definitions and data used, but tried to take that into account by mentioning methodological differences whenever they were relevant.

2. How to count the rich?

Who is rich? Only the ultra-rich or a much larger group? What suffices for analysis: income, wealth, both or something else? Should individuals with different incomes be counted the same way? Counting implies identification, and this requires an operational definition of rich, which is usually done with affluence lines. Lines may follow some explicit rationale, but even when they are seemingly arbitrary, they are making implicit judgments related to the questions above, that is, they are referring to some conceptual definition of rich.

In this section we review the methodologies used to count the rich. For analytical purposes we classify the different methodologies to construct affluence lines in six categories: absolute value, positional, index-based, curve-fitting, multiplier, sufficient wealth and redistribution. Following that we present indexes and other tools specifically designed to measure the rich. These tools have been inspired by the fairly well consolidated debate on poverty measurement, but have some particularities we discuss in more detail below. To a large extent, the way the rich are defined in different studies is pragmatically determined by the availability of data. As a result, we begin by discussing which types of data have been.

2.1. Data sources, dimensions and units of analysis

The studies about the rich use different data sources, dimensions of richness and units of analysis. The most common sources of data are rich lists from the

press, such as Forbes, Money and similar magazines, published biographies, tax and other administrative records and, of course, surveys, some of them specifically designed to sample high income individuals. Richness is observed, predominantly, in the dimensions of income or wealth, but sometimes with substantial differences between studies regarding the definitions of income and wealth. Units of analysis vary from individuals, households, extended families and tax units.

A characteristic of the field is that definitions of affluence and choices of units of analysis are pragmatically oriented by data imperatives, a reflex of both the relative scarcity of data specifically collected for the study of the rich and the difficulties of collecting such data in the case of the very rich. Although there is some resemblance between poverty and affluence studies, there are at least two main differences that make affluence studies much more demanding in terms of data. First, the focus on scarcity of poverty studies require less information than the evaluation of abundance in a multitude of forms done in affluence studies. Second, poverty studies are essentially concerned with measuring welfare whereas affluence studies are interested in both welfare and redistributable wealth. The latter concept necessarily relates affluence to inequality and because of that precision in the measurement of higher levels of affluence becomes very important.

For more than a century information from the press has been used to study the rich. Pessen (1971) mentions that rich lists date back to 1842, when Moses Beach, a newspaper editor, first published 'Wealth and Biographies of the Wealthy Citizens of New York City'. Immediately after several cities in the USA started publishing similar lists. These lists are the precursors of several lists of today. Most notably, the Forbes Magazine list of the 400 wealthiest Americans has been published annually since 1982 and has spawned versions for over a dozen countries.

Several studies of the rich are based on such lists. However, the methods and decisions made during the collection of this data are not always clear and the criticism about the quality of this type of information can also be traced back to a century ago. Powers (1908) compares it with official statistics and concludes that press information tends to overstate the wealth of the rich. Pessen (1971) reaches a similar conclusion. More recently, a comparison between Forbes and USA tax data found that in 1986 the net worth figure reported on the estate tax returns was less

than the estimate appearing in Forbes in 79 percent of the cases, on average 35 percent lower (McCubbin, 1987), but this in part might result from different definitions of wealth and units of analysis (families *versus* individuals). Press information still is an important data source, but sometimes is used only for comparison or for supplementing other data (Kopczuk & Saez, 2004; Roine & Waldenström, 2009).

Meta-analysis based on data present in published biographies are much less common than press information. Tickamyer (1981) identifies the rich using press estimates, follows them up in biographies and contrasts some of the results with aggregate tax records. This combination of sources attempts to reduce the biases related to the selection of who and what is biographically recorded. A typical limitation of published biographies is that they only provide information about the very rich or celebrities, but the combination of sources is a way of circumventing this limitation while still using information that would not be available elsewhere.

Tax, probate and administrative records have been used study to inequality and affluence since the early twentieth century (King, 1915; Powers, 1908; Sorokin, 1925; USA, Commission on Industrial Relations & Walsh, 1915; Watkins, 1907). After the work of Kuznets (1953) there was a period in which the use of such data decreased substantially. However, Piketty (2001, 2003) revived the use of tax data and since then a series of studies began to use tax data systematically, many of which were compiled in two 'top incomes' books (Atkinson & Piketty, 2007, 2010). Recently, a tax database of several countries, the *World Top Incomes Database*, has become publicly available for researchers.

These data have some distinct advantages. First, they allow the construction of time series covering periods before the first sample surveys were introduced. Estimates of inequality and rich lists based on tax, probate and other administrative records exist as far back as 1436 (Gray, 1934; Lindert, 2000; Morrisson, 2000; Soltow, 1968, 1984). Second, tax and probate records include information that is difficult to collect in regular interviews, such as incomes from interest and investment funds. Third, these records tend to reach more easily the very high incomes that are missed in surveys due to sampling limitations. Fourth, administrative records, such as labor records, sometimes provide information at the firm level and often in the form of panel data. The list does not end here and

could be easily extended.

Nevertheless, the use of tax, probate and administrative records comes at a cost. Detailed discussions of the potential problems of tax data can be found in Saez (2006), Atkinson (2007) and Atkinson et al. (2011) and some of these problems also affect probate and administrative records. Two of them deserve attention: incomplete distribution and insufficient information. Because large shares of the population are exempt from paying taxes, records only have information about the top tier of the distribution. Other administrative records, such as labor contracts information, have a better coverage but still cover only part of the distribution and the sources recorded often are limited to labor earnings. Moreover, tax data obtained from published reports are often limited in terms of characterization of individuals.

Surveys also provide important information for the study of the rich and generally cover the entire income distribution and provide more detailed information than tax data. Often they are the only available source, as some countries do not disclose their administrative records. The work of Sanhueza and Mayer (2011) in Chile, for example, is an example of surveys providing information for the study of the rich that would be difficult to obtain by other means. The downside is that general purpose sample surveys rarely rate well in some aspects, such as length and periodicity of series and measurement errors . More importantly, though, surveys are frequently marred by sample sizes too small to provide accurate estimates of the very top of the income distribution; they tend to suffer from nonresponse and incomplete response biases as well as underreporting at the top; and occasionally they impose top coding to income variables at quite low cutoff points. n.

Some of the problems of general purpose surveys are addressed by specially designed surveys, such as the Survey of Consumer Finances (SCF) in the USA, which has a high income supplement sample drawn from the US Internal Revenue Statistics of Income data file and in recent rounds includes checks of the actual financial records of respondents to improve the quality of answers. Wolff (1998, 2001, 2002, 2010) discusses some of the characteristics of this data. Still, a lingering problem that is that even with oversampling they are vulnerable to response bias. Tests of the SCF indicate that its response rates can be as low as

25% for the wealthy, not so much because of concerns about privacy but because households refuse to spend hours in interviews (Kennickell, 2009).

Results based on tax records show a reasonable convergence, as some studies have already documented (Burkhauser, Feng, Jenkins, & Larrimore, 2012; Kopczuk & Saez, 2004; Leigh, 2007). Leigh, for example, shows a strong correlation between tax data top income shares and survey data Gini coefficients (and other measures) in 13 developed countries, which means that survey and tax data, when available, tend to show the same general trends, even though surveys tend to underestimate top income shares and sometimes the rise in inequality (Atkinson et al., 2011).

To a large extent, the availability of data is what determines the dimension in which affluence is evaluated. The basic dimensions are income and wealth and both have been used to define the rich, although income studies prevail. The concepts of both income and wealth can vary in the datasets. For example, sometimes 'incomes' include capital gains (Piketty & Saez, 2003), sometimes not (Alvaredo, 2010). Income is a flow, wealth is a stock, and the measurement of a flow depends on the definition of a period of time. Given a sufficiently large span of time – to control for artifacts such as the bias resulting from the timing of capital realization – and a discount or interest rate, stocks can be converted into flows and vice-versa. In spite of that, income and wealth have been used *separately* to study affluence, mostly due to data constrains. Michelangeli et al. (2010), Bose et al. (2013) and Peichl and Pestel (2013) developed tools for the use of multidimensional definitions of affluence that allow the combination of income and wealth for the identification of the rich but these tools have not yet been incorporated into empirical analysis.

Data availability also imposes the units of analysis. In studies based on tax records, units of analysis vary from individuals to couples or larger groups, no matter where they live, according to the tax laws of the countries they refer to. Sample surveys almost invariably refer to households and the individuals in these units, treating owners of fortunes and their legal heirs and economic dependents as completely separate if they do not live in the same household. Labor administrative records allow firm-level analysis, but give no information about the rest of the family of the workers.

