Reducing policy risks in different industrial policy instruments: the case of Portugal

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Abstract:

In this paper I discuss how different forms of industrial policy in Portugal are subjected to different policy risks, and which institutional solutions can be adopted in order to improve the effectiveness and legitimacy of these forms of government intervention. Our analysis emphasises the differences between four instances of industrial policy according to two dimensions: the number of (potential) beneficiaries targeted by the policy and the diversity of public agencies in possession of the relevant skills for its implementation. These factors help to determine the level of scrutiny to which public policies are subjected, whether by private actors or within the State apparatus. Both sources of scrutiny help to minimise the risks of capture of public resources by private interests and to foster institutional learning processes that promote the effectiveness of policies.

Keywords: Structural change, Innovation, Public policy, Government, Bureaucracy

JEL classification: O38 Government Policy; O25 Industrial Policy; H83 Public Administration

1. Introduction

In this paper I discuss how different forms of industrial policy[1] in Portugal are subjected to different policy risks, and which institutional solutions can be adopted in order to improve the effectiveness and legitimacy of these forms of government intervention.

The scope of the academic and policy debate on State intervention in support of specific activities has been moving away from arguing about its rationale, to focus on the political and institutional conditions that favour the effectiveness and legitimacy of policies (Rodrik, 2008; and Chang, 2011). Those conditions aim, in particular, at improving the capacity of civil servants and public agencies to design and implement effective policies, as well as reducing the risk of capture by interest groups – two common sources of criticism of State intervention in the economy, following Krueger (1974). This paper contributes to this change of focus by discussing four cases of industrial policy instruments that have been deployed in Portugal in recent years: tax benefits for investment of a contractual nature; tax benefits for business R&D; direct support for business investment (NSRF incentive schemes); and the Electric Mobility Network Program.

There are three main reasons that make the Portuguese case particularly interesting in the present context.

Firstly, the need to change the profile of productive specialisation is one of the biggest challenges facing the Portuguese economy at present (Mamede et al., 2014). In the context of the crisis in the Eurozone and the adjustment programme to which Portugal was subjected after 2011 (EC, 2011), economic policy discussions have been almost exclusively centred on the need to correct public finance imbalances, as well as on implementing 'Washington Consensus'-like 'structural reforms'. However, the industrial structure of the Portuguese economy and the slow pace of structural change are the main ingredients of one of the most relevant sources of these imbalances – i.e., the low rate of GDP growth in Portugal since the turn of the century. In fact, the products and sectors in which the country specialises (using, for example, the Balassa index) largely juxtapose the structure of the emerging Asian economies and the new, Eastern European EU member states (OECD, 2007; IMF, 2008). After several decades of convergence with the average incomes of OECD countries and the EU, the Portuguese economy now operates with production costs that do not allow it to compete based on price with those emerging economies. Thus, the acceleration of structural change towards activities with greater growth potential and where international competition is less intense, is

[1] We follow Rodrik (2008) in defining industrial policy as the set of policy instruments that stimulate specific economic activities (including manufacturing, as well as nontraditional agriculture and services) and promote structural change.

now essential to avoid a permanent loss of the relative living standards of the Portuguese population. In fact, this is a problem that affects most countries at the periphery of the Eurozone, and which will need to be explicitly tackled in order to find a sustainable path out of the present European hurdles (Boyer, 2014).

Secondly, in spite of the constraints imposed on space of possibilities for public policy in Portugal accruing from international institutions such as the WTO and the EU, industrial policy does exist in Portugal, taking different forms, some of which are not immediately evident and merit a detailed discussion *per se*.

Finally, the design and implementation of industrial policy in Portugal as often included institutional mechanisms specially conceived to prevent some of the policy risks that are often associated with this type of State intervention.

The paper is organized as follows. In section 2 we briefly review the key points in the debate on the rationality of industrial policy, discussing the main lessons from several historical experiences, as well as their replicability in a country like Portugal at present. In section 3 we identify the main challenges facing the Portuguese economy in terms of specialisation patterns, and describe a set of policy instruments that are in place with the aim of promoting the development of specific activities. In Section 4 we discuss the institutional conditions for a legitimate and effective industrial policy in the Portuguese case and how this may differ according to the specificities of each policy instrument. Section 5 concludes.

2. The role and risks of industrial policies in contemporary economies: a brief overview

The defence of industrial policy as fundamental to economic development is based on the notion that private investors are little inclined to make the type of investment that drives structural change. Several factors contribute towards explaining this. In general, relevant shifts in the productive structure presuppose the development and expansion of activities based on knowledge and skills that are scarce in the prevailing situation. Uncertainty regarding the ability (technical, commercial, and institutional) to conduct operations related to fundamentally new activities, as well as uncertainty regarding the results expected from such investments, are strong disincentives to the involvement of private actors in the inception of structural change. Such disincentives are compounded in the case of productive activities that involve huge initial investment, given the difficulty faced by most private investors in mobilising huge financial resources and the tendency of capital markets to channel resources to low risk investments. These characteristics are typical of some activities which are strategically positioned in the system of inter-industry relations and which are thus crucial for the development of upstream

and downstream sectors, or to mobilising the scientific and technological systems for the development effort. In the case of more innovative activities (whether technical, commercial or institutional), uncertainty about the returns to investment is aggravated by appropriability issues: information (about new products, new processes, new organisational forms, new channels of distribution, new markets, etc.) resulting from these activities may be used by competitors who benefit from the efforts of pioneers without incurring the same costs.

