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Dipartimento di Scienze Economiche, Aziendali, Matematiche e Statistiche “Bruno de Finetti”
Piazzale Europa 1
34127, Trieste
Tel.: +390405587927
Fax: +390405587033
http://www.deams.units.it

EUT Edizioni Università di Trieste
Via E.Weiss, 21 - 34128 Trieste
Tel. +390405586183
Fax +390405586185
http://eut.units.it
eut@units.it

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Lack of Meritocracy in Italy
An Economic and Social Cost

SILVIA BIANCOROSSO
University of Maastricht-School of Business and Economics
NOVA Business School of Economics

MATILDE TREVISANI
Department of Economics, Business, Mathematics and Statistics "Bruno de Finetti"
University of Trieste, Italy

ABSTRACT[1]

The paper addresses the economic and social consequences of the lack of meritocracy in Italy. The analysis starts from the inspection of the *Meritometro* (2016), an index measuring the level of merit in Europe. Nepotism, low investments on education, distrust in the merit system and the lack of a specific evaluation of quality teaching are among the main causes of brain drain, high early leaving and NEET rates, on the social side, and of public debt increase and economic growth slowdown, on the economic side. The paper proposes some measures for fighting the high corruption level and reforming the entire education system. A graphical data exploration and a simulation-based analysis demonstrate how these quantitative solutions may be efficient overtime for Italy.

KEYWORDS: meritocracy, education system, brain drain, corruption perception, public debt.

[1] **Corresponding author:** Matilde Trevisani, Department of Economics, Business, Mathematics and Statistics "Bruno de Finetti", Via Tigor 22, 34124 Trieste, email: matildet@deams.units.it; tel: +39 040 5582519.

1. Introduction

The paper addresses the economic and social consequences of the lack of meritocracy in Italy. The concept of merit dates back to the time of Confucius and Plato and had a deep impact on the Western society from the 19th century. Nowadays it inserts in the broad context of social welfare, which is living a deep crisis not only in Europe but also worldwide.

The analysis starts from the inspection of the *Meritometro* (2016), an index built by a research group of the Università Cattolica of Milan, measuring the level of merit in Europe. The indicator is made up of 7 social and economic pillars, considering different aspects of merit: Freedom, Equal opportunities, Quality teaching, Talents attractiveness, Rules, Transparency and Mobility.

The Meritometro allows a more detailed analysis of the reasons why Italy is not meritocratic and a consequent reflection on the impact the lack of meritocracy has in term of lost human capital, invested resources in the education system and impact on the society.

Nepotism, low investments on education, distrust in the merit system and the lack of a specific evaluation of quality teaching are among the main causes of brain drain, high early leaving and NEET rates which deeply influence the overall Italian performance in the Meritometro and the financial and the economic results as well, by increasing the public debt and weakening the economic growth. Simply measures can be considered to improve the general Italian performance in the indicator: fighting the high corruption level and reforming the entire education system are the right steps to revive the atmosphere of distrust that young people are currently living in Italy and impact the entire economic cycle.

A graphical data exploration and a simulation-based analysis demonstrate how these quantitative solutions may be efficient overtime for Italy.

2. The origin of meritocracy and its modern version

The word “Meritocracy” was coined by the sociologist Michael Young (1958) almost 60 years ago. Despite the modern origin of the term, the philosophic concept of “Merit” is quite aged and dates back to the time of Confucius and Plato.

Confucius lived during the Spring and Autumn period of the Chinese history, an era marked by political and economic changes that influenced his entire philosophy. For the philosopher, meritocracy was strictly related with politics, since who governed should have been appointed because of merit, not because of an inherited status. This important concept led to the creation of imperial examinations in order to select government officers.

The Chinese Imperial examination system had an international influence. In fact both Japan and the British Empire adopted a similar methodology: the former for the promotion of minor nobles from 794 to 1185; the latter to shape the reform of the Civil Service in India and later in the United Kingdom in the period between 1858 and 1947, moreover, for the admission to the British civil service administration in the late 19th and early 20th centuries.

In other part of the world, 50 years later Confucius, Plato lived in a tumultuous period for Athens. Under the guidance of Pericles - in the second part of 5th century B.C.E. - the Athenian democracy and power were at their zenith but the polis was experiencing a rapid decline: Plato's writings are rooted in this dynamic context. The philosopher developed the idea that all contemporary forms of government are corrupt, theorizing that the research of true justice lied in philosophy. Hence Plato created the figure of the "Philopher King", suggesting that only philosophers should have ruled and the form of government should have been the aristocracy. With these premises, the philosopher suggested the creation of an educational system whose aim was the formation of the character. The role of the educator was not only spreading knowledge, but also "turning the mind's eye to the light so that it can see for itself" ("The Republic"). According to Plato, one of the main problems of the overall society was the incapacity to distinguish true reality from images of reality. Plato portrayed the famous allegory of the cave to show how men learn and can be misled by their way of learning. What the Greek philosopher described, was a type of meritocracy, since the formation of the ruler was based on a rigorous education system.

Plato and Confucius' ideas have been recovered by Young (1958): the essay describes a dystopic society in a future United Kingdom, where intelligence and merit are the central foundation of the society, divided in an elite holding power and a disenfranchised underclass of less deserving.

Meritocracy nowadays

The concept of meritocracy has different and distant origins, considering that the same idea was developed in two different part of the world but in a similar changing political and cultural background. It should be noted that all the European countries influenced by Plato's philosophy are not meritocratic nowadays and nations, which have not been affected by, are among the most meritocratic countries in the world.

Abravanel (2008) claims that a modern meritocracy is based on two fundamental pillars:

1) The quality of the education system: it must pick the most talented students regardless their social class in order to satisfy the concept of equal opportunities.
2) The incentive for individuals try their best: in the major of cases, stimuli are intended to be monetary.

In general, the concept of meritocracy can be integrated into a wider context, that is, the idea of *welfare* which has been differently developed across Europe. The reason is that the welfare state, typical of countries such as France, Germany and Nordic countries, aims at the reduction of social inequalities and at the provision of equal rights and services for everyone, among which public instruction, culture and healthcare.

The Scandinavian nations - Denmark, Sweden, Norway and Finland - are among the most meritocratic countries in Europe and worldwide. In particular, the "Nordic model" is based on the idea of public welfare. It differs from other types of welfare states by maximizing labour force participation, promoting extensive benefit levels and being flexible and open to innovation. Despite the different approaches to the administration of the welfare state among Nordic countries, they all share a broad commitment to safeguard individualism, by providing protection for vulnerable individuals and groups in society, and maximizing public participation in the social decision-making.

The history of this model starts with the Second World War. During the conflict, the Scandinavian countries remained neutral and this choice partially explained their incredible

boost from the second part of the 20th century. Additionally, the labour party that have dominated the political scene after the end of the war, spread the idea of *social state*, still employed nowadays: a strong model that carries the Nordic countries among the nations with the highest levels of employment, education and culture.

3. Meritometro: a measure of the European merit

Each year the Università Cattolica of Milan presents the annual report "Meritometro" (2016), the basic instrument to measure meritocracy in Italy and Europe. It is made up of 7 different pillars: *Freedom*, *Equal opportunities*, *Quality Teaching*, *Talents attractiveness*, *Rules*, *Transparency* and *Social mobility*.

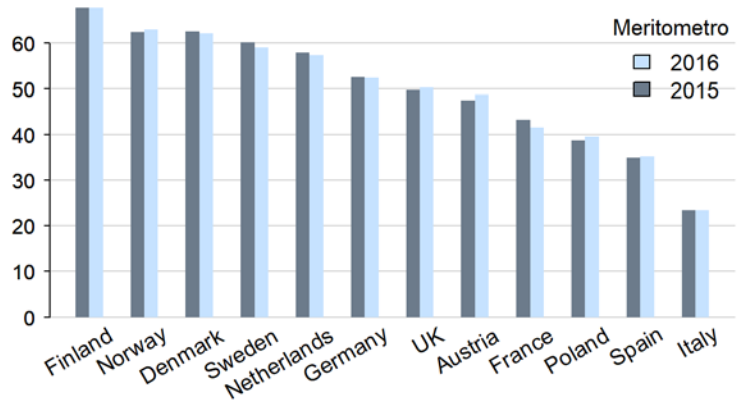

FIG. 1. Meritometro for 12 European countries in 2015-2016.
Source: Re-elaborated version from Meritometro 2015-2016.

