Thomas Piketty's Capital in the 21st Century – An Intellectual Capital Perspective

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Abstract: In this paper we analyze the book that was hailed by Paul Krugman and the Financial Times as the book of the Year of 2014, through the lenses of the Intellectual Capital. Published in French in 2013, and translated into English in 2014, Thomas Piketty's Capital in the 21st century became a worldwide sensation and best seller because of the deepness of its analysis and the controversy of its findings. In a nutshell Piketty claims that contrary to the neoclassical forecast, the Inequality in the world might grow, due to a shock between forces of convergence and forces of divergence. Furthermore, Piketty also claims that only redistribution policies can reduce the inequality trend, and calls for a new set of social policies. All this is very impressive but for us what matters most is how to put IC in the analysis. In this context we analyze Piketty's ideas using the concepts and theories on Intellectual Capital (Bonfour and Edvinsson 2005; Edvinsson and Malone, 1997; Kaplan and Norton, 1994), and we also recall what the main theories on inequalities are (Coleman, 1991, Atkinson 1983 or Stiglitz 2012), and about Welfare States (Esping Andersen, 1990). We find that in the History of socio-economic thought Intellectual Capital and Inequalities have been marching in separate paths: not only the paradigms of analysis are totally different, but only one handful of empirical studies exist that bring together IC and inequalities. The fact is crucial for our paper because we believe that IC in fact increases inequality and explains growing inequality. We also found that Piketty almost does not address IC directly in his entire book, a fact that by itself speaks volumes about the position of IC in the world of socio-economic thought. Pikettys' analysis, for all its importance, and novelty, is traditional and surprisingly old fashioned when it comes to considering Intangibles. He never uses IC, he seems to be unware of IC analysis. However we also think that most of Piketty's analysis would gain strength if IC is considered (as we believe it certainly should be) as a major force of inequality in the economy of the 21st century. In the discussion of the paper we point out nine ways in which the inclusion of IC in the analysis could benefit Piketty's conclusions; the seven ideas relate to IC itself, KM and the knowledge economy, super-professionals, billionaires, Human Capital, social policies and development, taxes on wealth, modern slavery, and the rise of political oligarchies in the 21st Century with relation to technology. The paper is limited because it is basically theoretical. We consider the paper is original because for the first time someone attempts to put together inequality (which is Piketty's point of view) and intellectual capital (which is IC science point of view), as we describe in the theoretical part of the paper. Furthermore we are sure, and demonstrate that both fields should be linked in the future. Finally we believe that our comments on the book which result in the empirical part of the paper are a first step in what we think must be a long road of scientific research.

Keywords: Intellectual Capital, Inequalities, Thomas Piketty

1. Introduction

In 2013, the literary and intellectual world of Economics was rocketed by the book "*Le Capital au 21eme siècle*" by the French economist Thomas Piketty (Piketty, 2013). The book was widely commented and read. The author was hailed as the "new Marx". The book's conclusions, in the words of the author himself, were that "*we should be wary of any historical determination in the subject of wealth distribution"* (Piketty, 2013, 47). Furthermore, there are multiple mechanisms in the economic world that generate convergence and divergence of wealth distribution through time. And the major factor of convergence and therefore of reduction of wealth inequalities is the diffusion of knowledge and the investment in skills and training (Piketty, 2013, 47). Two pages later the author reinforces the idea: the victory of the human capital over financial capital, and the replacement of the class struggle by the age struggle are illusions don't lead to a massive decrease in inequality; in the long run the real driving for of inequality reduction is the diffusion of knowledge and skills (Piketty, 2013, 49).

We assume that Piketty's message has links with and is of interest to the Intellectual Capital (IC) community. Therefore the research question of the paper will be – What can be said Piketty's book reflections on IC?

The question seems to be of real interest for us, because we as IC and Intangible scholars (Tomé, 2011) strongly believe that in the 21st century it is not Capital the major force in the world economy but Knowledge, Information, Intellectual Capital, Human Resources or, to put these concepts together, the Intangibles. Also we sincerely believe that "*if Marx were to be alive today he would have written the Information or Knowledge not Capital"* (Tomé, 2005).

