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Why and How Revisiting Industrial Policies

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Conference ‘Frankreich ein Vorbild für Deutchland’? ‘Allemagne, un exemple pour la France?’ IMK and OFCE, Berlin June 19-20, 2008

Why industrial policy becomes again fashionable?

- Two explanations:
- From a political viewpoint: delocalisation, deindustrialisation, jobs destruction revived a demand for industrial policy intervention
- From a theoretical viewpoint: globalisation, increasing competition reduce the *time* and the *margin* firms have to gather *the necessary information and mobilise the required resources*

What kind of policy do firms need?

- There are two types of industrial policies: Sector-based policies and horizontal policies
- Sector-based policies are policies, aimed at protecting sectors (and firms) from market forces and current competition.
- They consist in entry barriers, trade barriers, employment subsidies or import- substitution policies

What kind of policy do firms need?

- Horizontal policies correspond to a broader interpretation of industrial policy
- They are aimed at supporting firms engaged in competition on free markets, and favouring market selection
- They include anti-trust and regulation policies, but also supply-side policies that are concerned with the labour and the financial markets

What kind of policy do firms need?

- Two questions are to be answered
- Is it true that horizontal policies are more efficient than sector-based policies?
- Which horizontal policies do we need? That is, with which objectives and by which channels?

In what follows

- We will show that most limitations invoked against sector-based policies hold for horizontal policies
- We will show that barriers to growth are the main problem to be faced by firms
- Then, a new analytical framework will be contemplated that focuses on the information issues associated with the growth process of firms
- And both objectives and channels of industrial policy will be revisited
- Finally, situation in France will be contrasted with that of Germany

Industrial policies: which deficiencies

- According to the standard theory, market failures must be eliminated or compensated: they open the way for public intervention
- Thus, how government ought to intervene depends on the characteristics of the industry (technology, preferences, information)
- But these characteristics are not really known by policy makers
- As a consequence many subsidies could be inefficient, when they do not turn into waste

Industrial policies: which deficiencies

- This is true, by definition, for sector-based policies. This is also true for some horizontal policies
- Fixing R&D subsidies requires to know the real content of knowledge spillovers
- Subsidising human capital accumulation requires to know the market failures that affect the training of human capital
- Reducing the gap between the existing market structure and the optimal one, requires to precisely identify the former

