The rediscovery of industrial policy: to return to growth

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This essay argues that a strong, modern industrial policy is an essential element of the array of economic policies necessary for a resumption of growth in Italy, which has shown less ability than other countries to flank traditional industrial strengths with productive activities based on new skills. But just how useful can industrial policy be? In an international context that has changed significantly in recent years, the other advanced countries have launched appreciable industrial policy measures. The essay points out the policy failures and underscores the pitfalls to be avoided. Nevertheless, it contends that industrial policy can be used to cope with major market failures, particularly in research, the production of knowledge and the coordination of investment. Finally, it identifies four priorities for Italy: fostering new enterprises; supporting innovation, including through public demand; removing the obstacles to firms’ scaling up; and coordinating industrial policy with territorial and urban development policies.

Introduction, summary and conclusions

This essay argues that a strong, modern industrial policy is an essential element of the battery of economic policies necessary for a resumption of growth in Italy.

The paper is organized as follows. Section 1 summarizes Italy’s “industrial problem”, which industrial policy should help to solve. That problem does not lie in the structural difference of Italian manufacturing with respect to other models, but in its dynamic in the last twenty years. More than other countries, Italy is suffering from the repercussions of the powerful ascent in world markets of new manufacturing countries. Italian firms have lost substantial market shares to these new contenders but have nonetheless shown a considerable, at times
surprising, ability to resist and reposition themselves. At the same time, Italy has been less successful than other countries in flanking traditional industrial strengths with new productive activities based on new skills. Too many Italian firms are undersized, investing very little in acquiring and above all in creating and utilizing new knowledge. Too few small enterprises become mid-sized and too few mid-sized ones become large by pursuing innovation-based growth strategies. At the same time, the birth rate of innovative enterprises is very low.

But just how important can industrial policy be today in addressing these problems? Section 2 briefly summarizes its history: after some very significant experiences with a record of mixed results, from the 1980s economic policymakers' interest and action in the sphere of industrial policy dwindled steadily. However, the last few years, with the great financial and economic crisis, have seen a sharp reversal of this trend. A serious debate is under way and major policy interventions are being carried out in nearly all the advanced countries (except Italy) and in the emerging countries.

Section 3 seeks to clarify what industrial policy could mean today: measures aimed explicitly and directly at fostering the transformation of the productive economy by accompanying and reinforcing virtuous market-based dynamics. And to clarify what industrial policy cannot be: a set of objectives and tools valid in all historical periods and countries (on the contrary, it can only be designed starting out from well-defined historical and institutional circumstances and must accordingly differ according to time and place); or an all-powerful instrument (it cannot mould a productive economy but can only attempt to aid its evolution); or the sole policy to assist the transformation of productive systems (on the contrary, it must be coordinated with a vast set of “industry-by-industry” policies).

Section 4 develops the argument that industrial policy can be used to address important market failures, particularly in research and the production of knowledge and in the coordination of investment, failures which are difficult to pinpoint and for which reliable remedies do not exist. Consequently, the manner is just as important as the substance of intervention: industrial policy must be framed as a laborious process of discovery (Rodrik 2007) through which policymakers, mobilizing the knowledge possessed by the private sector, seek to implement measures for business, continually monitoring and evaluating their
effects and making adjustments as needed. Past experience highlights a number of possible policy errors that must be avoided.

Section 5 concludes by setting out four priorities for an Italian industrial policy agenda: fostering the birth of new enterprises; supporting innovations, including by way of public demand; removing the obstacles to firms’ scaling up, obstacles bearing on knowledge, human capital and financing capacity; and coordinating industrial policy with territorial and urban development policies. It concludes with some brief remarks on the issue of public ownership of enterprises.

1. Italy’s industrial problem

Italy has an evident problem of economic growth. It was evident even before the international crisis, with Italy’s growth rate considerably underperforming the European average for a decade. And it has remained evident during the crisis, with the recession longer and deeper in Italy than elsewhere, compounding the economy’s structural difficulties with persistently weak domestic demand. These difficulties spring from a multiplicity of factors – economic but also political and institutional. In a university lecture, Mario Draghi (2010) warned the country of the possibility of a general decline like that experienced by the Italian states beginning in the seventeenth century, which saw per capita output stagnate for two hundred years. He retraced its causes, citing Cipolla (1995) and underscoring the worrisome analogies with the current situation.

There are, to be sure, strictly economic factors at work. The debate in Italy highlights, among other issues, the presence of vast areas of rent in the economy, the poor quality of many fundamental collective goods and services and many infrastructures, the subpar public administration, the persistence of pronounced geographical disparities, and the high level of taxation and of tax evasion.

While this paper does not deny the importance of these and other factors, it will focus on Italy’s industrial problem. In a country structurally dependent on imports of energy and raw materials, manufacturing was long the main engine of economic growth, and it remains the core economic activity to this day: its value added exceeds €250 billion, contributing just under 20 per cent of the total, second only to Germany among the European countries. In Europe, manufacturing generates 80 per cent of exports and of private spending on research and development (in Italy, 80 and 70 per cent respectively); for every 100 jobs created
in industry, between 60 and 200 are created in the rest of the economy (Accetturo et al. 2013; European Commission 2012); in the United States, every new job in technologically advanced manufacturing and services generates up to five more in the rest of the economy (Moretti 2013). Indeed, alongside manufacturing in the strict sense we have increasingly important areas in which manufacturing and services (e.g. software) are superimposed. Conceptually, the resulting field encompasses the aggregate of goods (and services) to be sold on both the domestic market and abroad, capable of generating innovation that then spreads in the economy, employing skilled labour, and generating demand for additional services (and hence employment) in the economy.

