

THE (IMPLICIT) MICROECONOMIC FOUNDATIONS OF THE ECONOMY OF FRANCESCO

Tommaso Gabrieli*

ABSTRACT

In this paper, I analyse the microeconomic foundations of the economic judgements expressed in the encyclical letters of Pope Francis. I argue that these judgements are based on the implicit assumption that 1) human preferences are not those of the selfish Homo economicus and 2) market outcomes are neither equitable nor efficient. I discuss how both 1) and 2) are alternative foundations of the standard neoclassical paradigm, and I offer a review across economic fields of the most important contributions that explicitly put forward these microeconomic foundations. The fact that 1) is a criticism of individual assumptions and 2) is a criticism of an aggregate outcome poses challenges and opportunities: a growing body of recent economic research has offered important contributions on such links; therefore, I show that modern economic research can offer a comprehensive microeconomic foundation of The Economy of Francesco.

Keywords: Altruism, Interdependent Utility, Inequality, Catholic Social Doctrine.

JEL Classification: D01, D30, Z10.

ISSN: 0035-676X (print); 1827-7918 (digital)

DOI: 10.26350/000518_000083

1. INTRODUCTION

Pope Francis defined *Laudato Si'* and *Fratelli Tutti* as social encyclicals. In these encyclicals by Pope Francis, we can find several common elements and references to previous encyclical documents, from *Quadragesimo Anno* (1931) by Pius XI to *Sollicitudo rei socialis* (1987) and *Centesimus Annus* (1991) by John Paul II, but also new developments. Casula (2021) comments that unlike previous social encyclicals, an organicist vision of society is overcome and society is described in all its internal divisions, contrasts and conflicts. For example, in the encyclical *Quadragesimo Anno* published in 1931, there was only a vague and non-explicit reference to the Great Depression. In *Fratelli Tutti*, instead, an articulated analysis of the current historical, socio-economic and cultural climate of globalization is proposed, with a profound reflection on the emerging phenomena of conflicts, migrations, xenophobic, and authoritarian and populist temptations or drifts. Some scholars have also commented on the inductive method of the two encyclicals, which is somehow different

* Tommaso Gabrieli, Bartlett School of Planning, University College London. Email: t.gabrieli@ucl.ac.uk.

from that of *Caritas in Veritate* (2009) by Benedict XVI and is in continuity with the abandonment of the deductive method by John XXIII in *Pacem in Terris* (1963), which used the biblical category of the signs of the times¹. Naturally, there are also critics putting forth that there are in fact contrasts with previous encyclicals such as *Rerum Novarum* and *Centesimus Annus*, especially in what concerns the criticism of private property as not inviolable or the direct focus on universal fraternity as the goal of Christians².

Fares (2014) discusses the political anthropology of Pope Francis since his first writings as a priest in Buenos Aires. Exploring Pope Francis' conviction that there is a close link between the possibility of fullness of human existence and the concrete opportunities offered in our age to reach it, Fares (2014) discusses how Bergoglio proposes solidarity as a fruitful root with which to redeem and foster concrete political attitudes in a dialogue between the collective (an essential element of strength today) and the individual (the uniqueness of the person). He comments that the anthropology developed by Pope Francis builds on the writings of Guardini, as well as *The Brothers Karamazov* by Dostoevsky and various documents of the Society of Jesus.

My working hypothesis for this paper is that the economic foundations of Pope Francis' thought can be understood as the economic dimension of that political anthropology. Starting from the evangelical call to love your neighbour as yourself, I find that Pope Francis describes the Good Samaritan that everyone can aspire to imitate as someone characterised by what economists have defined as purely altruistic preferences. Symmetrically, by referring to the concept of original sin we can refer to selfish preferences as those of a human trapped in a state of false self-awareness, which Pope Francis invites us to change. I note that Pope Francis develops the behavioural economic argument that only by acknowledging her/his true self, or in other words, by following her/his altruistic preferences, every person can achieve personal happiness and contribute to universal fraternity. In contrast, a behaviour that is not altruistic (i.e. selfish) causes individual and aggregate negative consequences, which Pope Francis has no fear of documenting. At the individual level, these negative consequences are overconsumption and unhappiness; at the aggregate level, these are poverty traps, exploitation and environmental waste, among others.

In this paper, I analyse these implicit microeconomic foundations of Pope Francis' anthropology and show how they lead to the aggregate dimension of his (economic and political) anthropology. These microeconomic foundations can be linked to different strands of the economics literature, which I explore in the next section.

¹ See Crepaldi (2009) for a discussion of this debate: <https://www.vanthuanobservatory.org/archiviamo-definitivamente-la-questione-del-metodo-induttivo-e-deduttivo-nella-dsc-2/>.

² See Chap (2020) for a discussion, and see Fortin (1991) for more details about the differences between previous encyclicals.