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Therefore it is the objective of this paper, to analyze critically Piketty's outstanding and celebrated work and to dissect it from an IC perspective. We believe scientists in one hand and the society as a whole in the other hand may gain from that analysis.

We will proceed in five stages. Firstly, we will present the main concepts used in the paper, mainly IC, inequality and Welfare States (WS) (section 2). Secondly, we will present the main theories and studies we know on the relation between IC and inequality within the WS scope (section 3). Thirdly we summarize the books mains findings, from the point of view of IC (section 4). Then we discuss the books' ideas based on other known theories on IC, and other topics like income inequality and Welfare States (section 5). Finally we will draw our own conclusions (section 6), address the paper's limitations and implications for research and for the society, and suggest some inroads for further research.

2. Concepts

2.1 Intellectual Capital

In this paper we describe Intellectual Capital (IC) as a strategic asset of companies, nations and individuals. It is composed by human capital, relational capital and social capital, which translate easily into competences, routines and brands (Edvinson and Malone, 1997).

IC was first included in the scientific analysis when it became apparent that the there was a divergence between the book value (BV) and the market value of companies (MV). Given that the book should account for the tangible assets of the companies and organizations, IC should explain the difference between MV and BV (Edvinsson and Malone, 1997). Given the composition of IC, its management became suddenly of utter strategic importance to companies and organizations. Organizational success became a question of not only managing well the human resources, but also the relational capital within the company and the relations between the company and its direct environment (Blomqvist 1998; Bonneramn and Alwert, 2007. Kianto, 2008). Many methodologies on evaluating IC were put forward (Sveiby, 1997; Sveiby 2010) and the balance scorecard became the most popular methodology (Kaplan and Norton, 1994) in the field. Later, IC analysis was also extended to countries (Edvinson and Li, 2011) or regions (Bonfour and Edvinsson. 2005). The underlying assumption was also that some sort of value could be derived for countries from managing HR, routines and brands. Following this path were organizations, like the World Bank created the Knowledge Index Indicator (KEI) (World Bank 2014a).

Quite intriguingly, only a handful of studies have been done on individual IC (Maura and Longo, 2012, Tomé and al, 2014). The situation is a bit extraordinary because, conceptually, there is nothing that would prevent the application of the IC model to individuals; indeed, and on the contrary the use of the IC model could be as strategic for individuals as it is to organizations or to regions – a person may try to improve his or her situation in the labor market by managing its human capital (under the form of competences and skills), structural capital (as working and living routines) or social capital (and in this case we would be thinking about the reputation of the individual).

In the context of this paper we believe individual IC is at least as important as national or organizational IC because Piketty's analysis on Capital deals with the phenomenon of inequality (see section 4 below). In fact, given that inequality is foremost accounted on an individual base we may assume that Piketty's book is directly related with individual IC. And in our opinion the relation between Piketty's analysis and organizational and regional IC is only indirect: organizational IC can be related with inequality if it increases the wealth of the owner of the company and we believe it does; national IC can also have a positive external effect on the individuals' wealth or income because it is a way of generating individual income.

For an analysis on the relation between individual IC, organizational IC and inequalities, see 3.1. below.

2.2 Inequality

The analysis of inequality is usually made starting by the idea of equality. There are three main kinds of equality – equality over the law (EL), equality of opportunity (EO) and equality of result (ER) (Coleman, 1991). Equality over the law relates to rights, and it is usually linked with positive discrimination. Positive discrimination exists when the law singles out and protects some groups in order to increase their access to good or services. Equality of opportunity is measured relating the number of members of a group with the number of those members that perform an act; in a situation in which EO exists all the relevant groups should have broadly the same rate of participation. Quite crucially, EL may be assured and EO may exist, some groups may have higher returns than others in the labor market or in any other relevant market – as a sign of inequality of result. Inequality of result may be addressed at its roots, by trying to improve the underlying and non-observable conditions of the non-participants: inequality may also be addressed as the results, using taxes and other forms of redistribution policies.

