

Measuring the Impact of a State's Legal and Organizational Framework on Social Capital through System Dynamics Modeling

Pietro Sorci

University of Palermo, Ph.D. in Model-Based Public Planning,
Policy Design and Management, Italy

Submitted 12 January 2015; accepted in final form 17 April 2015

Abstract

The scientific community recognizes the critical effect of social capital on economic development; social capital benefits society with lower transaction costs and less opportunistic behavior among institutions, thus representing a key factor contributing to the quality of a country's global competitiveness. At a macro level of analysis, social capital arises through formalized institutional relationships, structures and public policies constituting a state's organizational and legal framework. Good public management, services and transparency foster in individuals their social commitment, honesty and a solid trust toward public institutions – all proxies of social capital. In contrast, bad public administration depletes social capital. The literature has heretofore been more successful at documenting the beneficial impact of social capital than at developing management tools for devising policies. The present research, tailored on the Italian state, may help fill this gap in literature through the design of a management tool to help policy makers assess the social capital created or depleted by public policies. The system dynamics model provided in this study, which includes such information in policy design, may also lead policy makers to select policy alternatives that produce the best results for social capital growth.

Keywords: *social capital, management tool, policy design, development, Italy, system dynamics.*

1. Introduction

A previous study titled “Building a State's Global Competitive Advantage by Improving Its Finances: a system Dynamic Model Tailored for the Italian State” and published in this review (issue 1/2014, pp. 43-58) analyzed the connections among a state's organizational and legal framework, enterprise development and state financial stability. The research demonstrates how, through chains of circular causalities, such a framework can affect considerably a country's global competitiveness.

The present study further develops this analysis by extending the effects of a state's organizational and legal framework on social capital development. The following analysis was performed by implementing Social Network Analysis (SNA) theory and system dynamics methodology. While the former has facilitated the understanding of the institutions that should be included in the analysis and how they are relevant to social capital, the latter can help simulate the plausible behavior of so-called social capital following the complex of public policies constituting the Italian state's organizational and legal framework.

At an international institutional level, social capital is defined as “networks, together with rules, shared views and values facilitating cooperation within and between groups” (OECD, 2001). In a similar manner, the World Bank (2008) defines it as “the institutions, relationships and norms that shape the quality and quantity of a society's social interactions.” The growing interest in social capital stems, in part, from empirical evidence about the role of networks and norms of mutual support in contributing to higher quality community governance as well as economic, social and personal development (Healy, 2002). The social capital-economic growth relationship has been outlined by several authors (Putnam 1993, 1995, 2000a, 2000b; Portes 1998; Woolcock 1998a, 1998b, 1999, 2000; Woolcock and Narayan 2000; Narayan 1995, 1997, 1998, 1999; and Narayan and Cassidy, 1999) as well as institutions (World Bank, OECD). All the above-mentioned authors show the potential of the concept of social capital for understanding differences in economic growth among nations and in success among individuals. Social capital arises from interconnections among institutions and individuals and, although intangible, contributes to improvement of

a state's global competitiveness more effectively than one might think. Lyon (2005) represents the concept with a simple extension of the standard production function:

$$Y_{it} = F(K_{it}, L_{it}, S_i, A_{it}),$$

where Y , K , L , S and A are, respectively, value-added, capital, labor, social capital, and the productivity measure. All variables except S are subscripted by both i and t to indicate that they vary with region i and time t ; social capital alone is assumed not to change over time and varies only by region (Lyon, 2005). In this study, social capital thus becomes an essential factor of production.

This productive nature of capital and its influence on other types of capital, such as human and cultural capital (Teachman, Paasch, & Carver, 1997, Coleman, 1988), were introduced by Coleman (1990). Compared with Bourdieu, who is responsible for bringing the concept and term social capital to present-day discussions, Coleman was the first to extend the analysis from individuals to other entities, including non-elite groups (Schuller, Stephen, & John 2000). He also started to analyze empirically relationships among such entities and to formulate assessment indicators (Schuller et al., 2000).

Robert Putnam widened the analysis of social capital studies and popularized the concept of social capital through a study of civic engagement in Italy (Boggs, 2001). The author of "In Making Democracy Work" (Putnam, Leonardi, & Nanetti, 1993). broadened the analysis to one represented by communities and regions and then analyzed the differences, in terms of social capital presence, among regions in the north and south of Italy.

Therefore, the economic literature has been divided by two theoretical approaches to the definition of social capital. The first approach defines social capital as mostly an attribute of an individual, i.e., as a person's potential to activate and effectively mobilize a network of social connections based on mutual recognition of proximity (in a social space) and maintained by symbolic and material exchanges (Bourdieu). The second approach defines social capital as an attribute of a society, as the quality of networks and relationships enabling individuals to cooperate and act collectively (Putnam). Within this framework, social capital is based on the trustworthiness of public and political institutions that establish and uphold the rule of law, making all kinds of exchanges transparent and safe. For these reasons, social capital facilitates achievement of higher levels of efficiency and productivity in society (Mateju, 2002, Leonardi, 1995, Day, 2002, Alridge et al., 2002). Following this framework, this study shows that public policies play a fundamental role in fostering social capital development and consequently, through it, economic development. In particular, public policies produce two kinds of social capital: structural and cognitive. The former facilitates information sharing, collective action and decision-making through established roles, social networks and other social structures supplemented by rules, procedures and precedents. As such, it is a relatively objective and externally observable construct (Grootaert & van Bastelaer, 2001). The latter refers to shared norms, values, trust, attitudes and beliefs. It is therefore a more subjective and intangible concept (Uphoff, 2000).