2. RELATED LITERATURE IN ECONOMICS

According to a standard definition from the authoritative review of Ester (2006), altruism is the desire to enhance the welfare of others at a net welfare loss to oneself, and altruistic behaviour is any act that could have resulted from altruistic motivations. Selfish behaviour can therefore be defined as the result of the desire to enhance only personal welfare, without concern for the welfare of others, while envy is defined as the desire to lower the welfare of others. By recalling the parable of the Good Samaritan as the personal human disposition that everyone should aspire to and choose to follow, in both encyclicals (and in many other interventions) Pope Francis is essentially calling everyone to act with economic altruism.

The economics literature has a long history of research, both theoretical and empirical, on how altruistic behaviour can be generated from self-interested motivations in iterated games or in reputation-building. For example, it is well known that selfish preferences are still compatible with costly contributions to the public good, cooperation in games, or altruism towards family members. In addition, behavioural economics research has investigated how altruistic acts may be caused by the emotions of the agents, notably pride and shame. As discussed by Ester (2006), an important distinction drawn by the literature is between acts whose performance is conditional on seeing what other agents are doing, corresponding to quasi-moral norms of fairness or reciprocity, and acts whose performance is conditional on being observed by other agents, corresponding to social norms. Ester (2006) also shows that most of these ideas can be traced back to writers such as Montaigne, Descartes, Pascal, Hume and Kant. Another very important line of thought in the economics literature that intersects work on the motivations behind altruistic behaviour, cooperation, and norms, is the work on *reciprocity*; Hann (2006) analyses the anthropological differences between disinterested gifting, altruism and reciprocity.

The economic thought of Pope Francis starts from a different perspective. In line with all other works in the compendium of the Social Doctrine of the Church, his encyclicals are not concerned with the anthropological motivations behind altruism, or in other words, the reason why the Samaritan decided to be good. Rather, by starting from the evangelical call to be good Samaritans, Pope Francis demonstrates that answering this call fulfils our true human nature of loving everyone, particularly focusing on the consequences of altruistic behaviour or the lack of it. By doing this, the Pope quickly steps away from the individual dimension of altruism – I help someone in need even if I have no returns, or I contribute to the common good even if it is costly to me – to the aggregate dimension of altruism, which he defines as universal fraternity: if one starts to love others unconditionally, then the whole world can change and all humans can become brothers and sisters³.

³ See, for example, paragraphs 94 and 95 in *Fratelli Tutti*. See also the work of Maggioni and Beretta (2017) for an innovative empirical analysis of the transformative power of love for vulnerable individuals.

This line of thought is obviously related to economic questions of how altruism and cooperation can become an “equilibrium” in society, and as already mentioned, there is a vast literature that investigates the link between individual altruism and aggregate altruism – in particular how cooperation can become a social norm. In this vast literature, one approach that is closely related to the anthropology of Pope Francis is that of Bruni (2008), who analyses how cooperation can be evolutionarily stable as long as there are a few “good Samaritans” who cooperate unconditionally, even if the majority of people only cooperate conditionally and some might not cooperate at all. Another type of economic analysis of altruism as a social norm that is closely related to the anthropology of Pope Francis is the *relational* approach, reviewed by Sacco, Vanin and Zamagni (2006), where the human need for relationships is a motivation for individual reciprocity and altruism, and environments where relations exist can be fertile ground for altruism and cooperation to become a social norm.

By referring to the same literature, which unpacks the link between individual and aggregate altruism, one can also identify a more critical view of the anthropology of Pope Francis. Economics and the social sciences in general need to analyse the decisions of each individual before having a clear picture of aggregate outcomes, so one could argue that it is too easy and superficial to tell people to become “good Samaritans”. Instead, we should really investigate if and when this is possible at all and what can drive that type of unconditional altruism. In this respect, it is interesting to note that this type of criticism comes also from experts in theology and social doctrine and not only from social scientists⁴. This is a criticism that could be aimed at previous social encyclicals as well. In fact, calls for charity and solidarity were at the centre of *Caritas in Veritate* (2009) and *Centesimus Annus* (1991), among others, but without a specific focus on how and when individuals choose to love and support each other more. In this respect, we can observe that Pope Francis offers a further and more explicitly micro-based explanation and interpretation of those fundamental principles.

Concluding this brief review, we might also mention that work in the broad area of behavioural economics is looking beyond selfish, consistent and un-relational preferences, as research on “happiness” resonates with the Pope’s call to acknowledge the broader dimensions of individual satisfaction, and the long history of research on social welfare offers many insights on the link between individual incentives and aggregate outcomes increasing *the common good*.