To the above listed arguments in favour of industrial policy, opponents typically respond with three lines of reasoning. First, they question the relevance of the above mentioned market failures as barriers to development. If there are situations in which the functioning of markets will not enable the most desirable results in social terms, it is argued, such situations are marginal or dealt with through regulatory instruments (for example, the patent system as a stimulus to technological innovation). Moreover, it is considered that the diversity and sophistication of the information necessary for effective intervention by public authorities in these areas is beyond the powers and capacities of public agencies, and therefore industrial policy will, in most cases, lead to inefficient and ineffective outcomes. Finally, public support for productive activities is seen as particularly prone to being captured by vested interests which influence public policy for their own benefit (Krueger, 1974). Ultimately, the argument goes, the extension of State intervention in the productive sphere only increases the privileges of the most politically influential elites, distorting the functioning of market mechanisms with little benefit to society as a whole.

The confrontation of theoretical arguments between proponents and critics of industrial policy is not settled by empirical research. If, on the one hand, case studies abound illustrating the failure of public interventions in support of specific activities, on the other hand, there are many examples where State support proved crucial to the international success of companies and industries (e.g., Chandra, 2006; Chang, 2006; Mazzucato, 2013). The use of econometric techniques that try to assess the impact of public support on the performance of sectors is not conclusive either. Although many of these studies indicate that the effect of industrial policy on the performance of supported activities is not statistically significant (or is even negative), this kind of analysis faces methodological problems that are difficult to overcome (Rodrik, 2008).

In sum, neither the confrontation of theoretical arguments nor the results of empirical studies allow for a definitive resolution of the debate about the merit of industrial policies. Nevertheless, examples of contemporary economies that abstain from supporting specific sectors do not abound. While it is not possible to exclude the presence of other explanatory factors behind this fact (State capture by special interests, electoral populism, etc.), the widespread diffusion of different forms of industrial policy is at least partly explained by the

historical experience of countries and/or industries whose economic success has largely benefited for different forms of public support. However, various historical analyses have also emphasized that the success of industrial policies is often associated with State apparatuses that prove conducive to the promotion of policy objectives (e.g., Amsden, 1989; Wade, 2003; Evans, 1995). This points towards the need to focus not only on the type of policy instruments that may promote the need structural changes in each economy, but also of the political and institutional conditions that favour the effectiveness and legitimacy of those policies.

As Rodrik (2007) points out, the idea of the vulnerability of the State to private interests is drawn from a conception of human motivation according to which individuals' instrumental interest is the only guide to action. In this line of thought, there are no policy makers motivated by the promotion of the common good or State officials who take the public interest and professional pride as key references while performing their duties. According to this view, these individuals' actions would only be consistent with the interest of the community if it were possible to devise a system of compensations, penalties and controls that ensured the ongoing alignment of the common interest with the interests of its representatives. However, since it is virtually impossible to ensure the implementation of such a system, it is argued, public policy is always associated with the proliferation of corruption, cronyism and the abuse of power.

This conclusion could not contrast more greatly with the emphasis that is given by Evans (1995) and others to the characteristics of bureaucracy (in the Weberian sense of the term) in the conduct of successful industrial policies. Recurrently, this type of policy has proved to be more favourable to developing economies (such as South Korea, Taiwan and Brazil) when they were conducted by competent public agencies loyal to the mission of the State. Notwithstanding the specificities of each context, policy options regarding the management of human resources in public administration (demanding recruitment policies, continuous training, remuneration and career prospects that are competitive with regard to the private sector, etc.) are systematically associated with examples in which the State apparatus has been effectively put to work in favour of structural change and economic development.

Regardless of the mechanisms that determine it, the commitment of those responsible for public agencies to the collective goals of economic development appears to be essential to overcome another problem emphasised by industrial policy critics: the State's inability to access information that would be necessary to overcome market failures in the process of structural change.

Historically, in most situations in which the State intervened to promote specific activities, it did so in conjunction with private operators. Whether through regulatory activity (aiming to encourage or inhibit certain behaviours), through subsidies to private investors, or even through

direct investment in State-owned enterprises, the success of public policy typically relies on mechanisms that foster the proximity between public agents and private actors, in order to elicit relevant information about the opportunities and constraints to development, as well as on the behaviours that the policy intends to influence (Rodrik, 2007).

In other words, although the State and the individuals who represent it should keep their autonomy with regard to private interests, their action is more effective when it takes advantage of the information and experience possessed by agents directly involved in production. As Evans (1995) convincingly argues, one of the factors that contributed to the success of industrial policy in East Asian countries was the ability to find institutional solutions that ensured an 'embedded autonomy' of public agencies over private economic actors – i.e. the ability of States to maintain a close relationship with the private sector, without being besieged by their interests.

According to Rodrik (2007), apart from human resource policies in public administration, such institutional solutions tend to share the following traits: a clear identification of priorities for public intervention, focusing interventions in the most promising sectors; political commitment at the highest level to the strategy of structural change; the assignment of clear mandates for public agencies, and their accountability based on results achieved; and the conditionality of support on achieving results.

