

Regulation and Turbulence in the Portuguese Wool Textile Markets

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ABSTRACT. This paper discusses the effects of a set of regulatory restrictions on entry and growth imposed on Portuguese wool textile firms from 1965 to 1974. The main findings are as following: a) regulation had an impact on firm industry size distribution during the period, mainly through the effects on entry and growth; b) by the end of the period, predominance of small firms in the industry was mainly a result of small firm survival; c) the pattern of exits implied a decrease of the share of small firms in industry; d) different patterns of entry and exit were observed in different stages of production of the industry.

1. Introduction

From 1966 to 1974, regulatory restrictions were imposed on entry and growth in Portuguese wool textile markets. They were based on the concept of a desirable minimum plant size, set by the government. The most important restrictions were imposed on small scale entries and on growth of small scale incumbents, as long as their size was below the regulatory minimum size. Building on disaggregated data on entry, exit and growth in several stages of production of the wool textile industry, the purpose of this paper is to discuss the patterns of turbulence in the Portuguese wool textile industry, from 1965 to early 1974, and how they were affected by the regulatory restrictions, both at the industry level and in the following stages of textile production: combining, spinning of combed wool, spinning of carded wool and weaving.

It is argued that regulatory restrictions had an impact on shifts in industry size distribution between 1965 and 1974, reinforcing the concentration of firms at the regulatory minimum size

and decreasing the presence of small firms in the industry.

It is suggested that the predominance of small firms in the industry size distribution was mainly the result of the survival of small scale incumbents, small scale entries making a marginal contribution to it. In some stages of textile production, the presence of small firms was very much reduced.

Section 2 presents the main features of regulatory restrictions and, in section 3, their potential effects on market turbulence are discussed. Empirical evidence is presented in section 4.

2. The regulatory restrictions

Regulation imposed on wool textile firms, according to rulings published in 1966, was based on a minimum plant size, set by the government as a given number of equipment units for each stage of production (Table I).¹ Concerning integrated plants, it was considered that the minimum plant size was achieved as long as it was achieved in one single stage of production.

Regulatory restrictions were imposed according to the nature of the investments to be made and according to plant size relative to the regulatory minimum plant size (RM). The main set of restrictions were as follows:

- a) Capacity entries, meaning investments in new plants that involved increases in the total number of units of regulated equipment,² were forbidden if the number of equipment units of the entrant was below RM and allowed if it was above.
- b) Acquisition entries, related to changes of ownership of incumbent plants, always implied an "acquisition" exit. They might involve the acquisition of a bankrupt firm, of an incum-

Final version accepted on November 7, 1997

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TABLE I
Regulatory minimum plant sizes (1966–1974)

Stages of production	
Combing	30 combs
Spinning, combed wool	5000 spindles
Spinning, carded wool	2500 spindles
Weaving	50 looms

Source: *Despacho Orientador da indústria têxtil*, 6.05.66.

bent, of parts of the operation of an incumbent, or becoming shareholder of an incumbent. They did not imply, per se, changes in technology and, in general, they were not subject to restrictions.³

- c) Investments related to increasing plant capacity were generally allowed without restrictions if the investing firm had a size above RM. For smaller firms, with size below RM, capacity increasing investment in new machinery should follow a two stage process. First, the firm had to buy second hand machinery from some plant departing from the market; then this machinery should be replaced by new equipment. Replacement of existing machinery was allowed, as long as the number of equipment units did not increase. Growth through acquisition or merger was generally allowed, as with acquisition entries.
- d) Exits were generally allowed without restrictions.⁴

These restrictions, published in 1966, were part of a long regulatory process, that had begun in

1931. Then, it was stated that any type of mobility of weaving plants would be subject to discretionary approval by the government.⁵ In 1937, the scope of regulation was enlarged, as combing and spinning of combed and carded wool were also included, but the discretionary powers of the government were slightly reduced, with the introduction of the concept of regulatory minimum plant size (see Table II). However, RM was imposed mainly on entrants, weaving being an exception, and there was no legal commitment that investment projects consistent with RM would be allowed – it was only stated that investments by entrants with capacity below RM would not be allowed.

From 1946 to 1955, investments leading to a number of equipment units greater than the values set for RM, would be allowed. In this sense, the restrictions were similar to the ones imposed in 1966. However, they were less general, because no RM was set for combing mills and, concerning spinning mills, restrictions were focused on integrated firms and on entrants.