3. FRANCESCO’S MICROECONOMY

I find that the most straightforward way to formally present the microeconomic foundations of Francesco’s Economy is based on *interdependent utilities* as discussed by Bramoullé (2001)⁵, and I briefly refer to his formalizations in what follows.

⁴ See Chap (2020) and the other linked essays in the editor’s note.

⁵ This material is also included in Bramoullé’s PhD dissertation, submitted in 2002 at the University of Maryland, College Park.

Consider an economy composed of n agents and k goods, where c_{ij} denotes the amount of good j allocated to individual i and $c = (c_1; \dots; c_n)$ is the collection of individual allocations. Preferences are represented by utility levels, denoted by u_i , and utility functions, denoted by v_i . If individual i is selfish, the utility function v_i would depend only on the individual allocation c_i , but when preferences are interdependent the utility function depends on other agents' utility levels $u_1; \dots; u_{i-1}; u_{i+1}; \dots; u_n$. This is the case for every agent and, therefore, interdependent utilities imply a recursive system of equations:

$$\begin{aligned} u_1 &= v_1(c_1; u_2; \dots; u_n) \\ &\vdots \\ u_n &= v_n(c_n; u_1; \dots; u_{n-1}) \end{aligned}$$

In principle, this system of equations might not be determined – not even in the most simple case of only two agents: my utility depends on yours, which depends on mine, which depends on yours, which depends on mine... and this chain of dependence might go on forever without being defined or without the possibility of reaching solutions to allocation problems. For example, mother, father and child might never be sure of the best way to allocate time to weekend activities in such a way that fully takes into account not only everyone's utility from personal leisure but also the love they have for each other, which in turn changes the utility from personal leisure.

In order to avoid some of these complexities, besides *interdependent utilities* economists have used two simpler models to represent *interdependent preferences* within consumer theory: *consumption externalities* and the so-called *Bergson utilities*. Consumption externalities mean that the utility functions v_i depend on the allocations of the other agents in a comprehensive fashion. Formally, interdependent preferences are represented by consumption externalities if

$$\begin{aligned} u_1 &= v_1(c_1; c_2; \dots; c_n); \\ &\vdots \\ u_n &= v_n(c_1; c_2; \dots; c_n). \end{aligned}$$

Note that here, my utility only depends on the consumption of others and not on their utility. For example, according to this formalization, I care about how much food and money a poor person receives but I ignore which of the two contributes more to his/her overall happiness.

Bergson utilities are instead based on the assumption that agents possess private utility functions $\wedge u_i$ that only depend on their private bundle of goods c_i . Bergson utility functions v_i then only depend on these private utilities. Formally,

$$\begin{aligned} u_1 &= v_1(\wedge u_1(c_1); \wedge u_2(c_2); \dots; \wedge u_n(c_n)); \\ &\vdots \\ u_n &= v_n(\wedge u_1(c_1); \wedge u_2(c_2); \dots; \wedge u_n(c_n)). \end{aligned}$$

Note that here, my utility depends on the utility of others, but only the portion of their utility that depends on their private consumption, not the portion that depends on others' utility. For example, according to this formalization I care about the happiness that a poor parent achieves by having food or money, but I ignore which of the two contributes more to the happiness of the children, which in turn affects the happiness of the parent.

Bramoullé (2001) discusses how interdependent utilities, Bergson utilities and consumption externalities are based on different assumptions according to the type of social interaction. In the literature on altruism, authors have drawn a distinction between pure altruism and paternalistic altruism. Pure altruists are supposed to respect the preferences of the other, whereas paternalistic altruists know what is good for the other better than he or she does. Formally, paternalistic altruism has been represented as an externality and pure altruism with Bergson or interdependent utilities, but it can immediately be seen that Bergson utilities do not really represent pure altruism because with Bergson utilities agents respect others' private preferences but do not take into account their social preferences. Therefore, interdependent utilities constitute the only way to model situations where agents completely respect all preferences of others. It follows that, in principle, a formal analysis of pure altruistic behaviour with interdependent utilities could enrich the contribution of Pope Francis, but this would actually be quite a complex task.

The first issue that arises when working with interdependent utilities is that the recursive formulation of utilities can be undetermined. Intertemporal recursive utilities rely on an individual and internal recursivity – my utility today depends on my utility tomorrow – whereas interdependent utilities rely on a social and external recursivity – my utility depends on your utility, which depends on mine. When such complexities are acknowledged, a common criticism that is often made towards mathematical economics is that the most important human issues of love, desires and motives cannot be successfully analysed through utility maximization, and even Catholic thinkers could pose this criticism. In reality, a long history of microeconomics research has put great effort into the utility-based formal analysis of those most important psychological and emotional factors⁶, and it would be quite superficial to dismiss the interesting results of formal analyses of interdependent utilities.