2.2. Identification - The different approaches

Absolute value

The absolute value approach is the most straightforward way to identify the rich. It consists in defining an absolute affluence line above which everyone would be considered rich, with *absolute* meaning 'independent from the actual distribution of incomes of wealth'. Its equivalent in terms of occupations is to define a set of occupational titles that can be considered a high class, as studies on intergenerational mobility often do. What is not so simple is to justify the value of this line. As it happens with poverty lines, only extreme values reach a reasonable consensus. The closer to the center of the distribution, the more controversial the lines tend to be and the more they will depend on an explicit justification.

Drewnowski (1978) posited that human needs are well known and, as it is possible establish minimum levels of these needs for a poverty line, it is also possible to standards of full satisfaction of various needs to establish the affluence line. This line should represent the absolute level "(…) above which consumption need not and should not rise." (Drewnowski, 1978, p. 264). Underlying Drewnowski's rationale for an affluence line is the idea that if poverty lines are to be set at very low levels because essential needs are easy to satisfy, then affluence lines should also be very low, an idea that has different (actually opposite) implications for the multiplier and the redistribution approaches to affluence lines discussed below.

Absolute affluence lines were common practice in earlier studies of the rich and are still used, although their implementation may rely on indirect methods. For example, Sorokin (1925) aims at an absolute line of one million dollars yearly income, but in practice, a millionaire is whoever pays USD 40,000 in taxes in a given year in the USA. He also included individuals based on their notorious wealth, 'notorious' being a subjective evaluation. Wedgewood (1928) studied heirs to estates exceeding GBP 200,000 in England, based on data from Estate Duty Statistics (1924-5). Also studying the rich of the nineteenth century, Rubinstein (1977) defined as rich all persons bequeathing estates above GBP 100,000 in British probate records between 1809 and 1939 and Soltow (1989) used the census classification based on levels of savings to define the rich of Sweden and Finland in 1805, which set the line at SD 500 rikdollars.

More recently, absolute wealth affluence lines were used to study the UK, the USA and Australia using information from magazines (Forbes, Money and Business Review Weekly), with the lines set at GBP 30 million, USD 180 million and AUD 30 million (Siegfried, Blitz, & Round, 1995). Lower lines, usually income thresholds, have also been used. Studying the intergenerational mobility of elites Ferreira (2001) combines absolute incomes (above monthly BRL 10,000 in 1996) and occupational titles to identify a top class in a household survey in Brazil. Katona and Lansing (1964) used a line of yearly family income of USD 20,000 a year (in 1960) to analyze the distribution of wealth, whereas Williamson (1976) used a line of yearly family per capita income of USD 50,000 (in 1972) to study beliefs about the tax burden among the rich in the USA and, in a health study based on the US Census 1990, Wen et al. (2003) also used a line of USD 50,000 yearly household income.

As it occurs with other approaches to define affluence, there can be the case that there are no rich in the population, depending on the absolute value set for the line. Absolute lines have some useful characteristics; among them are the simplicity and the capability to account for economic growth over time. But they also have implications that may be undesirable, such as the changing sizes of the social strata as either the level or the shape of the distribution of income or wealth varies.

Positional

Given the difficulties in justifying absolute lines, an alternative is to resort to positional definitions of the rich. A simple way to do that is to identify as rich those who, say, are among the highest 1000 incomes or the top 1% of the distribution, no matter what their income is. Apparently this avoids value judgments about what defines affluence, as identifying people as the 'richest' depends on factual observation, irrespective of absolute levels of income. Yet, from 'richest' to 'rich', even with positional lines, there is still a judgment, often implicit, of the position where the class of the rich begins. After all, a study about the top 99% incomes by no means can be justified in the same grounds a study about the top 1% incomes would be.

Positions can be absolute, independent from the size of the ordered population (rank), or relative to the size of the population (share). The relative

position approach was already defended and used in the first studies about affluence. Discussing the concept of 'large fortunes' in the early twentieth century Watkins (1907) argues that it is "more or less relative", an idea currently shared by many studies. Kuznets (1953), focuses on the top 5% of the distribution in the USA (1919-1945), with further subdivisions up to the top 1%. Two of the other precursors of the current top income studies based on tax records define 'rich' in relative position terms: Cumper (1971), who uses tax records in Jamaica, sets the line as the top 2.5% (and top 8.5%) of households (1951-1965) and Atkinson (1971), who defines them as the top 1% (and top 5%) in the distribution of estimated personal wealth based on Estate Duty Returns in Britain (1963-1969).

There are studies based on rich lists from magazines and business reports defining rich as a number of the richest ordered from top to bottom, but the choice for this number does not seem to be driven by a set of principles or criteria. The 'Forbes 200', 'Forbes 400', 'Forbes 500', 'Forbes 1,115', 'Business Review Weekly 200' 'Finans 500' and 'Standard and Poor's 500' (Broom & Shay, 2000; Brzezinski, 2014; Burris, 2000; Canterbery & Nosari, 1985; Goolsbee, 2000a, 2000b; Potts, 2006; Siegfried & Roberts, 1991; Siegfried & Round, 1994; Stilwell & Jordan, 2007) are examples of lines that are reasonable for the purpose of studying the largest fortunes or highest paid executives, as they set an extremely high threshold, both in relative and absolute terms. Apparently, these high thresholds have been set according to data availability imperatives. These rich groups tend to be small, but concentrate a disproportionate amount of wealth: in 2000 the Forbes 400 group in the USA corresponded to 0.0002% of the population and held around 3.5% of all wealth estimated with taxa data (Kopczuk & Saez, 2004).

Entirely relative lines are also found in studies based on survey data, tax and administrative records. Countries, data sources and variables in the distributions change, but the top 1% cutoff point is probably the most common relative line used. Analyzing survey data Albuquerque (1994) defines the rich as the top 1% of the Brazilian personal income distribution, Wolff (2000, 2010) as, separately, the top 1% of the income and wealth distributions of the USA, and Friedman and Hofman (2013) and Sanhueza and Mayer (2011) as the top 1% of household incomes in Chile. A series of studies using tax data in different countries also use the top 1% line, but order the distributions according to different tax units (Aaberge & Atkinson, 2010; Alvaredo, 2010; Atkinson, Gordon, & Harrison, 1989;

Atkinson & Salverda, 2005; Atkinson, 2005b, 2010; Banerjee & Piketty, 2010; Fortin, Green, Lemieux, Milligan, & Riddell, 2012; Landais, 2008; Piketty & Saez, 2003; Piketty, 2003; Roine, Vlachos, & Waldenström, 2009; Roine & Waldenström, 2008; Saez & Veall, 2005; Saez, 2005; Slemrod, 2000). Even though the top 1% line is the most common one, higher lines as the top 0.5% (Feenberg & Poterba, 2000; Levy, 1999), 0.1%, 0.01% (Godechot, 2012) and 0.001% (Bach, Corneo, & Steiner, 2009) and lower lines such as the top 5% (Ryscavage, 1999), the top 20% (Lichter & Eggebeen, 1993) or even the top 25% (Smith, 1988) have been used.

Index-based

Absolute and positional lines are very pragmatic yet also arbitrary. Several approaches make an effort to use criteria that could justify the choice of a line. The index-based approach resorts to inequality measures to decide the cutoff point in the distribution above which people will be considered rich or, more precisely, relatively rich. As every measure has an implicit welfare function (Atkinson, 1970), what this approach does is use that function as part of the criteria to define the rich. An affluence line based on a widely accepted measure will tend to be better accepted, at least in what refers to the implicit aversion to inequality of that measure.

Hoffmann (2001, 2005) sets an index-based affluence line by defining as relatively rich the share of the population for which a marginal increase of a person's income would increase the Gini coefficient. The method applied to a highly unequal distribution (Brazil, Gini 0.6) defines as relatively rich the top 20% of the population. The higher the inequality in the distribution, the higher the affluence line will be. The line calculated with the T-Theil index tends to be higher than that built on the Gini coefficient. The line based on the L-Theil is the average income. Alternatively, any other measure that satisfies the Pigou-Dalton principle could be used, as Hoffmann (2001, 2005) and Lambert and Lanza (2006) show when discussing positional measures of inequality.

Clustering

The clustering approach divides the population into groups based on internal similarities within groups and on differences between groups. Distinct from other approaches that follow some substantive criteria, the clustering methods resort to statistical procedures to define the groups. Given a dimension –

income or wealth – the population is divided into an arbitrary number of groups and the value that defines the lower bound of the top group is the affluence line. As a matter of fact, this approach can be used to define the rich, the poor, the middle class or any other class. In addition, it can be based on multidimensional measures of affluence. The value of the lines will depend on the number of groups, the inequality index and the observed distribution of incomes.