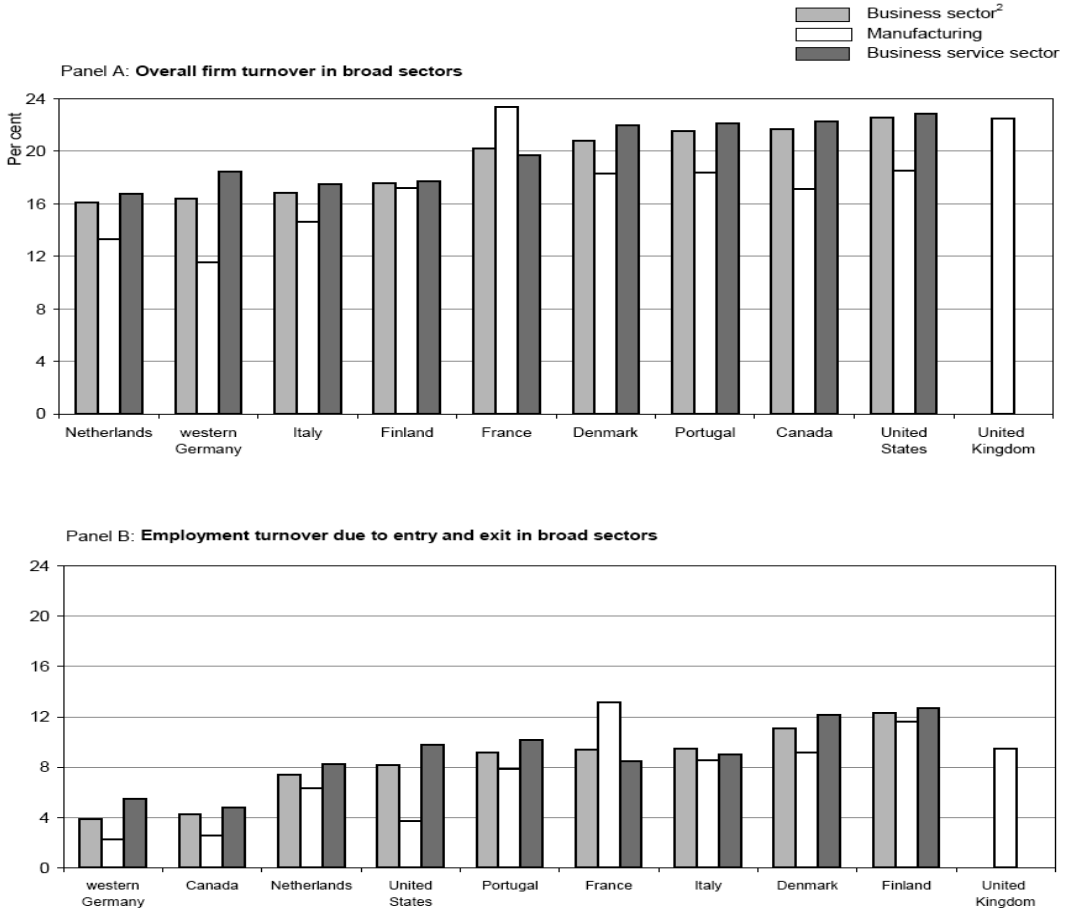
Industrial policies: which deficiencies

- Therefore, the only eligible policy is the policy that focuses on the working of markets and consists in reforms that liberalise these markets
- This option is questionable: believing that full competition might be a benchmark is a dangerous obsession, which may also turn into waste
- Facilitate the working of market forces is not the same thing that looking for the conditions of full (perfect) competition

Industrial issues: which evidence

- Recent literature focuses on the incentives to innovate, which would be determined by the nature and the strength of the barriers to entry
- If we look at data about the rate of entry, the rate of exit, and the rate of turnover, there is no evidence that such obstacles really exist
- Thus, the rate of turnover is higher in France than in Germany, particularly in manufacturing, and more or less the same as in the US

Figure 2. **Turnover rates in OECD countries, 1989-94**
(entry and exit rates, annual average)[1]

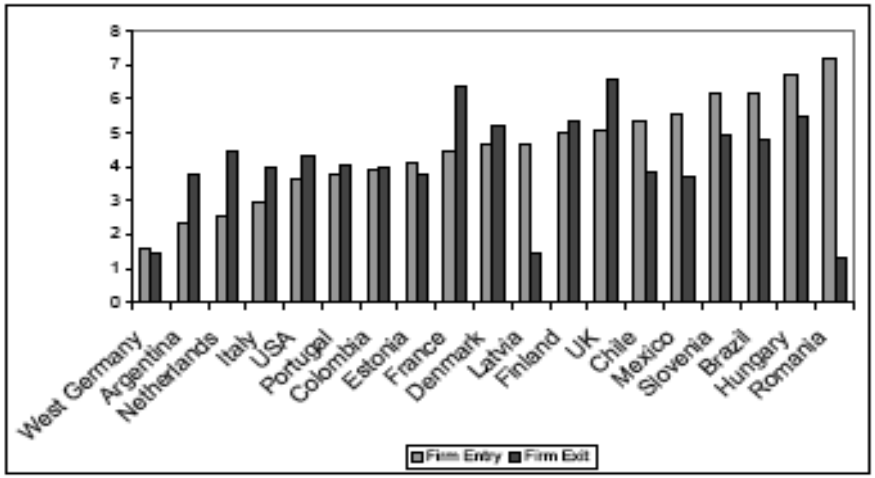


1. The entry rate is the ratio of entering firms to the total population. The exit rate is the ratio of exiting firms to the population of origin. Turnover rates are the sum of entry and exit rates.
2. Total economy minus agriculture and community services.

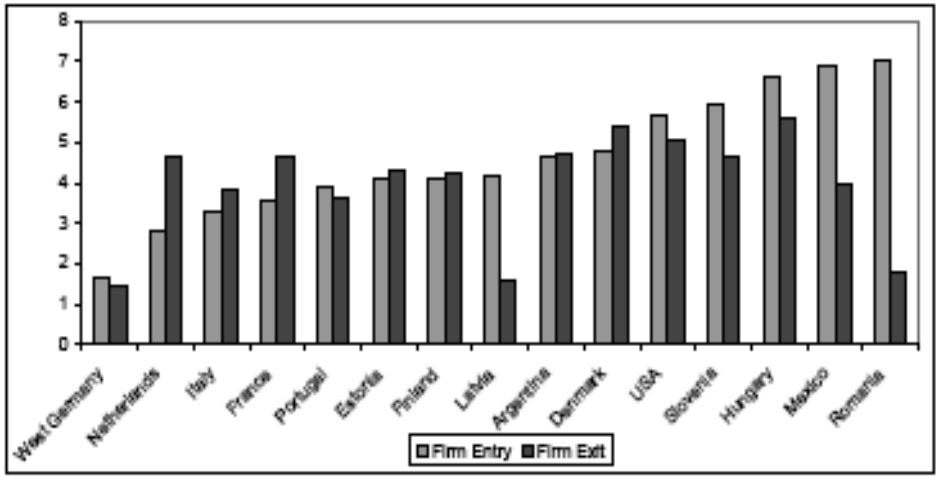
Source Bartelsman et alii 2005

Figure B

Figure 1. Firm turnover rates in broad sectors, 1990s
Panel A: Manufacturing, firms with 20 or more employees