The literature distinguishes through synthesis two fundamental groups of elements that foster social capital development: on one hand, networks and social structures; on the other hand, shared norms, values, trust and beliefs. It follows that the wider the network and more solid the trust, the greater the benefit in terms of social capital increase. Thus, this study's purpose is to make explicit the network links among state, enterprises and families through the use of SNA and to build a model simulating the impact of policies constituting the state's organizational and legal framework on social institutions' reciprocal trust, which is the second element of social capital.

2. The Dynamic Problem

The present study aims to provide a method to assess the impact of the Italian state's organizational and legal framework on social capital development, thus extending, as mentioned in the introduction, the previous system dynamics model simulating the impact of this complex of public policies on enterprise performance and localization strategies. In other words, the study aims to provide evidence of the effect of a state's organizational and legal framework on trust, shared norms and values, and collaboration among social institutions, in particular enterprises and state organizations.

To this end, a first obstacle to overcome is the measurement of the links of trust among such institutions: the measurement of social capital has always been problematic since it cannot be measured directly. Moreover, different configurations of social capital (bonding, bridging, linking¹, structural and cognitive) and methodologies adopted (quantitative, comparative and qualitative) have prevented agreement on a common accepted measurement method. Even so, economic doctrine allows for the use of proxy variables in assessing the development or depletion of social capital (Krishna & Uphoff, 1999, Narayan & Pritchett 199, Brem & Rahn, 1999, Uslaner, 2001, Grootaert, 1999, Andriani & Karyampas, 2009, Putnam, 1993, Paldam & Svendsen, 2002, Knack & Keefer 1997, World bank 2008). This means to establish and analyse correlation coefficients between proxy variables and social capital. The behavior of the former can provide a plausible measure of social capital in a society.

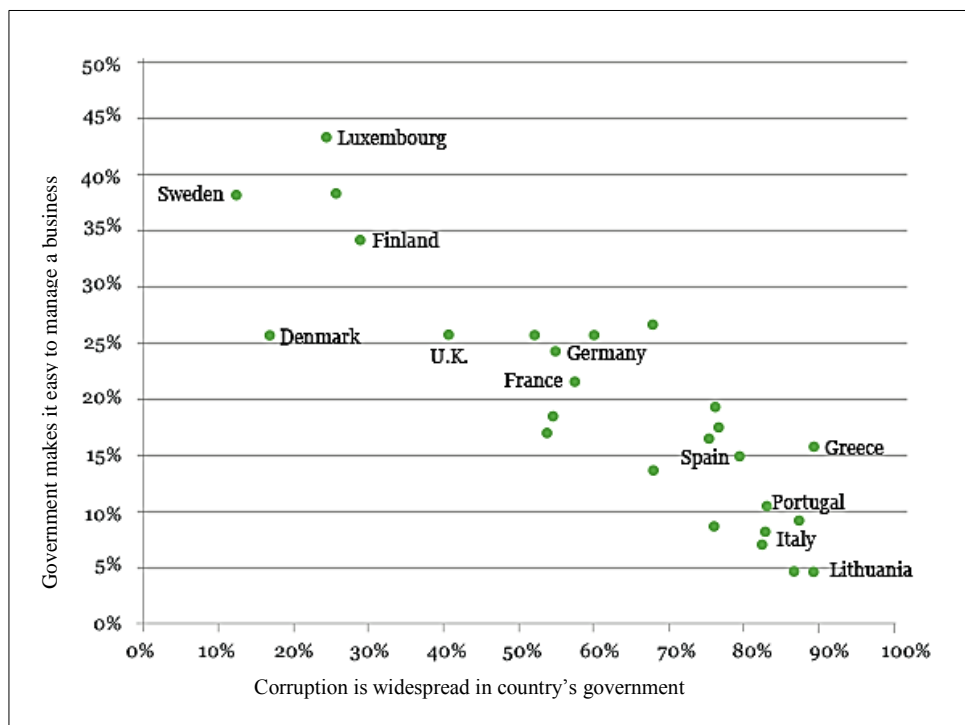


Figure 1 Perceptions of effort needed to operate a business, and government corruption in EU in 2014.
Source: Gallup 2014

An example of the functioning of proxy variables is shown in Figure 1: government corruption as well as the organizational and legal framework (ease of managing a business) may be taken as a measure of the links of trust among public institutions and economic players. The level of corruption and behavior of a state's organizational and legal framework thus may provide an estimation of social capital behavior over time. The behavior of social capital may then be used to analyse and predict the social and economic phenomena linked to the presence or absence of social capital. The example in Table 1, based on the research by the Bank of Italy (2007), analyses the tax evasion propensity depending on the quality of actions of public administrations and the rate of unemployment and other proxies of social capital.

¹ The configurations “bonding,” “bridging” and “linking” refer to social capital originating from interactions of individuals, respectively, within a social group, among similar social groups and between different society groups.