TABLE 1. Performance of Meritometro pillars.

Country	Freedom		Equal Opportuni-ties		Quality Teaching		Talents Attractive-ness		Rules		Transparen-cy		Social Mobi-lity	Meritome-tro	
	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2015	2016	2015
Austria	51.54	56.29	43.63	45.61	49.20	45.01	48.60	39.77	56.97	57.27	49.63	46.66	41.14	48.67	47.39
Denmark	69.34	69.06	56.23	55.81	49.46	49.65	71.83	70.33	67.69	69.57	66.34	69.57	53.60	62.07	62.42
Finland	59.22	59.73	61.18	61.51	68.79	69.89	67.96	68.91	63.40	61.15	65.23	66.13	88.18	67.71	67.69
France	21.18	25.23	51.73	51.05	49.53	50.28	47.05	51.58	39.81	41.76	42.94	43.22	38.47	41.53	43.13
Germany	60.61	59.73	47.08	46.36	53.56	55.48	54.28	56.21	54.83	53.39	55.20	54.68	41.14	52.39	52.43
Italy	18.39	16.54	25.24	24.36	29.53	29.84	25.37	25.90	18.36	20.42	13.97	13.44	32.90	23.40	23.34
Netherlands	60.26	62.50	46.77	51.15	62.25	62.24	55.31	54.92	59.12	59.21	61.89	59.26	55.76	57.34	57.86
Norway	53.63	51.09	75.02	75.38	48.78	47.16	64.60	62.37	67.69	68.91	61.89	62.71	68.73	62.91	62.34
Poland	42.47	37.31	50.98	51.13	65.07	65.12	18.41	22.30	33.38	28.18	34.03	34.06	32.90	39.60	38.76
Spain	38.98	38.98	38.71	35.89	31.88	32.94	33.12	29.49	26.94	28.18	29.57	32.91	46.62	35.12	34.91
Sweden	56.78	58.70	65.54	65.75	41.74	41.49	58.41	65.20	63.40	63.09	64.12	63.84	62.81	58.97	60.13
UK	67.59	64.91	37.90	35.99	50.20	50.92	55.05	54.67	48.39	49.52	55.20	53.53	37.75	50.30	49,61

Data for the pillar "mobility" are the same for the two years because data for 2016 were not available.
The pillar "quality of teaching" considers data available on 31.05.2016.

Italy comes last with a score quite far from the rest of Europe (Fig. 1). Important differences with respect to the European trend are observed in the pillars of Transparency, Rules, Freedom and Equal opportunities (Table 1). Despite an improvement from 2015 - substantially given by incremented Equal Opportunities, Freedom and Transparency - Italy has not identified a good strategy to be competitive as all the other countries yet.

In Europe, it is possible to observe an overall little improvement from 2015. Seven countries over twelve, such as Spain and Poland, have increased their performance; the first ranking countries like Denmark and Finland show a slowdown, more consistent for Sweden.

Meritometro pillar: Freedom

Freedom is the entirety of social, financial, economic and political conditions characterising the level of freedom of citizens in a given country. The pillar is based on the Index of Economic Freedom, which in turns considers 4 core aspects of the economic environment over which governments exercise policy control: rule of law, government size, regulatory efficiency and market openness.

Analyzing the Index of Economic Freedom, Italy is among the moderately free countries. Considering the *Rule of law aspect*, the legal system is vulnerable to political interference while corruption and organized crime represent significant impediments to investment and economic growth. For the *Government size*, the tax burden is 43.6% of total domestic income and budget deficits amounts to 2.7% of GDP, while public debt is 132.6% of GDP. The high tax burden makes Italy one of the most taxed countries in Europe, with consequent decreases in both consumption and business possibilities. In the *Regulatory efficiency* aspect, the inefficient public administration increases the cost of entrepreneurial activity. The overall context matters for meritocracy because the high tax burden, high public debt and corruption limit opportunities, investments and misallocate resources. Thus consumers do not have power and young people do not have growth possibilities and the result is distrust in merit and in the overall economic system.

Meritometro pillar: Equal opportunities

Equal opportunities are fundamental for a meritocratic country since they help both women and young people to reach leadership positions in different spheres, from the economic sector to the social one. The pillar considers the Glass Ceiling and NEET Indexes.

The English journal The Economist created a "*Glass-ceiling index*", measuring gender equality in the labour market. In particular, it shows where women have the best chances of equal treatment at work.

In Italy, women in managerial position, company boards and parliament hold respectively 27%, 30% and 31% of overall positions.

Equal opportunities are established in the Italian Constitution (Art.51) so the country is strongly involved in their promotion from the primary school. The long term goal is to reach performance of Nordic countries, where women make up 30-44% of company boards, compared with an average of 20% across the OECD and constitute good portion of parliamentarians.

Every year OECD presents the *report on NEET* - young people not in employment, education or training, whose aims are: 1) Investigate the current situation of young people in Europe-aged between 15 and 29 years - focusing specifically on those who are not in

employment, education or training; 2) Understand the economic and social consequences of their disengagement from the labour market and education system.