After 1955, the government did not follow a consistent set of restrictions, and many investments were allowed on a discretionary basis. It was often argued that general restrictions should be imposed, avoiding a discretionary approach. Following some public debate on a report presented by a Commission set in 1961 to develop proposals for the restructuring of the industry (C.R.I.L., 1962), the restrictions were finally set in 1966. In 1965, however, the government was already using (non published) restrictions similar

TABLE II
Regulatory minimum plant sizes 1937–1955

Stages of production	1937–1946	1946–1955
Combing	Entrants: 1 ton/16 hours	
Spinning, combed wool	Entrants: 3000 spindles	Entrants: 10000 spindles Vertical integration of weaving mills with at least 100 looms: 5000 spindles
Spinning, carded wool		Vertical integration of weaving mills with at least 50 looms, only for intra firm supplies
Weaving	Entrants: 12 mechanical looms Incumbents: 4 mechanical looms	40 mechanical looms; 30 mechanical looms for integrated plants

Sources: *Decreto nº 28132*, November 3, 1937, and *Despacho Normativo*, December 17, 1946.

to the ones to be published in 1966. Later, in February 1974, another change in the regulatory regime was initiated: weaving was deregulated and the government considered that restrictions on spinning and combing would be changed.⁶ In this paper it is considered that the RM presented in Table I, as well as the restrictions published in 1966, were imposed since the beginning of 1965 to the beginning of 1974.

Finally, it should be noted that most firms were single plant firms. In regulatory practice, the size of the firm, not the size of the plant, was used by the government, to compare with RM, even if this was not strictly consistent with the published restrictions, focused on plants. Accordingly, in this paper, in the very few cases when the same firm owned more than one plant, plant data were aggregated at the firm level.

3. Effects of regulatory restrictions

The effects of regulatory restrictions should be felt at the plant level, of incumbents and entrants, and on market turbulence, namely firm growth, entry and exit. These effects are discussed below according to neo-classical producer theory, assuming the traditional U-shaped long run average cost curve,⁷ and according to accepted propositions on the presence of small firms in industries with economies of scale.

For the purpose of this discussion, small firms are considered to be firms with size below RM. This was undoubtedly the sense of the word for policy purposes, but it is different from modern uses of the word. For instance, small firms are defined by Acs and Audretsch (1990) as firms with fewer than 500 employees. In the case of the wool textile industry, a weaving mill with a size close to RM might have 100 employees, but integrated plants had average sizes closer to 200 employees. We are accepting the implicit assumptions of the government that there was a minimum optimal scale for each stage of production and that RM was close to the minimum optimal scale. In this sense, firms with size above RM should not be considered as small firms as they did not had the cost disadvantages resulting from scales of production below the minimum optimal scale.

3.1. At the plant level

The most direct effect of regulation was to impose a burden on small firm growth. Whenever small firms wanted to increase the number of new equipment units, the new machines would replace an identical number of older ones, previously bought in the second-hand market. It should be expected that this restriction would imply that there would be very few plants in the lower neighbourhood of RM. Given the (potentially large) increase in investment costs resulting from remaining below RM, at some point in their growth process plants would find less costly to install a number of equipment units equal to RM, even if afterwards they might be operating with excess capacity.⁸

3.2. On the size distribution of firms

A remarkable feature in industries with economies of scale is the persistence of an asymmetric size distribution of firms, skewed towards small firms. One reason for the presence of small firms with sub-optimal scales of production, is that small firms deploy and remunerate labour differently (Audretsch and Yamawaki, 1992; Audretsch, 1995). Other reasons are related to product differentiation, flexibility of production, uneven distribution of managerial capabilities, innovation, as well as the importance of cost disadvantages relative to larger firms with the minimum optimal scale; potential disadvantages of small firms concerning the access to capital and the role played by absolute capital requirements and by the financial markets providing finance are also considered as variables that may affect the presence of small firms (Acs and Audretsch, 1989, 1990; Pratten, 1991). It has also been suggested that the persistence of small firms reflects a continuing process of entry and not necessarily the survival of sub-optimal firms (Audretsch and Mahmood, 1994). In this context, entry can be viewed as a learning process and as a mechanism by which markets make a choice between different alternatives, and not just as a mechanism of adjustment of supply to demand (for a discussion, Acs and Audretsch, 1990; Geroski, 1991).

Accepting these views to explain small firm presence, it may be suggested that the likely consequences of regulatory restrictions on entry,

growth and exit, namely of firms with size below RM, are as following:

- a) Capacity entries were legally blockaded for plants below RM. In this case, only acquisition entries were possible and their role in market restructuring seems to be mainly an empirical issue. It should be expected that acquisition entries/exits had a role in explaining changes in the presence of small firms in the industry, but it is not obvious that they would lead to an increase or a decrease in small firm presence. For instance, regulation might lead to a decrease in small firm presence, as investment costs of firms below RM were increased.
- b) Regulation introduced incentives to exit. Regulatory restrictions reinforced the demand for second hand machinery and for incumbent plants, the sources of demand being small scale entrants and incumbents. It also created an entirely new demand for obsolete equipment – the one that was to be immediately replaced by an identical number of new machines. For firms operating at a loss, but remaining in the market because the sales were enough to pay for variable costs, the increase in the value of machinery brought about by the additional sources of demand was certainly an incentive to exit.⁹ Again, as in the case of acquisition entries, the role of exit in market restructuring seems to be mainly an empirical problem, as it does not seem possible to make on this subject unambiguous theoretical predictions.
- c) As noted above, at RM there should be some concentration of firms, as at some point of their growth process firms would make a “leap forward” just to be freed from restrictions and cost distortions. Obviously, a similar argument applies to capacity entrants.
- d) The percentage of plants below RM should decrease, because of the restrictions imposed on growth and of the incentives set on exit of these plants, also assumed to be less efficient.

