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ABSTRACT

The key role of competence and knowledge in stimulating economic growth has been widely recognized by economists: a more highly educated society may lead to higher rates of invention, and may make firms more productive through the introduction of new and better production methods. In the knowledge-based economy, globalization, technological change and organizational development are increasing the demand for a higher level of skills. A general shift in labor demand from lower to higher levels of skill has led to increasing unemployment among those with lower skills. Thus, human capital is not only the most important production factor of modern times, but it also holds a central role in individuals' social and economic success. This paper, using heterogeneous sources (the OECD database on education and functional literacy, and data obtained from ISTAT, the Italian National Institute of Statistics), describes the main features of the production system in Italy (size of firms, area of specialization, etc.) and the quality of the workforce from a multifaceted perspective (educational attainment; distribution of adults' skills in four domains — prose literacy, document literacy, numeracy and problem solving — participation in formal or informal learning, etc.). An examination of the relationship between these variables suggests that there is a "vicious circle" in Italy where an inadequate supply of human capital fuels a model of development based on traditional manufacturing that in turn discourages investments in education. Nevertheless, this hypothesis should be integrated with additional hypotheses arising from typical themes and interests of sociological research.

KEY WORDS: economic system, education, human capital, literacy, Italian workforce

RIASSUNTO

Il ruolo chiave delle conoscenze e delle competenze nello stimolare la crescita economica è stato largamente riconosciuto dagli economisti: da una società più istruita discendono più elevate tassi di invenzioni, le aziende possono essere più produttive attraverso l'introduzione di nuovi metodi di produzione. Nelle società della conoscenza, il cambiamento tecnologico globale e lo sviluppo organizzativo hanno fatto aumentare la domanda di alti livelli di competenza. Tale spostamento nella domanda di lavoro ha portato all'aumento della disoccupazione tra i lavoratori scarsamente qualificati. Il capitale umano quindi non è solo uno dei più importanti fattori di produzione nella

società contemporanea ma ricopre un ruolo centrale per il raggiungimento del successo economico e sociale delle persone.

Questo articolo, usando fonti eterogenee (base dei dati OCSE sull'istruzione e il letteratismo; statistiche dell'ente italiano di statistica ISTAT), descrive le principali caratteristiche del sistema di produzione in Italia (dimensioni delle imprese, specializzazione produttiva, ecc...) e, in modo composito, la qualità delle forze di lavoro (livello d'istruzione, distribuzione della capacità della popolazione adulta secondo quattro ambiti — letteratismo della prosa, letteratismo dei documenti, numeracy e problem solving — partecipazione ad attività di formazione continua).

Un esame delle relazioni queste variabili suggerisce che in Italia esiste un "circolo vizioso" in cui la scarsa offerta di capitale umano alimenta un modello di sviluppo basato sulla manifattura tradizionale, scoraggiando a sua volta gli investimenti in istruzione. Questo articolo evidenzia tuttavia la necessità che tale ipotesi sia integrata da ipotesi aggiuntive derivate dai temi e interessi propri della ricerca sociologica.

PAROLE CHIAVE: sistema economico, istruzione, capitale umano, letteratismo, forze di lavoro italiane

RESUMEN

El rol clave que juegan la competencia y el conocimiento para la estimulación del crecimiento económico ha sido ampliamente reconocido por los economistas: una sociedad con un nivel educativo alto puede llevar a tasas de inversión más altas, y puede lograr que las empresas sean más productivas a través de nuevos y mejores métodos de producción. En una economía basada en los conocimientos, la globalización, el cambio tecnológico y el desarrollo organizacional crean una mayor demanda de niveles de capacitación más altos. Este cambio general en la demanda de trabajo de los niveles más bajos a los más altos de capacitación ha llevado al crecimiento del desempleo entre aquellos trabajadores menos preparados. De esta manera, el capital humano no solo es el más importante factor de producción de los tiempos modernos, sino que también tiene un rol central en el éxito social y económico de los individuos. A través del uso de fuentes heterogéneas (la base de datos OECD sobre educación y alfabetización funcional y los datos obtenidos del ISTAT, el Instituto Nacional de Estadísticas de Italia), este artículo describe las principales características del sistema de producción en Italia (el tamaño de sus empresas, las áreas de especialización, etc.) y la calidad de la mano de obra desde una perspectiva multifacética (los logros académicos, la distribución de la capacitación entre los adultos en cuatro dominios — alfabetización en prosa, alfabetización documental, cuantitativa y resolución de problemas — y la participación en capacitaciones formales e informales, etc.) Un estudio de la relación entre estas variables sugiere que hay un "círculo vicioso" en Italia donde una fuente inadecuada de capital humano alimenta un modelo de desarrollo basado en la fabricación tradicional que, a su vez, desalienta las inversiones en educación. Sin embargo, esta hipótesis debe ser integrada a las hipótesis tradicionales que surgen de los temas y puntos de interés típicos de las investigaciones sociológicas.