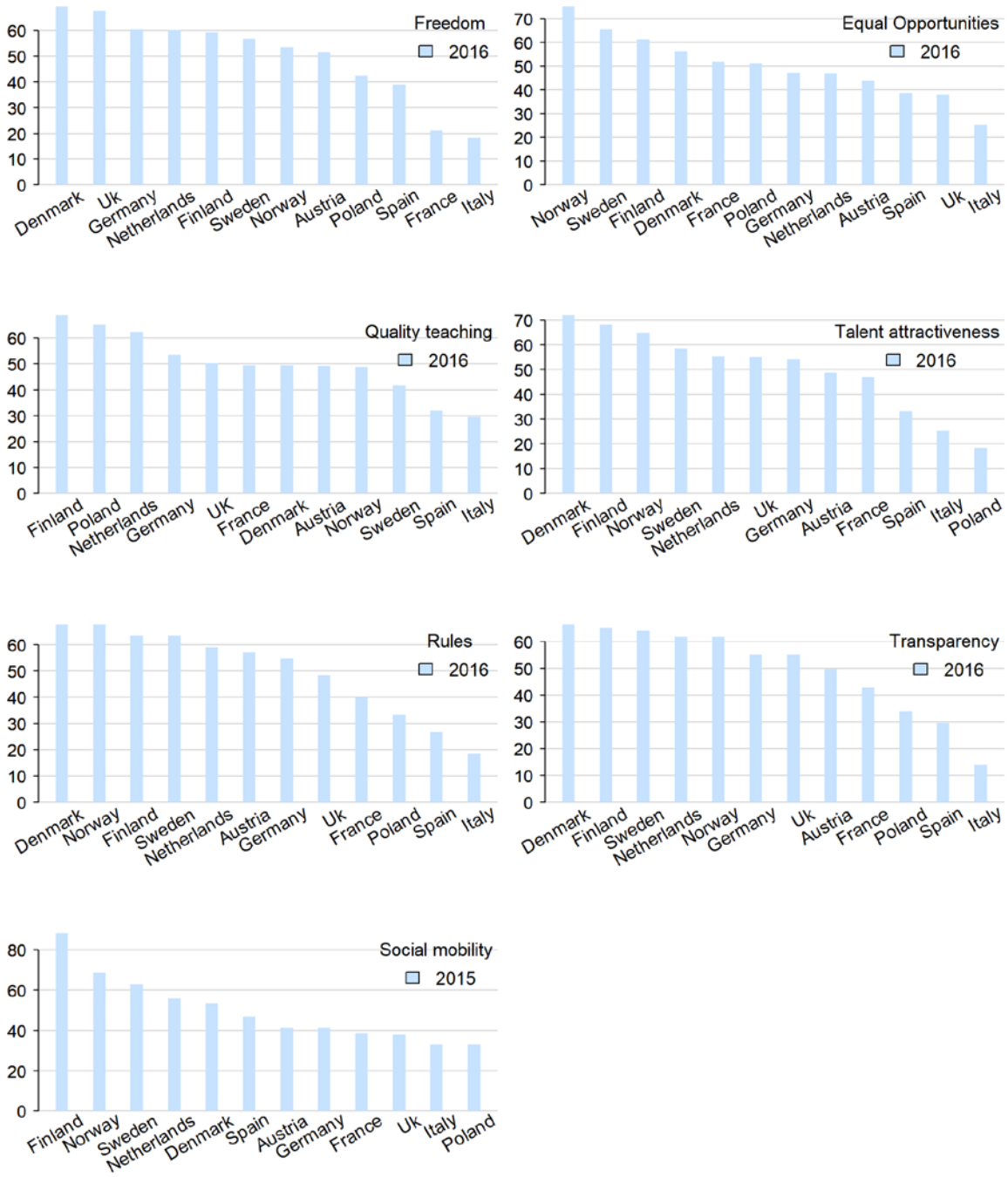

FIG. 2. Meritometro pillars for 12 European countries.

Considering all the factors listed above, Italy has the highest percentage of NEET in Europe. The leading countries in the index are Germany and Luxemburg, with a NEET rate lower than 10% for both young people from 15 to 19 years and 20-24 years, while Nordic countries have rates from 13% to 19%. However in the Meritometro, Norway, Sweden and

Denmark get the highest scores in the pillar "Equal opportunities" (Fig. 2), despite their higher rate of NEET because of their performance in the glass ceiling index.

In Italy, NEET are quite expensive, since they cost 1.4% of GDP and worsen the young unemployment rate, the highest in Europe (40.1%). In according to PwC, a reduction of the NEET rates to the German levels would increase the Italian GDP of 8.4% in the long term (the reduction will take time, so it should be interpreted as a long-term potential boost to the economy), hence to a save of 156bn $.

Meritometro pillar: Quality Teaching

Meritocratic societies are based on high quality education, that prepares student for their future life and reduce early leavings. In order to measure quality teaching three key indicators are considered: population with tertiary education, early leavers and knowledge of students.

Population with tertiary education is the set of those - aged from 30 to 34 - who have completed the highest level of education, including vocational programmes as well. It is measured through the Tertiary Education Attainment Index developed by Eurostat.

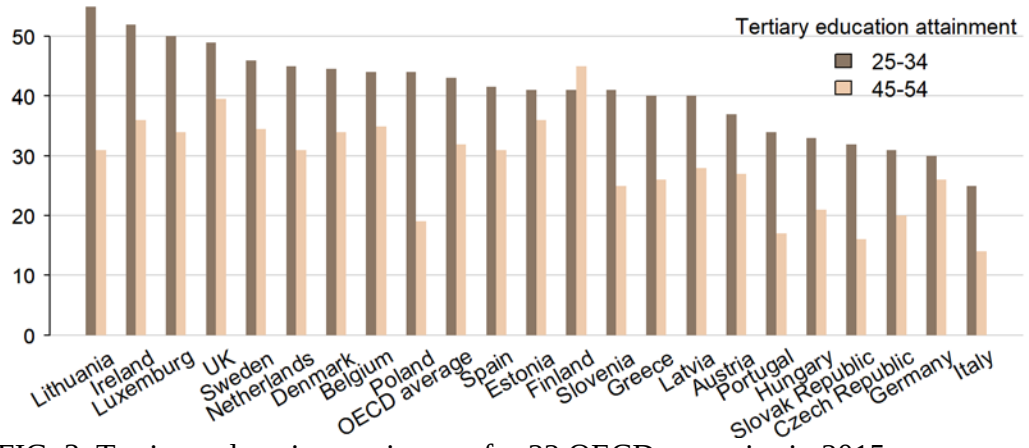

FIG. 3. Tertiary education attainment for 22 OECD countries in 2015.
Source: Re-elaborated version from tertiary education attainment, OECD, 2015.

Additionally, Italian universities offer just the traditional theoretical higher education path, while in other countries, like Germany of Finland, young people may have the possibility to choose a vocational higher education, which focuses on practical applications and very little theory. In 2010 Italy has introduced professional higher education training, with the creation of the "Istituto Tecnico Superiore", a school specialized in high tech, with the objective of increasing tertiary education attainment. However only 0.2% of students decide to undertake a professional higher education path, in contrast with 11% OCSE. Other problems concern the employability and the average income of graduate students, which are the lowest in Europe.

Early leavers from education and training have completed at most a lower secondary education. They may face difficulties in the labour market because of their low level of specialization.

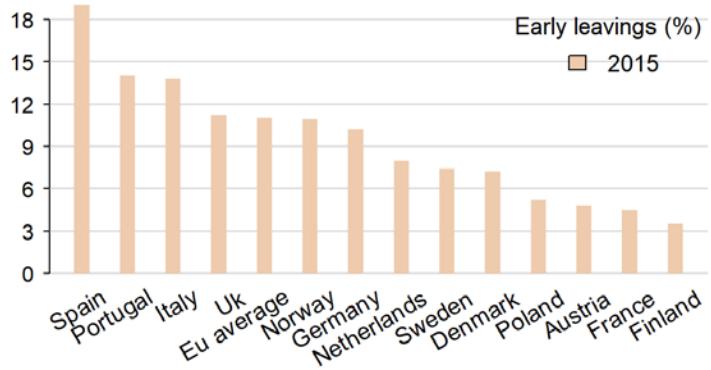

FIG. 4. Early leavers from education and training for 13 European countries in 2015.
Source: Re-elaborated version from Early Leavers, Eurostat, 2015.

The EU average of early school leaving rate (aged 18 to 24 years) is 11% but countries are committed to reduce the average share to less than 10% by 2020. Italy has a higher percentage of foreign-born early leavers with respect to other countries: a rate of 31.3% compared to the EU average of 19%. The European commission has suggested strategies to promote inclusion of foreign-born people. In fact, the 2015 high school reform has introduced additional teachers to improve migrant students' proficiency in Italian. Technically, the reform emphasises also citizenship education and the role of education itself in helping students to develop social and civic competences. As a matter of fact, at the primary and middle school, citizenship education is taught during the classes of geography and history, conferring only a marginal role to such an important subject.

Another issue is the limited career prospect of Italian teachers. The teacher career system offers only a single career pathway with fixed salary increases based solely on seniority, a practice that causes nepotism and do not favour meritocracy. Teachers' statutory salary levels are lower than both the OECD average at every career stage and the earnings of other workers with tertiary education. Limited career prospects, with relatively low salaries influence the rate of early leavings: if teachers are not motivated, neither students are.

The *knowledge of students* is an important factor to consider while evaluating quality teaching. The OECD Programme for International Student Assessment (PISA) evaluates the quality, equity and efficiency of school systems, through standardized tests measuring competences in science, mathematics and reading (results are published every 3 years). Italy performs below the OECD average in science (481 score points) and reading (485 score points) and around the OECD average in mathematics (490 score points), so that the country ranks 35th (out of 70 countries). The average performances in science and reading did not change significantly since respectively 2006 and 2009; in contrast, mathematics performance has improved, on average, by 7 score points every three years between 2003 and 2015. However regional differences should be considered. In some regions of North Italy, such as Lombardia, the overall performance of students is among the best in the world, while in some regions of the South Italy, like Campania, results are the same of Argentina (performance of Argentinean students are among the worst in the world).