Table 1 Correlation between propensity for tax evasion, quality of public administrations facilities and unemployment rate in Italy. Source: Bank of Italy.

Item	Value	Propensity for tax evasion
Quality of PA	low	0.47
	medium	-0.04
	high	-0.43
Unemployment rate	low	-0.38
	medium	0.07
	high	0.38

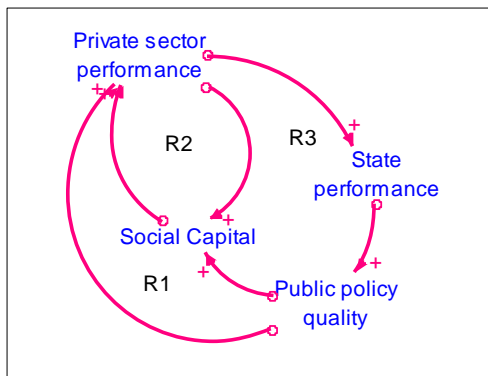


Figure 2 Dynamic problem

The dynamic problem addressed by the present work is a vicious circle whereby an inefficient state organizational and legal framework creates a drop not only in trust, shared norms and values, collaboration among enterprises, and a state’s organization (direct effect on social capital, loop R3), but also in private sector performance (loop R1). This last, in turn, produces a lower commitment of private sector (loop R2) and incentivizes it to adopt a deviating behavior to the detriment of state performance (indirect effect on social capital, loop R3). As a consequence, public policies are issued regardless of private sector examples of development (loop R3). Thus, the dynamic problem synthesized above shows how a weakening of links of trust among social institutions depletes social capital.

3. Dynamic Hypothesis

This paragraph describes the hypothesis for building a system dynamics model. It concerns the causal relationships leading to the depletion of social capital, which require specifying the variables in a state’s organizational and legal framework that influence social capital. To measure such influence, necessary for evaluating social capital, the literature distinguishes three approaches: quantitative, comparative and qualitative. The common point of these approaches is the use of proxies for social capital, i.e., of variables whose behavior may effectively represent an approximate measure of social capital (Krishna & Uphoff, 1999, Narayan & Pritchett, 1999, Whiteley, 1999, Rose, 1999, Brem & Rahn, 1999, Uslaner, 2001, Grootaert, 1999, Andriani & Karyampas, 2009, Putnam, 1993, Paldam & Svendsen, 2002, Knack & Keefer, 1997, World bank 2008).

This study, using proxies to measure variations in social capital, uses a mix of quantitative and comparative methods. The following system dynamics model is built on quantitative relationships among variables. Parameters influencing social capital development are compared with those of a pair of western European countries, i.e., the quality of a state’s organizational and legal context is assessed not in absolute terms but against a benchmark with one of Italy’s strongest competitors, as happens in reality. The

methodology adopted is based mainly on system dynamics models and marginally on SNA in that it concerns the identification of institutions in the model and the analysis of the strength of their relationships.

Table 2 Social capital dimensions included in the study

Social capital dimensions		Types	
Form	Cognitive	Structural	
Measurement method	Quantitative	Comparative	Qualitative
Methodology	Stat. Analysis	SD models	SNA

Social networks are nodes of individuals, groups, organizations and related systems that tie in one or more types of interdependencies, including shared values, visions and ideas; social contacts; kinship; conflicts; financial exchanges; trade; joint membership in organizations; and group participation in events (Serrat, 2009). SNA thus views social relationships in terms of network theory, consisting of nodes (representing individual actors within a network) and ties (representing relationships between individuals (Pineiro, 2011, D’Andrea, 2009, Carrington et al., 2005, Corbisiero, 2007, Trobia et al., 2011)). Such networks are often depicted in a social network diagram, where nodes are represented as points and ties are represented as lines, as shown in Figure 3.

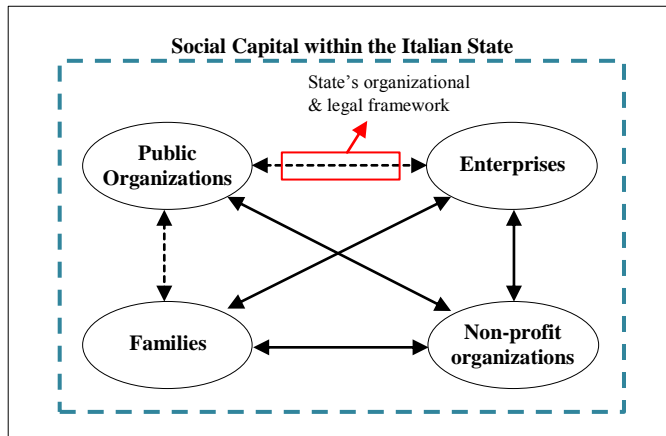


Figure 3 Representation of the network and trust among social institutions

The institutions included in this model are public organizations, enterprises and, in a marginal way, families as they are concerned with public education expenses and unemployment. Their relationships are shaped according to the state’s organizational and legal framework that represents the complexity of public policies affecting the activity of enterprises.

The hypothesis followed by the present study is that an inefficient state organizational and legal framework undoubtedly reduces enterprises’ trust in public institutions. Consequently, the phenomenon not only fosters in enterprises disappointment, but also an even lower social commitment toward collaboration on which the state can rely. Eventually, an impoverishment of networks and trust, sources of social capital, determines the depletion of such a strategic asset for the development of the Italian state.