Bramoullé (2001) explains that contraction is a convenient mathematical assumption ensuring existence, uniqueness and stability of the solutions to the problem of the maximization of a system of interdependent utilities. Almost all papers based on interdependent utilities rely on the assumption that the utility functions are contracting or, as a generalization, *p*-contracting. In general, contraction implies that changes in the utilities of others translate into proportionally smaller changes in one's own utility. It is clear to see that the property of contraction is compatible with the uncon-

⁶ Early papers by Strotz (1956) and Kolm [1968 reprinted in Lambert (2007)], among many others, inspired many important research contributions until research fields in behavioural and social economics started being widely recognized.

ditional altruism of the good Samaritan, as it can be naturally be interpreted as bounded altruism that ensures self-preservation and determined choices⁷.

Bramoullé (2001) further discusses how when the assumption of contraction is dropped, the possibility of multiple solutions arises and raises the traditional question of solution selection. In this respect, stability is a fundamental notion that allows one to discard unstable solutions; for example, stability allows one to solve the paradox pointed out by Bergstrom (1989): when altruism is strong, altruistic interdependent utilities lead to the awkward consequence that utilities decrease in consumption. Should one conclude that “true lovers hate spaghetti?” Bramoullé (2001) shows that stability provides an appropriate concept with which to solve this paradox, as in that example, the solution is unstable. Such unstable solutions can be interpreted as situations in which utility levels go to the positive or negative infinite limit, but infinite utilities are caused by the linear shape of the utility functions and do not arise if decreasing returns in the other’s utility are sufficiently strong. Bramoullé’s (2001) Theorem 3.1 interestingly shows that for any number of agents n , if there is a stable solution to an interdependence system under concave altruism, then there is no other solution that is Pareto greater. We therefore note that this formal microeconomic analysis shows how purely altruistic preferences can be stable and imply determined levels of individual happiness. These features resonate with the thesis of Pope Francis that the culture of the encounter (i.e. love for the other and unconditional altruism) is the driver of individual psychological stability as well as of the stability of a society⁸.

The approach of Bramoullé (2001) is extended by Bourlès, Bramoullé and Perez (2017) to the analysis of altruism in networks, with a model of linear interdependent utilities that analyses the Nash equilibria of a game of transfers. The authors find that transfers and consumption depend on the network in complex ways. In equilibrium, an individual’s transfers may be affected by distant agents as income shocks may propagate throughout the network of altruism. The analysis highlights the role played by transfer intermediaries – transmitting to poorer friends money received from richer friends – in mediating these effects. The authors establish that purely altruistic preferences also determine stable solutions in networks; moreover, the analysis reveals that this stable equilibrium generally corresponds to a unique pattern of consumption and transfers. The main prediction is that money must flow in equilibrium through the strongest paths of the altruism network, from the richest to the poorest agents, and that intermediaries naturally appear when the altruism network is intransitive, for instance, when agents do not care about their friends’ friends. They also study comparative statics with respect to incomes and to the altruism network. A small redistribution leaving components’ aggregate incomes unchanged does not affect consumption. In contrast, an individual’s consumption decreases when her

⁷ It can also be related to the disclaimer often made by Pope Francis that a call to unconditional love and altruism is not pauperism.

⁸ See, for example, paragraph 217 of *Fratelli Tutti*.

component's aggregate income decreases. Redistributing resources away from rich benefactors of poor communities may then worsen outcomes for community members and increase inequality. Those formal, albeit intuitive, results shed light on the economy of charity; in the social doctrine there have been numerous debates about taxes and redistribution possibly crowding out not-for-profit private initiatives, and Pope Francis also calls for a role of state aid that is subsidiary and supportive to charitable initiatives that spring from groups and organizations within civil society⁹. Moreover, their analysis also reveals that the expansion of altruism can aggravate consumption inequality, and this analysis can be extended to introduce networks into the study of family behaviour, initiated by Becker (1974), with interesting results regarding the non-neutrality of redistribution. The formal results on the nature of aggregate transfers and redistribution policies under purely altruistic preferences offer a very useful framework for the economic analysis of aggregate economic outcomes that Pope Francis attempts in his encyclicals, as I discuss in the next section.

4. MACROECONOMIC OUTCOMES

The marketplace, by itself, cannot resolve every problem, however much we are asked to believe this dogma of neoliberal faith. Whatever the challenge, this impoverished and repetitive school of thought always offers the same recipes. Neoliberalism simply reproduces itself by resorting to the magic theories of “spillover” or “trickle” – without using the name – as the only solution to societal problems (*Fratelli Tutti*, Paragraph 168).