In conclusion, considering the low percentage of people with tertiary education, the high rate of early leavers and PISA results, it is possible to understand why Italy gets the lowest score (29.53) in quality teaching (Fig. 2), 40 points below the Finnish performance (68.79),

which has a discrete rate of people with tertiary education and early school leavers but one of the best performance in PISA tests.

Meritometro pillar: Talents attractiveness

Talents attractiveness is fundamental in order to guarantee a continuous flow of human capital in the country; the Global Talent Competitiveness Index measures the ability of countries to compete for talent, on the base of the Attract-Grow-Retain framework used by corporations to manage talent.

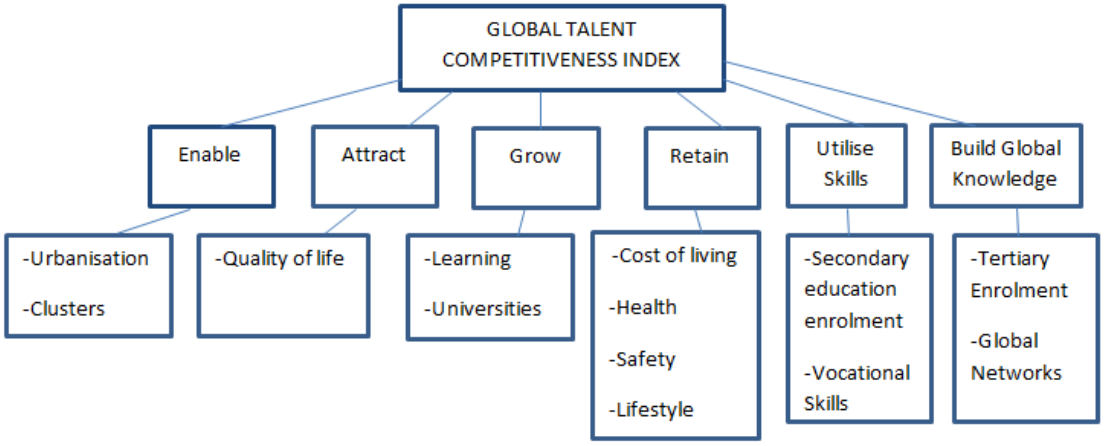

FIG. 5. Attract-Grow-Retain framework.
Source: Global Talent Competitiveness Index.

Italy (41st out of 118 countries) had one of the worst performances in Europe in the 2015-2016 Global Talent Competitiveness Index. Although it has excellent clusters (the world-class performer here), the result in the pillar "Enable" is particularly affected by the overall Business-government relations (107th) and, above all, by the Business-labour landscape (91st) due to labour-employer cooperation, one of the lowest in the world. In the "Attract" pillar, the main issue regards FDI (103rd), in "Growth", Employee development (105th), in "Retain", the relationship of pay to productivity (107th) and, finally, in "Labour and Vocational Skills", taxation (107th).

Nordic countries rank firsts, with a strong Grow pillar. Sweden performs well across all six pillars. In particular, it excels in retaining talent (4th in the Retain pillar) and Lifelong Learning (3rd). One of the Swedish dimensions that could be improved is the "Labour Market Flexibility", component of the Business Labour Landscape (35th).

Meritometro pillar: Rules

The pillar Rules is based on the Rule of law Index, analysing the rule of law worldwide and elaborated by the World Justice Project. The performance is measured using 8 sectors: Constraints on Government Powers, Absence of Corruption, Open Government, Fundamental Rights, Order and Security, Regulatory Enforcement, Civil Justice, and Criminal Justice.

Nordic countries rank first in both the regional and global rankings. At a global level, Italy performs well, being 35th out of 113 countries. An excellent performance was measured in the pillar "Constraints on Government Powers" (24/113) since the control on government power by legislature, the judiciary, and independent auditing and review agencies is not very high.

However if we consider the regional rank or the income rank (Italy is among the high income countries), the analysis changes. Italy badly performs in all the pillars, especially in "Order and Security", "Civil justice" and "Absence of corruption". In the first, in the entry "Absence of violent redress", Italy gets a very low score (0.4), implying that violence is a common practice to redress personal grievances. In the pillar "Civil justice" main issues regard unreasonable delays and lacks of effective enforcement of court proceedings and finally the "Absence of corruption" pillar underlines a high level of corruption in the legislature and executive branches.

Meritometro pillar: Transparency

Transparency is measured through the Corruption Perception Index, displaying the perception of corruption in the public sector (Table 2, reading: the higher the score, the lower the level of corruption perceived). Italy is considered to be highly corrupted hence it has mechanisms opposed to the concept of merit (corruption was also mentioned in the pillar "Rules" as a factor undermining meritocracy). However the level of corruption is slightly decreasing since 2012, year of the anti-corruption law. Fighting against corruption has a positive impact not only on the fiscal performance, reducing public debt, but also on the economic growth, stimulating investments and increasing opportunities for young people.

TABLE 2. Corruption Perception Index.

Country	Denmark	Finland	Sweden	Norway	Netherlands	Germany	Uk	Austria	France	Poland	Spain	Italy
2015	91	90	89	87	87	81	81	76	70	62	58	44
2014	92	89	87	86	83	79	78	72	69	61	60	43
2013	91	89	89	86	83	78	76	69	71	60	59	43
2012	90	90	88	85	84	79	74	69	71	58	65	42

Meritometro pillar: Social mobility

Social mobility_is the likelihood of participating in tertiary education, by parents' educational attainment and is measured by the OECD.

According to 2012 data (the most recent data aavailable for a substantial number of countries), in Italy, a student whose parents have an upper secondary education as their highest level of education is 4.6 times as likely to participate in tertiary education as someone with parents having below upper secondary education; a person whose parents have a tertiary education is 9.5 times as likely to have a tertiary education as a student with parents having below upper secondary education. Data reflects a very low level of intergenerational mobility, which could be increased by allocating more resources to the

education system, in order to give the same opportunities to every student, no matter the social class. As in the case of population with tertiary allocation, incentives for the most talented students and a system allowing to both work and study at the same time, can do the difference between a high level of intergenerational mobility and the maintenance of the status quo.

4. The Italian case

From the analysis of the Meritometro, it is possible to establish which are the main causes of the lack of meritocracy in Italy:

- Nepotism → Largely spread in the Italian society
- Lack of investments → Italy has one of the lowest government expenditure on education in Europe
- Distrust in the merit system → Consequences at a social and economic level
- No evaluation of quality teaching → Students' competences not fully developed

Nepotism

Nepotism is a form of corruption and is present in each segment of the society. Allesina (2011) studied this issue in Italian academia. The analysis is based on all the 61,340 Italian academics in 2011.

First, out of 28 disciplines, 9 - Industrial Engineering, Law, Medical Sciences, Geography, Pedagogy, Agriculture, Civil Engineering, Mathematics and Chemistry, representing more than 50% of Italian professors, show a significant level of nepotism. Additionally, for each macro-sector, Allesina reported the disciplines that effectively display the highest fraction of micro sectors where it is possible to find a high paucity of names: Medical Sciences, Geography, Pedagogy, Civil Engineering.

Despite several legislative efforts have been implemented to fight nepotism - which actually represents a serious problem for all those systems where career advancements are based on seniority rather than achievements - the general perception is that this form of corruption is still well established in the Italian culture. In 2016, at the national convention of administrative supervisors of universities held in Florence, Raffaele Cantone, president of the Anti-corruption Authority, underlined how corruption and nepotism lead to brain drain. In a feudal system, such as the Italian academia, illegal hiring practices are very common, but the lack of an efficient law against the "barons" of the system impedes to eradicate the problem and to stop the flow of *brain drain* (this issue is discussed below and in Section 5).

Lack of investments

Italy ranks last in government expenditure on education in Europe, representing the 4% of GDP and 7.9% of total expenditure, while the average for 28 countries is respectively 4.9% and 10.3% (Table 3).