Panel C: Total business sector, firms 20 or more employees



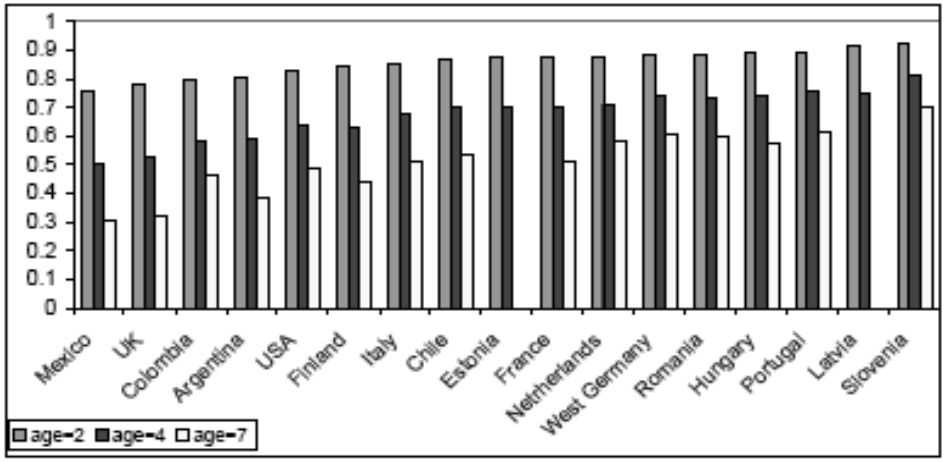
Source Bartelsman et alii 2005

Industrial issues: which evidence

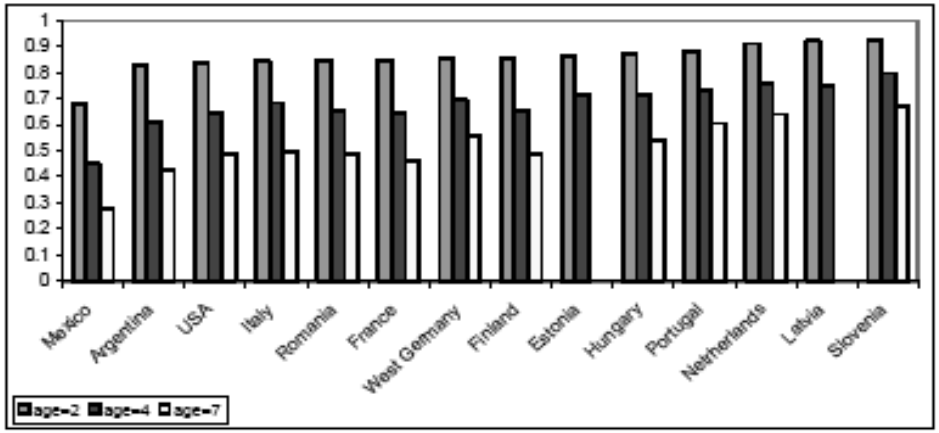
- There are no large differences in firm turnover among countries once account is taken of differences in sector composition,
- There are no large differences in firms rate of survival after 7 years
- But, post-entry growth of survivors is much stronger in some countries than in other ones