Since the turn of the century the weakening of Italy’s manufacturing sector has become steadily more apparent. This industrial problem is linked to the scale of manufacturing activity, its ability to produce innovation, to generate exports, to stimulate job creation in the constellation of services. A few numbers will suffice to illustrate the point: in 2008, even before the crisis hit, Italy produced scarcely 600,000 cars, 15 million electrical household appliances and 200 million pairs of shoes, compared with 1.6 million cars, 25 million appliances and 450 million pairs of shoes in 1997 (Accetturo et al. 2013).

The ability to preserve a large, competitive industrial sector depends on its transformation and on the continual development of new products and specializations (Imbs and Wacziarg 2003). Industrial competitiveness is a dynamic phenomenon. It is always hindered by the ascent of competitors or by the weakness of relative demand for established specializations; it is always fostered by the ability to create new products that can intercept new demand and new needs, to apply new knowledge and technologies, thanks to the emergence or strengthening of especially competitive firms (Altomonte et al. 2012). New products can create scope for cross-fertilization between different activities; they reduce risk by diversifying the product portfolio. Italy’s industrial problem “reflects the difficulty of adapting to the sweeping changes in the international economic environment in the last two decades” (Accetturo et al. 2013). Italian manufacturing demonstrates some ability to maintain its acquired positions in its traditional sectors of specialization. This goes both for “made in Italy” consumer goods, despite extraordinary competition from the newly industrialized countries and the international reorganization of these products into global value chains, and
especially for specialized machinery and equipment. At the same time, Italian manufacturing has plainly been unable to develop new products and specializations. Its model displays extraordinary persistence (Lanza and Quintieri 2007). And this is not good news. By now the causes of this situation are well known. They lie in a number of interconnected characteristics of Italian industry: its low propensity to innovate, apparent from a multiplicity of data (Bugamelli et al. 2012); the minute number of firms able to bulk up and become medium-sized or large corporations (Accetturo et al. 2012; Bugamelli et al. 2012). What matters is not average firm size in itself, but the fact that very few small businesses attain larger size through successful competition (Onida 2004, Altomonte et al. 2012) and thus manage to exploit scale economies of various kinds and dynamic learning economies or to reach new markets with high barriers and fixed entry costs. Knowledge largely continues to penetrate Italian firms primarily in the form of capital goods, as in the period when large-scale investment in process innovation enabled Italian companies to increase productivity and capacity (Onida 1985), and internal knowledge continues to arise from incremental, informal processes. The acquisition of outside knowledge incorporated in human capital or in intangible goods and services and the development of knowledge internally through formalized processes of R&D are relatively less important.

In the Italian industrial system an inordinately large role is played by small firms with a low level of human capital (gauged by the percentage of university graduates in their workforce), under family ownership and management and with a modest ability to finance and carry out risky innovation (Accetturo et al. 2013). Limited size and low capacity for innovation are two sides of the same coin. In addition, Italian industry is characterized by diffuse entrepreneurship (a large number of firms in relation to the population) and by the high business birth rate and turnover, which have historically tempered it by constantly creating strong domestic competitive pressure, especially in the industrial clusters or districts. At the same time, however, the birth rate of businesses is chiefly the result of emulation. Most new firms are similar, if not identical, to those already in being; fewer are “innovative”, substantially different.

The Italian industrial landscape has not lacked interesting developments in the past few years: from the strengthening of the “mittelstand”, to the emergence of strategies of “correlated diversification” and the firms’ demonstrated ability
to become links of large international value chains (Brandolini and Bugamelli 2009; Accetturo; Giunta and Rossi 2001; Arrighetti and Traù 2012). But these positive trends do not alter the terms of the industrial problem, now exacerbated by the crisis, which has swept away many businesses and severely undermined the country’s productive potential (CSC 2012). The risk is that Italy will experience only the first phase of the process of creative destruction typical of great periods of economic transformation and so emerge with its industrial capacity and thus its overall welfare reduced.

In this situation, as at other turning-points in Italy’s economic history, particularly the Age of Giolitti at the beginning of the twentieth century and again after the Second World War, a strong industrial policy is indispensable.

2. The return of industrial policy, but not in Italy

Government action to promote and steer structural transformation of the economy, particularly in the manufacturing sector, has a long history. From the mid-nineteenth century on it was a feature of the industrial development of all the Western countries, notably the United States and Germany (Chang 2002). A wide array of instruments were used, from protectionism to measures to promote domestic firms (e.g. regulation and public spending) to the acquisition of technologies abroad and support for research.

After the Second World War, European countries pursued explicit industrial policy strategies, on the premise that their industrialization and growth could not rely on market forces alone and that the state must therefore assume a direct role of coordination and intervention. In Britain, France and Italy, public intervention in the economy was widespread and made use of state-owned corporations, demand policy, and measures to support innovation by private companies and for the geographical diffusion of industry. Germany, in the aftermath of the war, instituted a somewhat different model, but one nonetheless characterized by significant intervention at both federal and regional level (Owen 2012). All the large European countries sought to foster the scaling-up of their leading firms and create “national champions” particularly in fields of production with high fixed investment costs; to stimulate the entry of public and private firms in “vanguard” technological sectors such as electronics, telecommunications and aerospace. Industrial policies often had a clear sectoral dimension, and industrial and technological considera-
tions were often part of broader national security strategies encompassing both defence and energy. In public opinion and in politics there was a broad consensus on the need to guide industrial and economic development, and even conservative political parties subscribed to this view. We find a similar pattern in Japan, where the primary agent of intervention was the Ministry of International Trade and Industry, and even in the United States, where government contracts and support for large-scale research projects were used; let us not forget that the public sector accounted for between half and two thirds of total American R&D spending in the post-war years (Lin and Monga 2010). Leaving the Soviet bloc aside, many countries of what was then called the Third World implemented policies, partly based on import deterrence, to support the development of native industry.