3.1 The Stock and Flow Diagram

In the simplest structure of the stock-and-flow diagram, social capital may be represented as stock. Social capital, even if intangible, is comparable to other types of capital. The term “capital” is usually identified with tangible, durable and alienable objects, such as buildings and machines, whose accumulation can be estimated and whose worth can be assessed (Solow 2000). This definition refers to the main feature of capital, accumulation or depletion, which dictates that capital should be included in the model as a stock.

Social capital stock changes overtime at a rate given by the trust of economic player toward a state institution and policies represented by the state organizational and legal framework. If trust grows over time, the stock of structural social capital will increase; otherwise, it will decrease. As in real life, trust depends on perception of key critical items that enterprises believe are basic for their success. Such items are indicated in Table 3 below. The critical items are represented by performance gaps in organizational and legal frameworks with respect to a reference European country (Germany/Austria). In particular, such gaps concern: a) tax and bureaucracy compliance; b) authorization delays of public authorities; c) short-term loan interest rates; d) long-term loan interest rates; e) tax rates; f) time to settle commercial disputes. Such gaps are exogenous to the model, i.e., these are parameters, not endogenously determined by the model. The model also includes endogenous variables that, although some of them are not shaped as gap, influence social capital stock, such as: a) delocalization ratio²; b) unemployment ratio³; c) education expenses reduction⁴; d) bank anticipation as consequence of delays in cashing from public organizations; e) FDI inflow gap; f) bank loans gap; g) investments in R&D and machinery gaps; and h) quality and efficiency gaps.

Table 3 Performance gaps between states' organizational and legal frameworks (Italy vs. Germany/Austria, 2012)⁵

Variables' list	Units	ITALY	EU (A/D)
Interest rates on long term loans	%	6,24	3,49
Interest rate on deposit advances	%	4,86	2,56
Time to obtain authorization	days	730	80
Av. time to cash from public organiz.	days	193-269*	45
Infrastructure quality and availability	0-1	0,9	1
Tolls per km	eur	0,136	0
Fuel cost (per liter)	eur	1,76	1,50
Cost of power per MWh	eur	192	125
Av. time to settle commercial disputes	days	1210	273
Time of tax and bureaucracy compliance	days	119	70
Tax on profits	%	32**	25
Real state tax	% EV	0,01	0,005***
* In Public healthcare			
** It includes IRAP rate			
*** Extimiation			

Trust in public institutions is affected not only by the objective gaps illustrated above, but also by the perception of such gaps by the economic players themselves. The subjective perception of variables affecting trust is a well-established concept in social capital measurement models. For example, Narayan and Cassidy (2001) have included in their model the variables “subjective well-being,” “optimism about the future,” and “perceived ability to survive a crisis.” The inclusion of subjective perceptions is more reflective of reality. The identification of which gaps are perceived as more problematic has been performed according to the annual World Survey by the World Economic Forum (WEF, Schwab 2013) about the most problematic factors of doing business. In Italy's case, these problematic factors are as follows: a) tax rates, 22.5%; b) access to financing, 18.6%; c) inefficient government bureaucracy, 17.1%; d) restrictive labor

² Given by the stock of enterprises relocated out of Italian enterprise stock, the variable is endogenously generated by the previous model simulating the delocalization of Italian enterprises following an inefficient organizational and legal framework.

³ Given by the unemployment caused by delocalization, endogenously determined by the previous model, out of the number of people unemployed in Italy in January 2014 (Istat, 2014).

⁴ Given by the loss in Italian public finances following delocalization, endogenously determined by the previous model, multiplied by the public education expenses rate out of total public expenditures in 2012.

⁵ Variables parameters have been collected from the following sources: AdnKronos, 2012, CGIA Mestre, 2012, Confartigianato, 2012, Confindustria, 2012, Deloitte, 2012, PriceWaterhouse & Coopers, 2013.

regulations, 9.3%; e) tax regulations, 7.9%; f) policy instability, 6.6%; g) corruption, 6.5%; h) inadequate supply of infrastructure, 5.3%; i) insufficient capacity to innovate, 3.2%; j) crime and theft, 1.6%; and k) inadequately educated workforce. 0.6%.

The last step in assessing the influence of key critical factors on social capital concerns their correlation with social capital development. A study conducted by the Bank of Italy’s research center in 2007 shows the following correlation coefficient among the quality of public administrations facilities, unemployment and social capital. The study thus shows a strong correlation among the aforementioned key critical factors (Cannari & D’Alessio, 2007).