PALABRAS CLAVE: sistema económico, educación, capital humano, alfabetización, mano de obra italiana

**SKILLS, WORK AND PRODUCTION SYSTEM:
understanding Italy's vicious circle.**

**COMPETENZE, LAVORO E SISTEMA DI PRODUZIONE:
comprendere il circolo vizioso dell'Italia.**

**EL SISTEMA DE PRODUCCIÓN, TRABAJO Y CAPACITACIÓN:
comprensión del círculo vicioso de Italia.**

Federica Cornali¹

INTRODUCTION

Various expressions are used to describe today's society: 'information society', 'knowledge society', 'network society', 'learning society'. These labels are rooted in the belief that science, innovation and expertise are the moving forces of economic and social development. In fact, knowledge and skill play a crucial role in the organization of contemporary society. Globalization processes, far-reaching economic inter-connections, the transformation of information systems and of biotechnology and large-scale cultural influences all entail continuous knowledge production and revision of

¹ Federica Cornali is a researcher in Sociology at the Department of Social Sciences of the University of Turin, Italy. Her current research interests are focused on human capital formation, education policies analysis and adult literacy. Main publications: Tutti in classe! Definizione, dimensioni e scopi dell'istruzione iniziale. *Quaderni di sociologia*, LII, 2008, 47, pp. 69-96. *La ricchezza intangibile. Considerazioni sul capitale umano*, Acireale-Roma, Bonanno, 2009. federica.cornali@unito.it.



existing knowledge, emphasizing workers' skill and expertise. In this sense, the notion of knowledge is not limited to higher education and academic research settings, but as THORLINDSSON and VILHJALMSSON² observe, contemporary society contains all sorts of knowledge. Though some of them have been developed in a scientific setting, knowledge has largely stemmed from various communities of workers doing everyday work.

For these reasons, ensuring countries' social and economic well-being hinges on increasing the level of literacy in the population, ensuring widespread schooling and stimulating participation in lifelong learning activities. In Italy, unfortunately, evidence from numerous sources shows that this process goes slowly — especially in the South. This delay is seen as one of the main determinants of the economic crisis that has afflicted Italy for several years. It is obvious to ask ourselves why knowledge seems to be such a difficult challenge in Italy.

The answer to this question involves a long list of factors: a historic reluctance to face the problems of compulsory education, little foresight in educational policy, and many others. In particular, this paper will examine the main determinants that can be linked to the specific features of the Italian production system which seem to discourage educational investment. Additionally, evidence from a number of sociological studies suggests that the series of causal factors should also include variables concerning the interpenetration of economic and non-economic action. This interpenetration affects

² THORLINDSSON, Thorolfur; VILHJALMSSON, Runar (2003): Introduction to the Special Issue: Science, Knowledge and Society. *Acta Sociologica*, Vol 46(2), pp. 99-105.

the flow and the quality of information available to actors and is also an important source of reward and punishment.³

1. ITALY IS SHORT OF BREATH

The most recent OECD, Bank of Italy and International Monetary Fund reports highlight Italy's economic decline: economic activity has contracted in the last few years and real GDP has been trending ever more sharply downwards.

The global recession that started in the second half of 2008 has had particularly serious repercussions in Italy, where exports account for a larger share of aggregate demand. The substantial drop in Italian exports has worsened industry's existing problems. In the first quarter of 2009, the economic outlook deteriorated further: GDP fell by 2.4 per cent compared with the previous quarter, the steepest drop since statistics were first collected in 1970. According to the Bank of Italy's annual report of 2008, the current recession is likely to be the most severe recorded since the Second World War. Since this report, consumer spending has weakened further. The contraction in expenditure on durable goods — a typical feature of all severe crises — was accompanied by a drop in that of non-durable goods. The continuation of the 15-year-long stagnation in households' purchasing power played its part.