The low investment on education reveals some important consequences: 1) Few grants and scholarships available; 2) An education system that does not stimulate students.

The first issue especially regards the academia. In Italy only banks provide grants - considering both need and merit criteria - to students, while in other countries also the government and universities offer this service.

Additionally, scholarships based on merit do not exist. Law 390/1991 established that students with a low level of income are able to obtain a scholarship despite their academic performance, making the system even less meritocratic. For example, a student getting high marks in all the exams has the same possibility of another student who gets low marks to obtain a scholarship. In fact, the two criteria for allocating resources are the low level of income and the achievement of the necessary yearly ECTS.

TABLE 3. Public spending on education in 2014.

Country	Austria	Belgium	Denmark	Finland	France	Germany	Italy	Norway	Poland	Portugal	Spain	Sweden	Switzerland	UK
% of GDP	5.0	6.4	7.0	6.2	5.5	4.2	4.0	5.5	5.2	6.0	4.1	6.5	5.8	5.1
% of total expenditure	9.6	11.9	12.8	11.0	9.6	9.6	7.9	11.2	12.6	12.4	9.3	13.0	17.2	12.0

Source: Re-elaborated from Eurostat, 2014

In according to data published by MIUR, the number of students getting a scholarship - based on income level - has decreased, even if in countries such as France and Spain has increased despite the economic crisis.

The Report on the student condition, provided by MIUR, underlines that the lack of investments in the Italian academia leaves many students not recipient even if suitable for a scholarship. This means that even if undergraduates have all the requisites of income and "merit", they do not have the possibility to obtain scholarships because the resources are not sufficient. Thus these students may renounce to their studies or they are forced to work part time - work timetables usually do not adapt to the academic needs of students - or to work under the table, to pay tuition fees. As already mentioned in Section 3, the social and economic background impede the development of the so called *"culture of independence"* of young people, thus in Italy only 8% of students is able to obtain grants and scholarships, in contrast with the 50% independent abroad.

The low public spending on education affects the school system as well, since extra-curricular activities such as theatre, chorus or foreign languages are minimized. Students cannot "live" the school, which is perceived as an obligation: collateral effect could be a high rate of NEET and a low level of people with tertiary education. Additionally, resources are not available for the apprenticeships system, which may represent a good solution to reduce youth unemployment. In accordance with a recent study of McKinsey (Studio ergo Lavoro. Come facilitare la transizione scuola-lavoro per ridurre in modo strutturale la disoccupazione giovanile in Italia, 2014), nearly 40% of youth unemployment is caused by the divergence between supply and demand of skills, which comes from the inexistent relation between school and work.

The law 107/2015 has introduced the apprenticeship system for all the types of high schools; the "Lyceum" must complete a path of 200 hours in three years, while for the other types of high schools, the apprenticeship lasts for 400 hours. Usually, one month per year, students work in a public or private company in the morning or in the afternoon - if the school decides not to suspend normal classes - and do not receive any salary.

This dual system is borrowed from Germany, where at the vocational school, corresponding to the Italian "Istituto Tecnico" and "Istituto Professionale", students can start a career with an apprenticeship. School is normally attended twice a week during a two, three, or three-and-a-half year apprenticeship, while the other days are spent working at a company. The company is obliged to accept the apprentice which is a part-time salaried employee of the company. After the school the student is ready for a career up to a low management level.

In January 2017, the students of the "Istituto Tecnico Carli" of Trieste have worked for private accountants, law firms or for the National Institute of social services (INPS). Some of them have learnt a lot but others do not because firms were not interested in developing students' competences. Some professors and tutors argue the fact that the compulsoriness of this project discredits the apprenticeship system that could actually represent a good method to connect school and work. Firms are obliged to employ students, which are seen as burdens and not as resources. Additionally everyone in the teaching staff doubt about the operating method: one month per year is not sufficient to develop students' skills and stopping classes has turned out to be harmful for learning: teachers have one month less to complete the educational program that has not been proportionally reduced by the reform, thus until the end of school in June, students are even more stressed in order to complete the syllabus. Finally the teaching stuff claims more resources are needed - to incentive firms to be participative as well - in order to develop the dual system showing more cons than pros at the moment.

Distrust in the merit system

If trust exists in the merit system, best students work in a stimulating educational environment, which orientates them toward the "social climbing" based exclusively on merit. Hence the most talented are rewarded and create a meritocratic leadership which in turn shapes a strong economic and social context that restarts the circle of both social and economic merit (this topic will be further developed in Section 5 through statistical evidence). The deep distrust in a system based on merit is the results of the economic crisis started in 2008, which has amplified the existing problems Italy had before, such as the low economic growth, the high public debt and the few possibilities for young people. EU has recently asked Italy to cut its budget deficits by about 3.4 billion, since Maastricht criteria foresee that highly-indebted countries must reduce their debt by one twentieth of the amount it exceeds EU limits annually.

Additionally the low salaries and few work possibilities of graduate students (Fig. 6) increase the entire level of distrust in the system, which also explain the low rate of people with tertiary education and the high rate of brain drain as well. Survey data show that, compared with their peers working in Italy, young Italian graduates working abroad earn higher and more rapidly increasing salaries.

Distrust causes corruption, which lead to gerontocracy and brain drain and the overall result is a depressing environment (Fig. 7).

No evaluation in quality teaching

Meritocratic societies exploit education as a tool to select the most talented, intelligent and motivated students and shape their formation on the basis of individual merits.

The models used in different European countries to evaluate quality teaching are the following: 1) Evaluation by external inspectorates and educational authorities; 2) Evaluation by students and parents through surveys and feedback after exams; 3) International evaluation of educating system; 4) Programme for the International Assessment of Adults Competencies survey (PIAAC); 5) Skills tests.

FIG. 6. Employment of recent graduates for 12 European countries in 2015.
Source: Re-elaborated version from Eurostat, 2015.

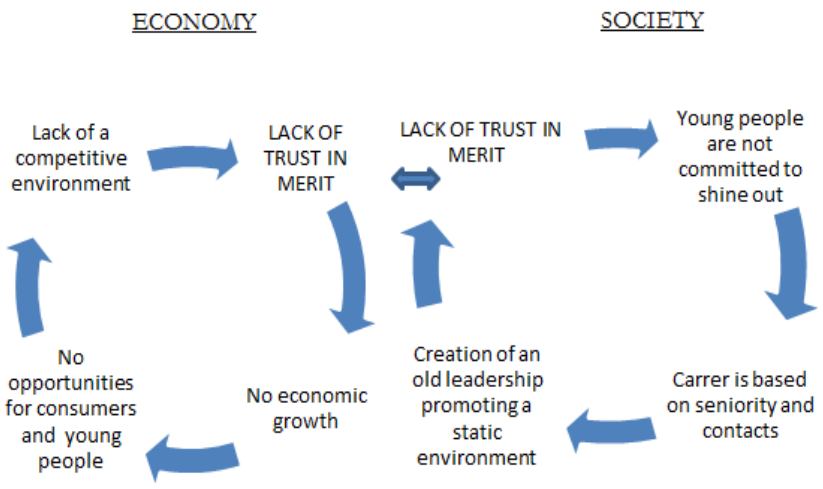

FIG. 7. The circle of distrust.
Source: Abravanel (2008).

In many countries *education inspectorates* take full responsibility for teacher evaluation, by evaluating the efficiency and quality of school under examination. *Educational authorities* play a major role in the conception and application of teacher evaluation, since they set the national learning outcome objectives, agree standards for the teaching profession and establish the norms regulating teacher evaluation. In some countries, they play a direct role in the implementation and monitoring of teacher evaluation procedures.

In Italy, the national institute INVALSI measures the preparation of Italian students in two disciplines, mathematics and Italian language, through standardize tests. However results are not seriously discussed and do not represent a starting point to evaluate and improve quality teaching.

The PISA is an example of international evaluation of educating system that is considered by country.