It is hard indeed to draw a balance of these interventions. The results varied greatly from country to country, sector to sector, firm to firm. Certainly, they fell short of expectations; in many cases, the positive role of new entrants and lively domestic competition in industrial development was underestimated and the importance of large leader companies overestimated (Owen 2012). Yet, there is no lack of success stories (Lin and Monga 2010, Stiglitz and Lin 2013), especially when account is taken of these measures’ indirect effects on the entire economy. More than a few of the more competitive companies active today in Europe, from Rolls-Royce (British Aerospace) to Volkswagen, from Aventis to Finmeccanica (Alenia), benefited from appreciable public initiatives back then; indeed, it is difficult to tell whether they would have attained their present competitiveness without them.

The crisis of the 1970s, with the upwelling of economic instability and certain evident, significant failures, brought a general change of course in policy. In the United Kingdom, the previous approaches were completely overturned. In France, the turnaround coincided with a dramatic change of stance on the part of the Socialist governments of the early 1980s; in Italy it came later, at the start of the 1990s, but when it did come it was clear-cut. The change was more nuanced, instead, in the United States, Japan and Germany. The role of the Community institutions expanded appreciably, both in promoting competition and fighting monopoly and in directing attention and resources towards measures of a horizontal nature. From the 1980s to the middle of the past decade, the European Union countries’ total state aid to firms fell from about 2 to 0.4 per cent of the
Union’s GDP (European Commission 2013); in Italy the decline was even steeper, to a level considerably below the European average (Cerosimo and Viesti 2013b). The spotlight was turned on government failures and policy failures that created scope for rent and squandered public resources. Emphasis was placed on the beneficent effects of competition for industrial and technological development, including the virtues of opening up to foreign firms and products. In the policy debate, there were many cases (Britain again offers the extreme example) of an overturning of past positions: even in the “progressive” camp many came out for drastic curbs on public intervention, especially in matters of industrial policy, and for liberalizations and privatizations. The rules of what would come to be called the Washington Consensus gained acceptance; many countries turned to policy approaches more friendly to market forces and hostile to direct public intervention. Nevertheless, the success of the emerging Asian economies sparked lively debate between the champions of the free market and free trade and those who underscored the pervasive industrial policy ingredients of that success first and foremost in Korea and China.

In the past few years industrial policy has come powerfully to the fore again in many countries of the world – excluding Italy, of course – and in the leading international organizations, from the World Bank to the OECD (Aghion et al. 2011; Wade 2012; OECD Development Centre 2013; Stiglitz and Lin 2013). The crisis has called into question whether market mechanisms alone can ensure the financing of economic activities required to sustain growth. In many countries it has spotlighted structural imbalances that must be corrected (most glaringly in the case of the euro-area countries of southern Europe: Viesti 2013b) and the simultaneous, ever more decided global ascent of the Asian economies. This is no merely academic debate. Since 2008-09 there has been a sudden return to massive public intervention for economic stabilization and equally strong public measures to stimulate industrial recovery. No doubt the most powerfully symbolic signal came from the United States, where the Obama administration, under the Troubled Asset Relief Program (TARP), temporarily nationalized two leading carmakers, General Motors and Chrysler, with an intervention worth some $80 billion (CSC 2012). Nor was this an isolated case. In the United States, provision was made for direct interventions in energy technologies under the American Recovery and Reinvestment Act of 2009, a new national strategy of
innovation was launched in 2011, and in 2013 President Obama announced a significant intervention regarding “manufacturing hubs” (Stiglitz, Lin and Monga 2013). Japan drafted a new national industrial policy plan. Partly in the wake of the Beffa Report (2005), France instituted a Strategic Investment Fund in 2008 (CSC 2012) and a programme on priority technologies in 2013. Finland and the Netherlands have launched new policies for business and innovation, and even the United Kingdom has adopted some measures (Warwick 2013). Under the Temporary Framework (2008-2011), the European Commission waived the ban on state aid for 73 programmes in all the member countries for €4.8 billion, concentrated in the automotive sector (European Commission 2013). With its recent communications, the Commission has undertaken an interesting strategy review, indicating instruments such as “green public procurement” and sectoral priorities (European Commission 2010 and 2012); these documents show that the border between “horizontal” and “vertical-sectoral” industrial policies is not so clear-cut (Stiglitz, Lin and Monga 2013). The European Union has set itself the explicit goal of increasing the weight of manufacturing in the total economy. Industrial policies continue to play a significant role in the main emerging countries: not only in China, under its twelfth five-year plan (2011-2015), but also in Brazil, with the 2011 Plano Brasil Maior, in India, with its 2012 industrial development plan, and in such countries as Korea, South Africa, Malaysia, Morocco, Chile and Turkey (OECD Development Centre 2013, Warwick 2013).