³ GRANOVETTER, Mark (2005): The Impact of Social Structure on Economic Outcomes. *Journal of Economic Perspective*, Vol. 19, 1, pp. 33-50.

It must be recognized that Italy's economic stagnation emerged before the current international crisis sank many countries into recession.

A simple arithmetic count⁴ exemplifies the sluggish growth in the Italian economy. This calculation consists of splitting the GDP variation rate into four addenda: *i.* total population; *ii.* share of population of working age (15-64 years); *iii.* share of the latter which is actually employed; *iv.* product per unit of labor input. The first and the second addenda are demographic components linked to social and economic well-being. The third one, the employment rate, depends on labor supply and on job market functioning. The last addendum, productivity, derives from the level and quality of education received by workers (human capital), from available technologies (physical capital) and from efficient combinations of all productivity factors (total factor productivity, of TFP).

Over the last decade, the demographic crisis has left the numbers of potential workers substantially unchanged. By contrast, the employment rate rose from 52% to 58% in the same period as a result of substantial wage moderation and policies for increasing job flexibility⁵. In spite of this increase in the number of workers, labor productivity is stagnant, and has even been decreasing since 1995-96⁶.

⁴ ROSSI, Salvatore (2006). *La regina e il cavallo. Quattro mosse contro il declino*. Roma-Bari: Laterza.

⁵ This increase does not cover the gap with respect to other developed countries (the employment rate is 63% in France, 64% in Germany and 72% in the United States).

⁶ Given a 1.1 per cent drop in labor productivity. In the private sector, productivity fell by 1.2 per cent (OECD 2007).

One of the main determinants of economic decline in Italy has been identified as weak productivity. The causes of this weakness are many and various, including the heavy tax burden (65.8% of GDP, according to the ECB), inadequate infrastructure⁷, the limited job market, an ageing population, and the failure to liberalize several protected markets (e. g., energy).

There is also another obstacle to economic growth: the size of Italian firms, which is small by international standards. In the past, this feature often ensured the necessary flexibility to cope with changes in global demand. Today, however, it is a factor of weakness: extremely small firms find it hard to absorb the high fixed costs connected with exports and innovation.

Italy is not a country that works little, but it produces inefficiently and, probably, using obsolete models. When innovation is measured using indicators such as breakdown of R&D investment by sector and by type, intangible investment as a percentage of GDP; proportion of firms using the latest technology as well as high-tech manufacturers; number of patents issued; percentage of scientists and engineers in the workforce; etc., it is clear that there is a significant difference between Italy and other developed countries. For this reason, the shortage of skilled workers plays a determining role.

⁷ "In the last twenty years the gap between Italy's infrastructural endowment and that of the other leading EU countries has widened. As regards major public works, the failure to set long-term priorities has resulted in discontinuity and the dissipation of funds on a multitude of projects. The list of high-priority strategic infrastructures, originally 21, has now swollen to over 200" - BANK OF ITALY (2008). *Annual Report*. Roma, p.210.

2. ITALIANS: AN INCOMPETENT POPULATION

In the past few decades, the spread of education has continued apace, fueling discussion by scholars, politicians and journalists. This increasing interest stems from “human capital theory”, according to which education is equivalent to a stock of one’s own accumulated goods that enables individuals to receive flows of income as if they were interest. Becker (1974) estimates that for every supplementary year of education, income increases by 5.5% for *college graduates*, 7% for *high-school graduates* and 15% for *elementary school graduates*.

The OECD report entitled *Human Capital Investment* describes human capital as “the knowledge, skills, competences and other attributes embodied in individuals that are relevant to economic activity”⁸ and underlines that it is a source of nations’ prosperity as well as of natural and physical goods. Fundamentally, there is one obvious consideration: if more highly educated people produce additional income, high levels of education of the whole population will as a consequence inject greater wealth into the general economy. Denison (1967, 1979), in estimating a function of production whose input is capital and the quality of human capital measured with an index of the workforce’s years of education, showed that 15 to 25% of GNP growth can be attributed to education.