Inequality exists between individuals (and is called individual inequality) or between factors of production (called functional inequality). The two forms of inequality are related because the more an individual possesses a factor whose share in the national income, the worse it is, and vice versa. Personal inequality has causes (Atkinson, 1983 or Stiglitz, 2012); the most important cause seems to be differences in education; other causes relate to inherited wealth, belonging to disadvantaged or excluded minorities, or working in problematic countries or economic sectors. Inequality is measured by indicators, the best known being the Gini Index (World Bank 2014, b) and also the Theil Index (Ra, 1992). Statistics on the inequality have been made worldwide mainly by the World Bank, the United Nations and also the European Union.

In the last decades of the 20th century the study of inequality was firstly mainly linked with the elimination of poverty (Kenworthy, 1999), in a more economic and financial perspective, and then the concept was extended to embrace other social and political aspects referred to as social exclusion (Levitas, 2006). However, in the 21st century, more attention is being put in the existence of very rich people (Tomé, 2012). In fact it is the existence of those very rich people. In a growing number, that has increased inequality recently. And we deeply and sincerely believe that the increase in very rich people is decisively and genuinely linked to the existence of IC (see 3.1 and 5 above, and Tomé, 2012).

2.3 Welfare States

In civilized and modern societies, social policy (SP) is defined as the set of actions performed by the society to solve the main social problems (Barr, 2004). In consequence SP relates to education, health, social security, law, environment, crime and other social problems (Le Grand and al, 2008).

In modern societies also SP are usually performed by Welfare States (WSs). WSs linked the various actors of the welfare scene: public forces, private forces, private non-profit, families, and the foreign providers. The form by which these actors interact is called the Welfare Mix. Different forms of Welfare State exist – Liberal. Conservative, Social Democratic, Latin, and Marxist, (Esping Andersen 1990, Deacon, 2000) depending on the way the Welfare Mix is organized.

WS tend to be a feature of advanced countries. In less developed countries only Welfare Societies exist and the social problems are mainly solved and addressed by families, and sometimes with the help of international aid.

The summary of the main characteristics of each form of WS is presented in Table 1, below:

Table 1 – Main characteristics of the WS forms

	Main author	Basic principle	Role of State	Type of justice	Practical applications
Liberal	Adam Smith and then Milton Friedman	Liberty	Minimal	Retributive	Anglo Saxon countries
Conservative	Bismark and the Catholic Church	Dialogue	Subsidiary	Commutative	Germany and Japan
Marxist	Karl Marx	Class Struggle	Total	Revolutionary	Eastern European Countries 1945-1989
Social Democratic	Keynes	Compensation of Government failures	Big House	Redistributive	Nordic States
Latin	Social Doctrine of Church	Dialogue but imposed	Weak and less democratic for of Conservative	Commutative with failings and privileges	Iberia and Latin America

Source; adapted by the author from Esping Andersen 1990 and Deacon 2000

There are also other ideas, often called the Critical Way, which in the last 50 years have gathered thinkers like Michel Foucaut on illegalisms, Ivan Illich on schools, the green and sustainability movement, analysis on gender and on minorities. In general the concerns of these thinkers have been more or less absorbed by the big currents of Liberalism, Social Democracy, Conservatism and Marxism.

For an analysis on the relation between WSs, IC and inequalities see next section.

3. The relation between Intellectual Capital and Inequalities and the role of Welfare States

3.1 IC and Inequalities two worlds apart

Reflecting on the ideas exposed in the previous section we find that IC and inequalities are two fields that have been growing separately and in opposite directions (see Table 2 below).