Very little has happened in Italy (Onida 2013, Viesti 2013a). The only industrial policy project of significant scale, the Industry 2015 programme, has gradually been emptied of contents and resources. Government action has been improvised, dealing case by case with the situation of specific companies, from Parmalat to Alitalia, with no general framework or common rules. The debate languishes; indeed, it is dominated by the misconception that Italy has a raft of industrial policy measures (Cerosimo and Viesti 2013b) which need to be scaled back as a budget measure. The view that a further reduction of public intervention would be useful is put forward vociferously by its proponents, as if they were still in the political and intellectual environment of thirty years ago. Both the interesting international context and the specific Italian situation thus offer an occasion for revisiting Italy’s industrial problem and the question of what a strong, modern industrial policy can do and what it cannot.
3. What do we mean by industrial policy?

When we say a “strong” industrial policy, we mean actions designed explicitly and directly to foster the transformation of the productive economy, the creation that must accompany destruction in the normal course of things. We may attempt here to clarify what we mean without engaging in a complex and what has often proved sterile definitional debate (Cohen 2006, Pack and Saggi 2006, Naudé 2010, Warwick 2013). Industrial policy means public intervention for structural change in the business sector different (or more intense) than that which would occur in their absence. We have, then, a purpose (structural change), an object (the business sector or parts of it), a logic (to accelerate or modify spontaneous patterns of transformation).

But to avoid misunderstandings, a number of points need clarification. First, unlike other public policies, industrial policy does not refer to an abstract model (Rodrik 2007), with well-defined policy objectives and instruments. It necessarily varies according to time and specific geographical context. To assert the usefulness of an industrial policy today in Italy is not to turn back to advocating the great objectives that our country set for itself in a now distant past: from the first wave of industrialization to the rescue of the industrial apparatus; from the development of major basic industries to entry into technologically advanced sectors. Nor does it mean invoking the use of a battery of policy tools, from massive state ownership of enterprises to the award of public procurement contracts on a national basis, typical of an older historical era and, for that matter, utterly inconsistent with the rules of the single European market and with Italian and European competition policies. Nor, lastly, does it mean borrowing procedures and tools from other countries’ more or less recent experience. It means designing objectives and tools for today’s Italy.

Second, industrial policy is not all-powerful, especially in today’s world. Compared with the past, it has a much more limited toolkit; it is the fruit of action by nation-states which, at least in Europe, are subject to limits and constraints adopted voluntarily in the process of European integration. Public action can try to condition, foster, guide the paths of structural transformation, but its objective cannot be to determine those paths with certainty or even to plan them. The industrial development of a country is always largely the result of spontaneous dynamics in markets, business and technology, which react under conditions of
acute uncertainty to a multiplicity of stimuli and incentives. The right question is not whether an industrial policy can redesign or relaunch an entire productive system, but if and how it can assist or accelerate some evolutionary processes. The question, that is, is not whether there should be an industrial policy, but how best to realize it (Rodrik 2007; Stiglitz, Lin and Monga 2013).

Finally, industrial policy is certainly not the sole means of public intervention to spur positive transformations of the productive system. The development of a vibrant and innovative entrepreneurial fabric depends on the full panoply of a country’s institutions (Acemoglu and Robinson 2012). The upgrading of Italian industry requires measures of a general nature, from the improvement of education to the reduction of the burden of taxes and red tape, more vigorous promotion of competition particularly in the field of services and utilities; but also measures to speed up civil justice and to improve the transport and communications infrastructures available to businesses. The latter, “horizontal”, measures are naturally of the utmost importance. The right question is not if industrial policy should be deployed as an alternative to such measures, but whether it would not be appropriate to flank them with instruments for direct intervention.

This paper answers in the affirmative. A toolkit for direct intervention can foster, intensify or accelerate the acquisition, transformation and production of new knowledge in the business sector. It is above all in these processes that the market failures are most evident (Rodrik 2007; Cimoli, Dosi and Stiglitz 2009; Greenwald and Stiglitz 2013). The private and collective benefits of these activities diverge both because externalities arise and because there are conditions of uncertainty: specifically, market prices may not reveal the profitability of allocating resources to innovative activities. “Informational externalities” (Rodrik 2007) limit commitments of resources to new activities and products. Since the costs of discovery are borne entirely by the innovator but discoveries – both successful and unsuccessful – can be freely acquired by emulators, there are heavy disincentives to starting up new activities or products. “Coordination externalities” (Rodrik 2007) mean that new activities may become profitable only thanks to the presence of a multiplicity of different investments, and this too can deter firms from starting new activities and launching new products. These conditions discourage business investment in knowledge, whether the expenditure is on in-house research, development and innovation or on the acquisition of the results of these activities from the outside.
Still, it is not easy to determine the magnitude and precise location of these market failures. The purpose of industrial policy is to discover, through close cooperation with the private sector, where such market failures are most significant and if and how they can be redressed. Industrial policy is not a static set of rules conjured up by policymakers, but a process of discovery in which businesses and the government learn about the costs and opportunities present within the market (Rodrik 2007). How it intervenes is therefore a question of fundamental importance.

4. Industrial policy: limits and possibilities

Rodrik (2007) lists some principles for designing industrial policies, seeking notably to address the instances of “government failure” discussed above: focus incentives only on new activities (not defined in terms of sectors) with the greatest potential for spillovers; have clear benchmarks on which to evaluate successes and failures and provisions that set time limits for support and make it subject to evaluation. Evaluation is especially important, since industrial policy inherently faces partial failures; the point is to detect them in time, i.e. to be capable of “picking losers” even more than picking winners. Further: entrust policy programmes to persons of proven competence, who must be closely monitored and maintain channels of continual communication with the private sector.