These elements, as discussed above, are repeatedly mentioned as distinctive characteristics of the most successful processes of policy-led development experiences. Overall, they refer to the structure of the State's ability to formulate policies and assigning responsibilities for their implementation, ensuring the effectiveness and legitimacy of all public interventions.

However, it is worth noting that the relative importance of each of these elements may vary depending on the programmes or public policy instruments in question. Indeed, taken individually, the forms of industrial policy entail different risks of State capture by private interests, as well as different possibilities for institutional solutions to minimise those risks. In this paper I consider four instances of industrial policy in Portugal to illustrate this point.

3. Objectives and instruments of industrial policy in Portugal

The Portuguese economy is characterised by a high share of low-technology, low value added, non-tradable and/or non-market activities (Mamede et al., 2014). Among the tradable sectors, a significant proportion of value added and employment is concentrated in labour intensive activities. These sectors are particularly exposed to two risk factors of a structural nature: on the one hand, they are threatened by stagnant (or even receding) worldwide demand (e.g., Eurostat,

2013); moreover, they have to face strong competition from emerging economies, which base their competitiveness on low production costs (namely, labour compensation) (OECD, 2007; IMF, 2008).

Such a pattern of specialisation is at the root of Portuguese underperformance in international trade and in inflows of foreign direct investment – in contrast with the more favourable performance of emerging Asian and Eastern European economies. The resulting decrease in the share of low-tech industries in the Portuguese economy was compensated for by an increasing weight of medium-low-tech industries, while the share of more knowledge-intensive industrial activities remained practically unchanged.

In the years before the international economic crisis of 2008/2009, Portugal recorded some positive developments in this field, including the favourable performance of the Technology Balance of Payments (whose annual balance turned positive from 2007, due to the good export performance activities of technical services – engineering, architecture, computer science, among others), as well as the continuing increase in business expenditure in R&D as a percentage of GDP. Although these dynamics point towards the desired structural transformation of the Portuguese economy, the results in these areas are nonetheless modest when compared with those in the more developed economies. Additionally, the recent evolution of some indicators shows that the process of structural transformation of the Portuguese economy is still fragile. For example, the small surplus of the Technological Balance of Payments actually decreased after 2008, while the weight of the high-tech and medium high-tech goods in Portuguese exports declined, revealing that the successive crises experienced in recent years did not penalise less the more advanced sectors of the Portuguese economy. Moreover, given the high levels of private indebtedness (which weaken domestic demand), as well as the strict budgetary limits imposed by EU rules, future growth will be highly dependent on the capacity of the Portuguese economy to generate value from exporting activities – which can hardly rely on activities characterised by low knowledge-intensity, low value added, and low international demand growth (Mamede et al., 2014).

In short, the upgrading of its industrial structure has been one of the central challenges facing the Portuguese economy since at least the 1990s. It is, therefore, not surprising to find in the Portuguese policy landscape a number of instruments and initiatives which were put forward in recent decades, aiming (more or less explicitly) at promoting the desirable structural change. Next we present four instances of such instruments or projects that help to illustrate this idea –

and frame the ensuing discussion on the conditions for an effective and legitimate industrial policy.[2]

3.1. Tax benefits for investment of a contractual nature

The Statute of Tax Benefits establishes the possibility of granting tax exemptions, reduced rates, tax deductions and other tax benefits to firms, with the aim of enhancing or inhibiting certain behaviours in the public interest. The range of situations under the law is diverse, including: various financial investments, investments in productive capacity, corporate restructuring, among others.

In compliance with EU competition rules, the Tax Benefits Statute stipulates that "the definition of the objective and subjective conditions for tax benefits must be made in general terms (…) only admitting benefits of an individual nature for exceptional reasons duly justified (...)" (Article 6).

The generic formulation of tax benefits does not, however, prevent the Portuguese government from actively using them for the promotion of specific activities. Detailed information on all the tax benefits granted to companies in Portugal was not made public until recently, and thus a comprehensive analysis of its distribution is not viable. Still, it is possible to carry out this analysis in the case of two forms of tax incentive for investment that have been actively used in Portugal. This subsection deals with the first of these, which regards investment incentives of a contractual nature.[3]

Tax benefits in Portugal can be granted on a contractual basis to large investment projects (equal to or greater than 5 million euros). These are recurrently used in negotiations with multinational companies interested in installing production capacity in the country or in domestic investment projects which, for different reasons, are eligible for specific public support. This type of incentive is legally framed by EU rules, and the associated investments must comply with a set of conditions in order to be considered of special national interest. According to Portuguese law, such investments must: be relevant to the strategic development of the national economy; contribute to the reduction of regional disparities; induce the creation or maintenance of jobs; and help to enhance technological innovation and national scientific research efforts. Although these conditions to a large extent restrict the scope of activities that