Figure 4. Firm survival at different lifetimes, 1990s

Panel A: Manufacturing



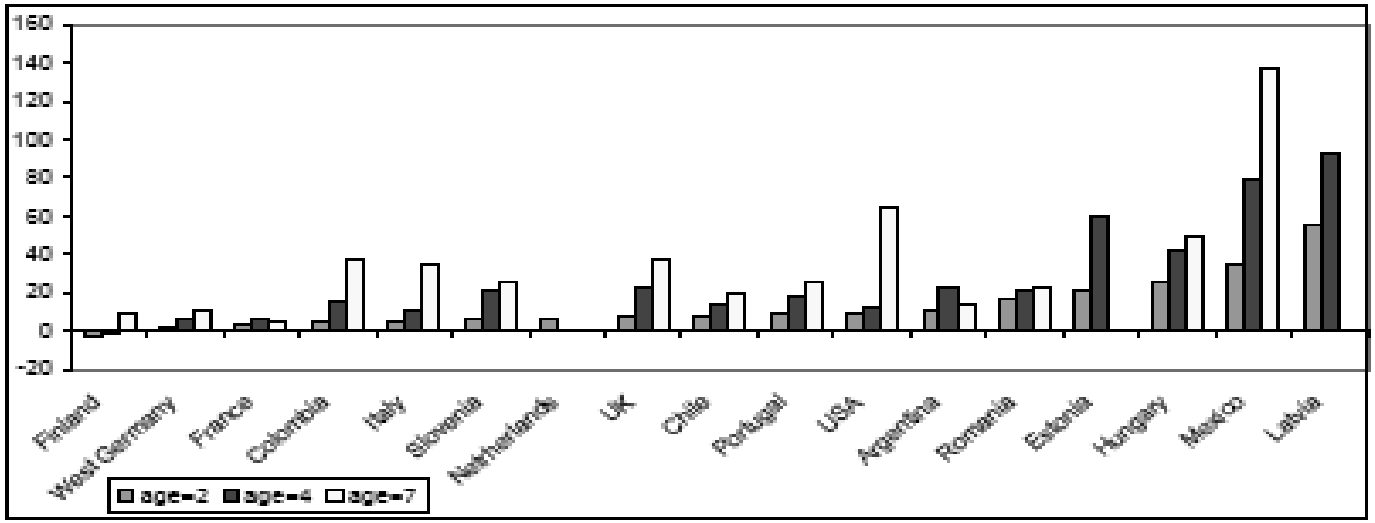
Panel B: Total business sector



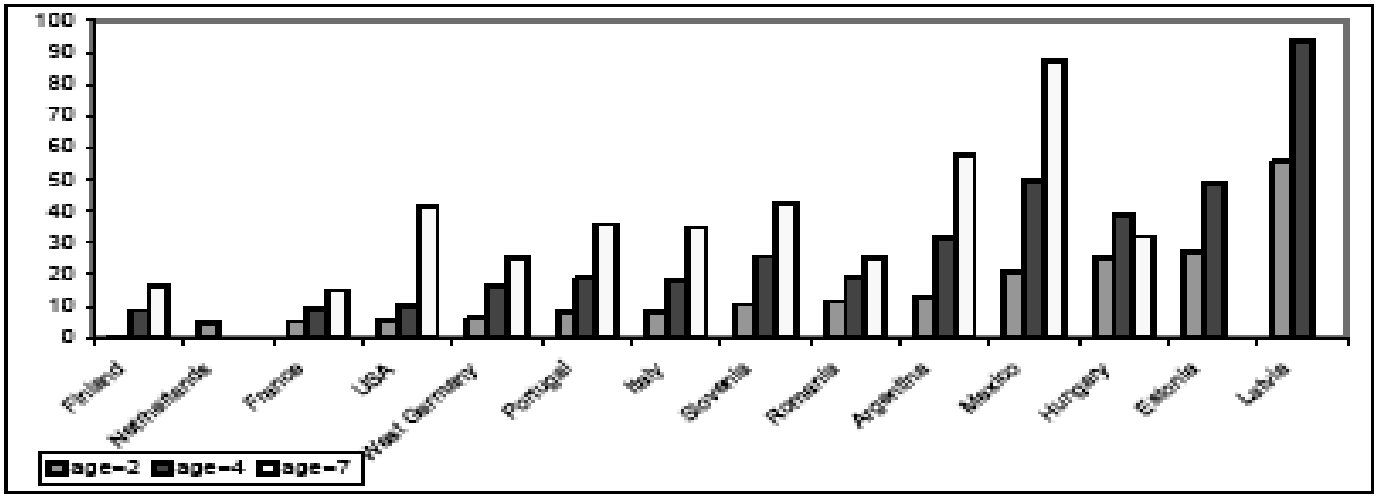
Source Bartelsman et alii 2005

Figure 6. Average firm size relative to entry, by age

Panel A: Manufacturing



Panel B: Total Business sector



Source Bartelsman et alii 2005

Industrial issues: which evidence

- Barriers to growth might be more significant than barriers to entry in explaining difference in performances across countries
- Ability to invest and grow might be much more decisive than incentives to create a new firm and enter the market

Industrial issues: which evidence

- Some analytical and empirical studies show that these barriers could be attributed to the existence of sunk costs and to the resource constraints associated with them

Industrial issues: which evidence

- The combination of sunk costs in setting-up a new business and high uncertainty leads firms to start small and to expand once they are established
- Thus, some firms are small because they are financially constrained, while in a later phase, if financial constraints cease to be binding, these firms will grow to their optimal size.