There are different ways of clustering the population. Hoffmann (2007) generates groups by maximizing the between-group component of decomposable inequality measures. Similar to what happens with index-based affluence lines, the choice of inequality measures carries an implicit choice for a welfare function that determines aversion to inequality. Hoffmann's approach is to use common inequality measures because their implicit welfare functions tend to be better known and more consensually accepted. Esteban, Gradín and Ray (2007) use the Esteban-Ray class of polarization measures for clustering. Even though polarization measures also have implicit welfare functions, their focus is on the choice of the number of groups that can maximize each type of polarization, these types being defined by a parameter in the Esteban-Ray measures.

The existing clustering methods to define affluence lines are all based on the notions of affinity and dissimilarity or, to use the terminology of Esteban, Gradín and Ray, identity and alienation. They are particularly useful when the objective is to create relatively homogeneous groups, since they also maximize group affinity when maximizing group dissimilarity. The affluence lines produced by this method depend on an often arbitrary choice of the number of groups to be created.

Multiplier

The multiplier approach operationalizes the affluence line by choosing a reference level in the distribution of incomes, usually the poverty line, and multiplying it to define the point above which individuals will be considered rich. Several other points, such as the median or the mean, could be used as reference; the choice for the poverty line is, sometimes implicitly, an effort to give a substantive content to justify the affluence line.

The affluence line obtained by the multiplier approach depends both on the level of the reference line and the magnitude of the multiplication. A poverty line can be a generally accepted one, such as an official line, but the choice of the

number by which this line will be multiplied usually lacks a rationale. Drewnowski (1978) proposed a multiplier of three or four times the poverty line but multipliers ranging from seven to twelve times the poverty line can be found in the literature (Danziger, Gottischalk, & Smolensky, 1989; Danziger & Gottischalk, 1995, p. 56; Hirschl, Altobelli, & Rank, 2003; Rank & Hirschl, 2001). Of course, not all affluence lines multiply a poverty line. Peichl, Schaefer, & Scheicher (2010), for example, calculate affluence lines for a large group of European countries as two times their median equivalized income and Atkinson (2007) defines the global rich as twenty times the mean world income.

Affluence lines defined by a relative approach always define some people as rich and thus they might, paradoxically, identify as rich those who could also be identified as poor. At least in theory, some of those in the top 1% of a distribution can be poor if the population as a whole is very poor. The multiplier approach avoids this potential problem as the multiplication of the poverty line ensures some distance between the rich and the poor. As a matter of fact, depending on the distribution, the multiplier and the poverty line, there might be no rich (nor an intermediate group) in the population.

In spite of the apparent ease of implementation of this approach, the choice of multiplier still needs more development. The lack of criteria to decide whether the distance from the poor should be seven, twelve – or any other number – times the poverty line often leaves it to an entirely arbitrary and therefore easily disputable decision.

Sufficient wealth

The sufficient wealth approach draws the affluence line based on the flow of income that a stock of wealth could yield. If the wealth of an individual is sufficient to ensure an income flow above a certain level, then that individual is rich. Therefore, the affluence line depends on fixing a remuneration rate (i.e. interest rate) and a minimum income level (i.e. standard of living).

This approach has been used by Eisenhauer (2008, 2011) and by Atkinson (2008). The rationale of Eisenhauer's affluence line is that, in theory, a household having a large net worth could convert its assets into risk-free investments – returning 1.5% per year – and thereby generate sufficient interest income to remain above the poverty level. Atkinson (2008) uses a similar mechanism but sets

the income level at the mean income of a country, representing an average standard of living, and the interest rate at 3.33%, taken as a reasonable measure of a long-run real return.

The ingenious mechanism of the sufficient wealth approach depends on data on personal or household wealth. Neither Eisenhauer nor Atkinson attempted to link their wealth lines to income lines, but it would be possible to depart from their approach to reverse engineer the lines in order to calculate the level of income that could allow for accumulation of wealth over a certain period of time so an individual would be rich at, say, the end of his working life.

Redistribution

Redistribution-based affluence lines propose a goal that can be achieved by redistribution from the rich to the rest of the population, define a rule to conduct this redistribution and define the rich as those whose resources are to be redistributed. This approach depends on the political consensus around the goal, its characteristics and on distributional principles to justify the implementation of the line. The goal could be anything, such as eradicating or halving poverty, or reducing inequality in a country to the levels of another country.

Medeiros (2001, 2006) defines an affluence line for Brazil by setting the goal as poverty eradication and proceeds by making successive hypothetical income transfers from the richest to the poorest individuals until poverty disappears. The point in the income distribution were the transfers may stop is the affluence line. A similar transfer mechanism was used to measure poverty in the mid-1970s (Anand, 1975[2001]), and as Mishra and Joe (2010) pointed out, the mechanics of the approach are identical to the one that Jayaraj and Subramanian (2010) first proposed in the mid-1990s to analyze poverty eradication in India through redistributive taxation. Redistributive lines have been used in studies about Poland (Brzezinski, 2010), India (Mishra & Joe, 2010), Iran (Bagheri & Kavand, 2007), Ecuador (Ramírez & Burbano, 2012) and DR Congo (De Herdt & Marivoet, 2011).

By definition, there are cases in which there will be no rich in the population. The redistribution method will not define an affluence line when a country has high levels of poverty and little capacity for redistribution. Empirically, this will occur if high poverty lines are adopted in low income

countries. There will be also cases in which the rich of one country would be considered poor in other countries. Some of the rich in India, for example, could be considered poor by USA or even higher poverty thresholds (Ravallion, 2010). As a matter of fact, by those higher thresholds a very large share of the world's population is poor.

Both the multiplier and the redistribution approaches may relate to a poverty line. But while the multiplier lines depend only on the poverty line, the redistribution lines change according to the actual intensity of poverty, that is, the poverty gap. Moreover, the approaches respond to the value of the poverty line in different ways. In the multiplier approach, the higher the poverty line, the higher the affluence line will be; in the redistribution approach, the higher the poverty threshold, the more redistribution will be required, therefore the lower the affluence line will be.

Curve-fitting

The notion behind the curve fitting approach is that there are two clearly separated groups in a population, the rich and the rest, and the determinants of the incomes of each group are so different that the curves that better adjust the distribution of incomes in each group are different. The idea is that income is concentrated on the rich because their main sources of incomes tend more easily to concentration. Consequently, the curve that fits the distribution of incomes within the rich should be steeper than that which fits the incomes of the rest.

Inhaber and Carroll (1992, pp. 42–3) define the affluence line at the point of the population ordered by a level of income where a Pareto function fits better the distribution than a Gibrat (lognormal) function. In the US, 1987, this corresponds to the top 3% of the distribution of incomes. Calculated for Brazil, 1999, this would define as rich the top 0.4% of the population (Medeiros, 2005).

Inhaber and Carroll justify their decision to compare Pareto and Gibrat functions, but it would be perfectly possible to use different curves to express different implicit welfare functions. One could extend the curve-fitting approach to more groups – for example, to produce a middle class, or use even steeper curves to differentiate the rich from the very rich. The method also applies to wealth-based lines. From a statistical point of view, the Pareto function is not necessarily the best curve to fit the incomes of the rich. Brzezinski (2014) shows that neither the

distribution of incomes nor the distribution of wealth of the rich – particularly the very rich – are always well-fitted by a Pareto function and suggests a series of alternatives that could be used for the very top of the distribution: exponential, stretched exponential and Pareto with exponential cut-off.

2.3. Aggregation – the measures or richness

Given the individual identification of the rich, the next step for the measurement of richness in a population is the aggregation in a measure that synthesizes the levels of affluence in that population. Because the rich are the other extreme of the distribution, a natural set of candidates for measures of richness are indexes that mirror the well debated and consolidated poverty indexes. For example, Sen's and FGT's poverty measures, the first allowing for full factor component decomposition and the second for additive decomposition by population subgroups, are both potential departing points for creating measures to study the rich (Foster, Greer, & Thorbecke, 1984; Sen, 1976).

Peichl et al. (2010) and Brzezinski (2010) discuss measures of richness in detail. The former note that simple FGT-based richness measures are nesot standardized – that is, have no upper limit – which may not be desirable for comparison of different groups or periods. To tackle the problem they apply a transformation function to the incomes that limits the FGT-based measures to the unit. In addition, because a FGT-based measure of richness decreases with a regressive transfer from a rich to a very rich person, they also propose a transformation to make incomes increasingly concave, thus making the index become less sensitive to changes in very high incomes, the opposite of what happens in most canonical poverty measures. This transformation can be applied to different classes of poverty measures to generate analogous richness measures. Shortly after, Eisenhauer (2011) pointed out that Peichl indexes can also be used to measure wealth affluence, given a wealth affluence line. Bose et al. (2013) developed an index that parallels the Atkinson index of inequality and Peichl and Pestel (2013) created a multidimensional affluence index that simultaneously takes into account income and wealth.