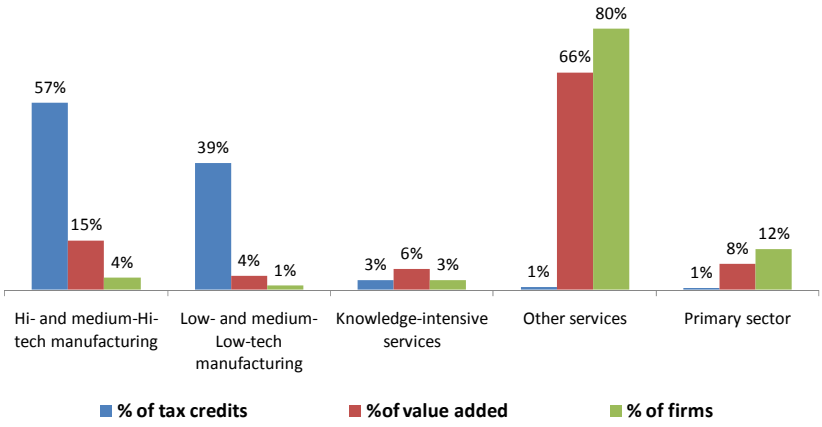
[2] The four examples refer to the period that preceded the international crisis of 2008 and especially the Eurozone crisis starting in early 2010. This is not incidental: as argued by Mamede et al. (2014), the policy agenda has been almost exclusively focused on budgetary, labor market, and regulation policies, largely disregarding other policy domains that may play a relevant role in promoting structural change.

[3] In the next section we discuss tax benefits for business R&D.

are eligible for tax benefits of this type, the industry spectrum of potential beneficiaries is nevertheless broad, including the primary sector, manufacturing industries, tourism-related activities, IT and R&D services, and various activities in the areas of the environment, energy and telecommunications.

Notwithstanding the above, the analysis of tax credits granted during the period 1999-2008 shows that these tend to focus on a limited number of industries. Of the approximately 690 million euros in tax credits approved in the period (corresponding to 118 investment contracts), 96% were concentrated in manufacturing, more than half of them in just three industries: pulp and paper, chemical, pharmaceutical, and electronics. Although support directed at low-tech and medium-low tech industries predominates (in addition to pulp and paper, these include the oil industry, metallurgy, and foodstuffs), the weight of high-tech and medium high-tech industries in the tax credits approved is particularly striking when compared to the relative importance of such sectors in the Portuguese economy. In fact, the more technology-intensive industries account for 4% of value added and 1% of Portuguese companies, but they take in 2/5 of such tax credits.

Figure 1 - Share of industry groups in the total number of firms, value added and investment tax credits of a contractual nature (1999-2008)



Sources: Court of Auditors (2009) and INE

The intention of fostering those industries that do not correspond to the traditional comparative advantages of Portugal is visible in the share of tax credits approved for major investment projects in electronic, chemicals, and pharmaceuticals, but also in the automobile and

automobile components industries (e.g., engineering, rubber and plastics), reflecting the priority attached by policy-makers to the promotion of the automotive cluster in Portugal.

3.2. Tax benefits for business R&D

The intention of stimulating the development of activities with little weight in the Portuguese productive structure is even clearer in the case of the System of Tax Incentives for Business R&D (SIFIDE).

Introduced in Portugal in May 1997, the SIFIDE allows for the tax deduction of business expenditure on R&D (classified according to the OECD Frascati Manual). In a country where business expenditure on R&D is relatively low and limited to a small number of firms[4], the impact of instruments like SIFIDE is necessarily selective and asymmetrically distributed across industries. Of the approximately 222 million euros of tax incentives granted under SIFIDE between 2006 and 2008, nearly half were concentrated in six industries, which represent 9% of GDP and 1% of domestic companies.

Table 1 - Sectors that benefit most from SIFIDE (2006-2008) and its weight in the economy

Industry	Tax credit in 2006/08 (€)	% of total tax credits	% of GVA in 2008	% firms in 2008
Software consultant and related activities	30.209.458	14%	1%	1%
Manufacture of basic pharmaceutical products and pharmaceutical preparations	20.775.113	9%	0%	0%
Manufacture of motor vehicles, trailers, semi-trailers and components for motor vehicles	16.563.852	7%	1%	0%
Telecommunications	13.897.690	6%	4%	0%
Manufacture of computer, communications equipment and electronic and optical products	12.151.431	5%	0%	0%
Manufacture of other non-metallic mineral products	9.980.104	4%	2%	0%
Total (of the listed industries)	103.577.648	47%	9%	1%

Sources: Certification Commission of Tax Incentives for Business R&D (2010) and INE

Some of the industries that benefit the most from SIFIDE were also among the biggest beneficiaries of the tax incentives scheme discussed in the previous subsection (including pharmaceuticals, automotive and related components, and electronic products). However, in the case of SIFIDE, IT services (which tend to be absent in the case of tax incentives for large

[4] According to official estimates, about 1,800 firms reported R&D expenditure in 2010.

investments, due to their strongly immaterial nature) and telecommunications activities (traditionally very active in business R&D in the country) are outstanding beneficiaries. The high public support for all the aforementioned industries is also to be found in other programs and instruments of public policy in Portugal, such as those discussed below.