Table 4 Correlation coefficients among social capital, quality of public administration facilities and unemployment

	Social Capital	Quality of PA facilities	Unemployment
Social Capital	1,00	0,85	-0,81
Quality of PA facilities	0,85	1,00	-0,83
Unemployment	-0,81	-0,83	1,00

Source: re-adaptation from Bank of Italy (2007)

Therefore, the influence of key critical factors on social capital development has been set according to Figure 4. Their influence on social capital is thus determined as follows:

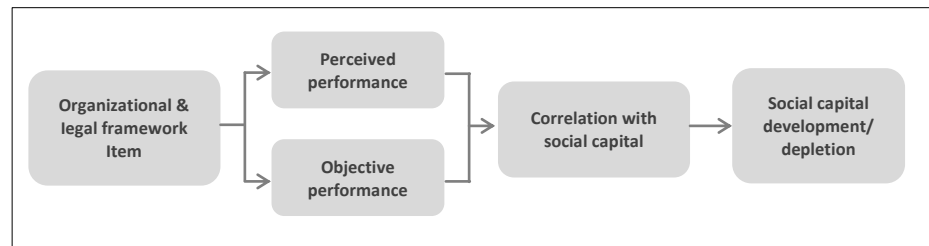


Figure 4 Scheme for assessing influence of key critical items on social capital

- a) the objective performance of gap is calculated as a ratio whose variation has a linear influence on social capital;
- b) the subjective perception acts a multiplier of the previous ratio; when the gap is identified among the most problematic factors of doing business in Italy, its perceived influence is high;
- c) when the correlation coefficient is strong as shown in Figure 4, the variables listed above can be employed effectively as proxies of social capital.

In synthesis, the influence of the key critical factors affecting social capital is calculated by the following expression:

$$SCVR = \Sigma (OP * SP * C)/n$$

where:

- a) SCRV is the social capital variation rate;
- b) OP is the objective performance of variables illustrated above;
- c) SP is the subjective perception of variable performance according to the most problematic factors of doing business in Italy (WEF, 2013);
- d) C is the correlation between the gap and the social capital development;
- e) n is the number of variables affecting social capital.

3.2 Extension of the Previous Model

The model represented in Figure 5 explains how social capital is influenced by the efficiency of a state's organizational and legal framework, but alone it does not give evidence of the effect of the loops illustrated in Figure 2 (dynamic problem), i.e., of the effect of a drop in social capital on the behavior of private and public institutions. To do so, as mentioned in the introduction, this model should be analyzed as an extension of the previous model published in this review (Issue 1, 2014, pp. 43-58). The previous model explains the effect that Italy's state organizational and legal framework has on enterprise localization strategies and, consequently, on state financial performance. The present model allows the earlier one to include the effects of a state's organizational and legal framework on social capital. The drop of social capital "amplify" the incentives to the adoption of deviant behaviors of economic player and their relocation abroad. At the end, the model simulates the financial damage on a state organization due to enterprise behavior. The full model is shown in Appendix A.

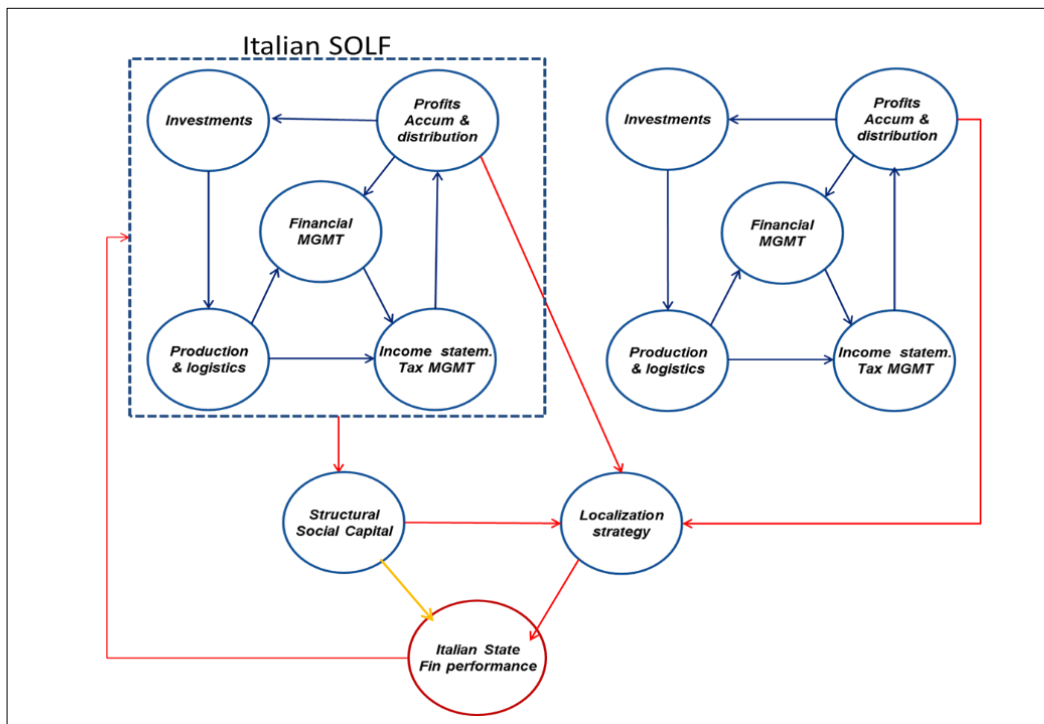


Figure 6 Scheme of the extension of the previous model

4. Model Analysis

Model analysis consists mainly of seven tests (Sterman, 2000) as mentioned below:

- 1) Unit consistency test: a model that has inconsistent units is usually not only unreliable but also worthless (Sterman, 2000);
- 2) Face validity test: model must reflect how things work in reality;
- 3) Equilibrium shock test: it identifies and fixes incorrect equations;
- 4) Extreme conditions test: by setting parameters to extreme conditions, it seeks to identify and fix wrong or incomplete equations;
- 5) Reference mode comparison test: this checks the correspondence of simulated variable's behaviour to the one recorded in reality over a determinate period of time;
- 6) Parameter sensitivity test: it evaluates model response to parameters' variation;
- 7) Structure-behavior test: it shows how each feedback loop operates, creating endogenous variation of the model's stocks;

The present work describes only the face validity and structure-behaviour tests as they illustrate how the model works and how single variables affect social capital stock behavior.