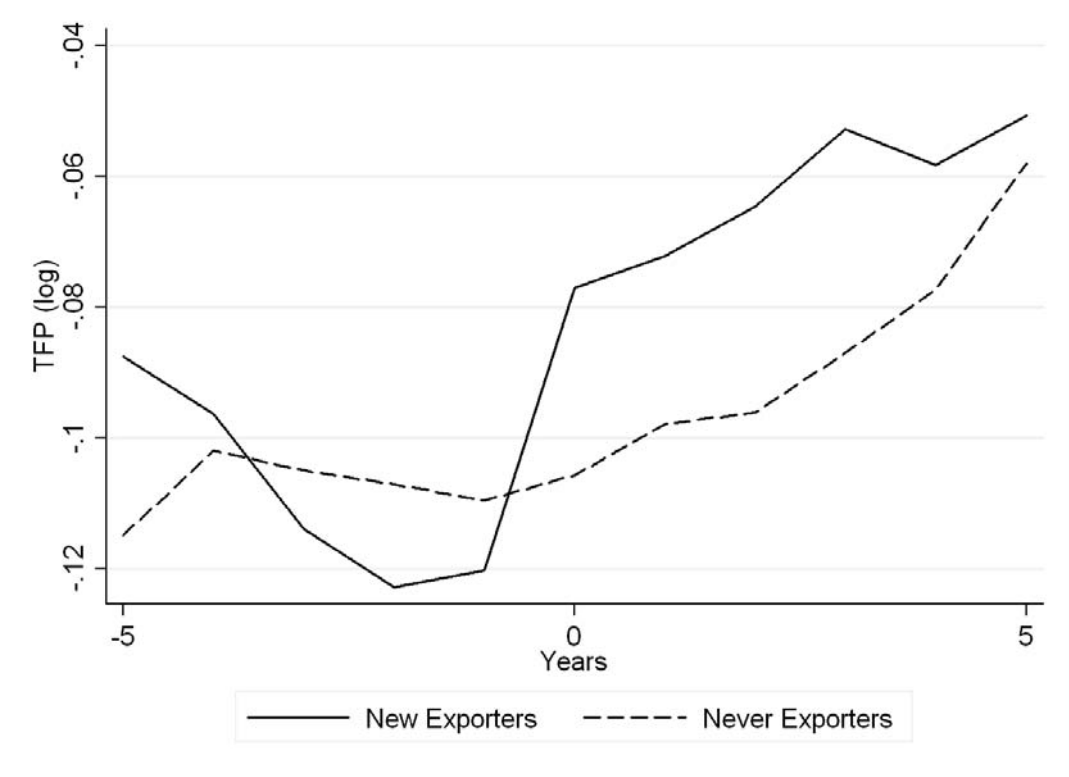
Industrial issues: which evidence

- Thus, in the case of French manufacturing firms, financial constraints significantly increase the probability of exiting the market,
- and access to external financial resources has a positive effect on the growth of firms
- But financial constraints are positively correlated with productivity growth in the short run.

Industrial issues: which evidence

- It is also worth mentioning that the productivity path of French manufacturing firms that enter export markets is U shaped:
- Total factor productivity decreases prior to entry to the extent it inverts the ranking in performances of exporting and non exporting firm
- This U shaped path reveals both the existence of sunk costs (resources constraints) and what happens when they are removed

Source: Bellone et alii 2007



Industrial issues: which evidence

- On the one hand, financial constraints must not be too high: they must allow firms growing
- On the other hand, they must be enough tight, and discipline competition among firms
- In any case, what is at stake is reducing the barriers to growth, in fact the barriers to converge towards a sort of *natural market structure*, which allow firms capturing productivity gains

Industrial change: a new analytical framework

- While main discussions in I.O. consist in determining the outcomes, which correspond to different information structures, the real issue is to identify how firms may have an access to the relevant market information.
- In fact, firms are not only concerned with incentives in industries characterised by a full co-ordination on a good or bad equilibrium; they have to face co-ordination failures, in fact, market imbalances and resources constraints

The nature of the problem

- A specific co-ordination problem is involved due to the existence of two delays
- On the one hand, investment represents a firm commitment, and this commitment give rise to an additional output only after a certain interval of time elapsed
- On the other hand, entrepreneurs will learn about the commitments of others, and also about the needs of customers only after a certain period of time

The solution of the problem

- Dealing with these two delays require specific means of co-ordination.
- The co-existence of a number of firms, each producing under increasing returns, depend on the existence of market connections, that is, on market imperfections that are in the nature of the competition process.

The need of restrictive practices

- Thus, co-ordination through market transactions is only possible by virtue of existence of circumstances which set bounds to what happen, in particular to investment behaviours.
- This is provided by natural or contrived restraints, which permit industry converging towards a dynamic equilibrium,in fact a coordinated state
- and which orientate instruments and objective of industrial policies.

Natural and contrived restraints

- There are natural restraints: indeed, the differences among firms in the ability either to foresee a profit opportunity or to increase production in response to it
- There are contrived restraints: indeed, agreements between firms that compete with each other or between firms and their customers
- Typically R&D agreements that allow firms sharing heavy costs, but also and mainly sharing the market information, which is made available only step by step, with the effect of coordinating competitive investments

What about the market discipline?

- All these restraints may appear as incompatible with market discipline, which is supposed to prevent firms to reduce investment and production, and to maintain a rate of profit in excess of the normal level.
- Nevertheless, performance should be a guide, only if assessed over a period long enough for the influence of sunk costs to be taken into account.
- All these restraints can be qualified as market failures, but only from a static viewpoint. From a dynamic viewpoint, we have to distinguish between those that help co-ordination and those that are really harmful.

Towards a natural market structure

- Firms' growth depend on the behaviour of their competitors as well as their suppliers and customers
- Firms growth strategies will be successful when investments will be coordinated, that is when a sort of natural market structure will be stabilised.
- Stabilisation means that market imbalances are dampened, and both competitive and complementary investments are made compatible with each other.