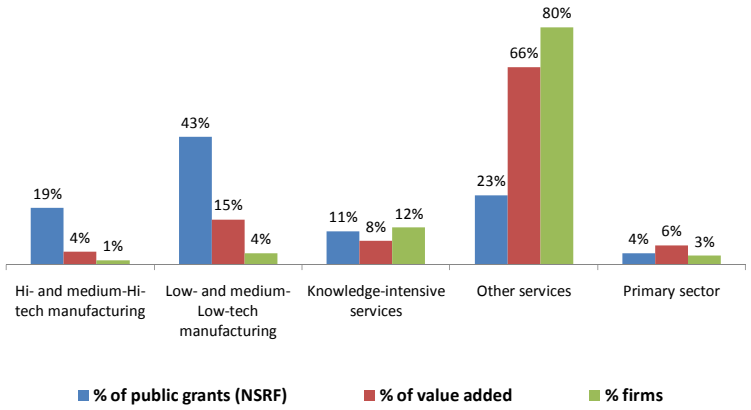
3.3. Direct support for business investment (NSRF incentive schemes)

In the past two decades, direct support for firm investment in Portugal was strongly associated with the Cohesion Policy of the EU, the main source of finance for such policy instruments. In the first three programming periods of Structural Funds (1988-1993, 1994-1999 and 2000-2006), these direct incentives were relatively little selective in nature, supporting nearly every form of business investment in almost all industries (Augusto Mateus & Associados, 2005).

Recognising the urgent need for structural change in the Portuguese economy, and reflecting the recommendations resulting from the evaluation of the previous programmes, the National Strategic Reference Framework (NSRF) that ran in the period 2007-2013 substantially reformed the incentives schemes for business investment co-financed by the EU Cohesion Policy. Such reforms led, among other things, to a more focused approach, both in terms of number of projects and types of investment. In particular, priority was given to supporting projects related to: business R&D; product or process innovation; expansion of production capacity in sectors with high technological content or dynamic international demand; knowledge-based entrepreneurship; and the use by SMEs of intangible competitiveness factors (organisation and management, design, product and process development and engineering, digital economy, fashion and design, internationalisation, and qualification of human resources).

As before, the new incentives schemes allowed, in principle, for supporting investments in almost all productive activities (being conditioned only to primary activities, construction and financial services). However, their implementation was biased in favour of activities aligned with the goal of structural change. As in the case of tax benefits for investment of a contractual nature, manufacturing was the main beneficiary here, absorbing 2/3 of the roughly €2.3 billion of incentives approved (while its weight in terms of VAB was close to 20%). More technology-intensive manufacturing industries absorbed a proportion of incentives that was five times greater than its share of value added.

Figure 2 - Industries that benefit most from the incentive schemes for business investment NSRF



Source: NSRF Observatory

The incentives granted to non-knowledge intensive services focus heavily on tourism – an industry in which Portugal has an intermediate level of specialisation and which is targeted by different national policy instruments.

3.4. Mobi.E - Electric Mobility Network Programme

The three examples above refer to policy instruments that are apparently 'horizontal' in nature but the implementation of which reveals a preferred orientation towards specific sectors. By contrast, the last case discussed here is a programme that deliberately took a sector specific focus from the outset.

The prospect of replacing vehicles using petroleum products with electric vehicles has huge potential – not only economic, but also political and environmental – especially for countries heavily dependent on imported oil and where electricity generation is done with little use of fossil fuels. Growing use of electric vehicles reduces the need for oil imports, with beneficial effects on the trade balance, as well as in terms of security of energy supply. In addition, electric vehicles help to make better use of renewable energy by providing a storage form for the energy produced at night (when the level of energy consumption tends to be low). Finally, the large-scale diffusion of electric vehicles would significantly reduce CO2 emissions, contributing to meeting the targets set by international rulings, as well as improving environmental quality. Electric vehicles are thus a powerful attraction for a country like Portugal: heavily dependent on imported fossil fuels, with worrying imbalances in the current account, and with an ambitious programme of renewable energy.

However, the generalisation of electric vehicles as an alternative paradigm to the combustion engine faces several hurdles. In general, the persistent uncertainty as to its economic viability discourages investment both on the part of producers and consumers. A major factor of uncertainty is the evolution of technology related to batteries: at present, the autonomy of an electric car is highly limited, putting the electric vehicle at a distinct disadvantage against a car moved by petrol or diesel.

Internationally there have been ad hoc solutions that aim to minimise this disadvantage. A well-known case was the solution developed by the Californian firm Better Place, which was initially implemented in Israel[5]. The firm's solution was based on the principle of battery replacement, through a vast network of replacement stations. Notwithstanding the advantages of this system – it ensured the desired autonomy of vehicles, and the initial investment was guaranteed by the private company – it contains a number of drawbacks, the most relevant of which is the huge initial investment required (which greatly reduces the prospects of competition in the market for battery replacements).

An alternative proposal was presented to the Portuguese government by Inteli – a semi-public think tank. The system proposed by Inteli was based on a network of charging stations, thereby ensuring interoperability between the network of electrical mobility and the various brands and systems for charging batteries of electric vehicles. It also had the advantage of incorporating a higher content of domestic production.

Intel promoted the formation of a consortium that included three leading national companies in IT services, electro-mechanics, and electricity, to develop what would become the Mobi.E project. This project consisted of installing a network of electric charging stations distributed throughout the country, with a global management system of energy flows and related financial transactions. This is essentially a non-proprietary system – it ensures the separation of ownership of charging stations, electricity distribution and energy supply services – and has as a distinctive feature the underlying business model for the management of energy and financial flows in the system. As in the management of ATM networks, Mobi.E's charging stations are all alike in the eyes of users, regardless of the operator who owns them. In particular, this system allows different companies to offer their commercial packages of energy supply – price lists, discount schemes, etc. – without consumers being forced to fill up at specific loading stations. This in turn presupposes the existence of a compensation system that distributes the revenues among the various actors.