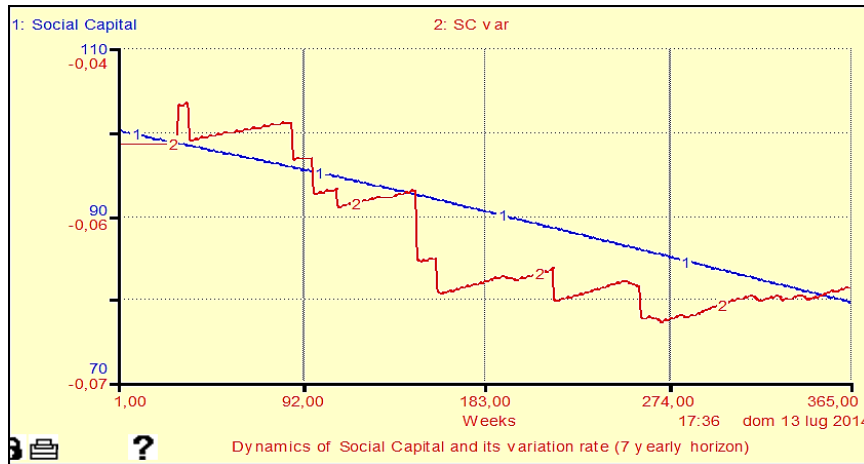


Figure 7 Social capital stock and variation rate (7-year horizon)

In the face validity test, as illustrated in Figure 7, the complex of public policies constituting the organizational and legal framework leads to social capital depletion. The variation rate change over time according to those variables endogenously determined by the model are: a) FDI inflow; b) delocalization ratio; c) unemployment ratio; d) education expense reduction; e) bank loan gap; f) investments in intangibles gap; g) investments in plant and machinery gap; h) quality gap; and i) efficiency gap.

Regarding social capital stock, the model simulates over time its decrease in absolute value due to a negative variation rate. The social capital stock behavior follows the type “exponential decay” for a declining impact of its variation rate on decreasing stock. In case of a positive variation rate, the social capital curve is shaped according to the type “exponential growth.”

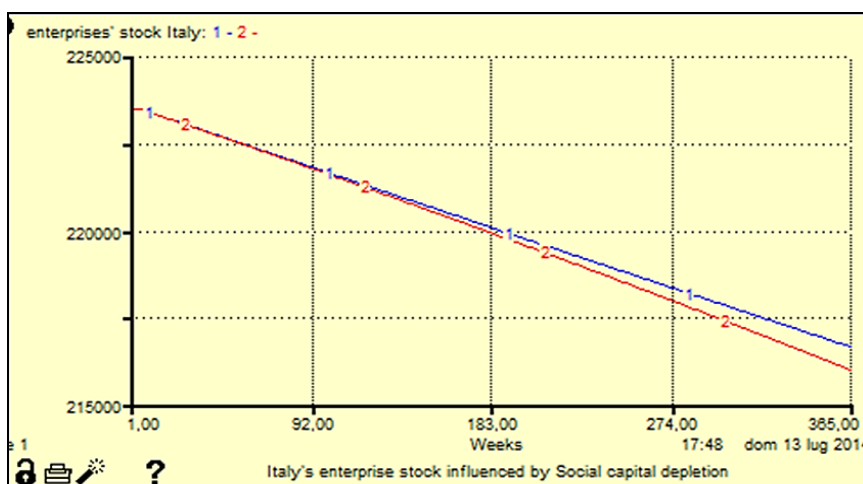


Figure 8 Effects of social capital drop on enterprise delocalization

In the structure-behaviour test, the effects of social capital stock variation on model loops are analyzed. In particular, with regards to the loop R2 in Figure 2, Figure 8 shows the impact on delocalization due to social capital drop. This is equal to the difference of the value of the two curves and is due, as illustrated in Figure 9, to a drop of the links of trust among state and private institutions that act as pressure to relocate abroad.