⁸ OECD (2008). *Education at a Glance*. Paris. p. 9. OECD has recently modified this definition using a more careful explanation, considering the numerous non-economic benefits of human capital. The current definition describes human capital as a body of “knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” (OECD (2008): *Education at a Glance*. Paris, p. 19).

MANKIW, ROMER and WEIL⁹ affirm that human capital (measured through high school enrolment rate) reproduces about 2/3 of the variability of national economic growth. More recent studies show that educational investment has a crucial impact on productivity growth — see, for example, KRUEGER and LINDAHL¹⁰; COHEN and SOTO.¹¹

Since calculating human capital consists of estimating individual ability to produce earned income, it is largely represented by ‘flows of education’ or, to be more precise, educational attainment and job experience. Formal education in particular is considered to be highly significant. It provides basic skills, but also specialized knowledge. It is essential for increasing individual productivity and is seen as one of the most important predictor variables of personal income.

An examination of educational statistics¹² shows the low human capital available in Italy. On average, Italian adults, i.e., the population aged 16 to 65, have attended school for about 9 years (precisely 9.4). This is less than the average for citizens of OECD countries (11.9 years) and the European Union (11.8), and is certainly less than the average for more highly educated nations (the United States 12.7, Australia 13.1, Germany 13.4, Norway 13.8). The proportion of 25 to 64-year-olds who have completed their studies at

⁹ MANKIW, Gregory; ROMER, David; WEIL, David (1992). A Contribution to Empirics of Economic Growth. *Quarterly Journal of Economics*, n. 102, vol. 7, pp. 408-437.

¹⁰ KRUEGER, Alan; LINDAHL, Mikael (1999): *Education for Growth in Sweden and the World*. Massachusetts Ave., Cambridge, MA: NBER Working Paper Series, National Bureau of Economic Research, June, 7190, pp. 1-54.

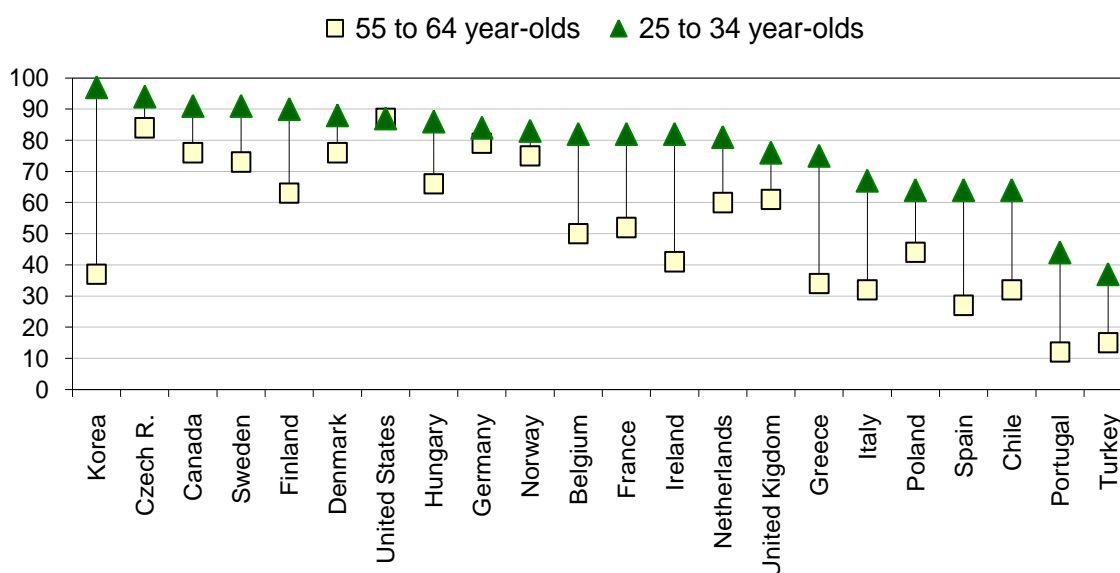
¹¹ COHEN, Daniel; SOTO, Marcelo (2001). *Growth and Human Capital: Good Data, Good Results*. Technical Paper, 179, Paris: OECD Development Centre.

¹² Id. OECD, 2008.



least up to secondary school was only 48% in 2006, or 20 percent points less than the OECD average. Tertiary graduation rates are still very low in Italy (13%).