In the central parts of both encyclicals, as well as in other interventions¹⁰, Pope Francis develops a fierce critical analysis of several market-based aggregate economic outcomes that are non-equitable and non-ecological. His is a deep and multidimensional discursive analysis that links complex macroeconomic outcomes such as economic growth, inequality, poverty, exclusion, aggregate consumption, natural resource usage and environmental damage. The words “market” and “inequality” are used many times in both encyclicals, but in a nutshell, two core economic assumptions are made by Pope Francis regarding market outcomes: (i) free market outcomes are characterized by persistent inequality and poverty, where the poor are persistently excluded from the gains of economic growth¹¹, and (ii) private profit maximization cannot lead to an efficient and sustainable use of natural resources, instead causing overconsumption and environmental damage¹².

Sometimes referring to it as a *neoliberal agenda* and sometimes as a *technocratic paradigm*, it is clear to any economist that Pope Francis is conceptually criti-

⁹ See, for example, paragraph 175 of *Fratelli Tutti*.

¹⁰ See, in particular, the Address to Participants in the World Meeting of Popular Movements in 2014, 2015, 2016.

¹¹ See, for example, paragraph 168 of *Fratelli Tutti*.

¹² See, for example, paragraph 109 of *Laudato Si'*.

cising both assumptions and conclusions of the neoclassical (i.e. based on individual, selfish, rational preferences and free markets) competitive equilibrium model. He discusses at length that neither the outcomes of free competitive markets nor the actions of selfish *Homo economicus* agents are desirable for humanity. It is important to note that this criticism is double-edged: it is a criticism of the workings and outcomes of free markets and also a criticism of how individuals are supposed to behave in market-based interactions. In this respect, it is useful to refer to what was discussed in the previous sections. Economics has also modelled altruistic agents, and market interactions with altruistic agents can be compatible with the common good. Moreover, we have also discussed that many strands of literature based on the neoclassical approach to utility maximization have looked beyond the invisible hand of Adam Smith and analysed market outcomes that are neither efficient nor equitable.

I find that the discourse of Pope Francis on ecology can broadly be reconciled with a standard economic analysis of externalities and commons, as well as the international policy agenda on environmental sustainability¹³. However, when Pope Francis confronts the complex relationships between growth, inequality and poverty, he refers explicitly to theories of spillovers and trickle-down growth as the final word of economics, but in reality, a more informed examination of the extensive economics literature on inequality could foster a fruitful dialogue between modern economic research and the Social Doctrine. Based on these premises, I discuss various common points for a fertile exchange between the anthropology of Pope Francis and the microeconomic foundations of recent economic research on inequality.

It is indeed the case that while interest in the distribution of income used to be central among classical and post-Keynesian economists¹⁴, with the development of neoclassical economics in the second half of the 20th century there were times when economists appeared to believe that distributive outcomes were less important than aggregate economic growth. The seminal paper by Stiglitz (1969) is commonly considered to be the first neoclassical analysis of the distribution of wealth and income among individuals. It in fact presents a strong result of long-run convergence in the dynamics of individual income, which is similar to the seminal result obtained by Solow (1956) in the context of country income. As implicitly referenced by Pope Francis, in economic models of perfect markets and *Homo economicus* agents, sooner or later growth spills over and trickles down to everybody. Stiglitz's (1969) model features the typical reductionist approach of neoclassical economics: agents are endowed with capital (accumulated factor) and labor (non-accumulated factor),

¹³ Even the strong criticism of profit maximization in paragraph 195 of *Laudato Si'* can be compatible with the standard economic result that the competitive market equilibrium can be efficient only if the social cost of externalities is included in prices. Moreover, recent research in economics is explicitly linking ecological issues to pro-social preferences. See, for example, a recent article from Aghion et al. (2021).

¹⁴ The historical development of research on inequality is discussed in depth by Bertola, Foellmi and Zweimuller (2006).

markets are competitive and both factors are paid at their marginal return. The assumptions of diminishing returns to capital and of an identical concave saving function across individuals imply that individual wealth increases over time in a concave fashion and eventually converges to a steady state value that does not depend on the initial level of wealth. In other words, in this model free markets imply social mobility, inequality across families is solely determined by the differences in the non-accumulated factors (i.e. the differences in individual skills) and as long as all families are equally endowed with the non-accumulated factor (i.e. skills are homogeneous across families), every family converges to the same level of wealth. This type of research may seem very simplistic to non-economists, but a precise mathematical analysis of how market dynamics shape long-run inequality was not obvious before this type of model, which was therefore groundbreaking at the time it was written. However, as is the case for most early neoclassical economic models, this reductionist approach, where the few mathematical variables could be interpreted in many different ways (i.e. education and care for the other could be simply considered to be an accumulated factor, pure individual genius or talent could be easily interpreted as the only non-accumulated factor), would be ill-suited to analysing the drivers and implications of individual choices and, hence, the root causes of social mobility or persistent poverty. It is interesting to note that in the contributions of Pope Francis, even inequality that arises from different innate skills is something to actively correct¹⁵. But in order to understand how to tackle inequality, it is important to learn lessons from subsequent economic research that moved beyond a simplistic neoclassical analysis.