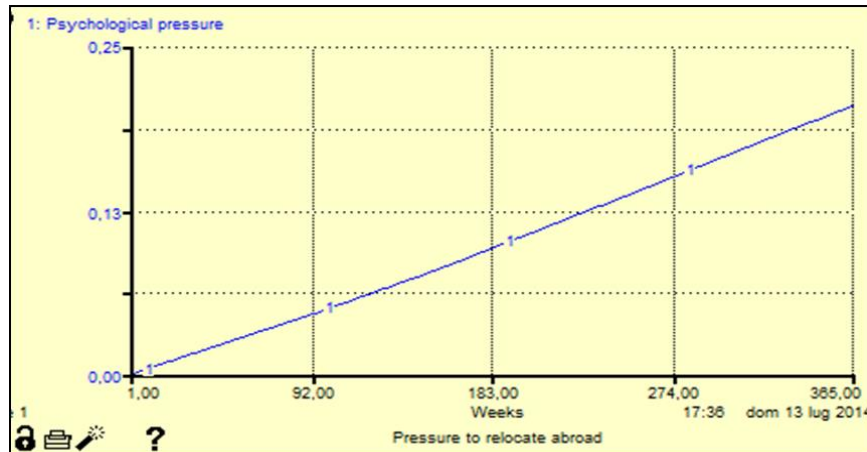


Figure 9 Effect of social capital drop on the motivation to relocate abroad

A relocation of enterprises abroad as well as their deviant behavior become a cause of poorer state accounts (loop R3). As a countermeasure, the state increases fiscal pressure and adopts aggressive and, in some cases, predatory measures to balance national accounts. By doing so, the state reiterates loop R3, causing a further drop in social capital.

5. Policy Design

An inefficient organizational and legal framework undoubtedly reduces, as shown in model analysis, the reciprocal trust among social institutions. Such complex policies not only foster in enterprises disappointment toward public institutions, but in turn produce an even lower social commitment and honesty among enterprises on which a state can rely. Eventually, an impoverishment of networks and trust, both proxies of social capital, determines the depletion of such strategic assets for the development of the Italian state. Instead, effective public policies resulting in an efficient organizational and legal framework produce a positive reflection in term of social capital development. Good public management, services and transparency foster in individuals their social commitment, honesty and a solid trust toward public institutions and, therefore, the development of the social capital in society. The policy design thus performs according to this consideration.

For this purpose, once again the model is invoked to give a measure of evaluation of public policies in terms of social capital. The following table (Table 5) shows the parameters of some policies that the Italian state could be ready to implement to improve its legal and organizational framework.

Thusly, the policies recommended consist of:

- a) Increasing competition in capital markets and utilities;
- b) Increasing efficiency of payments due by public organizations, as well as ensuring brief times and transparency in obtaining authorizations from public authorities;
- c) Guaranteeing short times for the settlement of commercial disputes, and simplification of enterprise tax and administrative compliance;
- d) Improving the functioning and the endowment of infrastructures to benefit enterprise productivity.

The model simulation specifically excludes a change in the current tax leverage in order not to sacrifice in the short term the amount of tax revenue that the state needs for its institutions (although a reduction of excessive general administrative expenses may allow for lower tax rates).

Table 5 lists the policy adopted and their parameters according to Table 3. The last, compared with the former, is integrated with two additional columns indicating those policies adopted and, consequently, the new parameters concerning the legal and organizational framework. These last has been set to the average level of Italy’s neighbouring countries (Austria and Germany).

Table 5 Specification of policies adopted and their parameters

Variables' list	Units	ITALY	EU (A/D)	Policy switch	Policy's param.
Interest rates on long term loans	%	6,24	3,49	Yes	3,3
Interest rate on deposit advances	%	4,86	2,56	Yes	2,4
Time to obtain authorization	days	730	80	Yes	60
Av. time to cash from public organiz.	days	193-269*	45	Yes	40
Infrastructure quality and availability	0-1	0,9	1	Yes	1
Tolls per km	eur	0,136	0	No	
Fuel cost (per liter)	eur	1,76	1,50	No	
Cost of power per MWh	eur	192	125	Yes	125
Av. time to settle commercial disputes	days	1210	273	Yes	180
Time of tax and bureaucracy compliance	days	119	70	Yes	50
Tax on profits	%	32**	25	No	
Real state tax	% EV	0,01	0,005***	No	
* In Public healthcare					
** It includes IRAP rate					
*** Extimtion					

Figures 10 to 13 illustrate policy results in terms of social capital, behaviour of market players and state performance.

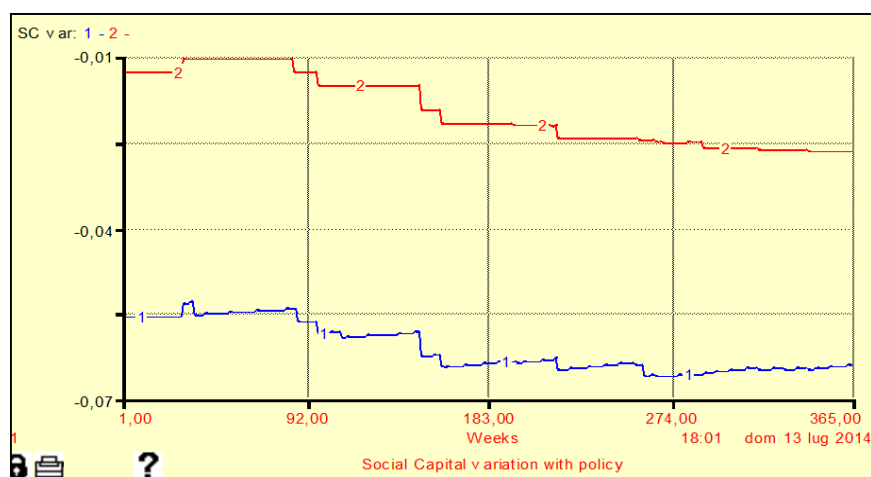


Figure 10 Social capital variation rate with policy (red curve)

Figure 10 shows that an improvement of the Italian state organizational and legal framework reduces the objective gaps influencing the decrease in social capital. Policy performance in terms of social capital variation rate is shown by the red curve. Its behaviour is determined by the model’s endogenous variables.