FIG. 1 - POPULATION THAT HAS ATTAINED AT LEAST UPPER SECONDARY EDUCATION. PERCENTAGE BY AGE GROUP (2006)



Source: OECD (2008)

The increased awareness of the importance of alphabetical competence in adulthood has made assessing it by means of a proxy measure consisting of educational credentials ever more unsatisfactory. An alternative to measuring human capital stock through educational qualifications or years of schooling consists of assessing adults' skills directly. Thus, the OECD conducted two surveys called the International Adult Literacy Survey (IALS) and the

Adult Literacy and Life Skills Survey (ALL). The IALS and ALL are multi-country and multi-language assessments of adult literacy based on scales of performance so that literacy and ability can be measured across different languages and cultural backgrounds. Literacy, defined by OECD researchers as *the ability to understand and employ in daily activities in both domestic and social life and at work to achieve one's goals, and to develop one's knowledge and potential*¹³, was measured operationally in terms of several domains: prose literacy, document literacy, and problem solving.

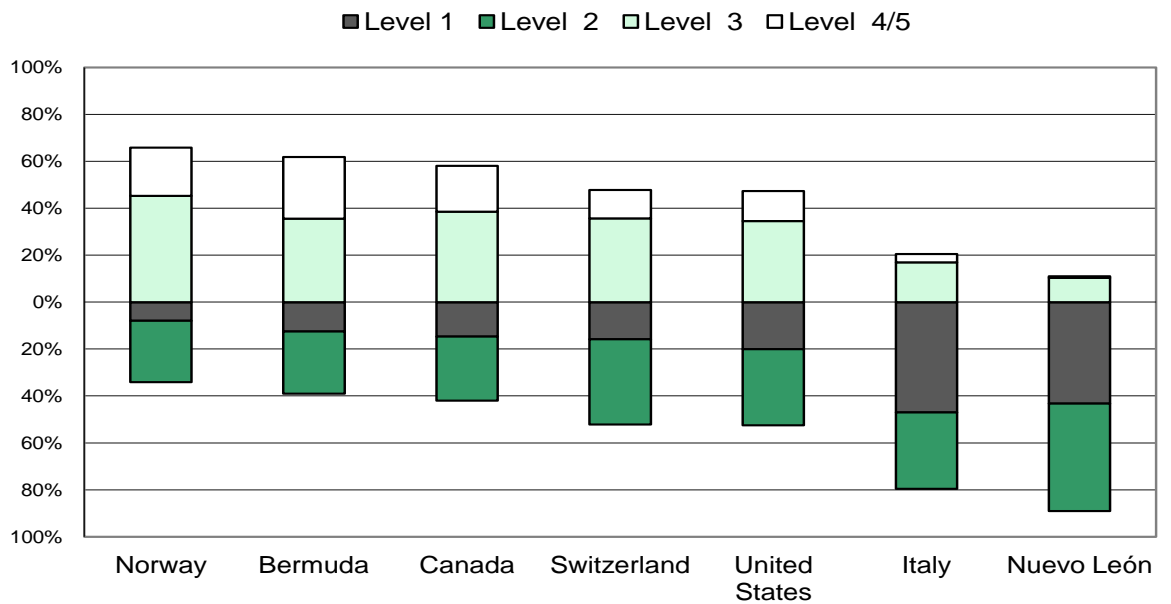
In order to provide an actual measure of competence, each individual was given a score for each task, which varied depending on the difficulty of the assignment. Scores for each scale range from 0 to 500, and are subsequently subdivided into five levels. Level 1 has a score range from 0-225 and would indicate very low levels where, for example, instructions for a medicine prescription would not be understood. The interval 226-275 defines Level 2 where individuals are limited to handling material that is not too complex and clearly defined. Level 3 ranges from 276-325 and is considered the minimum desirable threshold for most countries, while Level 4 (326-375) and Level 5 (376-500) show increasingly higher skills which integrate several sources of information or solve complex problems. The results confirm the shortfall of competence in the Italian workforce. The IALS (carried out in 1998) describes 65.5% of Italians as illiterate, whereas according to the more recent survey (ALL, carried out in 2003) this percentage has increased by 14% to 79.5%. In particular, there is a significant percentage of Italians (89.8%) with difficulties in

¹³ OECD (1995): *Literacy, Economy and Society: Results of the First International Adult Literacy Survey*. Paris-Ottawa. p. 3



problem solving, which is the set of goal-directed thinking and action in situations for which no routine procedure is available. This rate describes a population in difficulty because their own incompetence seems to prevent them from choosing alternative actions.