Table 2 – Comparison of IC and inequalities analysis

	Intellectual Capital	**Inequalities**
Beginnings	Nineties	Sixties
Dominant Subject of analysis	Companies	Individuals
Dominant problem or research questions	Market value minus book value	Reduction of inequality, elimination of poverty and exclusion
Dominant focus	Strategic	Social
Dominant methodology	Balance Scorecard, Tobin q (Sveiby, 2010)	Gini and Theil indexes (World Bank, 2014b, Raj, 1992).
Main authors	Edvinson, Kaplan and Norton	Atkinson. Sen, Berghman
3Known studies	Bonnerman (Incas study)	Luxembourg income studies

Source: own analysis

IC analysis has been done on companies, based on strategic thinking, and trying to solve the dilemma between market value and book value - with the use of methodologies like the Balance Scorecard and Tobin's q (Sveiby, 2010). Therefore, the reduction of inequalities was never a problem for the people that studied IC. Furthermore, the analysis of national intellectual capital was never translated in an analysis of national inequalities.

And conversely, or symmetrically, inequality analysis was never concerned with the strategy of companies but only with some factors that could eliminate or decrease inequality, like education or taxes; this analysis was mainly linked to individuals, had social concerns and was based in well- known mathematical models and indicators like the Gini Index (World Bank, 2014b) and the Theil Index (Raj, 1992).

The separation between the two fields is understandable because the research questions that built those fields were different, as were the historical times in which they were developed. But we have little doubt that IC is a generator of both of wealth and of inequality. Personnel IC (namely human capital, individual routines and individual branding), generates wealth and income for its possessors. Organizational IC (meaning human capital, routines and brand image) generates wealth and income for company workers and above all for the company owners. Therefore individual and organizational IC explain much of the appearance of millionaires (through individual branding and uniqueness) and billionaires (through the ownership of multinationals) as explained in Tomé, 2012. Quite crucially chapter 12 of Piketty's masterpiece is in itself a small book on millionaires and billionaires (see section 4, below).

3.2 Known studies relating IC to inequalities

Searching in Google Scholar we found very few studies that may relate, even remotely, and directly, IC and Inequalities. Stewart in his seminal book (Stewart 1997) asserted that income inequality was rising due to the rise of knowledge workers. Chu and Peng (2009) developed a model that explains how that protecting property rights in countries rises inequality. Finally, the rise of managers pay in the knowledge economy has become a scientific topic (Martin, 2014). Wisniewski (2012) analyses the situation on the financial services sector, and (Lin, Edvinsson and Chen and Beding, 2014) study the issue in a nation-wise perspective, worldwide.

3.3 The role of the Welfare States linking IC and inequalities

IC is essential for the development of economies (Tomé, 2004), and social policies are essential to provide societies with the necessary level of IC (Tomé, 2008). Moreover, Welfare States decisively contribute to the stabilization, balancing, and development of societies. Therefore, while investing in IC, and funding IC investments, Welfare States may do a crucial job of reducing inequalities. Piketty is in favor of such actions (see sections 4 and 5 of this paper and also Piketty, 2013, 751-882).

4. Pikettys' Ideas

Piketty's book (Piketty, 2013) has 950 pages in its French edition. The text is divided in six main sections: Introduction, part I to IV and conclusion. The four parts have the following titles: Income and Capital, the dynamic of the relation capital/income, the structure of inequalities and ruling the capital in the 21st centuries.

In the Introduction Piketty summarizes the book and its main findings, putting his analysis in relation with Malthus, Ricardo, Marx and above all Simon Kuznets who forecasted a stable relation over time between wealth and income and a decrease in inequalities due to an increase in the investment in human capital (Piketty, 2013, 37). In fact between 1930 and 1950 income inequality decreased, and until 1980 there was a stabilization, but afterwards the increase in inequality was sharp (at least in the USA) (Piketty, 2013, 52). The recent evolution was caused because in Piketty's view the rate of return of capital (r) nowadays is higher than the income growth rate (g), this difference being mainly the main force of divergence in the world economy. As a consequence the ratio between wealth and income is increasing (Piketty, 2013, 54). This divergence can only be matched by investments in training broadly speaking in the framework of large social policies (Piketty, 2013, 50) and is increased by the possibility of high incomes / super-cadres (Piketty, 2013, 50-52) and also by the increased possibility of concentration of wealth (Piketty, 2013, 50). Piketty also lists his data sources (Piketty, 39-46), and cases (mostly France, the USA, Japan, France and the UK since 1990) (Piketty, 2013, 57-61) and finally explains how he himself felt compelled to make the book, being from a generation that celebrated the Bicentenary of the French Revolution in 1989 (Piketty, 2013, 62-4).