[5] Better Place went bankrupt in 2013. See, e.g., http://www.theatlantic.com/technology/archive/2013/05/another-clean-tech-startup-goes-down-better-place-is-bankrupt/276257/.

For the companies involved in the consortium, this project was not only a source of revenue but also an opportunity to develop and test pioneering products with promising international demand. For the software companies involved the electric mobility network presented great potential for the development of sophisticated IT systems (e.g., smart electrical network management interfaces, information networks, communication between the network, consumers and charging stations), which will probably be in high demand in the near future. For companies producing electronic equipment, the pilot project was an opportunity to develop solutions for charging stations that incorporate not only energy supply solutions but, more importantly, electronic systems for satellite communications. For the electricity company involved, the development and implementation of Mobi.E constituted a learning moment in the development of the business model to adopt in the future as a supplier of energy for electric vehicles.

The Portuguese government provided initial financial support for Mobi.E through a public fund. The State's action was also visible in the regulatory domain, classifying legal entities and the governance of the network, and setting the rules during the trial period – which, in practice, granted the consortium the monopoly of the process throughout 2011. Other measures included: the creation of tax incentives and subsidies for the purchase of electric cars, the renewal of public bodies' car fleets and the adoption of municipal regulations in favour of using electric vehicles in cities (e.g., preferential parking areas); promoting research networks linked to the theme; the creation of incentives for the involvement of national industry in developing solutions for charging batteries and construction of electric vehicles; attracting major manufacturers of electric vehicles and components; and the concerted action of Portuguese economic diplomacy in promoting Mobi.E. The growing visibility of the Portuguese electric mobility project attracted international interest, opening up business opportunities for companies, as well as contributing to the involvement of large multinational companies and major research centres in international projects associated with Mobi.E.

As the Euro Area crisis developed and a newly elected government took office in 2011, Portugal focused on the implementation of the austerity programme agreed with official creditors and the electrical mobility project was strongly downgraded. Nonetheless, the Mobi.E consortium reoriented its activities towards the external market, selling abroad the technological solutions developed in the context of this project.

4. Conditions for an effective and legitimate Industrial Policy in Portugal

As seen earlier, critics of industrial policy point to the inability of the State apparatus to access the relevant information, together with its vulnerability to capture by special interests, as factors that determine the undesirability of industrial policy. While these risks are present in various forms of State intervention in the economy, analysis of various historical examples suggests that scepticism regarding industrial policy based on these risks should itself be critically assessed.

The comparison between the four cases of industrial policy in Portugal referred to in the previous section – tax benefits for investment of a contractual nature, tax incentives for business R&D, direct incentives for business investment, and the electric mobility network programme – help to illustrate this idea. These cases show significant differences in two dimensions: (i) the volume of private beneficiaries of public support (which is associated with a more or less recurrent nature of such support), and (ii) the dispersal of relevant skills among the public agencies that are responsible for policy design, implementation and monitoring. The following table compares the four types of intervention in the light of these dimensions.

Table 2 - Volume of private beneficiaries

		high	**Low**
Dispersion of relevant skills in public administration	**High**	Direct incentives (grants and loans) for business investment (SI NSRF)	Tax benefits for investment of a contractual nature (BFINC)
	Low	System of tax incentives for business R&D (SIFIDE)	Electric mobility network program (Mobi.E)

The direct incentive schemes for business investment (SI NSRF) and the system of tax incentives for business R&D (SIFIDE) have in common the fact that they target a large number of companies. In the case of SI NSRF, between late 2007 and mid-2010, over three thousand companies received public support for investment projects; in the case of SIFIDE, more than 600 companies received tax incentives in 2008 alone. While these figures represent a small percentage of the firms operating in the relevant period (reflecting a significant degree of selectivity of support), they contrast with the volume of companies supported under the investment tax benefits of a contractual nature (BFINC) – an annual average of about 12 companies between 1999 and 2008 – and with the programme of electrical mobility (Mobi.E) (where the number of companies directly involved is reduced to the low tens).

The size of the set of enterprises receiving public support in each case is not irrelevant to the risks of State capture by vested interests and to the possible institutional responses to those risks. On the one hand, a large number of recipients – and an even larger number of potential beneficiaries – necessarily implies a greater scrutiny of public policies by civil society,

particularly with regard to the former's efficiency, effectiveness and legitimacy. The beneficiary companies tend to question the procedures for allocation of support, and those companies to which support was denied tend to question the selection criteria and decision mechanisms. The public agencies and policy makers involved in the management of these policies are therefore more often exposed to diffused public pressure, and they often respond to that pressure by making an effort to clarify the policy objectives and justify the institutional arrangements associated with policy implementation.

Additionally, the high number of beneficiaries appears typically associated with a higher recurrence of support. In fact, SI NSRF and SIFIDE are expected to be in place in a medium-term horizon and are based on recurrent processes of project analysis and decision, requiring significant volumes of dedicated human resources. The repetition of implementation procedures is conducive to institutional learning among the public agencies involved, strengthening the criteria and mechanisms for evaluating and selecting projects.