The advantage of the analogy with poverty is that richness indexes can build on consolidated previous discussions of income measurement, including axiomatic examination, besides allowing the use of tools originally developed for

poverty analysis. Michelangeli et al. (2010) and Bose et al. (2013), in analogy with poverty studies, introduce tools such as affluence orderings and affluence dominance of distributions, which allow comparisons that are robust to different affluence lines or affluence indexes. These last advancements are very important for the use of multidimensional definitions of affluence, such as the identification of the rich not by lines but by spaces of affluence combining, say, income and wealth.

3. What makes someone rich?

In this section we discuss the results of a fairly large empirical literature about the determinants of richness. We make an attempt to contrast and summarize the main conclusions of the debate, but since they are influenced by the way the rich are defined, our generalizations should be taken carefully. We also make an effort to highlight whenever divergences between studies could be due to methodological differences and to indicate points in which the debate is, in our evaluation, still inconclusive.

We begin by showing the results of the literature about the composition of the incomes of the rich, with special attention to the role of labor and capital incomes, and then proceed to present findings about causal determinants. To organize this section we grouped these determinants into three large groups, the individual characteristics, the state and the structure of production. With this division we tried to keep together findings regarding, respectively, the supply, political institutions and the demand for labor. However, we must note that this division exists only for analytical purposes as there is, obviously, interaction between the three.

3.1. The composition of the incomes and the wealth of the rich

Incomes

Definitions of income, populations and sources of data vary from country to country, as Atkinson (2005a, 2007) has already pointed out. Yet, it seems that labor earnings are an increasingly important source of income for the rich, at least for the 1% richer in many countries. Only at the very top of the distribution capital incomes, including rents, become undoubtedly the main source of incomes of individuals or families. In France, for example, this occurs only about the top 0.1%

of the distribution (Landais, 2008).

Regular household surveys have difficulties in capturing capital incomes so one would expect the higher incomes in surveys to be predominantly labor incomes. Yet, evidence of top compensated employees, high earning self-employed workers and similar types of professionals –, the so called working rich – is quite abundant not only in survey data but also when tax records are used. For example, labor income is the largest isolated factor component of the incomes of the richer 1% or so in France (Landais, 2008), Canada (Fortin et al., 2012), Colombia (Vélez, 2012, p. 23), Argentina (Alvaredo, 2010), Brazil (Medeiros, 2005), Indonesia (Leigh & Van der Eng, 2009), the USA (Feenberg & Poterba, 2000; Parker, Vissing-Jorgensen, Blank, & Hurst, 2010; Piketty & Saez, 2013; Wolff, 2000) and apparently in Chile (Friedman & Hofman, 2013; Sanhueza & Mayer, 2011), but with some controversy about this composition when a broader definition of income is used, at least in the USA (Wolff & Zacharias, 2009) or when the concept of 'labor' excludes self-employment, as in Germany (Bach et al., 2009).

Of course, one can ask why capital incomes are a secondary source of income for the richest 1%. There are at least three possible explanations, and they can all be true. First, the existing measurements are correct and capital incomes simply are not the major source of incomes of the rich. Second, it may be a result of how 'personal income' is defined: capital incomes are often intermediated by corporations or financial funds and sometimes are not accounted as incomes but reinvestments – if so, hardly a survey or individual tax database will be able to measure them accurately. Third, it may also be influenced by the very definition of 'capital income': depending on the classification used, distributed profits and compensations paid to owners of firms are accounted as 'labor incomes', especially when they follow a regular monthly schedule.

Many studies agree that in developed countries capital lost importance to labor in the composition of top incomes after the 1980s or even before that (Feenberg & Poterba, 1993; Landais, 2008; Piketty & Saez, 2003, 2013; Piketty, 2003, 2007; Slemrod, 1996). Yet, what Hungerford (2013) noticed is that between 1991 and 2006 changes in capital gains and dividends were the main reason for income concentration among tax filers in the USA – the share of capital gains in total incomes is increasing and becoming more concentrated. The recovery of

capital is predictable. Among the rich, only part of labor incomes becomes consumption, a fair amount of it is saved and at some point part of this investment will return in the form of capital incomes. Unless top wages keep increasing, or taxation on incomes and wealth rises, it is expected that at some moment capital incomes will recover, at least partially, the share they have been losing, as Piketty (2007) has already noted.

Logically, if labor is an important source of income in one generation, one should expect contributory pensions to increase in importance in the next generation, though not at the same proportion. The share of pensions in the GDP is increasing in several OECD countries (Lazar & Stoyko, 1998) and their progressivity decreasing in the USA (Coronado, Fullerton, & Glass, 2002, 2011). Pensions, public or private, may be particularly important in lower income countries, where the composition of incomes differs from that of developed economies. They are extremely concentrated at the top of the distribution in Mexico (Esquivel, 2011), Chile and Brazil (Hoffmann, 2003; Soares, Osorio, Soares, Medeiros, & Zepeda, 2009) and somewhat concentrated in other countries with high income-replacement ratios (Brown & Prus, 2006; Goudswaard & Caminada, 2010; Palme, 2006).

However, very little has been written about the role of pensions in the income of the rich. Alvaredo (2010) found that among the top 1% in Argentina, about 30% of incomes come from salaries and pensions, but does not provide a disaggregation of these two sources. Using FGT-based measures of richness, Medeiros (2005) calculates that pensions contribute only as a secondary source of income of the rich in Brazil. What calls attention here is not so much the relative importance of pensions in the total income of the rich, but the fact that pensions, particularly public funded pensions, are being directed to the top of the distribution in high inequality countries.

Wealth

Survey data on the distribution and composition of household wealth is available only for a limited number of countries. A recurring pattern is that the poor usually have little or no wealth and owner-occupied housing is by far the most important asset owned by the middle classes, whereas the top wealth holders have a much more diversified portfolio, with a strong presence of business and

investment assets.

In the United States, a country with abundant wealth data, researchers had already noted that the share of the principal residence in total household wealth in the 1950's peaked towards the upper middle of the wealth distribution and that he rich were much more likely to invest in stocks and other financial assets (Katona & Lansing, 1964; Lampman, 1959). More recently, it has been shown that households in the top 1% of the wealth distribution hold between 25% and 35% of their assets in corporate stocks, financial securities, mutual funds and personal trusts, and between 35% and 45% in unincorporated business equity, while their principal residence accounts for 10% or less. This adds up to roughly half of all outstanding stocks, mutual funds and trusts, two-thirds of financial securities and between 60% and 70% of total business equity (Davies & Shorrocks, 2000; Kennickell, 2009; Spilerman, 2000; Wolff , 2006; Wolff, 1998, 2006). Estate and tax data do not diverge much from surveys when it comes to the portfolios of the wealthy, although Kopczuk & Saez (2004) do note that stocks became less concentrated among the very wealthy since the 1980's. The same overall pattern was also observed in France since the nineteenth century (Piketty, Postel-Vinay, & Rosenthal, 2006, 2014). This led Carroll (2000) to conclude that the wealthy simply are not "scaled-up versions of everybody else", as their asset holdings are skewed towards risky investments and their own entrepreneurial ventures, possibly as a result of capital market imperfections.

Yet, in some other countries, this pattern is not as strong. For instance, in Spain stocks only overtake real estate as the most important component of net worth among the top 0.01% (Alvaredo & Saez, 2009). There is also sparse but suggestive evidence that real estate plays a larger role in developing countries. Subramanian and Jayaraj (2008) note that financial assets barely reached 5% of total household wealth in India in 2002 and that, unlike other countries, asset diversification was a declining function of wealth, as the wealthiest deciles invest heavily in land holdings: while land accounted for only 31% of the wealth of the bottom half it was almost 60% of the wealth of the top decile. It is not clear whether this also happens in more urbanized developing countries. In Latin America the estimated share of total housing wealth accruing to the top decile ranges from 26% (Uruguay) to 65% (Bolivia) and the ownership of financial assets is about four times more common among households in the top 10% of the income

distribution in the United States than in Chile or Mexico (Torche & Spilerman, 2006, 2008, 2009). However, there is no data to determine directly the relative weights of different assets in the portfolios of the rich.

3.2. Determinants of affluence

3.2.1. Intergenerational immobility and Inheritances

Intergenerational transmission of material wealth and other advantages is an important determinant of being rich. To a lesser extent, this is also true in the case of incomes, as studies on earnings and on occupational mobility have shown. Moreover, kinship is related not only to the transmission of fortunes from one generation to the next, but also to the transmission among family members of the same generation. The literature tends to give more attention to mobility than to the specific role of wealth inheritance, in part because it is very hard to measure precisely the role inheritances had in the composition of fortunes. First, because inheritances can be added to the existing wealth, reinvested and result in even more wealth (Spilerman, 2000). Second and more important, there is a series of ways of transmitting advantages across generations of people that allow rich individuals to influence the social position of their descendants and direct transfer of wealth is only one them.