FIG. 2 - PER CENT OF POPULATION AGED 16-65 AT EACH PROSE LITERACY LEVEL (ALL 2003)



Source: OECD (2005)

Direct assessment of skills through tests offers a representation of adult literacy which is more realistic than educational statistics.

Evidence is given by the average “literacy index”¹⁴ scores for educational attainment in several OECD countries (Table 1): Italians with high educational qualifications show an average “literacy index” which is lower than that of Swedes with medium-low educational qualifications¹⁵.

TAB. 1 – AVERAGE “LITERACY INDEX” SCORE OF THE POPULATION AGED 16 TO 65, CONSIDERING THE EDUCATIONAL LEVEL IN SEVERAL OECD COUNTRIES

	<i>Average “literacy index” score</i>						
	<i>Sweden</i>	<i>United Kingdom</i>	<i>United States</i>	<i>Germany</i>	<i>Ireland</i>	<i>Italy</i>	<i>Chile</i>
<i>Isced 1</i>	-.27	-.99	-1.45	-.56	-.81	-	-
						1.31	1.25
<i>Isced 2</i>	.49	-.29	-.53	.15	-.22	-	-.81
						.46	
<i>Isced 3</i>	.60	.21	-.14	.42	.23	.12	-
							.41
<i>Isced 5</i>	.85	.48	.26	.56	.42	.17	-
							.15
<i>Isced 6/7</i>	1.06	.79	.71	.71	.78	.30	.10

Source: Processed from IALS database

¹⁴ The “literacy index” was obtained by carrying out Principal Component Analysis on the scores which denote the level of the respondents’ competence for each domain (prose literacy, document literacy, numeracy and problem solving).

¹⁵ The dilemma of school efficacy is not new to policy makers and scholars. Though analyzing the causes of Italian schools’ inefficiency is beyond the scope of this study, a short list of possible causes should be enough to satisfy the reader’s curiosity: the lack of reliable evaluation, the low level of school self-management, and the lack of teacher upgrading and evaluation programs.

There is a wide agreement that workforce skills are an important determinant of economic growth. It is clear that the fact that there are too many adults who still fail to acquire even basic skills has major consequences on their individual lives as well as on their country's economy and social well-being. The all-level incompetence that emerges in Italy is worrisome for the country's future. The IALS and ALL international assessments of literacy offer clear evidence. Table 2 shows the differences in competence between various ISCO occupational classifications in several OECD countries as well as in two different Italian regions. Generally speaking, Italian workers have a level of "foundation skills" (language, literacy and numeracy skills) that is greatly below that of workers in other OECD countries. On the other hand, a significant infra-national division appears when data is analyzed by regional area: in Piedmont, a Northern region, the "literacy index" is definitely higher than the national average, as well as higher than the average for other developed countries¹⁶.

¹⁶ There are significant differences between Northern and Southern Italy. Northern regions have a better economy, more efficient public services, and less pervasive organized crime than Southern regions.

	Average "literacy index" score						
	Campania*	Piedmont*	Italy*	United States**	United Kingdom**	Germany*	Sweden*
<i>Armed Forces</i>	-	-	-.21	-	1.32	.69	.45
<i>Legislators, Senior Officials, Managers</i>	-.032	.54	.29	.53	.49	.45	.86
<i>Professionals</i>	.23	.88	.62	.77	.72	.75	.87
<i>Technicians, Associate Professionals</i>	-.24	.74	.39	.56	.40	.60	.74
<i>Clerks</i>	.29	.63	.47	.21	.25	.40	.74
<i>Service Workers, Shop and Market Sales Workers</i>	-.27	.14	.036	-.25	-.00	.29	.55
<i>Craft and Related Trades Workers</i>	-.74	-.17	-.26	-.34	-.054	.29	.44
<i>Plant and Machine Operators and Assemblers</i>	-.75	-.082	-.32	-.58	-.18	.00	.44
<i>Elementary Occupations</i>	-.43	-.37	-.29	-	-.47	-.19	.25

TAB. 2 - AVERAGE "LITERACY INDEX" SCORE OF THE POPULATION AGED 16 TO 65, BY ISCO OCCUPATIONAL classification

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Source: processed from IALS and ALL database



Another signal of workers' low level of competence is provided by the small percentage of the adult population who participate in non-formal job-related activities (14%).