Part one is devoted to the presentation of the concepts of income and wealth (in chapter 1) completed with an extensive discussion on the empirical relation between the two concepts and growth (chapter 2). More specifically, in chapter 1 Piketty defines the main concepts he will use in the book: national income as national production plus net income received from the outside world, and world income as world production (Piketty, 2013, 81), national income as returns from capital and from labor (Piketty, 2013, 82). Crucially, Piketty uses "Capital" and "Wealth", interchangeably (Piketty, 2013, 84). In consequence, national wealth as the sum of private wealth and public wealth (Piketty, 2013, 87), or also the sum of internal wealth and the net external wealth (Piketty, 2013, 88). Income is a flux and capital a stock from which income derives (Piketty, 2013, 89-92). One important point in the analysis is that, the share of capital in the national income (α) equals the average rate of return of capital (r) multiplied by the ratio between capital and income (β) (Piketty, 89, 2013). Therefore if wealth represents six times national income and the rate of return of capital is 5 percent, the share of capital in the national income is thirty percent (Piketty, 90, 2013). Piketty is in favor of the development of systems of national accountability, namely of world income and wealth databases. Income data exist only since 1900, wealth data existed before, since 1700 because of the problem of inheritances; after World War II the quality and quantity of the data increased; in 1990-2000 wealth data became a major issue. (Piketty, 2013, 99-104). The first chapter ends with an analysis on Describes the inequality of income in the world (Piketty, 2013, 105-115) which is smaller than the inequality of wealth (Piketty, 2013 116-8); and Piketty assumes that the main way of assuring convergence between nations is the diffusion of knowledge at national and international level; this process will not fall from heaven but will depend of the capacity of nations to mobilize massively funds that will train their citizens, in the scope of a enhancing legal scheme and a legal and efficient public sector (Piketty, 2013, 121-2). Chapter 2 is devoted to the analysis of growth (Piketty, 2013, 125-179): demographic growth (Piketty, 2013, 131) economic growth (Piketty, 2013, 144), from les *Trente Glorieuses* (Piketty, 2013, 161) to the end of growth (Piketty, 2013, 156). The chapter ends with a reflection on the effects of monetary stability on growth through history (Piketty, 2013, 171-9).

In Part II (chapters 3 to 6) Piketty analyses the evolution of national wealth as defined as agricultural lands, housing, other internal capital and external capital (Piketty, 2013, 191) and its relation with national income. After a general presentation in chapter 3, in which he demonstrates that although states have never been so poor and indebted, private wealth has never been so high (Piketty, 2013, 199-202), Piketty then uses the remaining part of chapter 3 and chapter 4 to analyze in succession the cases of the UK (Piketty, 2013, 206), France (Piketty, 2013, 216), Germany (Piketty, 2013, 224), Europe (Piketty, 2013, 234), the USA (Piketty, 2013, 239), and Canada (Piketty, 2013, 247). Finally in page 258 of chapter 4 the French author expresses the idea that the monetary valuing Human Capital amounts to some sort of slavery! We will return to this bold idea in our section 5, below. In chapter 5, Piketty studies the relation between wealth and income (β) as a function of the savings rate (s) and of the level of economic growth (g) (Piketty, 2013, 262). After long term considerations (Piketty, 2013, 265-270 and 274-7) and the analysis of rich countries