While both SI NSRF and SIFIDE target a broad spectrum of beneficiaries, the two instruments differ with respect to the distribution among public agencies of the skills that are relevant for policy implementation. Being a policy instrument co-financed by EU structural funds, the planning and management of SI NSRF necessarily involve the institutional structure provided for in the regulations of European cohesion policy – from the managing authorities of operational programmes, to the fund coordinating and certification bodies, and auditing authorities. Additionally, since direct incentive schemes target various types of firm (industry, size, etc.) and projects, the capacity to examine the appropriateness and adequacy of applications is necessarily distributed among various public agencies that are not necessarily linked to the management and supervision of European structural funds. Moreover, the European funds constitute a significant source of funding for policies pursued by these national public agencies. This, together with the fact that they possess the relevant skills to implement SI NSRF, creates strong incentives for the relevant public agencies to get involved in the design and management of support mechanisms. This means that this policy instrument is subjected not only to strong external scrutiny (due to the volume of beneficiaries, as discussed above) but also to processes of interaction and consultation involving various government bodies. By contrast, the number of institutional actors involved in SIFIDE is necessarily smaller, due to its specific domain (business R&D) and the fact it is unrelated to European funds.

The dispersion of skills relevant to the implementation of public policies is also present, albeit to a lesser extent, in the case of tax benefits for investment of a contractual nature (BFINC). As discussed above, this policy instrument is deployed in complex negotiations with large investors (often foreign), covering policy domains as vast as taxation, international trade, licensing,

training, R&D, among others. Typically, different public agencies are called upon to comment on specific aspects of the investment contracts under negotiation, introducing some elements of scrutiny within the public administration. However, in contrast to the SI NSRF, not only is the diversity of public agencies involved more limited (it often excludes, for example, entities linked to the management, control and audit of European structural funds), its intervention is of a sporadic nature, limiting the potential for inter-institutional learning and scrutiny.

Finally, in the case of Mobi.E, as seen above, the number of both private beneficiaries and public agencies involved is limited. As a result, it tends to be subject to scrutiny both within and outside the State apparatus.

In short, the differences between various forms of industrial policy – as regards the dispersion of relevant skills in public administration and the volume of beneficiaries – carry different risks of State capture by special interests, which are inversely proportional to the internal and public scrutiny to which they are subjected in a democratic society. Such differences are also associated with different institutional solutions for minimising the risks of different State capture by private interests, as suggested in the following table.

Table 3 - Institutional solutions for reducing the risks of State capture by special interests

		Volume of private beneficiaries	
		High	**Low**
Dispersion of relevant skills in public administration	**High**	Generic explanation of the priorities of public policy. Involvement of different public agencies relevant to the processes of design, implementation, monitoring and evaluation, with a range of political tutelage. Publication of the recipients, the amounts of support and the criteria adopted (not necessarily decision-making processes).	Detailed explanation of the priorities of public policy. Involvement of different public agencies in implementing relevant policies. Publication of the recipients, the amounts of support, the criteria adopted and the decision processes. Need for control mechanisms outside the executive branch of State (parliamentary and public audit).
	Low	Detailed explanation of the priorities of public policy. Publication of the recipients, the amounts of support, the criteria adopted and the decision processes. Relevance of assessment processes unrelated to policy implementation.	Setting objectives and cessation clauses of public support. Need for control mechanisms outside the executive branch of State (parliamentary and public audit) and independent evaluation processes for the implementation of policies.

As argued above, when policy instruments target a high volume of beneficiaries and several public agencies are involved in their implementation, the potential conditions for a high level of scrutiny are in place. Thus, minimising the risk of capture can be achieved by: firstly, publicising the list of private beneficiaries, the amounts of support granted, and the selection criteria applied; and secondly, ensuring the involvement of various relevant public agencies throughout the policy lifecycle (design, implementation, monitoring and evaluation). Such

extended scrutiny helps to reduce the risk of illegitimate use of public resources and to enhance the effectiveness of policies, without significant introduction of external control mechanisms. Insofar as the mechanisms of mutual scrutiny between the various public agencies are guaranteed, keeping the decision processes opaque to external observers can, paradoxically, function as a protecting device from pressure by special interest groups, without compromising the legitimacy of these processes.

Where opportunities for scrutiny of public policy are lower – either because the relevant skills for its implementation are concentrated in a limited number of public agencies, or because the number of beneficiaries is reduced – the minimisation of risks of State capture by private interests tends to require additional mechanisms for evaluation and control. Typically, the involvement of a limited number of agencies in implementing the policies implies the need for further independent evaluation processes. The latter can operate both as opportunities for improvement of policies and as protection of public agencies against external illegitimate pressure. In turn, when opportunities for scrutiny are reduced as a result of the limited number of beneficiaries (*de facto* and potential), improved mechanisms of formal control (including parliamentary scrutiny and public audit) and stricter conditions regarding the amounts and terms of support (e.g., sunset clauses) may be necessary, given the closeness of the interactions between public agencies and private actors that tends to characterise the intervention in question (leading to higher risks of State capture by special interests).

5. Conclusions

The discussion of State intervention in support of specific activities has been experiencing a change of focus in recent years, falling away from the rationale of industrial policies to focus on the political and institutional conditions that promote the effectiveness and legitimacy of the policies pursued.