It is worth inquiring more closely into these aspects in view of the reality on the ground in Italy. The most obvious lesson to be drawn from past experience is that it is utterly illusory to think that industrial policy alone can determine the course of a country’s growth. The history of industrial policy in Europe (Owen 2012) shows that ambitious plans and experiments have run up against unexpected developments in technology and markets strong enough to undermine their success. Indeed, the record reveals the importance of unforeseen positive developments outside the industrial policy framework and sometimes even counter to its provisions and projections. Policymakers do not necessarily have better information than the aggregate of firms on the market. This is all the more so in the contemporary world, with its high uncertainty regarding technological trajectories and the industrial and technological evolution of individual countries. Industrial policy cannot, in the abstract, mould an industry’s future, but it can contribute to its development.
Programmes of support for existing firms can impede the development of competition and result in policy "capture" by incumbent businesses. Rather than foster structural change, which often involves the reallocation of market shares and the emergence of new and more competitive players, that is, poorly designed industrial policy may simply defend the existing situation. A factor here is the pressure on policymakers from established interests, which are always stronger and more experienced than younger, smaller, growing businesses. This can produce policies that stay on indefinitely and prove to be at once ineffective and very costly. This may be what distinguishes the experience of East Asia from that of Latin America. The desirability of "sunset" clauses specifying the duration of the measures from the outset is one of the main lessons of past experience. The "capture" of policymakers by vested interests is certainly a key issue. In complex societies with a multiplicity of interests at stake, the risk of distorted decision-making is substantial, but it should be recalled that this risk is always present, everywhere. The lack of an industrial policy strategy may itself be the fruit of lobbying by vested interests, who may simply be interested in maintaining the status quo and blocking any promotion of innovative activities that might threaten the market for their current products and services or the entry of new competitors. Essentially, this means the defence of positional rents (Stiglitz 2012).

A policy of "laissez-faire" does not coincide with theoretical perfect competition. In some circumstances it may allow the maintenance of rents and monopoly positions that only pro-active public policy can overcome. Frequently major vested interests are numbered among the paladins of absolute "laissez-faire"; and they weigh heavily in public discussion and debate (among other things, often through control of mass media), as in Italy. In a country where there is no express industrial policy, it is easier to enact extemporaneous measures in favour of special interests, i.e. industrial policies "concealed" within other economic policy measures. Recent Italian experience in this area is exemplified by the CIP6 affair (a measure subsidizing renewable energy), the "captains courageous" of Alitalia and the creation of the Strategic Investment Fund in order to intervene in the case of Parmalat.

Political decision-makers may tend to maximize returns in terms of short-run consensus. So there is a perverse incentive for programmes with as many beneficiaries as possible. At times when substantial public resources are available,
across-the-board measures for the entire economy or significant portions of it, possibly with limited impact, may be coupled with specific measures for well-defined special interests, making the latter more acceptable politically.

This ties in with the significant issue of the critical mass of policy measures, which has several dimensions. One is magnitude: small actions may simply be insufficient, even over time, to generate the structural changes needed. Another is duration: short-lived programmes – even if relatively more substantial – may prove equally ineffective. Short duration may be caused by budget problems, by the never-ending redefinition of spending priorities. Or it may depend on strategies of “announcement” by policymakers. To gain political consensus, the continual announcement of “reforms,” new strategies, new measures may be very attractive, as opposed to persevering in the implementation of policies already enacted. Recent Italian experience with regional policy, for instance, has been marked by the continual redefinition of financially limited and short-lived instruments, hence by their large numbers and pronounced fragmentation (Cerosimo and Viesti 2013a and 2013b). Unhappily, the current Italian political and public scene is replete with strategies for gaining political consensus in the short run, and this has repercussions on the choice of economic policy instruments. A definite, lasting industrial policy framework, subject to revision but consistent in its evolution, is essential. It enables firms to operate in an environment in which uncertainty is reduced, in which policymakers’ preferences are explicit, in which the mechanisms of action are clear and tested. The successful experience of Germany depends significantly on the great continuity of the industrial policy approach.

Critical mass is also linked, finally, with the simultaneous deployment of a number of different instruments. In industrial policy as in other fields of public action, there is no single measure capable of achieving the objectives, which are often diversified and long-run. In the case of industrial policy, a series of simultaneous, coordinated measures appear to be indispensable. The timing, scale and duration of every programme can significantly affect the impact and value of the others. This carries the significant implication that industrial policies cannot be configured as an à la carte menu, a series of separate instruments that can be activated as wished. For there to be some hope of their being effective, there must be a strategic dimension that combines various measures over a definite period.
of time. To be useful, industrial policy must be a “grand public design,” as it has been in other historical periods in Italy. Not a matter to leave to sectoral measures but one of the fundamental themes of the nation’s development, in which the political class will have to make a substantial investment. Industrial policy, in a word, must be on the Prime Minister’s docket, not just the agenda of some government functionary.