In the *PIAAC* teachers are defined to be all PIAAC respondents who report as current occupation code "primary school teacher", "secondary school teacher", or "other teacher" (which includes, for example, special education teachers and language teachers). The study reveals that competences of Italian teachers are the lowest among 23 OCSE countries and that there is a high correlation between teacher's wages and skills. This survey should be seriously considered by the country in order to develop economic, education and social policies enhancing skills of adults. The predominant idea is that Italy seems to underestimate quality teaching, which is one of the basic instruments of growth of a country since methods to improve the education system exist but they are not considered.

Finally countries like UK use the *Professional skills tests* assessing the core skills that teachers need to fulfil their professional role in schools, rather than the subject knowledge needed for teaching. Italy badly performs in the pillar "Quality teaching" and the main issue of the relation between the indicator and student outcomes is the possibility of a vicious circle, which represent the current situation in Italy: unprepared students will become unprepared teachers, who, in turns will produce unprepared students again.

Additionally the lack of a sort of evaluation of quality teaching impedes to identify a strategy to improve PISA results and the education system in Italy, which offers to Italian students a wide general culture but seems not to fully develop basic competences in math, reading and science.

Finally, the not meritocratic system impacts GDP, public debt and produces a high level of brain drain (Fig. 8) and a scarce level of brain gain.

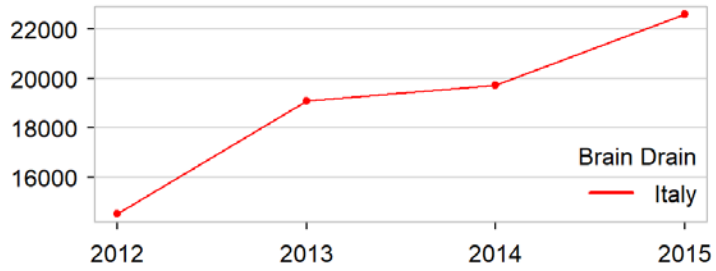

FIG. 8. Brain drain in Italy overtime.

In accordance with "The Global Talent Competitiveness Index", Italy ranks 92nd out of for 109 for brain drain and 95th for brain gain. As a result, there are imbalances between human capital flow out and human capital flow in the country.

High-skilled young Italians are increasingly emigrating abroad, causing an important brain drain. Every year approximately 3000 Italian researchers immigrate to nations offering a more meritocratic system such as UK, Germany and Sweden. Among the most industrialized European countries, Italy is the only one where export of researchers is greater than import of equally-qualified foreign residents, with a deficit of 13.2%, thus emigration cannot be considered as a "brain exchange". In the 2016 Country Reports for Italy, the European Commission declared that brain drain may cause a permanent net loss of highly qualified human capital to the detriment of competitiveness. Additionally in the medium-long term, cost of brain drain must be added to the cost of NEET, early leavings and students without tertiary education in term of lost productivity, GDP and resources spent for

education, foregone future public revenue from taxes and social contributions that highly qualified migrants would pay if they worked in Italy.

5. Proposals for a more meritocratic society

Main directions we suggest to follow to build a more meritocratic society are: 1) Fight corruption and fiscal evasion; 2) Reform the educational system.

Fight corruption and fiscal evasion

As mentioned in Section 4, Raffaele Cantone declared a strict relationship between corruption and brain drain. Several international studies have demonstrated how high levels of nepotism lead to higher migration rates of high educated people, resulting in a shortage of skilled workers, slower economic growth, and lower brain gain.

From 2012, year of the anti-corruption law (190/2012), Italy has little improved its position in the global ranking of the CPI, while number of migrating students has increased. In order to reduce corruption, different solutions are available: 1) Teach pupils what corruption is, through citizenship education; 2) Improve the text of law 240/110.

It should be noted that corruption is a matter of culture hence *citizenship education* must have an active role at school, as the basic instrument to improve the Italian society and to earn more responsible citizens and adults tomorrow.

To diminish cases of nepotism, which is the most popular form of corruption in the Italian academia, *law 240/2010 should be improved*. In particular, Art.18 and 24, concerning the call of first and second level professors and temporary researchers, should be modified. The articles do not contain specified selection rules, area of competence of single universities, leaving enough space for nepotism and evaluations based on contact instead of merit. In order to avoid these situations, standardized tests should be adopted and considered with the other two criteria specified by law 240/2010, which are the curriculum vitae and the academic production of the candidate (Table 4).

TABLE 4. Selection criteria.

Selection criteria	Standardized test	Curriculum vitae	Academic production
Weight	40%	25%	35%

Additionally, Art.18 should oblige to explicit, in the ethical code of each university, punishments if cases of nepotism or other forms of corruption are found in the evaluation process. For example, in the ethical code of the University of Trieste, Art.9 just announces that nepotism is condemned without specifying evaluation procedures and subsequent punishments.

Law 240/2010 fits in a broader context, which is the perception of corruption in the Italian culture. The more recent anti-corruption law 69/2015 increases the maximum number of years of detention but, as Davigo (2017), the President of the national Association of magistrates, says, no one goes to prison for corruption. In Italy only 0.9% of detainees are condemned for financial crimes against the 11.7% of Germany. Corruption is still settled in the Italian culture and is still considered as a minor crime and even if more severe penalties are adopted in theory, in practice they are not.

Another important cost, that undermines resources available for education, is fiscal evasion. Italy has the lowest public expenditure on education in Europe, which is the result of the austerity imposed from 2008, rather than implanting effective law against fiscal evasion.

Proposals to fight it are: ISEE (Italian indicator of the social-economic situation of family units) compulsory and easily compiled from home; Deductions and exemptions for people making ISEE, no matter the income; Lower fiscal pressure or improvement in the quality of public services; Teaching citizenship education and advertising controls and found tax evaders trough media, for prevention; Harsh punishments for each tax evader, with detention, fines and no possibility of plea bargain for people with an income higher than €23,000 from dependent employment; More cross controls on all available databases by local financial authorities, by establishing a specified team.

Reform the educational system

Resources recovered from fight against corruption and fiscal evasion could be entirely employed to reform the education system in three steps:

- Increase teacher's salary and based it on merit
- Change the structure of the school system
- Relaunch the academia

The official definition of teacher - and the consequent definition of *salary* in collective agreements - regulate the terms and conditions of employees in the workplace. In the case of Italy, the contract includes only teaching time per week, while in other countries can also include the availability at school, which is the amount of time available, other than teaching time, for performing duties at school or in another place as specified by the school head.

In Italy, teacher's salary depends on a seniority base increase which should be substituted by a merit base.

From 2015, teacher salaries are fixed because the government does not have enough resources to pay seniority base increases, which should be paid starting from 2018. Law 107/2015 establishes an increase on salary based on merit beyond the seniority base. A commission is established for a period of three years and made up - for the secondary school - of one student and parents' representatives, chosen by the school council, an external advisor and 3 teachers, one chosen by teachers representative and the remaining two by the school board. The commission evaluates the teacher's merit on the basis of: 1) Teaching quality and contribution given to enhance the school and students performances; 2) Results obtained by the teacher in terms of development of students' competences, innovation in teaching and diffusion of good educational activities; 3) Organizational and educational coordination of teachers' training.

The main issue of this methodology is its lack of objectivity. Only one student and parents' representatives are not sufficient, considering that maybe they do not know the professor to evaluate. Additionally the commission should consider questionnaires distributed to parents and students during the year to evaluate quality teaching and base it on standardized examinations.

Teachers evaluation based on a written and oral examination is a common practice in Europe (even if it does not exist in Italy, Sweden, Norway and Scotland). In the case of Finland headmasters can evaluate teachers through an oral or written examination, during the school evaluation or independently.

Italy could employ annual standardized tests measuring teachers' competences and teaching aptitude, fundamental to distinguish between willing teachers from those who are not, create a true system of incentives awarding best performances and distance teachers that do not meet minimum requirements of competence to teach; after two subsequent negative evaluations or three non-subsequent in the same school, the teacher should be moved; if after the transfer, he/she receives two negative evaluations or three not subsequent as well, the teacher should be fired.