This can also be seen as a sign of the static nature of the working tasks required by Italian firms, where providing learning opportunities is virtually unknown, even for workers in high-tech production processes.

4. A VICIOUS CIRCLE?

Unlike physical goods, human capital does not tend to lose its driving force. Thus, it is a continuously developing factor. Human capital grows and regenerates itself. As LUCAS suggests¹⁷, moreover, it has a positive impact in three spheres: *i.* By stimulating innovation and R & D, education to be utilized in the job market is increasingly important; *ii.* In addition to improving productivity, using highly skilled workers also benefits low-skilled workers because it provides competence and experience; *iii.* Human capital is itself a fundamental tool for forming human capital: qualified teaching is necessary to spread knowledge. By creating human capital, moreover, countries become more attractive to private investments, both domestic and foreign. And through such investments, countries grow and prosper.

Human capital becomes the protagonist of constant growth, wholly dominated by economic actors' choices, which is an endogenous growth. To express its potential, however, it needs conditions that can promote its formation and its use. So far in Italy,

¹⁷ LUCAS, Robert (1988): On the mechanics of economic development. *Journal of Monetary Economics*, 22, pp. 53-97.

these conditions are lacking or insufficient. Indeed, some features of the Italian production system would appear to discourage investments in education.

First, the private internal rate of return of both secondary and tertiary education is lower than the corresponding estimated OECD average¹⁸. In fact, the private internal rate of return of tertiary education is 18.5% in the United Kingdom; 14.3% in France; 9.1% in Germany and only 6.5% in Italy.

The unexpected low return on capital human in a country where qualified professions are not widely available disappears when moving from a transnational comparison to comparison between four Italian macro-regions. Where there is a low percentage of skilled individuals — especially in Southern Italy — the shortage of supply means that the private return on schooling is higher. Nevertheless, returns are on the whole low, confirming that the incentives for pursuing higher education might be weaker than elsewhere.

¹⁸ The rate of return represents a measure of the benefits obtained, over time, relative to the costs of the investment in education. It is expressed as a percentage and is analogous to percentage returns from investing in a savings account.

TAB. 3 - PRIVATE RETURNS ON EDUCATION IN PERCENTAGE POINTS

	<i>Private internal rate of return</i>	
	Upper secondary	Tertiary
North-West Italy	7.3	6.1
North-East Italy	6.7	6.5
Central Italy	6.8	7.3
Southern Italy	8.4	9.9
OECD average	11.4	11.6

Source: CICCONE *et al.* (2006)

These data are not surprising: the benefits of educational attainment differ appreciably according to the labor markets' ability to absorb skilled workers, assuring them adequate professional status and remuneration.

In Italy, there is a prevalence of manufacturing firms in the traditional sectors (textiles and clothing, leather and footwear, and "other products of manufacturing", a residual category that includes furniture), which are more exposed to competition from recently industrialized countries with lower labor costs. By comparison with other OECD countries, Italy has a greater incidence of so-called 'hand labor' (elementary occupations, craftsmanship, etc.), as well as a smaller number of senior officials, managers and professionals.

The factors which have retarded the entry of highly skilled workers in Italian firms include the low penetration of information and communication technologies (ICT). The persistent delay in starting digitalization processes is probably due to the small size of Italian

firms, whose information flow is not enough to make ICT applications feasible or cover the cost of implementing them.

The failure to introduce ICT is not without consequences. ICT is a major tool for increasing economic productivity and competitive strength. Moreover, it is an opportunity for social and cultural improvement because it requires significant engagement on the part of numerous actors: citizens, public institutions, firms, etc.