Based on the historical analysis of a set of successful (and less successful) cases in which the State played an active role in supporting structural change, several factors have been identified that promote the effectiveness and legitimacy of industrial policies, such as: human resource management practices in public administration that promote the quality of interventions and the autonomy of civil servants; identifying clear priorities for public intervention, focusing interventions on the most promising activities; political commitment at the highest level with the strategy of promoting structural change; the allocation of clear mandates to the public agencies involved and their accountability based on performance; and the conditionality of support on achieving results (Rodrik, 2007).

These factors tend to be presented in the literature in a general way, identifying the least common denominator of successful cases of industrial policies. In this paper we analyse in greater detail the conditions for effective and legitimate industrial policies, examining four cases of public interventions in Portugal. Our analysis emphasises the differences between the various interventions according to two dimensions: the number of (potential) beneficiaries targeted by the policy and the diversity of public agencies in possession of relevant skills for managing the interventions. These factors help to determine the level of scrutiny to which public policies are subjected, whether by private actors or within the State apparatus. Both sources of scrutiny help to minimise the risk of capture of public resources by private interests and to foster institutional learning processes that promote the effectiveness of policies.

Overall, the analysis developed here suggests that: (i) where the nature of the policies favours internal or external scrutiny, the effectiveness and legitimacy of industrial policy can benefit from pursuing such possibilities of enhancing scrutiny, (ii) when the interventions are, by their nature, little exposed to scrutiny by the beneficiaries or by different public agencies, alternative mechanisms for monitoring, independent audits and policy evaluations should be put in place to minimise the risk of capture of public resources by private interests and to encourage learning processes leading to more effective interventions.

References

Amsden, A. (1989). *Asia's Next Giant: Late Industrialization in Korea.* New York: Oxford University Press.

Augusto Mateus & Associados (2005). *Relatório Final da Actualização da Avaliação Intercalar do Programa de Incentivos à Modernização da Economia*. Lisboa.

Block, F. (2008). "Swimming Against the Current: The Rise of the Hidden Developmental State in the United States." *Politics & Society* 36 (2), pp. 169-206.

Boyer, R. (2014). "The unsustainable divergence of national productive systems". In A. Teixeira, E. Silva e R. Mamede (eds.), Structural Change, Competitiveness and Industrial Policy: Painful Lessons from the European Periphery. London: Routledge. Pp. 10-42.

Chandra, V. (2010). *Technology, adaptation, and exports. How some Developing Countries Got It Right.* Washington: The World Bank.

Chang, H. J. (2011). "Industrial policy: can we go beyond an unproductive confrontation?". In Annual World Bank Conference on Development Economics, pp. 83-109.

Chang, H.-J. (2006). *Bad Samaritans: Rich Nations, Poor Policies and the Threat to the Developing World*. London: Random House.

Comissão Certificadora para os Incentivos Fiscais à I&D Empresarial (2010). *SIFIDE - Sistema de Incentivos Fiscais à I&D Empresarial: 2006 – 2008*. Lisboa: FCT, GPEARI-MCES e AdI.

Comissão Técnica de Coordenação do QREN (2010). *Relatório Anual do QREN II*. Lisboa: Observatório do QREN.

European Commission (2010). *An Integrated Industrial Policy for the Globalisation Era. Putting Competitiveness and Sustainability at Centre Stage.* Communication COM(2010) 614. Brussels.

European Commission (2011). *The Economic Adjustment Program for Portugal*. Brussels: The European Commission.

European Commission (2014). *For a European Industrial Renaissance.* Communication COM(2014) 14. Brussels.

Eurostat (2013). *High-technology and medium-high technology industries, main drivers of EU-27's industrial growth.* Statistics in focus 1/2013. Luxemburg: Eurostat.

Evans, P. (1995). *Embedded Autonomy: States and Industrial Transformation*. Princeton: Princeton University Press.

IMF (2008). "France, Greece, Italy, Portugal and Spain - Competitiveness in the Southern Euro Area". *IMF Country Report No*. 08/145.

Krueger. A. (1974). "The Political Economy of the Rent-Seeking Society." *American Economic Review* 64 (3), pp. 291-303.

Mamede, R.; Godinho, M.M.; Simões, V.C. (2014). "Assessment and challenges of industrial policies in Portugal: is there a way out of the 'stuck in the middle' trap?". In A. Teixeira, E. Silva e R. Mamede (eds.), *Structural Change, Competitiveness and Industrial Policy: Painful Lessons from the European Periphery.* London: Routledge. Pp. 258-277.

Mazzucato, M. (2013). *The Entrepreneurial State: debunking private vs. public sector myths*. London: Anthem.

OECD (2007). *Economic Survey of the European Union*. Paris: OECD.

Pack, H. and Saggi, K. (2006). "Is there a case for industrial policy? A critical survey." *The World Bank Research Observer* 21(2), pp. 267-297.

Rodrik, D. (2007). *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth.* Princeton: Princeton University Press.

Rodrik, D. (2008). "Normalizing Industrial Policy." *Commission on Growth and Development Working Paper n*.3. Washington: The World Bank.

Tribunal de Contas (2009). *Relatório de Auditoria aos Benefícios Fiscais ao Investimento de Natureza Contratual*. Relatório de Auditoria nº 43/2009 - 2ª Secção.

Wade, R. (2003). *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton: Princeton University Press.