Empirically, the statistical analysis of intergenerational mobility can be traced back to the early 1900s. Emily Perrin (1904), for instance, analyses contingency tables to estimate that the social origin determines about one third of the choice for a profession, a revision of a value somewhat lower than the three quarters Pearson (1904) estimated with her data. A few years later some studies began focusing specifically on the measurement of the mobility of the rich.

A USA governmental report found that in 1914 the fortunes of the rich who concentrated more than half of all personal wealth of the country were mostly inherited and that the inheritors transferred that responsibility of administrating their wealth to professionals (the executives and investment funds of today). The report recommended those fortunes to be taxed in order to reduce inequality (USA, Commission on Industrial Relations & Walsh, 1915). Sorokin found a high intergenerational transmission of wealth among USA millionaires, and that most of the wealthy came from parents who were in manufacturers, merchants, bankers

and businessmen (Sorokin, 1925, p. 635).

In the early 1970s Atkinson (1971) concluded that life-cycle factors alone cannot explain the upper tier (1% and 5%) of the distribution of wealth in Britain and that there were reasons to believe this wealth is related to inheritances. Russell (1979) comes to the same conclusion after examining USA data from 1960, 1962 and 1965. However, this relationship may not be stable over time. Hurd and Mundaca (1989) find a decrease in the role of intergenerational transfers in the wealth of the affluent in the USA between 1964 and 1983, but it is possible that this result was affected by the comparison of surveys with different methodologies and sample sizes.

Similar results are found in many countries. In Chile, Torche (2005) found that strong mobility barriers between the top and the rest of the class structure coexists with very high fluidity among the nonelite classes. In Brazil, Albuquerque (1994) found high levels of occupational reproduction among generations of the rich. In the late 1980s, between one-third and one- half of the rich (top 1%, survey data) had the same occupation as their parents, with mobility levels varying according to occupation. A few years later Ferreira (2001), using a different methodology, arrives at the same general conclusion about the permeability of elites.. Based on a panel of tax data from Canada, Finnie and Irvine (2006) observed strong intergenerational reproduction among the very rich, particularly among the top one thousandth of the distribution of earnings; half of them have come from families above the top decile of the distribution twenty years earlier. Strong reproduction is also found among those at the remaining extreme of the distribution (above top 1% but below top 0.1%), even though they are more likely to come from families who were below the top tenth.

The conclusions about inheritances are robust to different definitions of rich and sources of data. Canterbery and Nosary (1985) regressed on data for the ultra-rich in the USA (Forbes 400) and found that inheritance explains 43% of the amount of the fortunes analyzed. Broom and Shay (2000) also use Forbes data and conclude that between one quarter (F400) and one third of individuals (F1115) in these rich lists inherited great wealth. Five out of ten top Australian wealth holders in 1994 and at least four out of ten in 2006 became rich due to inheritance of family businesses (Stilwell & Jordan, 2007). Results based on probate records

and biographies point in that direction. In the city of Cleveland (USA), probate records from 1964-5 indicate that about three-quarters of the assets of the wealthy were inherited (Inhaber & Carroll, 1992, p. 91). Biographies of rich persons in the USA in the late 1950s and 1960s indicate that many large wealth-holders initially inherited much property, although many have also increased their holdings in their lifetimes (Lundberg, 1969; Tickamyer, 1981). Finally, using survey data Wolff (2002) estimates that in the USA, 1998, inheritances accounted for about one fifth of the total wealth of those with a wealth level of USD 500,000 or more, with the proportion falling a little for the extremely rich.

Some argue that because a fair share of the ultra-rich (say, Forbes 400) were not ultra-rich in the previous generation, then levels of mobility into the ultra-rich class could be considered high (Hazledine & Siegfried, 1997; Siegfried & Roberts, 1991; Siegfried & Round, 1994). This, however, is disputable as they look only at the composition of the rich and the absolute distance they moved, ignoring relative odds of being rich. A more careful analysis underlines that the probability of being rich is thousands of times higher for inheritors – and, more generally, for those born in richer families – and that the incidence of inheritors among the rich is disproportionately high when compared to the rest of the population.

International comparisons based on the literature reviewed by Erikson and Goldthorpe (2002) and by Breen and Jonsson (2005) indicate that in all industrial societies there is a strong relationship between class origin and destination. Intergenerational mobility is even lower for higher classes, as professionals and managers. There is some dispute about whether this relationship changes over time, but the evidence in the studies reviewed by Piketty (2000) tends to point in the direction of relative stability of these patterns.

All other things being the same, the more unequal the society, the more important positional mobility tends to be, as there are larger distances separating persons. Yet, it is precisely in unequal countries that mobility is lower (the reverse causality should not be discarded). Analyzing 15 countries from Europe, North America and Oceania, Andrews and Leigh (2009) found that countries which were more unequal during the 1970s had less intergenerational mobility during the 1990s. It seems that, to a large extent, the rich are rich due to an inherited control of opportunities.

Furthermore, transmission occurs not only between generations but within families in a same generation. In a historical perspective, Lampman (1959) observed that half of what apparently was a decline in the concentration of wealth in the USA from 1922 to 1953 was in fact redistribution within families. Broom and Shay (2000) note that in the USA, one-fourth of the Forbes 1115 richest individuals have a kinship tie to another rich person, primarily through a blood relation rather than by marriage. Regressing on that data they found kinship ties to be one of the strongest determinants of fortunes, with rich individuals and families linked by kinship being substantially wealthier than those with no affiliations.

Patterns of intergenerational mobility are, to some extent, repeated in mobility over the lifetime of an individual. Relative movements from lower positions in the distribution to the top are modest in Chile (Sanhueza & Mayer, 2011), Canada (Saez & Veall, 2005) and the USA (Kopczuk, Saez, & Song, 2010), except for women, who experienced a relevant upward mobility from the 1980s on. On the other hand, absolute mobility within the top, that is, from a high to an even higher level, seems to be reasonably common and an important factor behind the rise in inequality in many countries in North America and Europe.

3.2.2. Exceptional abilities

The rich may be rich because they have exceptional productive abilities. These abilities are very hard to measure directly and arguments along this line run the risk of being more a moral justification for inequality than an actual examination of the determinants of high income or wealth. Without any measurement of productive abilities, even a weak one, to say that some people are rich because the market decides to remunerate well what they are capable of doing is rather tautological and such emphasis tend to mask the organization of economic production and the institutional underpinnings that allow high remunerations. As a matter of fact, what we know about abilities is that their distribution is not as unequal as the high differentials in earnings that separate the rich from the rest but, of course, the rich can always be outliers in that distribution and markets may reward exceptional abilities in an exceptional way.

There is debate on what is behind the high incomes of the working rich. Kaplan and Rauh (2013) and Baranchuk (2011) believe that the rise in income and wealth shares for the top 1 percent in the USA is most consistent with a

"superstar"-style explanation, that is, information and communications technologies increase the relative productivity of highly talented individuals, or "superstars", who become able to manage or to perform on a larger scale. Notwithstanding, others have interpreted evidence in a different direction. Essentially, they argue that "superstars" theories may be useful to explain the rise in the income of superstars, but not broader changes in the income distribution, particularly those below the very top (Kim, Kogut, & Yang, 2011; Landais, 2008). In their favor is the fact that they systematically analyze the composition of the top 1% while Kaplan and Rauh, and to a lesser extent Baranchuk et al., center their discussion on a much smaller share of the population – a few hundred executives, superstars and billionaires. More research still has to be done in this area but at the moment it seems more prudent to say that if exceptional abilities are an important determinant, they account for a small share of the rich.

As a matter of fact, there is some evidence that, for the highest positions in the labor market, the relative performance against a group of competitors is more important than the absolute productivity of workers – as if job compensations were the reward for a 'winner take all' tournament. Typically, this is the situation found in some highly specialized occupations where much is at stake, such as CEOs of large firms, or lawyers and physicians. Indeed, there is evidence of a correlation between CEO salaries and compensations and the scale of the firms, and given the skewedness in the distribution of company sizes, a minuscule advantage over other potential CEOs may imply significantly higher remunerations (Frydman & Saks, 2010; Gabaix & Landier, 2008). At any rate, a more rigorous contrast between exceptional productive abilities and cumulative advantages theories to explain the rich still waits for more data and research.