Towards a natural market structure

- This is a situation in which competition causes the rate of investment in product development to rise or fall towards the level at which this investment yields only a normal return
- This is a situation in which entries and exits do not change the market structure, and look like a purely random phenomenon.
- This is a situation that corresponds to dynamic efficiency, and a well managed process of creative destruction.

Towards a natural market structure

- A plurality of firms that compete with each other is certainly the best situation both for firms and customers
- But, a dynamic equilibrium has nothing to do with perfect competition
- It may be considered as corresponding to a natural market structure in the sense that it allows firms capturing all the potential gains of productivity.
- The characteristics of this structure are essentially unknown. They will be the result of the rivalry between firms under specific specific restraints

Which objective for policy makers

- As a consequence, policy cannot be devoted at reducing the gap between the existing market structure and this entirely unknown structure.
- It must be devoted at establishing these conditions that favour the convergence towards the so-called dynamic equilibrium, which are not, in any way, the full competition conditions

Industrial policy revisited

- Policies oriented to ameliorate industry performances must be aimed at giving *more market information* to firms, at creating a *more stable environment* for them, and then should help industries converging towards a dynamic equilibrium.
- Of course, government has not more information than the firms about markets and technologies.
- But it has not the same constraints and the same objectives. Its intervention may allow firms acquiring more information about market conditions, and helping them to innovate and grow.

Industrial policy revisited

- Rather than to be sector or technology based *per se*, industrial policy must be an array of horizontal interventions that *target the relations* between firms, between firms and their employees, between firms and financial intermediaries, between firms and public research institutions
- Subsidies must not devoted at supporting national champions or high tech sectors, but at *encouraging cooperation* among firms, including firms that compete with each other.

Competition and industrial policy

- Competition plays a central role in the coordination process.
- But, it is not only aimed at equalising supply and demand in a given environment. It has also to adapt both structure and and technology to fresh opportunities created by expanding markets
- Therefore, competition policy cannot be conducted without considering the distortions that are in the nature of the growth process, and the necessity of agreeing with some market connections or imperfections.

Competition and industrial policy

- However, policy makers may be faced with a real dilemma
- On the one hand, market connections help firms to invest and innovate. On the other hand, these arrangements can be used to shelter inefficiency or extract undue profits
- To rule that all restraints are against the public interest *per se* denies the existence of the dilemma

Competition and industrial policy

- Market imperfections are necessary to convince firms to carry out innovative investment and, as such, they are not something to be systematically condemned.
- Competition and regulation policies have to take into account the possible divorce between static and dynamic efficiency, and support restrictive practices that enhance innovation and growth
- As industrial policies, they must be *discretionary* policies rather than to be reduced to the enforcement of given rules.

Labour markets and industrial policies

- The prevailing view is that the possibility of hiring and firing freely, and offering wages at a freely chosen level, is an incentive to invest and hence to favour innovation and growth.
- The argument is that the higher levels of productivity are obtained by firms operating in high tech sectors and that these sectors are characterised by strong rates of creation and destruction of jobs
- Dismissal costs (employment protection) would reduce incentive to invest

Labour markets and industrial policies

- However, because it increases job tenure and, through this channel, favours on the job training, employment protection also affects human capital accumulation, and hence productivity
- Thus labour markets policies, far from being oriented to the dismantlement of the welfare state, should promote creation of skills through forms of bargaining between employers and employees that help adaptation to technological and market changes.

Regional and industrial policies

- Industrial policies have a territorial dimension insofar as there are local learning processes; they have to promote the development of clusters
- But local governments are not better informed than the national government, can also be easily captured by lobbyists, and have not a higher degree of competences
- Moreover, competition among regions can be wasteful, enhancing inequalities and affecting global efficiency

Regional and industrial policies

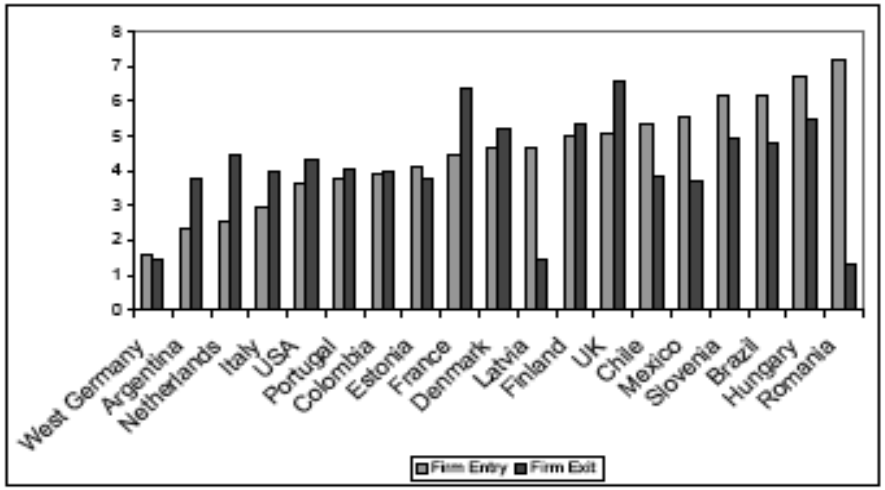
- We can make the conjecture that the smaller is the region size, the more wasteful competition among them will be.
- This might be because small regions are more inclined to compete with each other by promoting generic advantages such as tax reductions or set-up subsidies, which reduce the sunk costs but make setting-ups more instable
- While larger regions would be more inclined to promote cooperation between firms within and outside the territory, and to pay subsidies, aimed at sustaining large public programmes such as environmental programmes