Additionally, teachers' salaries should be adapted to international standards, since Italian teachers are among the worst paid. To understand why is important to pay teachers adequately and promote monetary incentives on a merit base, it is sufficient to consider the correlation between teacher's salaries and student outcomes. Generally, a higher salary incentives workers to be more efficient and productive. The graph shows a relation between teacher's salary average scores taken by students in PISA tests: the higher the salary, the better the performance.

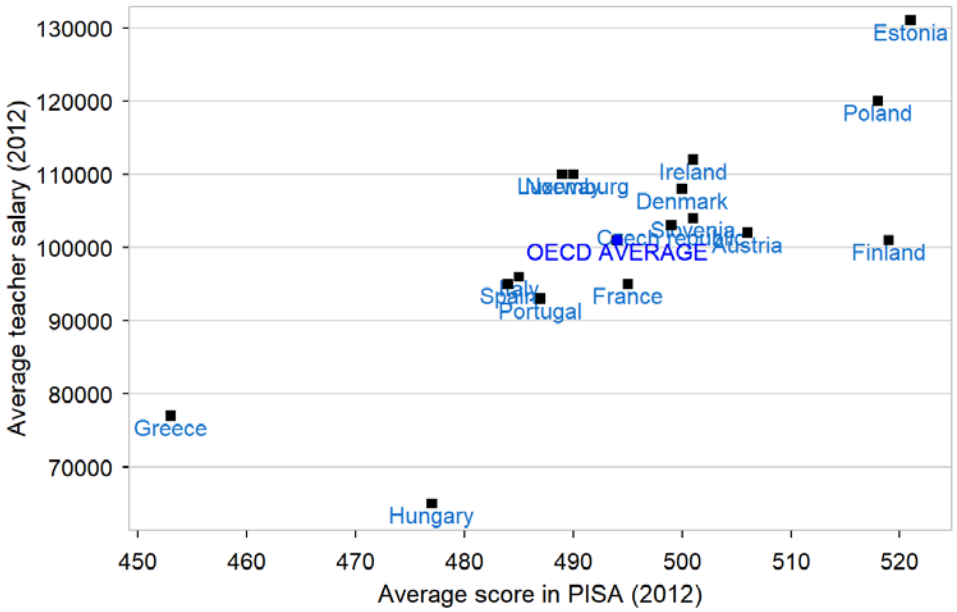

FIG. 9. Relationship between teacher's salary and average score in PISA, 2012.
Notes: Salary data were not available for Germany, Sweden, UK, Netherlands and Belgium. The average score on PISA 2012 refers to the average on Science, Reading and Mathematics scores. Teacher salary is expressed in dollars for Lower secondary, after 15 years' experience. Sources: Re-elaborated from OECD data on education and PISA 2012.

Another issue to consider is the entire *education system*. Primary school is excellent, as showed by standardized tests. The middle school should be incorporated into the lower secondary school, which should include students from 11 to 15. At the upper secondary school, students should choose between lyceum and vocation school. The first has a theoretical approach while the latter prepares student for the world of work, by weekly alternating school and apprenticeship in a specialized firm. Students should choose between linguistic, scientific, artistic, social and economic or classic lyceum. The following tables (Tables 5, 6 and 7) summarize the subject and the amount of weekly hours to be devoted to each class in the lower and the basic subjects for the upper secondary school.

TABLE 5. Subject in the lower secondary school.

Subject	Italian Literature	Italian	English	Art	Mathematics	Physical Education	Citizenship Education and basic economics	Foreign language	History	Geography	Science	1st optional class
Hours per week: first 2 years	/	3	3	2	4	2	2	3	2	2	3	/
Hours per week: last 2 years	3	/	4	2	3	2	2	3	2	2	3	2

TABLE 6. General subject in lyceum.

Subject	History	Mathematics	Physical Education	Philosophy	Histoty	Italian Literature	Latin	English Literature	Economics and Law
Hours per week: 1st year	2	2	2	3	2	3	3	2	2
Hours per week: 2nd year	2	2	2	4	2	3	3	2	2

TABLE 7. General subject in vocational school.

Subject	Italian	English	Mathematics	History	Specific subjects *
Hours per week	3	3	4	3	18

*Specific subjects related to the chosen path by the student could be: Business Economics, Computer Science, Telecommunications, Mechanics or Agricultural Techniques.

The vocational school should follow the German system. School should be normally attended twice a week during a three year apprenticeship; the other days should be spent working at a company. The company is obliged to accept the apprentice and after the school the student is ready for a career up to a low management level.

By choosing upper secondary school at 16 years instead of 14, students can be more aware of what they like and they are good at. The later specialization and possibility to choose a school that bridge the gap with the world of work could also diminish the percentage of early leavings and NEET, by given concrete competences for both lyceum and vocational school while encouraging the trust in the entire system.

A special regard to the *academia*: an important step to create a more meritocratic society could be the implementation of Art.4 of law 240/2010. It establishes a fund for merit, in order to award best students on the basis of standardized tests and national criteria of evaluation. For this purpose, the law decree 70/2011 established the "Foundation for merit", a private and public partnership appointed to promote the culture of merit at school and in the academia. The main issue is law decree 69/2013 did not allow the Foundation to supply funds for most talented students, thus the Government Accountability Office asked if the creation of the Foundation was still in the interest of the Governance or the project had to be deliver to private citizens. Law 232/2016 substituted the Foundation of Merit with the "Foundation Article 34", which should have been constituted in 2017. However the government did not promulgate the law decree establishing the first core of the foundation, hence the business will not start in 2017. De facto the found for merit was a great solution to enhance the culture of merit and relaunch the academia. However, since Italian governments and private firms are apparently not interested in meritocracy and young talents, local authorities, conferring the scholarships based on merit and students' income, should impose more restricted control on ISEE in order to guarantee funds to those in need of help while limiting the increasing number of suitable but not recipient students.

Additionally, a law ad hoc should protect working students and employers' interests, by guaranteeing: 1) Tax breaks for employers hiring students with flexible timetable; 2) Normal salary for students, with a taxation proportionate to weekly hours worked.

A similar regulation would allow young people to work while studying and attend classes. In order to make it effective the Italian academia should be reformed as well: to this purpose the academic year should follow the one of others countries like UK or France, where classes finish at the end of May and start again in September: this organization gives the chance to students to have a full time experience in the world of work, which is becoming a fundamental prerequisite for many international masters and makes the university more close to the real world.

Analytical demonstration of solutions proposed

The reasons why fighting corruption and fiscal evasion as well as reforming the education system were considered can be shown through a temporal analysis, cost calculation of brain drain and econometric simulations.

In the period from 2012 to 2016 there are clear evidences of some important relations between: the CPI and the public debt (PD); the CPI and the GDP; the CPI and the NEET rate; the PD and the NEET rate; the GDP and the NEET rate (the last three only for 2015); the PD and the quality teaching (only for 2015 and 2016). (Note that some relationship are available for only one year due to lack of data.)

The CPI has a negative and significant relationship with the following variables: PD (the correlation has been -0.73 on average), NEET rate (the correlation has been -0.89). These data shows that the higher the score in the CPI, the lower the PD and NEET rate. On the other hand, corruption has a positive and significant relationship with GDP (the correlation

has been 0.68 on average), hence the higher the score in the CPI and the higher the GDP (Fig. 10).