3.2.3. Schooling

Education is an important determinant of inequality and perhaps the most important determinant of intergenerational mobility for the lower classes. A conventional approach is to assume the correlation between schooling and incomes expresses returns to investments in human capital. However, unless human capital is understood in a very broad sense - perhaps so broad that it makes the concept almost useless for empirical research -, the rich do not seem to be much richer than others because they invested more in human capital.

Most of the rich are well educated, but education is far from sufficient to make someone rich. This, which was already a fact in the nineteenth century, when college education was rare (Sorokin, 1925), has probably become even more true nowadays, as the share of inequality explained by schooling has been stable or has fallen in many countries (Erikson & Goldthorpe, 2002; Trostel, Walker, & Woolley, 2002). Such an assertion is probably also true for developing countries, as many of them faced an expansion of their educational systems immediately followed by falling returns to education.

Analyzing data for the USA, Inhaber and Carroll (1992, p. 148) conclude that while human capital theory may predict incomes for up to 90% of the population with a certain degree of certainty, for the top incomes it seems elusive. The same can be said for a developing country: counterfactual simulations for Brazil show that neither schooling nor any other observable variable used in conventional wage equations provides a strong explanation for why someone is rich (Medeiros, 2005). Therefore it seems reasonable to say that higher education may be necessary but by no means is sufficient to make someone rich.

3.2.4. The state

Transfers

Transfers can be divided into direct transfers, made to persons or families and indirect transfers, made first to companies and other organizations and later appropriated by individuals. Usually direct transfers are understood as social transfers – public pensions and assistance – but in the case of the rich there is one class of direct transfers that should not be ignored, wages paid to workers in the public sector.

Direct government transfers received relatively little attention in the literature on the rich. There is evidence on how transfers affect the rich pointing in different directions. Comparing 16 countries in North and South America, Western Europe, Asia and Oceania, Roine, Vlachos and Waldenström (2009) found that direct government spending does not favor the top 1% in a relevant way. Fuest, Niehues and Peichl (2010) reach similar findings for the Enlarged European Union, as one can infer from their analysis based on a generalized entropy measure (GE2).

On the other hand, there is evidence that government wages favor the top 1% in Singapore (Atkinson, 2010) and pensions favor disproportionally the top 0.9% in Brazil (Medeiros, 2005).

Even less attention has been given to indirect transfers. Although there is some evidence that economic elites are capable of influencing politics to their own advantage and that this is probably driving inequality up in the USA (Bartels, 2008; Bonica, McCarty, Poole, & Rosenthal, 2013; Gilens, 2012), it is very hard to measure how indirect transfers affect the personal income distribution. A subsidy, for instance, is partially incorporated into prices, which results in changes in profits and at some point will be redistributed to shareholders. Similarly, government bonds pay interest to pension funds that at some time will be transferred to pensioners. In addition, state expenditures affect inequality among individuals in many other ways. Expenditure in infra-structure, science and technology or defense, for example, do not affect all individuals in the same manner, either because the government buys from specific companies or because the results of its actions benefit only part of the population. In a broad sense, these expenditures can be understood as government transfers or flows of income, ultimately from the treasury to individuals. However, difficulties in obtaining data make tracking these flows nearly impossible.

Taxes

Both direct and indirect taxation affect inequality. Yet, most studies focus on direct taxation of individuals, such as income and property taxes, because it is hard to relate some types of indirect taxation to the personal distribution of incomes. The distributional impact of some indirect taxes, like sales taxes, can be more easily estimated using consumption surveys, but the distribution of other types of indirect taxation would require more information and different techniques. When a corporation or an investment fund is taxed, this taxation will end up being paid by individuals, but it is very hard to link that taxation to the incomes of all their owners, particularly when they are formed by a cascade of other corporations and funds.

What studies have shown is that taxes can be an important equalizing factor. In 1915 a report from the US Commission on Industrial Relations (1915) already argued for the increase in the taxation of the rich in order to reduce the

high levels of inequality. Sustained tax progressivity has been proposed as an explanation for inequality staying low in industrialized countries after the shocks of World War II. Part of the increase in this inequality after the 1980s has also been related to lowering taxation on the top incomes (Atkinson & Piketty, 2007, 2010; Atkinson, 2005b, 2010; Feenberg & Poterba, 1993, 2000; Hungerford, 2013; Piketty et al., 2006; Piketty & Saez, 2003; Piketty, 2007; Riihelä, 2009; Roine et al., 2009; Roine & Waldenström, 2008; Saez, 2004; Stilwell & Jordan, 2007). Moreover, tax cuts in one country may even affect inequality in another country, as firms must compete for skilled workers, as it seems it was the case of Canada (Saez & Veall, 2005).

Apparently, taxation of top incomes reduces inequality without seriously affecting productive behaviors, in particular the supply of labor. Goolsbee (2000b) and Saez (2004) found that except for executives with very high compensations, the USA working rich do not adjust their behaviors, nor their patterns of remuneration, to tax laws. Roine and Waldeström (2008) found no effect of taxes on hours worked in Sweden. There is some controversy on how to calculate optimal tax rates (Goolsbee, 2000a), but based on cross-country evidence, Piketty and Saez (2013) estimate that the optimal top tax rate in the USA can range from 57% to 82% in 2013 this rate was 39.6% for single people with yearly incomes above US$ 400,000 and the historical peak was above 90% between 1944 and 1964. These findings and estimates may have immediate implications for policymaking. If this is a widespread phenomenon, then in many countries top tax rates could be much higher than they actually are without harming much of the overall performance of the economy.

Notwithstanding, taxation may be ineffective to reduce inequality if progressivity is limited to individual incomes and is not sustained over time, as in some countries top paid workers can open individual firms to benefit from lower levels of corporate taxes, change their tax residence to tax havens or find other mechanisms to reduce taxation. Goolsbee (2000b), for instance, observed that top executives in the USA choose to receive payment in stocks so they can the regulate the timing of their capital gain realization to minimize tax payment in a specific year and Harris, Morck and Slemrod (1993) noted that some USA firms shift their profit incomes to low-tax countries.

Progressivity in taxation is a political decision. Yet, not much is known about the political processes that establish lower or higher tax rates around the world. Allen and Campbell (1994) argue that partisanship and class power are important determinants of progressivity, but macroeconomic conditions and state imperatives – such as the budget deficit management – are probably the major determinants of tax policy. This conclusion refers to the USA and a generalization still depends on much more research, but the implication is that a high level of spending in a year will tend to raise taxes and produce less inequality in the following years, all else being the same.

Furthermore, it should be noted that if taxation is an important equalizing factor, then a reasonable share of inequality is not determined by production itself (technology, skills and so on) but by political decisions about the appropriation and distribution of the results of production, that is, social norms. These decisions express, at their core, a choice for the acceptable levels of inequality in a society.

3.2.5. The occupational Structure

In some cases, occupational titles are the only information available to analyze inequality or produce a profile of top earners, particularly for earlier historical periods (Soltow, 1968). Today, occupation, or at least occupational titles, alone, gives very limited information to identify who is rich. There is much heterogeneity within occupations, especially at the higher end of the income distribution, therefore people with similar occupational titles can be found in quite different positions. Not surprisingly, only a fraction of people in each occupation is in the high income group. Besides that, changes in very dynamic sectors can transform substantially the activities and prerogatives indicated by occupational titles, limiting comparisons over time. In this sense, the conventional approach used in intergenerational mobility studies, that of forming classes based on occupational titles, can hardly contribute to the study of the trends on income inequality caused by a concentration of incomes in the top tier of the distribution, as DiPrete (2007), Kenworthy (2007) and Myles (2003) have already noted.

On the other hand, some occupational patterns among the rich can be identified in the recent literature about developed countries, as we show below. At the very top of the income distribution - say, above the 0.1% - rentiers, entrepreneurs, CEOs and superstars tend to be more frequent. Below that, at the

top 1%, one finds a slightly wider range of occupations in all sectors and industries of the economy, including lower rank managers, professionals and public servants, depending on the country being analyzed. The rich are not only capitalists but self-employed workers and employees, many of whom manage the capital of others. Nonetheless, the working rich are not only workers, in the 'proletariat' sense of the term, as they also derive a large share of their total incomes from dividends and capital gains and, sometimes, receive remuneration in the form of stock options. As a matter of fact, since the 1990s stock options are the largest share of the compensation of top executives in the USA, even though they are employees of the corporations they manage (Abowd & Kaplan, 1999).