Discussion often focuses on the specific measures adopted and their technical aspects. In Italy, for instance, there is intense debate over whether to favour automatic measures or programmes based on evaluation, but this misses the main point: namely, the process of setting the objectives. In the past, especially at the height of industrial policy in Europe, the objectives were explicit, but they were set exclusively by political decision-makers, who were clearly more powerful than the business system. This gave rise to some of the sharpest, and largely opportune, critiques of past policies. Criticism was directed in particular against the claim by public decision-makers, whether political or bureaucratic, to have better information than market participants and their power to set priorities and guidelines, selecting the economic activities (sectoral policies) and single companies to favour (picking winners).

In the light of this experience, and a fortiori in the light of the present situation of great uncertainty, the process of setting objectives cannot but involve continuous public-private consultation. This entails the inconvenience of less formal procedures of discussion and decision than ordinary governmental decision-making; but it has the great advantage of “extracting” from the private sector essential information about the opportunities to seize. There are significant consequences: it means that industrial policies have better chances of success in countries with a competent bureaucracy and a transparent public decision-making process in which interest groups and the media play essential roles in the discussion. Industrial policy is a challenge for countries with weaker bureaucracies, like Italy. Some observers contend that precisely owing to the poor quality of the public apparatus, the less it does the better, so programmes should be based as much as possible on automatic mechanisms. Improving the quality of administration, as I have maintained for decades, is essential. But this cannot be attained by forgoing policies but, on the contrary, by designing them in such a way as to make them manageable by the present apparatus and to foster their
improvement over time. To borrow a European Community term, this should prompt reflection on the limits to the "absorption" capacity for industrial policies – one cannot do too much all at once, as has been made abundantly clear by the story of European regional development funds everywhere in Italy; on the indispensable clarity and simplicity of the policies themselves, which are often complicated by countless regulations and implementing measures; and on the need to strike the right balance between automatic rules and discretionary action.

The final element, closely connected with the foregoing, is monitoring and policy assessment. Mechanisms for control and correction are indispensable for all public programmes. And their relative lack is one of Italy's great weaknesses by comparison with other countries, from the Netherlands to the United States (Warwick 2013). And all the more so for industrial policies, for which continuous verification and impact assessment, difficult as it may be, is indispensable. As Rodrik (2007) notes, mechanisms of control, verification and self-correction must be embedded in the measures from the first and must have priority. It bears reiterating: industrial policy, to have a chance of success, cannot be simply a collection of rules and regulations but must constitute a constant process of analysis, comparison, review and revision.

5. An industrial policy agenda for Italy

Industrial policy can contribute to an economy's acquisition and application of skills by accompanying and intensifying spontaneous processes, to the birth and strengthening of firms, new products, new specialties that complement present ones. It can foster the spread of business strategies better suited to today's global competition. It can, if it is designed as a grand, national policy, with definite objectives established in the long run, with procedures for permanent public-private consultation, flexible choice of instruments, and strong capacity for monitoring, assessment, detection of errors and failures, and self-correction.

No one can claim to have devised a complete industrial policy strategy. But to prompt discussion I intend to indicate a few points that should be among the priorities on Italy's agenda. The focus should be on four areas: i) fostering the birth of innovative firms and attracting skill-intensive firms; ii) stepped-up efforts to generate and utilize knowledge, including spurs to innovation and to firms' allocation of resources to R&D, among other things via public procurement; iii)
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expansion of firms prompted by a battery of fiscal measures in connection with the entry of human capital and diversification of funding sources; and iv) the integration of industrial with local development policy. Finally, I shall discuss the issue of public ownership of firms.

The first point of this possible policy agenda is simple indeed. The theme of the birth of innovative firms is crucial. Italy is a country with a high index of entrepreneurship. Vitality, the high business birth rate, is one of the economy’s greatest strengths. Emulation has always been intense, both within Italy’s industrial districts and through the economy more generally, exerting strong competitive pressure on existing firms, compelling constant incremental improvements. Best practices, like information on mistaken and failed initiatives, spread rapidly.

All this strengthens the productive economy. What seems to be lacking, though, is a high birthrate of innovative firms embodying scientific knowledge and technical know-how (of which Italy is a significant producer), the fruit of new capabilities and creativity. There is anecdotal evidence of new enterprises formed by Italian researchers and innovative businessmen who from the very outset move their headquarters abroad, to advanced countries where they evidently find more fertile terrain for gestation and early growth. The issue is examined extensively in “Restart Italia”, a paper by the Economic Development Ministry’s start-up task force (Ministero dello sviluppo economico – Task Force sullle startup, 2012), which uses a comparative framework to identify the main actions necessary to foster these processes.

Industrial policies to stimulate the creation of innovative enterprises will necessarily have to work on multiple matters, but in any case the issue of the channels and ways of providing seed capital and then venture capital is unquestionably central. This area suffers from a clear market failure, insofar as the banking and financial system does not assign a consistent price to high-risk activities. In many countries, this market failure is remedied by public action, providing various incentives for the creation of specialized lenders capable of supplying sufficient risk capital to nascent enterprises (Lerner 2013). The extremely high rate of creation of new businesses in the United States is explained in part by the presence of these intermediaries. In Italy early-stage venture capital is equal to just 0.5 per mille of GDP, a third of the European average and one-thirteenth of the US level (Accetturo et al. 2013).
Conceptually, business creation can be flanked by the problem of attracting foreign investment. Italy’s productive structure can also be reinforced by the actions of foreign-owned firms— but as we know these are much less common in Italy than in the UK and Spain, or even France and Germany. The international literature has long described the many potential benefits of inward foreign direct investment, as well as the not unimportant problems it can cause. The basic point is that not all foreign investments are equal. Within the framework of regulations oriented, properly, to broad freedom of establishment for foreign firms, special favour may be reserved for some. In principle, the investments that are most likely to foster Italian economic growth, creating significant externalities that deserve incentives, are those that result in additional use of skilled labour, through greenfield operations or purchase and subsequent expansion. There is some evidence (Cerosimo and Viesti 2013a) that the presence of foreign-owned firms produces significant positive externalities more by making the most of high-skilled human capital than by the traditional sub-contractor effect, which is severely impeded today by the presence of global production chains.