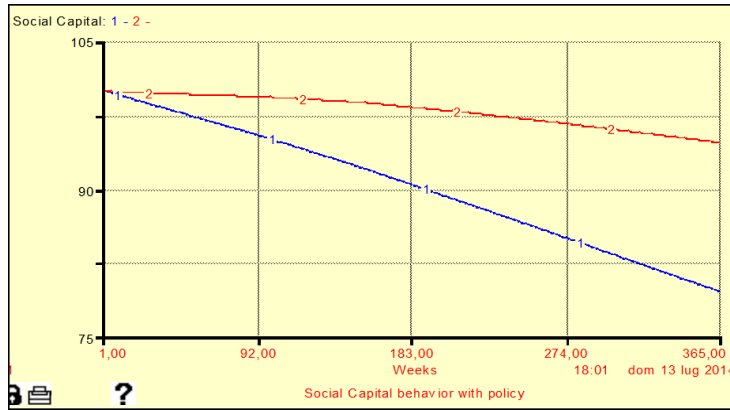


Figure 11 Social capital behavior with policy (red curve)

A lower negative variation rate affects social capital behaviour. In Figure 11, social capital, through implementation of the policy, decreases just six points over seven years (red curve), compared with a drop of 20 points if maintaining the status quo.

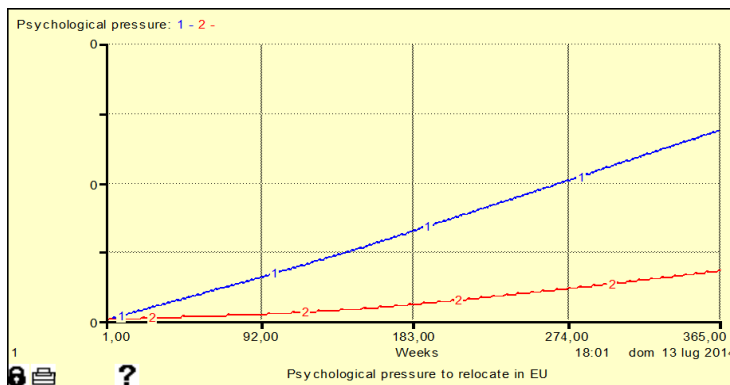


Figure 12 Impact of policy on motivation to relocate (red curve)

Such performance of social capital, through activation of loop R2 seen in Figure 2, influences positively the behaviour of market players by reducing their opportunistic behaviour and weakening their reasons to relocate abroad as illustrated in Figure 12 (red curve).

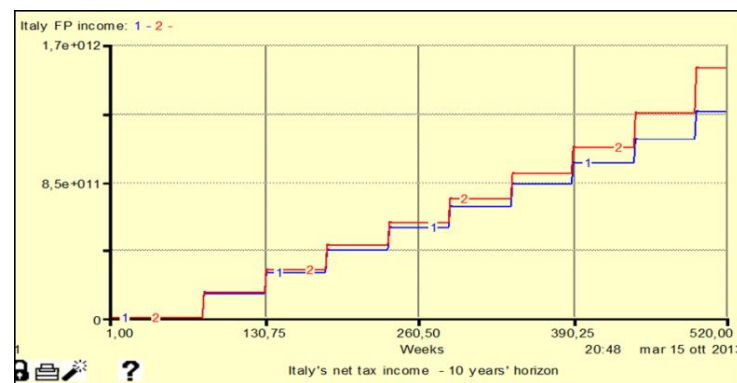


Figure 13 Impact of policy on state financial performance (red curve)

Eventually through activation of loop R3 as seen in Figure 2, the reduction of the phenomena of relocation and opportunistic behaviour of market players increases financial resources for a state's organization. In Italy's case, as shown in Figure 13 over a 10-year horizon, the positive impact on a state organization is represented by additional 274 billion euros in public receipts (red curve) at a constant tax leverage.

6. Conclusions

The state's organizational and legal framework undoubtedly plays an important role in directly shaping the economic performance and behaviour of private institutions. This study shows also the existence of indirect effects on private institutions due to the mean of social capital. In other words, an additional part of private and public institutions performance (since they are strictly connected) relies on reciprocal trust, shared norms and values. Social capital acts as an amplifying factor of performance by the institutions involved in a network, both in cases of positive and negative performances, as seen in the case developed in the present research.

This study may also fill a gap in the social capital literature, which so far has been more successful at documenting the beneficial impact of social capital rather than deriving policy prescriptions and relative tools to policy makers, although analytical tools are already sufficiently developed for this purpose. Therefore, the present research may represent a first attempt to evaluate the complex of public policies in term of social capital development. This has been done essentially with objectively measurable policy results as social capital proxies. The building of a system dynamics methodology has also demonstrated the possibility to simulate the development of social capital in line with public policy design. Including such information in policy design, the introduction of system dynamics models such as Decision Support System may effectively lead not only to develop and select policy alternatives producing best results in terms of social capital development, but also to replace public bureaucratic management models with performance management systems and provide major accountability in the public sector (Bianchi, 2010).

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Appendix A Previous model including the present one on social capital (framed in the dotted line)