Building on the seminal model of Stiglitz (1969), in the 1970s and 1980s a few other authors extended this neoclassical setup in order to study intergenerational inequality and social mobility, allowing for bequests, but this did not change the fundamentally *laissez-faire* predictions of the analysis¹⁶. The interest in problems of inequality had a substantial comeback in the 1990s because the available data showed a dramatic increase in inequality, especially in developed economies, and macroeconomics research started to point out the links between inequality and growth. At the theoretical level, there were two main ideas that changed the neoclassical understanding of inequality and both could enrich the economic analysis of Pope Francis. One contribution was to introduce imperfect financial markets into models. The basic idea is that if poor individuals are prevented from borrowing resources and hence cannot invest their *talents*, then initial inequalities will persist and some dynasties will remain stuck in a poverty trap¹⁷. A related group of papers focused specifically on the dynamics of human capital accumulation and inequality in the presence of segregation dynamics, finding that segregation arising from the financing of schools or the endogenous sorting of agents into homogeneous communities also produced persistent

¹⁵ See, for example, paragraph 109 of *Fratelli Tutti*.

¹⁶ See, for example, Atkinson (1980), Becker and Tomes (1979) and Becker and Tomes (1986).

¹⁷ See Loury (1981), Galor and Zeira (1993), Banerjee and Newman (1993), Piketty (1997) and Aghion and Bolton (1997), among others.

inequality and poverty traps¹⁸. Those contributions were instrumental to challenging the neoclassical view, criticised by Pope Francis, that markets work for everybody, and also made a strong case for the economic efficiency of redistribution.

The other influential contribution introduced in the 1990s is represented by the specific analysis of how redistribution and inequality are, in fact, jointly determined. The main idea behind those early models of inequality and redistribution is that greater inequality translates into a poorer median voter relative to the country's mean income, and therefore a higher level of redistribution preferred by the median (decisive) voter. High levels of redistribution are in turn inefficient since they imply lower individual incentives to accumulate capital and, hence, the result that inequality lowers growth¹⁹. Also in this case, reductionist models might seem quite simplistic today, but at the time they were fundamental to shedding light on the complex dynamics between growth, inequality and redistribution. However, they were challenged on empirical grounds as it was not conclusive that inequality is detrimental to growth or that inequality implies higher redistribution. This second challenge, in particular, inspired a new group of theoretical models whose major focus was to explain the described evidence relating inequality and redistributive politics. These models achieved this result by showing the existence of multiple equilibria: a Europe-type equilibrium characterized by relatively lower inequality and higher redistribution versus a US-type equilibrium characterized by relatively higher inequality and lower redistribution²⁰. A subsequent development of this literature was inspired by ideas that can be traced back to De Tocqueville (1835) and that are common in the work of sociologists and political scientists: a few insightful economic models pointed to surprisingly persistent differences in popular beliefs about the role of social mobility in explaining the different levels of redistribution across countries²¹. Interestingly, these models were able to analyse how individual beliefs and politico-economic outcomes are self-reinforcing. They characterised US-type equilibria as featuring low redistribution and “sensationalist” beliefs about social mobility and EU-type equilibria as highly redistributive with pessimistic beliefs²².

We note that a growing body of research focused on the role of self-motivated beliefs analyses the roots and implications of ideological beliefs in the goodness and

¹⁸ See Benabou (1993 and 1996), Durlauf (1996) and Fernandez and Rogerson (1996), among many others.

¹⁹ The idea of the median voter equilibrium was introduced by the seminal paper by Meltzer and Richard (1981). The first contributions to introduce it in dynamic macroeconomic models are those of Perotti (1993), Alesina and Rodrik (1994) and Persson and Tabellini (1994).

²⁰ These ideas were first developed by Benabou (2000), Saint-Paul (2001) and Hassler et al. (2003).

²¹ Data from the World Values Survey reported by Alesina and Glaeser (2004) strikingly showed that only 30 percent of Americans (vs 60 percent of Europeans) believe that the poor are trapped in poverty and cannot escape it or that “luck”, rather than effort or education, determines income.