Since supply and demand of human capital are strongly correlated, FAINI and SAPIR¹⁹ maintain that Italy has produced a *vicious circle where the low supply of human capital feeds a model based on small-size firms, in traditional sectors with high intensity of unskilled work force, that in turn discourages the education investments.*²⁰ The hypothesis of a “vicious circle” between supply and demand of human capital is certainly fascinating, but the explanation it provides is only partial. First of all, as SPAVENTA²¹ affirms, if there were in fact a causal relationship between insufficient demand for human capital and sector composition of production, we would be dealing with a clear case of market failure.

Since the spread of knowledge is not in itself a sufficient condition for economic growth, and as political, institutional and legal arrangements interact with human capital to influence economic well-being, it seems necessary to consider a wider set of factors in order to identify the determinants of Italy’s economic decline. Examples of

¹⁹ FAINI, Riccardo; SAPIR, André (2005): Un modello obsoleto? Crescita e specializzazione dell’economia italiana. In Boeri, T.; Faini, R.; Ichino, A.; Pisauro, G. and Scarpa, C. (eds.), *Oltre il declino*. Bologna: il Mulino, pp. 19-60.

²⁰ Id., FAINI, pp. 50-51.

²¹ SPAVENTA, Luigi (2005). Commento. In Boeri, T.; Faini, R.; Ichino, A.; Pisauro, G. and Scarpa, C. (eds.), *Oltre il declino*. Bologna: il Mulino, pp. 72-77.

such factors include the aspects linked to the interpenetration of economic and non-economic action. According to GRANOVETTER²², the greater part of social life is given by non-economic elements. Therefore, when economic and non-economic activities are mixed, non-economic activity affects the costs and the available techniques for economic activity. The author refers to the “social embeddedness of the economy”, i.e., the mixing of activities where economic action depends on actions and institutions which have non-economic contents, goals or processes.²³ Certain of the negative aspects of embeddedness (which may be ‘social’, ‘cultural’, ‘political’, ‘religious’, etc.) cited by GRANOVETTER describe the Italian situation, including the “culture of corruption”, which produces high economic costs and requires many off-the-books transactions to carry on normal production of goods and services, and “rent seeking”, whereby actors pursue economic goals through non-economic institutions and practices, and for which little or no contribution is asked.

The consequences of this interpenetration of economic and non-economic action are not all negative. Social relations are also positively linked to productivity for several reasons. The first is that many tasks cannot be accomplished without cooperation from others. The second is that group norms and culture can also improve job devotion and loyalty towards firms. GRANOVETTER and TILLY²⁴

²² GRANOVETTER, Mark (2005): The Impact of Social Structure on Economic Outcomes. *Journal of Economic Perspective*, Vol. 19, 1, pp. 33-50.

²³ GRANOVETTER, Mark (1985): Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*. 91, 3, pp. 481-510.

²⁴ GRANOVETTER, Mark; TILLY, Charles (1988): Inequality and Labor Processes. In: SMELSER, Neil. (eds.) *Handbook of Sociology*. Newbury Park, Calif.: Sage Publications, p. 202.

comment that *many workers have opportunities to embezzle, steal, shirk, sabotage and otherwise diminish an enterprise's profitability. Some of them take these opportunities. But most do not... Why? Systems of control make a difference.* Obviously, social control is not exercised only by dedicated institutions, but also derives from normative consensus inside the social group of reference.

CONCLUDING REMARKS

In the last decade, scholars, policy makers and international organizations (OECD, UNESCO) have emphasized the role of human capital formation in economic development. But it seems there are a few doubts. How is it possible not to recognize that an educated and well-prepared population definitely contributes to improving productivity and national economic innovation?

Italy constitutes a clear example: a country where the population's low level of education — and of real competence — is aggravated by a stagnant economy whose production structure is skewed towards traditional low-technological sectors. This is a "vicious circle" where a labor force with low skill levels is an obstacle to benefiting from new technological opportunities and innovating, and an obsolete production training system does not form human capital.

Also contributing to this representation is the consideration that the causal direction between education and economic growth is uncertain. Are more highly educated countries more likely to grow, or

are wealthier countries more likely to have a well-educated population?

Representing this static situation as a “vicious circle” is useful to analysis because it suggests that only exogenous elements can stop this loop. On the one hand, an active education policy should stimulate demand — in order to improve supply — and on the other hand, an economic policy is needed which does not stop giving help to sectors in difficulty, but also proposes action that can be effective on multiple fronts (e.g. market-based solutions, tax incentives for R&D investments, etc.).

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