(Piketty, 2013, 270-3 and 278-281) many specific questions are analyzed in relation to durable goods (Piketty, 2013, 282-4) assets prices (Piketty, 2013, 294-301), foreign assets (Piketty, 2013, 301) and land assets (Piketty, 2013, 310). Quite importantly, between pages 294 and 301 Piketty addresses the rise of the value of assets and the relation between the market value and the book value of companies since 1970 until 2010 (Piketty, 2013, 297). In page 300 Piketty addresses the immaterial investments of companies, and in the pages 299 and 301 he reflects on Tobin's q indicator, considering that mainly and fundamentally q has been rising as a consequence of the rise in the price of assets (Piketty, 2013, 299-301). We will address this idea in our section 5, below. In chapter 6, Piketty analyses the relation between capital and labor in the 21st century. The analysis begins with some historical data (Piketty, 2013, 316-20), and then addresses the question about accountability of fluxes versus stocks (Piketty, 2013, 320-3), the profitability of capital (Piketty, 2013, 323-344), the trade-off between labor and capital (Piketty, 2013, 344-352). Between pages 353-5 Piketty discusses the idea that Human Capital raise in History might be an illusion; we will discuss this idea in section 5, below. Finally, Piketty puts the reader in guard with relation with the effects of technology in societies: more technology does not mean more democracy, less inequality or more meritocracy (Piketty, 2013, 370-1). We will also come back to this idea in section 5.

In Part III (chapters 7 to 12) the current and historical evolution of inequalities are analyzed. Inequalities relate to work (about income) or to wealth (about income but also about heritage). (Piketty, 2013, 380-3), the later being always more unbalanced than the former (Piketty, 2013, 385, 396 and 410), and in the last decades the inequality of income was somehow reduced (Piketty, 2013, 401-4) but the inequality of wealth remained extreme (Piketty, 2013, 404-10). However in some countries, like the USA, and the UK the inequality of revenues rose after the eighties of last century (Piketty, 2013, 460-1, 501) whereas in other countries like France, Central Europe, and Northern Europe and Japan it remained stable after a sharp decline since WWII (Piketty, 2013, 431, 503 and 505). Piketty debates the raise of the "super-professionals" (Piketty, 2013, 52, 500, 512, 529), and points to the conflicting effects of education and technology (Piketty, 2013, 482) on this phenomenon. In what concerns the inequality of wealth however, Piketty observes that: first, it was always higher than the incomes' one; second it did not redress so much after WWII; and third it was not as different in Europe and in the USA (Piketty, 2013, 548-9, 555-6); the cause of the difference is that, according to Piketty capital revenues rise faster than income (Piketty, 2013, 557, 560); for the future Piketty is concerned it not afraid that the 21st century will be more unbalanced than the 20th ((Piketty, 2013, 499). In a long analysis to the flux of heritages and donations (defined as variable b), explained by three variables (the relation between wealth and income, mortality rate and the relation between the wealth of the living and the wealth of the dead (Piketty, 2013, 608-9), Piketty concludes that in the last century variable b has not been decreasing (Piketty, 2013, 604 and 677) and will probably grow in the 21st century at least for France (Piketty, 2013, 633). "Heritage will not disappear, it will only be different" (Piketty, 2014, 669), and we are becoming a society of small heirs who anyway derive around a quarter of the resources they will have available in their lifetime from capital (Piketty, 2013, 665). Those heirs will benefit from "rents" and constitute the backbone of a "society of small tenants" (Piketty, 2013, 665); those tenants will profit from the fact that the wealth growths faster than income; this divergence exists within the free market (Piketty, 2013, 675).

In chapter 12 (Piketty, 2013, 685-747) Piketty writes what could be in its own a small book on the fortunes on billionaires and millionaires in the current times (Piketty, 2013, 685-748). He analysis the rankings of fortunes (Piketty, 2013, 688) and of billionaires (Piketty, 2013, 695); he also analysis reasons to belonging to these rankings; heirs and entrepreneurs (Piketty, 2013, 701), economies of scale (Piketty, 2013, 719), sovereign debt (Piketty, 2013 729), oil funds (Piketty, 2013, 733) or Chinese investments (Piketty, 2013, 737). As a conclusion to this part Piketty states that the increase in the international inequality in wealth distribution will lead probably to more oligarchies and less democracy (Piketty, 2013, 740).