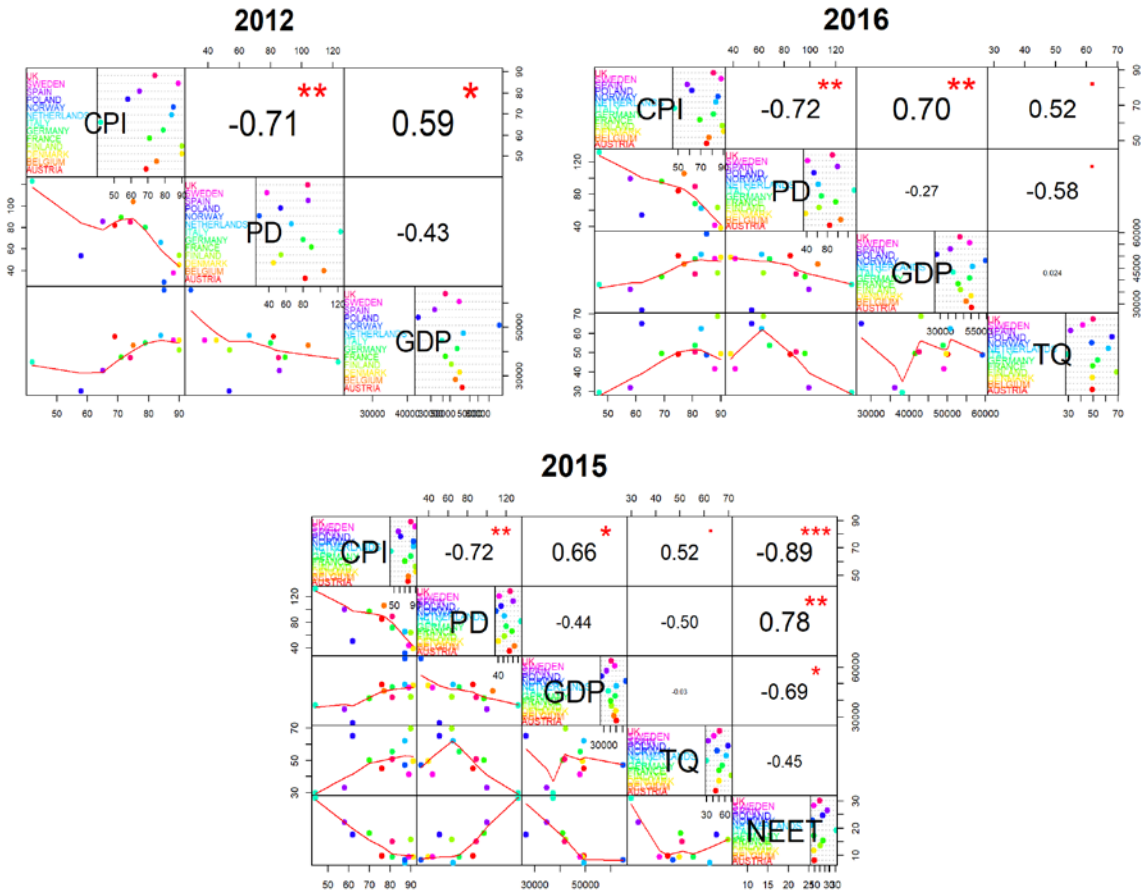

FIG. 10. Relationships identified in 2012, 2015 and 2016.

GDP can be expressed in a simple formula: GDP = I+C+N+G, so it is made up of investments, consumptions, government expenditure and net export. Corruption undermines investments, government spending and the overall economic growth, therefore GDP.

These relations are very important since reflect the impact corruption has not only on the society, but also on the economic and financial performances of the country. Therefore, a legislation fighting more effectively corruption could be extremely important, especially nowadays that Italy growths less than the other countries in the Eurozone.

At the same time, for 2015, it is possible to see how the NEET rate influences GDP and public debt in terms of distrust in the system, investment in education and weaker future growth: young people not in employment, training and education are not only the emblem of the youth dissatisfaction but also of the future unspecialized generation of adults that Italy does not need.

Another important factor is the negative relationship between PD and quality teaching which has increased (in size) in one year from -0.50 to -0.58. Quality teaching is measured through three core indicators: Tertiary education attainment, Early leavings from training and education, PISA results. The probable reason is that the lack of investments in the education system has a strong impact on the public debt, since education is the first method

of growth of countries. For the specific case of Italy, early leavings are potential NEET and they have a cost in term of youth unemployment, lost GDP and public debt. Early leavers accept to be employed for a lower salary due to their lack of specialization. In Italy, graduate students, which are the most productive sector and also the less consistent, produce a GDP which is not sufficient to cover the expenses the society had to sustain for the education of all the workers, early leavers included. Additionally PISA results below the average show that students are less prepared than the rest of European countries and the results reflect also in term of low tertiary education attainment.

An additional enhancement to the Italian GDP could be given by limiting brain drain, caused in part by nepotism (Table 8).

TABLE 8. Cost of brain drain for 2015.

Primary Education	$42.655 per student
Lower Secondary Education	$45.329 per student
Upper Secondary Education	$28.239 per student
Tertiary Education (Bachelor Degree)	$33516 per student
Total	$149.739

Source: OECD, Indicator B1: How much is spent per student?

Hence, if in 2015, 22585 tertiary level students migrated, the costs in terms of public expenditure on their education was $3,381,855315 (considering an average period of education of 16 years, including 5 years of primary education, 3 of lower secondary education, 5 of upper education and 3 of tertiary education). The analysis is underestimated since it does not consider the costs on social protection, health and lost GDP

Finally, through econometric simulations, Baldassarri (2016) estimated the costs of corruption and fiscal evasion from 2002 to 2014. The simulations were based on two different hypotheses: 1) Cut to public expenditure of €45 billion from 2012 in order to finance cut on taxes for €40 billion and enhance investments; 2) Block absolute values of public expenditure on goods and services to ones of 2012 and stop delivering €25 billion of non-repayable money transfers. Subsequently he assumed: 1) A severe and concrete struggle against fiscal evasion based on financial cross checks on all available databases that reveal taxpayers' income and net worth; 2) Deductions and exemptions for taxpayers.

From the simulation, GDP would have increased from a minimum of €128 to a maximum of €141 billion while fiscal evasion would have cost €95 billion. Additionally, PD would have lowered by a minimum of €530 to a maximum of €840 from struggling corruption and by €266 from fiscal evasion. Thus, cost of evasion and corruption was, on average, €66.3 billion per year (sum of the minimum cost of corruption in terms of GDP and cost of evasion, divided by 12 year).

6. Conclusions

Investing on education does not only help to have more prepared students but has also a deep impact on the entire population and national culture. At the same time, resources should be employed in fighting fiscal evasion and corruption to create opportunities for young people, restore economic growth, revive the trust in the system and improve the financial performance (Fig. 11).

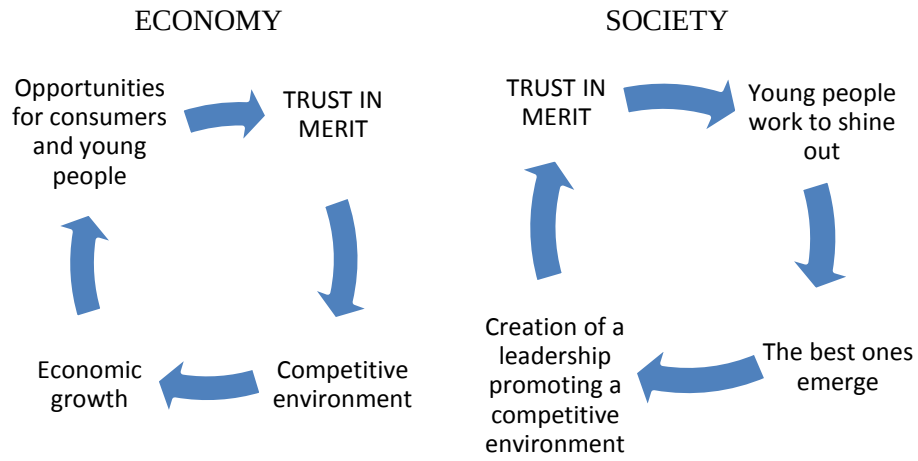

FIG. 11. The circle of trust.

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