²² The seminal models of multiple belief-based politico-economic equilibria were developed by Piketty (1995), Alesina and Angeletos (2005) and Benabou and Tirole (2006).

fairness of market outcomes that the Social Doctrine has repeatedly denounced and criticized²³. Moreover, this line of research shows that so-called sensationalist beliefs (one determines his/her own destiny and poverty is a choice rather than an unavoidable outcome) is a channel that may contribute to the formation of non-altruistic preferences and produce selfish and unequal outcomes. Related to this, the analysis of the role of personal relations in Sacco, Vanin and Zamagni (2006) shows that the combination of individual incentives and the forces of social selection may lead to a contraposition between a society's material success and its well-being. It therefore appears that a dialogue between those growing research fields and the Social Doctrine could be mutually beneficial. Nowadays, we can also observe a massive development in the robustness and detail of empirical research on inequality and social mobility, which has made a very strong case for the existence of unequal opportunities through the perverse self-reinforcing effects of inequality, segregation and low social mobility²⁴. Therefore, the strong call of Pope Francis to fight against growing inequality is widely supported by current economic research. Although in the analysis of Pope Francis many factors behind unequal opportunities are denounced, from the extraction of natural resources to psychological factors, in order to move towards the more equal and fraternal society that he calls for it is necessary to precisely identify the specific channels through which unequal opportunities are perpetrated in society and identify the best solutions. In this respect, learning from the vast spectrum of new and old economic research that analyses the creation of economic opportunities for all (through politico-economic dynamics of redistribution), the effectiveness of existing opportunities (through welfare and educational policies), and internal barriers to the use of existing opportunities (through behavioural and psychological factors) is a necessary first step.

5. CONCLUSION

I have reviewed various strands of the economics literature and have shown how microeconomic foundations can provide a better understanding of the link between individual and aggregate altruism that is developed by the economic anthropology in both encyclicals of Pope Francis. Starting from those microeconomic foundations, Pope Francis' critical analysis of economic inequality and poverty traps can lead to interesting connections and enriching results in a great extent of the modern economics literature. As hoped for by the initiatives of The Economy of Francesco, a fruitful dialogue between economics and all of those interested in following the call of Pope Francis to be "good Samaritans" is indeed possible, but it surely requires non-trivial intellectual efforts as it relates to complex issues that economics has tried to tackle for a long time.

²³ Benabou and Tirole (2016) review this growing literature, which also includes contributions on religious beliefs. Paragraphs 109 and 123 of *Laudato Si'* link market outcomes to cultural beliefs about the self-sufficiency of markets; similar points were also developed in paragraphs 35 and 36 of Benedict XVI's encyclical *Caritas in Veritate*.

²⁴ See, for example, Chetty et al. (2014).

REFERENCES

- Aghion P., Benabou R., Martin R., Roulet A. (2021). Environmental Preferences and Technological Choices: Is Market Competition Clean or Dirty? *American Economic Review: Insights*, forthcoming
- Aghion P., Bolton P. (1997). A Theory of Trickle-Down Growth and Development. *Review of Economic Studies*, **64**(2), 151-172
- Alesina A., Angeletos G.-M. (2005). Fairness and Redistribution: US versus Europe. *American Economic Review*, **95**, 960-980
- Alesina A., Glaeser E. (2004). *Fighting Poverty in the US and Europe: A World of Difference*. Oxford University Press, Oxford, UK
- Alesina A., Rodrik D. (1994). Distributive Politics and Economic Growth. *The Quarterly Journal of Economics*, **109**(2), 465-490
- Atkinson A. (1980). *Inheritance and the Redistribution of Wealth*. In G. Hughes, G. Heal (Eds). *Public Policy and the Tax System: Essays in honour of James Meade*. Allen and Unwin, London
- Banerjee A.V., Newman A.F. (1993). Occupational Choice and the Process of Development. *Journal of Political Economy*, **101**(2), 274-298
- Becker G. (1974). A Theory of Social Interactions. *Journal of Political Economy*, **82**(6), 1063-1093
- Becker G.S., Tomes N. (1979). An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility. *Journal of Political Economy*, **87**(6), 1153-1189
- Becker G.S., Tomes N. (1986). Human Capital and the Rise and Fall of Families. *Journal of Labor Economics*, **4**(3), 1-39
- Benabou R. (1993). Workings of a City: Location, Education, and Production. *Quarterly Journal of Economics*, **108**, 619-652
- Benabou R. (1996). Heterogeneity, Stratification and Growth: Macroeconomic Implications of Community Structure and School Finance. *American Economic Review*, **86**, 584-609
- Benabou R. (2000). Unequal Societies: Income Distribution and the Social Contract. *American Economic Review*, **90**(1), 96-129
- Benabou R., Tirole J. (2006). Belief in a Just World and Redistributive Politics. *Quarterly Journal of Economics*, **121**, 699-746
- Benabou R., Tirole J. (2016). Mindful Economics: The Production, Consumption, and Value of Beliefs. *Journal of Economic Perspectives*, **30**(3), 141-164
- Bergstrom T. (1989). Puzzles: Love and Spaghetti, The Opportunity Cost of Virtue. *Journal of Economic Perspectives*, **3**(2), 165-173
- Bertola G., Foellmi R., Zweimuller J. (2006). *Income distribution in macroeconomic models*. Princeton University Press, Princeton, New Jersey