For the future (analyzed in part IV, between chapter 13 and 16), and as a solution to the unbalanced tendency he foresees in the world economy, Piketty asks for 3 actions: a new social policy, a progressive tax over revenues and a world tax over capital (Piketty, 2013, 751-882). First, about social policy, Piketty is in favor of redistribution, and also in favor of an increased support to education and to pensions by the State (Piketty, 2013, 774 and 783). He is also concerned and interested in the fact that the Welfare State has to be built in emergent countries as a way of ensuring the planet's future (Piketty, 2013, 791). Secondly, about the progressivity of the tax on incomes, Piketty asks for a maximal level of 80% in the developed and rich countries (Piketty, 2013, 831) and that policy would be a factor against the possible "oligarchic derive" (Piketty, 2013, 833). But, thirdly and last but not the least, in order to fund the Welfare State, Piketty asks for a progressive tax on wealth (Piketty, 2013, 856). Part IV ends with a chapter on public debt (Piketty, 2013, 883-940); Piketty discusses if the highest debts of European countries are payable in their current form and is very skeptical about it (Piketty, 2013, 892), asking for a new architecture for the Eurozone (Piketty, 2013, 911-23).

The book ends with a Conclusions section (Piketty, 2013, 941-950).

5. Discussion

It is perhaps a good measure of the place IC has in Economic Science and even more specifically in the discussion on inequalities, that in 950 pages of text we only found three (299 to 301) in which IC is directly addressed, when the difference between market value and book value as defined by Tobin's q is analyzed (Piketty, 2013, 299-301). Moreover, Piketty states that "immaterial" investments (brands or R&D according to the French author) may have been important in the UK and the US and may have escaped the balance sheet mostly in the last two decades, but even so their effect was eclipsed by the dot.com bubble of 2001 and the 2007-8 crisis in explaining the variance in Tobin's q over the last 40 years (Piketty, 2013, 300).

In all the rest of the book, it seems to us that IC was not considered. The omission of IC is a pity, because in our opinion, considering IC would reinforce both the analysis and the explanations of the fact Piketty offers. The examples of this are many, we counted at least nine:

a) First and foremost Piketty's main conclusions, about the recent and current raise in inequality and the fact that wealth growths faster than income, may gain in explanation if we introduce IC in the analysis. In fact given that IC comprehends human capital, social capital and structural capital it is easy to understand that the increase divergence between individuals and organizations on these three factors generates an increased divergence on the income of individuals. Furthermore, the continuous and conjoint effect of the three components of IC also contributes to the increased return of capital, because in an organization IC is strategic and human capital, routines and brand image are decisive to increase the profitability of capital. Therefore IC is at the core of the explanation of both the increase in the divergence of incomes and of the increased rate of return of capital in comparison with national income.
b) Secondly, it seems that Piketty tries to pass by the simple notion that since the eighties, this means, since the moment inequalities rose and capital returns increased the world economy changed in its paradigm entering decisively a knowledge based and services driven phase (Tomé, 2011). And it is well known that in the Knowledge Management (KM) theory, technology, people and routines are the decisive factors (Edwards, 2011). In our opinion technology, people and routines explain a lot of Piketty's outstanding results, both in terms of inequality and on the relation between g and r.
c) Thirdly the phenomenon of "super-professionals" analyzed in page 500, and that seems to interest and intrigue Piketty, may be, in our opinion also explained by IC. By this we mean that those elite people are the ones that, conscious or unconsciously have used personal IC better for their benefit – by using competences, social relations and routines to obtain extremely high revenues and wages in the labor market (Tomé and al, 2014).
d) Piketty's chapter 12 could be edited as a remarkable short book on billionaires and millionaires; the question of very rich people has been analyzed in relation to IC: millionaires sometimes have specific forms of talent whose returns are potentiated by technology; billionaires derive they wealth from the organizational position they have and from the benefit they generate from the IC of companies and the labor force of those companies (Tomé, 2012). IC is a way or the way of promoting and making possible the existence of both types of people.
e) When in pages 353-5 Piketty states that Human Capital may be just an illusion, he omitting the fact that, historically we went from the unskilled labor of the Marxist Era, to the Intellectual Capital of our Knowledge Era, passing by the Human Capital analysis of the 20st century. It is not for nothing that we may say that if Marx were born now, he would have written The Information and not Capital (Tomé, 2005). This omission of any analysis on the Intangibles, any reference to Knowledge as an economic driver, weakens in our opinion the analysis of Piketty.
f) The idea of the emergence and emergency of social policy for IC (Piketty, 2013, 774) is also very interesting and should be reinforced as form of enhancing development (Tomé, 2004, Tomé, 2008).
g) The idea of a tax on wealth (Piketty, 2013, 831 – 856) would be on extraordinary importance for the billionaires and the millionaires' phenomena, and we should never forget that IC is at the root of these two phenomena nowadays (Tomé, 2012).
h) The idea expressed in page 258 about HC valuing being something like slavery encounters many supporters, as the Nobel Prize Mohamed Yunnus who defended recently that jobs are making people slaves and that we