The prevalence of the working rich at the top of the distribution is a common finding. Albuquerque (1994) points out that, in Brazil, 1988, the majority in the top 1% were employees – higher level managers and executives; Sanhueza and Mayer (2011) found 60% of employees among the top 1% in Chile in the late 2000s, whereas employers were less than 20% of the total. This does not change much when one moves to richer countries and climb higher in the distribution. In France, year 2000, 60% of those in the top 0.1% were administrative managers, and their presence in the top incomes has been increasing since the mid-1980s – they were less than 20% of the top 0.1% in the early 1980s (Godechot, 2012). A similar pattern is found in the USA since the 1990s (Bakija, Cole, & Heim, 2010; Kaplan & Rauh, 2010; Parker et al., 2010; Wolff, 2000) and Canada (Fortin et al., 2012; Saez & Veall, 2005).

As one can expect, at the very top of the distribution, where wealth certainly matters more than personal income, the rich are essentially entrepreneurs and rentiers. The Forbes richest top 400 in the USA, the Money Magazine 200 in Britain or those in the super-fortunes list of the Business Review Weekly in Australia are almost all owners of large companies (Broom & Shay, 2000; Canterbery & Nosari, 1985; Gilding, 1999; Siegfried & Roberts, 1991).

Part of the literature about top incomes, particularly that on the long term evolution of the rich, is concerned about the role of skills and technology in determining inequality (Atkinson et al., 2011; Atkinson & Piketty, 2010; Atkinson, 2003; Gabaix & Landier, 2008; Kaplan & Rauh, 2010; Landais, 2008; Philippon & Reshef, 2012; Piketty & Saez, 2006; Piketty, 2007; Saez & Veall, 2005). The issue is

important for testing modernization theories of inequality, such as the technological change mechanisms that are behind Kuznets' hypothesis (Kuznets, 1955).

Although a skill intensive economy will tend to show a particular occupational structure, the fact is that it is not simple to evaluate whether the demand for skills is a determinant of top remunerations. First, at this level, the supply of skills is hard to observe accurately; actually, studies arguing that skills are an important determinant of high incomes often presume – not observe – skills based on the price of labor, which renders tautological most conclusions about the rich based on such assumptions. Second, if it is reasonable to imagine changes in the occupational structure that cause an upwards shift in the demand for skills in countries transitioning from agricultural to industrial economies, the same cannot be said about assuming the same shift of demand in highly industrialized countries.

There is no conclusive evidence supporting the idea that the rich result, predominantly, from the demand for skill-intensive work. For instance, the rich do not seem to be a by-product of a high demand for workers who are technologically qualified: engineers and related groups of service professionals are not and are not becoming a majority among the working rich. Moreover, in countries or even within firms with similar levels of technology, high-skilled workers are remunerated differently, even within the same occupations, and the trends in their remunerations are also different (Godechot, 2012; Piketty & Saez, 2006; Piketty, 2004; Saez & Veall, 2005).

Although some argue that the increase in the remuneration of CEOs and workers in the financial sectors in some countries is a result of a technological change that demanded highly specialized labor (Philippon & Reshef, 2012), the existing evidence points in the direction that it is not so much the technical skills of these workers but their social competences, their control of information, their power to influence their own payment and the size of their firms that allows for very high remunerations. Research has shown that CEOs have a non-transferable influence over a network of customers, suppliers, other CEOs, the executive board of the companies and lower rank managers, and detain privileged information about their own companies and competitors. For a corporation, the high

remuneration of executives and their immediate subordinates is a way to be in command of this network and manage crucial information, which are particularly valuable in large firms (Bebchuk & Fried, 2004; Bebchuk & Grinstein, 2005; Belliveau, O'reilly, & Wade, 1996; Bertrand & Mullainathan, 2001; Bivens & Mishel, 2013; Godechot, 2006, 2009, 2012; Hambrick & Finkelstein, 1995; Kim et al., 2011; Wade, O'Reilly, & Pollock, 2006).

In short, technological change may affect the income of the rich in many ways – by making firms more hierarchical, concentrating core decisions, enlarging the scale of companies and granting monopolies, just to mention a few examples – but according to most of the literature on the subject, it does not seem that human capital or skill-biased technological change theories are sufficient to explain much of the income of the rich and its dynamics.

Finally, a skill-intensive occupational structure may explain why, on average, people are richer in one country than in another, but it seems that this structure has no clear explanatory power to account for differences between the higher social strata between countries. Of course this, in part, results from the definition of rich in relative terms, as most often the rich are understood as the richer persons in a country. Undoubtedly, comparisons based on a cross-country affluence line would give better grounds to conclude about the relation between the occupational structure of a country and its internal inequality but, to the extent of our knowledge, this has not been done yet.

3.2.6. Sectors and industries

Analyzing data about the wealthy class of nineteenth-century Britain, Rubinstein (1977) concludes that the numerically largest group of wealth-holders was neither industrialists nor bankers, but the great landowners, who were far richer than the wealthiest British businessmen. Holmes (1909), Sorokin (1925) and Watkins (1907) arrive at similar conclusions examining the nineteenth-century USA. Their argument is that some diversity of industries and sectors was a characteristic of capitalist elites during and immediately after the industrial revolution, but behind the accumulation of fortunes there were not productive activities but realty rights and land speculation. Furthermore, Watkins notes, one should not even expect the rich to be in a single industry, as most fortunes are not derived from the productive abilities of an individual. To some extent, this would

still be valid today.

Recent studies have pointed out that in Canada and the USA the rich are dispersed over a broad range of sectors and industries (Broom & Shay, 2000; Fortin et al., 2012; Kaplan & Rauh, 2013; Parker et al., 2010). Most likely this would be also true in many other countries, certainly with local variations. Yet, with respect to this diversity of sectors, some characteristics seem to be common among the very rich in industrialized countries.

First, finance has always been an important sector for the rich. Second, land trading and property development (real estate) was and still is an important source of fortunes. Third, fortunes are related to rents deriving from monopolistic power, including, but not limited to, the monopoly created by intellectual property. Fourth, it is possible to infer an association between the sectors in which the very rich operate and State direct or indirect subsidies, or trading with governments, such as military expenditures, science and technology, telecommunications and fuels, though this has not received much direct attention by the literature.

The finance industry is an important sector for the working rich and in some countries play a key role in the dynamics of inequality. Sorokin (1925) had already noted a disproportionate presence of bankers among the millionaires in the nineteenth century USA. More recently, Wolff (2000, p. 86) estimated that in 1992 about 36% of employees in the top 1% incomes of the USA were working in finance or real estate trading and that these sectors were growing in importance over the previous decades. A decade later, Kaplan and Rauh (2010) show that executives from the financial sector are twice more common in the top 0.1% than other executives. Fortin et al. (2012) identified that 10% of the top 1% incomes in Canada were working in finance and according to Godechot (2012), the finance industry doubled its presence in the top 0.1% and was responsible for half of the rise of inequality in France between 1996 and 2007. Of course, the importance of the finance sector for the rich goes beyond those working in it: financial wealth is extremely concentrated and its incomes are an important source of earnings for the rich in all industries.

Real state trading has also been a relevant industry for the rich for a long time. The conclusions of Rubinstein (1977, p. 125) about the prominence real estate owners and traders over of industrialists in early industrialized Britain remained

true during the 1980s - 2000s in Britain, Australia, New Zealand and the USA (Canterbery & Nosari, 1985; Hazledine & Siegfried, 1997; Siegfried & Roberts, 1991; Siegfried & Round, 1994). Note that what this literature highlights is that the rich do not only use real estate to accumulate wealth, they make fortunes by actively investing and trading realty.

The rich are also commonly found in activities favored by monopolistic power, either when they are in firms controlling a large part of a sector, such as news, media and telecommunications, or controlling key parts of economic production, such as the monopolies maintained by intellectual property laws. Which specific sectors are favored by those powers vary according to the structure of production in each country. Science and technology development, for instance, is an important activity for the USA rich (Broom & Shay, 2000) and, to some extent, for those in Australia and New Zealand (Potts, 2006). As a matter of fact, part of the literature argues in a different direction, that fortunes are predominantly made at competitive industries (Hazledine & Siegfried, 1997; Siegfried & Roberts, 1991; Siegfried & Round, 1994), but this depends on how "competitive industry" is defined and has been subject to critique (Waldman, 1991).

The role of the State favoring the rich by directly or indirectly subsidizing companies or granting monopolies is yet to be subject to a detailed analysis. This, however, is a hypothesis that should not be underestimated. The high frequency of fortunes in sectors that typically receive benefits or protection from the State suggests that the relation between the State and the rich deserves more attention from researchers. This relation is not restricted to direct subsidies but also by indirect funding, such as by sponsoring scientific research, channeling military expenditures to industrial sectors, using macroeconomic policy as an insurance mechanism to the finance sector or even by simply limiting competition in strategic sectors of the economy. Not only the capitalists but also workers can benefit from privileges and rents obtained by some companies that trickle down to them.