The second agenda point too is also easy to illustrate. The innovation effort of all firms has to be supported. For smaller firms, innovative processes are reinforced principally from the outside. This can be done by favouring the purchase of new technology that increases the stock of knowledge and that can accordingly be incorporated in new products, interaction with universities and research centres, or cooperation with other firms to achieve the minimum resource threshold for innovation. It is best to encourage these common types of behaviour by simple, automatic measures. Italian industry (and the entire economy) is characterized by considerably lower R&D spending than in the other advanced economies: 0.7% of GDP, as against 1.9% in Germany and an EU average of 1.2% (Accetturo et al. 2013). This holds also extending the definition of research spending to include purchases of models and prototypes, characteristic of incremental innovation (Bugamelli et al. 2012). Italy’s spending remains lower even when we adjust for the sector and size structure of the economy (Banca d’Italia 2013).

Fiscal policy would appear to be the best tool for reducing the inherently high risk of R&D expenditure. The rules should guarantee substantial and lasting tax benefits, so as to modify firms’ choices permanently. Investment in R&D does not guarantee competitiveness in the long run. However, it remains a necessary
though not sufficient condition for the drastic and durable structural transformation of the productive system. Tax benefits can be accorded to all the sectors and thematic areas of research. It is hard for the law to select, in advance, the most deserving sectors or activities. Nevertheless, in some countries, and in Europe with the Commission's recent initiatives and under the same logic as the Framework Programme for research and innovation (now called “Horizon 2020”), some priority fields of technology are designated. The same logic presides over Italy's “Industria 2015” programme.

These definitions are inevitably arbitrary. Still, we can imagine special support to some areas of research, especially if they are linked with the European priority areas, possibly financed by competitive grants, which must be in addition to and not instead of the broad-based, "horizontal" tax benefits. Or there could be automatic national funding for research projects submitted to the European Framework Programme and judged worthy but denied funding for lack of resources. This more targeted support can have two positive effects. First, it deals with the coordination problem (Rodrik 2007), which means it could stimulate activity simultaneously at a number of different companies, with cross-externalities (if both the probability of undertaking R&D investment and the likelihood of its producing positive results are also functions of the simultaneous activity of other firms). Second, it should envisage joint activity among various firms, through the creation of alliances, ad hoc consortiums or networks of firms, which can make R&D more successful (if it depends on pre-existing and complementary knowledge or on the availability of capital in different companies).

Firms’ research and discovery activities can also be stimulated by public demand (OECD 2011a). With the completion of the European single market, discretionary power to award public contracts has been taken away from the member states, which are now subject to binding, transparent rules. But in Italy these rules, together with public financial difficulties, have produced an effect that we might call “low-bid syndrome”: namely, the painstaking definition of every tiny detail of the tender to ensure that the contract is awarded to the lowest bid. If this results in savings for the purchaser, it does not necessarily reward the best firms. And above all it presumes that the purchasing entity has perfect knowledge of its necessities and practically limits procurement to goods and services that already exist.
In the United States, by contrast, especially in defence, aero-space and health spending, government procurement is a major tool for spurring corporate innovation and, through new products and services, improving the government’s ability to perform its tasks. The point of departure is the problem, for which the market is asked to suggest solutions. Increases in demand thus translate into greater supply capacity. The contrast with Italy could not be clearer; here, for instance, the enormous effort to promote renewable energy did nothing whatever to increase the country’s technological or production capability but produced only a surge in imports. In compliance with EU rules and following Germany’s recent interministerial agreement on innovation in public demand (Warwick 2013), public procurement can stimulate the industrial fabric: for the European economy, to be sure, but certainly also for the Italian.

The third point on our hypothetical agenda is probably the most critical for the future of the Italian industrial system: policies to minimize or eliminate the obstacles to businesses’ expansion. What matters is not the size structure of the economy at any given point in time but its dynamics. In Italy, there is discussion, and rightly so, on the decline of many of the large industrial corporations of the past, such as Olivetti, Montedison and Telecom (Amatori et al. 2013). But there is less discussion of the fact that there are no new ones to take their place. In the United States a good number of today’s largest corporations did not even exist just thirty years ago. And as noted, support for research activities is an important instrument in favouring these processes. Another, parallel instrument is incentives for open-ended hiring of skilled staff. Italian industry is set apart, in Europe, by two striking drawbacks: an especially low share of university graduates in the work force and an especially low share of firms run by professional managers rather than family-owned and operated. In Italy, two thirds of firms are family firms in which ownership and management coincide, compared with a third in Spain and a quarter in Germany (Accetturo et al. 2013). And family businesses are more risk-averse. Like research, the hiring of skilled personnel itself is often seen as a risky investment, in view of its cost and rigidity over time and also the potential impact on company routine. Accordingly, policy measures, even quite generous ones, to lower the costs of hiring skilled staff would appear to be potentially fruitful. True, the expansion of the work force is the effect of company expansion (you hire because you are growing); but the reverse is also true: firms
succeed in growing because they can tap the skills and competence embodied in new human capital. To grow, enterprises must acquire knowledge and skills, they must learn continuously (Cimoli, Dosi and Stiglitz 2009). And without an internal base of knowledge and skills, this is no easy matter.