need to be entrepreneurs, to free ourselves from that slavery. However, we also think that IC is a way of liberating humans from the mentioned form of slavery by using not only our competences but also our routines and our brand for our own benefit.

i) Finally, we doubt that the present society, even if rents are important we be less democratic and more oligarchic (Piketty, 2013, 740) because we believe that the internet possesses the power of giving freedom of speech, speed and power to the ordinary citizen. Furthermore we believe that ordinary citizen will be able to prosper from its own IC and that in the long run inequality and poverty will diminish. Therefore even if understand Piketty's concerns with the impact of technology in society (Piketty, 2013, 370-1) we are not as pessimistic as the French author.

6. Concluding comments

The first main conclusion of this paper is of theoretical scope and precludes Pikettys' work. Namely we made perfectly clear in section 3 that IC and inequalities are two scientific fields which have been growing and living separately. The situation is both extraordinary and very important because we believe that IC explains inequality and the growth of inequality, as we explained in section 3 of the paper.

The second main conclusion of the paper is that, Pikettys' analysis, for all its importance, quality and novelty, is traditional and surprisingly old fashioned when it comes to considering Intangibles. He never uses IC, he seems to be unware of the bulk of IC analysis and results. In fact Piketty never leaves a traditional macroeconomic model based in a couple of variables such as the relation between wealth and income (β) the savings rate (s) the level of economic growth (g), the share of capital in the national income (α) equals the average rate of return of capital (r) as we described in section 4. The only time he really addresses intangibles he uses Tobin's q. All other implications and analysis of IC, individual and organizational, in inequality are only analyzed in second hand, as we described in the discussion.

The third conclusion, is that the omission of IC and the knowledge economy from the analysis is quite unfortunate, because as we demonstrated in the conclusion there at least nine topics in which IC may reinforce Piketty's ideas.

The main implication for researchers of this paper is that we believe that the gap between IC science and inequalities science as masterfully represented by Piketty's work should be bridged. In the discussion section we point out nine subtopics for which we believe the use of IC could well benefit Piketty's analysis, namely: the role of IC in the economy, KM and the knowledge economy, Human Capital, super-professionals, billionaires, social policies and development, taxes on wealth, modern slavery, and the rise of political oligarchies in the 21st century. These topics could serve as chapters in that book about "Intellectual Capital in the 21st century". That book would be an excellent follow up of this paper and a very good start about bridging the gap between the fields of science.

Finally, we believe that considering IC has a fundamental factor of social inequality may generate important and more correct social policies. Therefore if we succeed reading Piketty's book as also related to IC we may achieve, with the help of this paper, a fairer and more efficient world in the 21st century.

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