Furthermore, what the literature on the subject seems to indicate is that innovation or high productivity may be less important for the composition of fortunes than that of restrictive property rights. If that is correct, then another field that deserves more investigation is the institutional settings that are behind these rights and their implications for the overall distribution of income within and

between countries.

3.2.7. Globalization

With respect to globalization, one can ask at least two related but separate questions: 'who are the world's rich?' and 'how the rich benefit from the integration of national economies'. Because the large majority of studies about the rich is country-specific and little attention has been given to the role of globalization as a determinant of the income and wealth of the rich, the answers given in the literature to these questions are, so far, still very speculative.

Regarding the question of 'who are the world's rich?', it is very likely that the answer is that the relatively rich in a few North American and European countries are the true global rich, much richer than the local rich of other countries. Considering that the world as a whole is more unequal than any country taken separately, that most of the interpersonal inequality is located between countries (Firebaugh & Goesling, 2004; Firebaugh, 2000; Lakner & Milanovic, 2013; Milanovic, 2012) and that most of the difference between countries is due to the differences in the distance between the top 10% and the bottom 40% of the population in each country (Cobham & Sumner, 2013; Palma, 2011), in the cross-country 'differences between tails', the top incomes tend to be particularly important. Potentially, the top incomes in the rich countries are the world's rich. Verification of this hypothesis is a matter of measurement, but not a simple task simple given the difficulties in harmonizing international data.

As countries interact and much of this interaction is controlled by economic elites, it would be surprising if the global scenario had no influence on the making of a rich class in a country. The second question, however, is possibly harder to answer than the first one.

Research on the effects on inequality of what we understand today as globalization has a long history. Marx (1996 [1867]) , for example, writes extensively about how the enrichment of capitalists in England was possible due to the free trade with the colonies and resulted in the destruction of handicraft and incipient industry in these countries. In a much less celebrated but still meriting work, Watkins analyses the origins of the rich in the USA in 1892 and concludes that fortunes were created by international trade and investment (Watkins, 1907).

However, more precise evaluations of how much globalization responds for

fortunes face the important barrier of limited data. In recent times, Milanovic (2005) worked with a database composed by surveys from 95 countries, representing 90% of the world population and found that in poor countries globalization tends to favor the rich (top10%). Roine, Vlachos and Waldenström (2009) worked with a smaller set of countries, 15 high income economies and India, but used data from tax records, which allows inferences about a richer group, the top 1%. Their study did not find trade openness of a country to be disproportionately beneficial to the rich in that country, but this refers only to indicators of the general level of openness in linear regressions, not to the direct role of trade as a source of income for different groups. Neumayer (2004) analyses only Forbes lists from 2001 to 2003 and found that there is no negative influence of taxation, regulation of wages, regulation of the prices of commodities or the concession of social benefits in the number of billionaires of a country. Commercial openness, however, has a positive impact in this number. Volscho and Kelly (2012) also concluded that trade openness favored the top incomes in the USA.

These are studies about within country impacts of trade openness, a proxy for globalization that does not take directly into account investment and financial transactions. Apparently there is no study specifically concerned with how the rich in rich countries are affected by trade openness of low income countries or, to put in other terms, how the global rich relate to the global lower classes. The truth is that such a type of study is hard to carry on due to limitations in data availability and comparability. A notable exception is the work of Piketty and Zucman (2013), who found that a significant share of the domestic capital in rich countries is owned by people in other countries, and that foreign portfolios have generated large capital gains in the USA: one third of all capital gains in the USA come from cross-border portfolios, a sign that an important part of the income of some rich are not bounded by national economies.

As a matter of fact, as it is well accepted that the levels of income in one economy depends on the levels of income in other countries – as one routinely does in growth theory – there is no good reason to believe that globalization should not affect the concentration of incomes in the rich. Indeed, there are studies pointing in this direction. Atkinson (2003, 2007) has been arguing that the levels of income of the top earners in a country are related to global inequality: "The analysis so far has considered the role of top incomes in a purely national context, but it is evident

that the rich, or at least the super-rich, are global players" (Atkinson, 2007, p. 23). A possible reason is that large companies operating internationally hold monopolistic powers and therefore are able to extract rents due to those powers in different countries and concentrate them in the form of capital gains, high wages or wealth accumulation. Such a proposition deserves further evaluation, but if it is correct, the recent rise of top incomes in North America and Europe may also be a result from an international redistribution of incomes from other countries.

4. Summary

Research about the rich, the affluent and the top incomes has a long history, is already abundant and keeps growing. It can be found in different disciplines but is more common in Sociology and Economics. Even though most of the research have focused on developed countries, the number of developing countries being studied is increasing. There is, however, very little work about the global insertion of the rich, in spite of the potential importance of the subject and some clear signs that a non-negligible part of the income of the rich crosses national borders.

Behind the large majority of the existing literature there is a concern not only with the rich themselves, but with pragmatic concerns about the inequality of income and wealth. In other words, studying affluence is often taken as a way to understand inequality in order to design policies to reduce it. This appears, for example, in the simultaneous attention given to poverty and affluence in empirical analysis or even in the construction of affluence lines of many studies.

There are affluence studies based on different types of data, but only in rare cases the collection of this data has been specifically designed to study the rich. As a consequence, data availability often dictates the object of study, the population covered, the units of analysis, the definitions of rich and the measures of richness and inequality. It also strongly influences comparability over time and between countries. Notwithstanding, a growing literature is working on techniques to merge different data sources and harmonize international information.

Income and wealth affluence lines are used to define and identify the rich. Methodologies vary, but here they have been grouped into six broad categories. Some resort to somewhat arbitrary definitions of rich, such as the absolute value and positional approaches. Others are based on the value judgments implicit in

some statistical measures – their implicit welfare functions – such as the index-based and curve-fitting approaches. There are also those which explicitly attempt a justification of the definition used, based on a more or less clear rationale or set of principles, such as the multiplier, sufficient wealth and redistribution approaches.

Measures to aggregate the rich and represent them as a group in the population are strongly influenced by the poverty measurement debate. Some of them simply mirror existing poverty measures, with minor adjustments. Nevertheless, since the mid-2000s the literature has been concerned with measures specifically designed to allow the comparative study of the rich, particularly with the fact that, differently from what happens with poverty, the measurement of affluence occurs in an open interval, that is, there is no upper limit in the incomes of the rich.

It is very hard to generalize empirical results obtained over a fairly large span of time, in different places of the world and using different definitions of affluence. This is aggravated by the fact that local and global patterns of inequality are changing at a reasonably fast pace – for example, at the same time inequality grew in North America, Europe and part of Asia, it fell in South America. However, some major conclusions of the literature, particularly the more recent ones, can be highlighted.

Labor is an important source of income for the rich – say the top 1% higher incomes of a country. Only at the very top of the distribution capital becomes a main source of incomes. However, many of the working rich also own capital and benefit from its incomes. And because they do not consume all their wages, they are increasingly becoming capital investors. These investments are observed even among the less rich, in the form of pension funds. The tendency thus is of a rise in the importance of capital as a source of incomes for the rich in the coming decades.

Social mobility or, more exactly, immobility, was and still is an important determinant of affluence. Inheritances and transfers within generations of a family are a significant source of fortunes. Most likely the association of affluence with social origins is not limited to transfers of material wealth. It probably includes social networks, political influence, elite education and other sorts of advantages.

Investments in human capital and exceptional talents do not seem to be a major reason to explain why some individuals are much richer than others. Neither

is the occupational structure, at least in what refers to the distribution between occupational titles. Some occupations are disproportionately represented among the rich, but variation within occupations is clearly more important than between occupations. As such, these factors can account for only a small – apparently a very small – share of the rich. Skill-intensive occupational structures may explain differences of affluence between countries but it is not clear that they are a good explanation for inequalities within countries.

There is some evidence that characteristics of companies and industries are more important, but to allow for generalizations a more rigorous contrast between these and alternative explanations awaits more data and research. With some difference from country to country, fortunes are dispersed over a range of sectors and industries, but with more concentration in finance, commerce and real estate development and trading than in technology and innovation. *Mutatis mutandi*, a fact that should not be neglected is that in spite of immense historical change these are the very same sectors where the rich would be found at the beginning of the industrial revolution.

The role of the State in determining the incomes and wealth of the rich is another area that deserves more attention. Growing evidence points in the direction that taxes can be an important equalizing factor without seriously affecting the behavior of the rich. However, the work on how direct and cross-subsidies, market protections, direct investments in science, technology, infra-structure and other sectors benefit the rich is still incipient. For example, there is little or no research available on how military and pharmaceutical research benefit the richest in a given population. The same can be said of studies about how fiscal and monetary policies benefit different groups of the population.

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