France and Germany

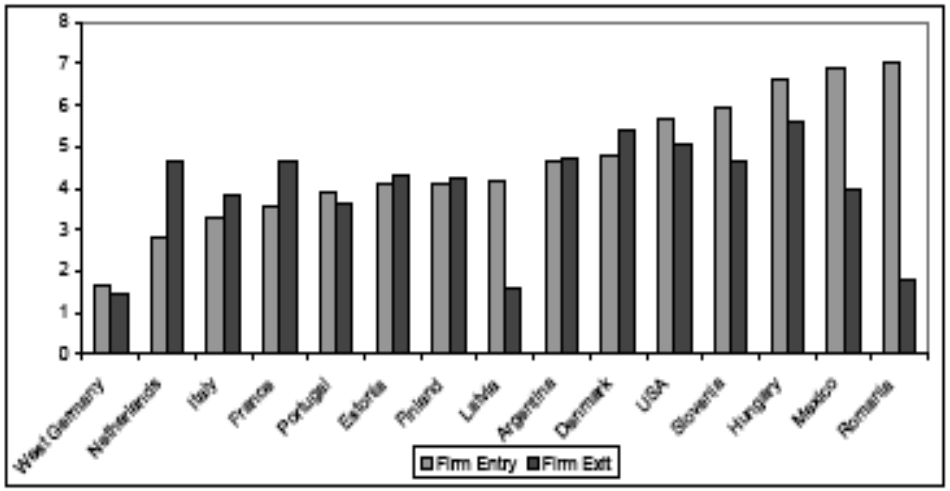
- During the nineties, in manufacturing sector, the total firm turnover (entry + exit) is about 3% in Germany while it is about 11% in France
- Moreover, firm exit outpaced firm entry in France (6.5 against 4.5%) while a balanced pattern is found in Germany
- Entry and exit are positively correlated in Germany while negatively correlated in France
- The export participation rate is lower (44% against 72%) and mean export intensity greater (40% against 21%) in Germany than in France

Figure B

Figure 1. Firm turnover rates in broad sectors, 1990s
Panel A: Manufacturing, firms with 20 or more employees



Panel C: Total business sector, firms 20 or more employees



Source Bartelsman et alii 2005

Table 6. Correlation between entry and exit rates across industries, 1990s

	Annual correlations			Correlations on time averages		
	Observations = industry*year	Entry/Exit Correlation	Entry/Exit Correlation (Weighted)	Observations = industry	Entry/Exit Correlation	Entry/Exit Correlation (Weighted)
Denmark	85	0.3731*	0.6687*	17	0.5681*	0.8739*
France	132	-0.2449*	-0.1025	22	-0.5250*	-0.2986
Italy	125	0.0976	0.7999*	25	0.1011	0.6894*
Netherlands	175	0.3131*		25	0.6702*	
Finland	175	0.2717*	0.4084*	23	0.2675	0.2413
West Germany	130	0.6860*	0.6242*	13	0.7510*	0.7702*
East Germany	56	0.0385	0.5599*	14	0.1855	0.7181*
Portugal	124	-0.1239	0.5671*	25	0.3526	0.0331
UK	105	0.2845*	0.6412*	15	0.4709	0.7389*
USA	199	0.8801*	0.6167*	25	0.8132*	0.9513*
Canada	168	0.5782*	0.7683*	21	0.8252*	0.9301*
Venezuela				16	-0.3306	-0.1726
Chile	128	0.6323*	0.5504*	18	0.0947	0.3741
Colombia	129	0.0319	0.1595	18	0.4385	0.5527*
Brazil	38	0.3472*	0.5068*	19	0.395	0.7880*
Mexico	220	0.1862*	0.5441*	20	0.7756*	0.9159*
Argentina	100	0.0582	0.4971*	25	0.3973*	0.7432*
Slovenia	176	-0.05	0.7680*	25	-0.1602	0.4373*
Hungary	145	0.2445*	0.5651*	25	0.1917	0.7793*
Estonia	59	0.4977*	0.2874*	24	0.3344	0.4621*
Latvia	98	-0.0609	0.1511	24	0.294	0.1772
Romania	119	0.0626	0.1209	21	0.6098*	0.4066

Correlations are based on a maximum of 25 industries in the business sector.