- Bourlès R., Bramoullé Y., Perez E. (2017). Altruism in Networks. *Econometrica*, **85**, 675-689
- Bramoullé Y. (2001). *Interdependent utilities, preference indeterminacy, and social networks*. Université Paris X-Nanterre, THEMA Working paper 2001-32
- Bruni L. (2008). *Reciprocity, altruism and the civil society: in praise of heterogeneity*. Routledge
- Casula C.F. (2021). Le novità dell'enciclica "Fratelli Tutti". *Religioni e Società*, **99**, 114-117
- Chapp L. (2020). *Fratelli Tutti and its critics*. Catholic world Report, October 9th. <https://www.catholicworldreport.com/2020/10/09/fratelli-tutti-and-its-critics/>
- Chetty R., Hendren N., Kline P., Saez E. (2014). Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States. *Quarterly Journal of Economics*, **129**, 1553-1623
- Crepaldi (2009). *Archiviamo definitivamente la questione del metodo induttivo e deduttivo nella DSC*. Osservatorio Internazionale Cardinale Van Thuân sulla Dottrina Sociale della Chiesa. <https://www.vanthuanobservatory.org/archiviamo-definitivamente-la-questione-del-metodo-induttivo-e-deduttivo-nella-dsc-2/>
- Durlauf S. (1996). A Theory of Persistent Income Inequality. *Journal of Economic Growth*, **1**, 75-93
- Elster J. (2006). *Altruistic Behavior and Altruistic Motivations*. In S. Kolm, J. Mercier Ythier (Eds). *Handbook of the Economics of Giving, Altruism and Reciprocity*, vol. 1. Elsevier, pp. 183-206.
- Fares (2014). The political anthropology of Pope Francis. *La Civiltà Cattolica*. Notebook 3928, Vol. I, pp. 345-360
- Fernandez R., Rogerson R. (1996). Income Distribution, Communities, and the Quality of Public Education. *Quarterly Journal of Economics*, **111**, 135-164
- Fortin (1991). *From Rerum Novarum to Centesimus Annus: Continuity or Discontinuity?* Faith & Reason, Winter 1991. Available at <https://www.ewtn.com/catholicism/library/from-rerum-novarum-to-centesimus-annus-continuity-or-discontinuity-1208>
- Galor O., Zeira J. (1993). Income Distribution and Macroeconomics. *Review of Economic Studies*, **60**(1), 35-52
- Hassler J., Rodriguez-Mora J.V., Storesletten K., Zilibotti F. (2003). The Survival of the Welfare State. *American Economic Review*, **93**(1), 87-112
- Hann C. (2006). *The Gift and Reciprocity: Perspectives from Economic Anthropology*. In S. Kolm, J. Mercier Ythier (Eds). *Handbook of the Economics of Giving, Altruism and Reciprocity*, vol. 1. Elsevier, pp. 203-227
- Lambert P. (2007). Editorial: Serge Kolm's "The Optimal Production of Social Justice". *The Journal of Economic Inequality*, **5**(2), 213-234
- Maggioni M.A., Beretta S. (2017). Life's about change. How relations transform individual attitudes, choices and behaviors. *Rivista Internazionale di Scienze Sociali*, **125**(3), 249-275

- Meltzer A.H., Richard S.F. (1981). A Rational Theory of the Size of Government. *Journal of Political Economy*, **89**, 914-927
- Perotti R. (1993). Political Equilibrium, Income Distribution, and Growth. *Review of Economic Studies*, **60**(4), 755-776
- Persson T., Tabellini G. (1994). Is Inequality Harmful for Growth? *The American Economic Review*, **84**(3), 600-621
- Piketty T. (1995). Social Mobility and Redistributive Politics. *Quarterly Journal of Economics*, **110**, 551-584
- Piketty T. (1997). The Dynamics of the Wealth Distribution and the Interest Rate with Credit Rationing. *Review of Economic Studies*, **64**(2), 173-190
- Sacco P.L., Vanin P., Zamagni S. (2006). *The Economics of Human Relationships*. In S. Kolm, J. Mercier Ythier (Eds). *Handbook of the Economics of Giving, Altruism and Reciprocity*, vol. 1, 1. Elsevier, pp. 695-730
- Saint-Paul G. (2001). The Dynamics of Exclusion and Fiscal Conservatorism. *Review of Economic Studies*, **4**, 275-302
- Solow R.M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, **70**(1), 65-94
- Stiglitz J.E. (1969). Distribution of Income and Wealth among Individuals. *Econometrica*, **37**(3), 382-397
- Strotz R. (1956). Myopia and Inconsistency in Dynamic Utility Maximization. *Review of Economic Studies*, **23**, 165-180