Strengthening firms’ capital base is fundamental, to make available own capital to finance the various elements of the growth process. This is a complex issue that can only be mentioned here. It concerns the extremely large share of debt capital in Italian firms (bank debts account for 70% of firms’ financial debt in Italy, against 49% in Germany and 30% in Britain and the US; Accetturo et al. 2013); the heavy incidence of short-term debt; the propensity to control downstream firms indirectly through complex shareholding chains; and the strengthening of intermediaries that can facilitate the needed strengthening (including by bond issues). Help can come from fiscal measures, some of them already adopted. In addition, there are more structural actions, which are certainly not simple.

The fourth and last point on this possible agenda is the indispensable integration of industrial policy with local development policy (OECD 2011b). Industrial policy is multi-tiered. There is a European dimension, the national dimension that has been prevalent so far and remains essential, and a local or regional dimension. Businesses draw many significant factors of competitiveness from the territory in which they are established: the local labour force; the presence of entities that already have skills or can develop them, such as universities and research centres; and interactions with other firms. It is no accident that both in the United States and in Europe the most interesting developments of new, innovative industries tend to be geographically clustered (Moretti 2012). In particular, urban areas are the places where, as a result of partly casual interactions, the conditions for the emergence of new businesses are most likely to be found. Industrial policy, therefore, needs to be able both to act on a national scale and to differentiate, to adapt to the local, regional or urban scale.

The issue of vertical coordination of policy-making among several levels of government is a complicated one. It involves assigning specific powers, funding, the action of measures with a clear territorial impact, such as urban policy, and the existence of development policies geared to specific geographical spheres. This framework embraces “regionalized” industrial policy programmes, i.e. the
tailoring of common objectives to local needs and potential and the enhancement of specific factors of comparative advantage. This notion comprises widely differentiated measures in terms of approach and importance, ranging from the extremely rich German and French experience with competitiveness poles to the recent US programme of manufacturing hubs and interesting programmes in China (Stiglitz, Lin and Monga 2013).

The picture in Italy is particularly confused: responsibilities and actions, rather than integrated, are overlapping. Specifically, owing to the central economic policy's "shirking" of its duties, the role of the regions in distributing resources to firms has been greatly enhanced (Cerosimo and Viesti 2013a and 2013b). Nevertheless, the experience of technology districts is interesting, even though the results to date are not readily verified (Bertamino et al. 2013). This whole approach needs rethinking in the light of the more general considerations set forth above on the potential and pitfalls of industrial policy. Mechanisms of continuous assessment of results and revision of the instruments and geographical areas of intervention, for instance, are indispensable. This is a crucial issue: "coordination externalities" can be resolved precisely on a local scale, where affecting the interactions among a multiplicity of public and private actors is simpler and can accelerate firms' learning and growth.

One final marginal note. Partly owing to the practically absolute absence of industrial policy thought and action, Italy is the scene of recurrent waves of concern over the fate of single corporations that for one reason or another are deemed to be "strategic" and thus deserving of public protection or even public ownership (as majority or minority shareholder), from the Ilva steelworks to Telecom. The discussion is often confused. Critical reflection on a series of crucial matters has only just begun: on the results of the privatization of industrial capacity; on the perimeter of public ownership of industrial firms, which in Italy still counts major players, such as the Finmeccanica group; on other countries' experience, notably the temporary "nationalization" of the US auto industry. There is reflection on the action of Cassa Depositi e Prestiti, which has recently created two funds for shareholding in private enterprises. Everywhere, national governments directly influence certain major industrial choices, with a set of tools ranging from shareholding, golden shares or golden power to subtler but no less incisive actions of moral suasion. Nowhere do governmental authorities
conform to the theoretical precepts of laissez-faire. As specific cases are involved, in any event the risk of capture by private interests is great; but this is a feature of action and inaction alike.

This issue warrants a far more ample discussion than can be conducted in the present forum. Still, past industrial policy does offer a number of useful lessons, which can be concisely summarized. First, there is no immutable border between public and private, valid in all times and across such highly diversified models of capitalism as those of today, even within Europe. There are no rules of thumb to determine whether government should own shares in Terna, Telecom or Alenia. The question of the importance of the interests at stake and the objectives to be attained is always political, and the decisions will be subject to the beliefs and priorities governing the country's politics in general. They are unlikely to be supplanted by simple rules.

Second, public ownership per se does not guarantee the pursuit of objectives in the general interest. It must always be tempered by the EU rules for competition, which - fortunately - make salvage operations like those of the past more difficult. Different situations must be distinguished. Some businesses can be directly owned and operated by public entities. In these cases the specific public interest justifying this choice - say, a natural monopoly - has to be clearly identified; and management's choices must be closely monitored. The fact that a public corporation makes profits - as in the case of the State Railways, for instance - does not necessarily mean that it is serving the community interests that justify public ownership. Or there may be businesses subject to private control and management but with a government stake. The purpose may be to make sure the company pursues certain specified economic policy objectives, or to perform a "signalling" function to the market, or to provide a guarantee for private investors. These aspects too certainly warrant discussion and debate.
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