* = Significant at 10% level.

Source Bartelsman et alii 2005

France versus Germany

- This shows that market structures are stabilised and investments coordinated in Germany, while turbulences persist in France
- This also shows that, in France, there are no barriers to entry e.g. in export market, but stronger barriers to growth on these markets, which is the main difference with Germany

France and Germany

- If we look at the orientation of industrial policies in each country, strong differences can be observed
- The state aid as a percentage of x100 GDP is much more important in Germany than in France (54.4 against 33.5 for horizontal objectives; 90.5 against 56.4 for the total less railways);
- And is more oriented to environment (31.7 against 0.6), and regional aid (11.8 against 6.3), less oriented to employment (0.6 against 6.7), R&D (6.7 against 8.0), and SME (2.0 against 7.9).

Table 4.2

State aid by sector / objective as 100 * % of GDP

	EU-25	Austria	Belgium	Cyprus	Czech	Denmark	Estonia	Finland	France	Germany	Greece	Hu
Agriculture	**13.3**	30.6	9.2	16.2	14.3	7.0	33.0	132.0	16.2	22.4	4.8	
Fisheries	**0.4**	0.0	0.2	0.0	0.3	0.7	0.0	0.5	0.2	0.0	1.0	
Horizontal objectives, of which	**31.1**	**23.1**	**23.4**	**44.9**	**39.1**	**50.1**	**13.2**	**35.1**	**33.5**	**54.4**	**13.8**	
Commerce, export aid	**0.5**	0.0	0.2	0.1	0.0	0.0	1.4	1.1	0.4	0.0	0.0	
Culture, heritage cons	**0.7**	0.0	0.5	30.5	0.0	1.6	2.3	1.0	3.3	0.7	0.1	
Employment	**1.4**	0.8	1.1	0.0	0.2	21.5	0.1	2.3	6.7	0.6	2.7	
Energy	**0.9**	0.0	0.0	0.0	0.0	1.5	0.0	12.1	0.2	0.2	0.0	
Environment	**6.9**	3.7	2.2	0.9	0.9	22.9	0.9	2.2	0.6	31.7	1.3	
Regional aid	**9.4**	0.2	3.9	0.0	20.6	0.3	2.4	4.5	6.3	11.8	7.9	
R&D	**5.4**	3.5	4.7	3.5	10.4	2.0	2.7	9.4	8.0	6.7	0.5	
Risk capital	**0.0**	6.2	0.0	3.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	
SME	**5.1**	7.2	9.2	1.0	7.0	0.1	3.1	2.6	7.9	2.0	0.7	
Training	**0.7**	1.5	1.7	5.8	0.0	0.0	0.2	0.0	0.2	0.2	0.0	
Particular sectors, of which	**18.5**	**1.9**	**7.2**	**82.3**	**0.0**	**5.7**	**0.0**	**4.8**	**6.5**	**13.5**	**0.4**	
Coal	**8.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	
Manufacturing Sectors	**2.5**	0.0	0.0	37.9	0.0	1.5	0.0	0.0	4.3	0.3	0.1	
Other Non Manufacturing sectors	**0.4**	0.0	0.0	15.1	0.0	0.0	0.0	0.9	0.0	0.0	0.1	
Other services	**0.3**	1.1	0.0	2.4	0.0	0.0	0.0	0.0	0.1	0.6	0.2	
Transport	**1.7**	0.8	7.1	26.9	0.0	4.2	0.0	3.9	2.1	0.5	0.0	
Total aid less agriculture, fisheries and transport	**41.7**	**24.3**	**23.5**	**100.3**	**39.3**	**51.6**	**13.2**	**36.0**	**37.9**	**67.5**	**14.2**	1
Total less railways	**58.9**	**55.7**	**40.0**	**143.5**	**53.8**	**63.5**	**46.3**	**172.4**	**56.4**	**90.5**	**20.0**	1

Source: European Commission, DG COMP.

France and Germany

- Both environment and regional aids are aimed at creating market information and market conditions that help firm to invest by reducing uncertainty.
- By the way, the successful areas of German economy are successful because they do not have flexible labour markets in the conventional sense
- France has not elaborated a fully coherent industrial policy framework
- The nature of aid and the size of regions are the main differences between the two countries

In guise of conclusion

- Industrial policies should be horizontal
- But instead of replicating or re-establishing the conditions of full (perfect) competition, they should be aimed at validating restraints that allow firms acquiring market information.
- This implies privileging subsidies aimed at supporting cooperation between the various actors of innovation processes through large public programmes defined at appropriate geographic levels, that is, levels that permit avoiding a destructive competition among regions or countries.