4. Empirical evidence

The size distribution of firms, in the beginning of 1965 is used as a benchmark. It is the size

distribution estimated before the regulatory restrictions, published in 1966, began to be imposed, during 1965.¹⁰ The objectives are to discuss changes in the size distribution of firms, between 1965 and early 1974, before regulatory reform.¹¹ Changes in the size distribution are related to the potential effects of the regulatory restrictions. The role of variables as small scale entry and exit in market restructuring is also assessed, even if only with descriptive purposes, whenever it does not seem possible to relate them to regulation.

The main features of changes in the size distribution of firms between 1965 and 1974 are as follows (Figure 1):

- a) There were almost no firms with sizes between 80% and 99% of the minima. One possible explanation might be that this was a result of the burden on investment costs imposed by the regulatory restrictions. Evidence about the price of second-hand machinery, bought by small firms and entrants to be immediately replaced by new machinery according to the regulatory restrictions, is scarce, as the price was not a regulated variable, but it was possible to collect data for a few transactions. In these cases, the additional investment cost was, as percentage of new machinery costs, 23% in 1965, 66% in 1966, 37% in 1967 and 16% in 1968.
- b) There was a sharp increase in the percentage of firms larger or equal to the RM, and there is a concentration of firms at this point.
- c) The percentage of firms below RM decreased, particularly the share of firms with sizes below 30% of RM.

The shifts in the size distribution are consistent with firm conduct suggested in section 3, as a response to regulation, and they are the result of different patterns of entry, exit and growth.

4.1. Entry and exit

Regulation seems to be closely related to capacity entries, as they were concentrated in plant sizes close to RM and contributed to the peak found at this point in the industry size distribution of firms (Table III). Acquisition entries (and exits) were concentrated in ranges of firm size around 40%

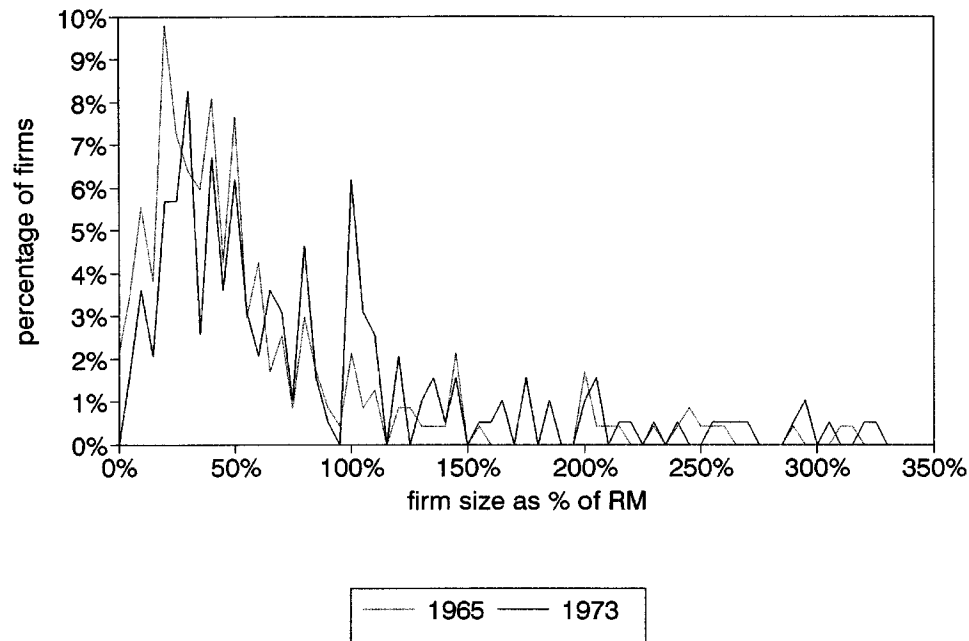


Figure 1. Size distribution of incumbents wool textile industry.

TABLE III
Size distribution of entries and exits 1965–1974 (number of firms)

%RM	0–10	10–15	15–20	20–25	25–30	30–35	35–40	40–45	45–50	50–55	55–60	60–65	65–70	70–75	75–80	80–85	85–90
Capacity exits	5	4	3	6	4	2	2	1	1	7	1	0	1	1	0	2	0
Capacity entries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acquisition entries/exits	0	0	2	2	3	2	2	6	5	2	0	2	0	0	0	0	0
%RM	90–95	95–100	100–105	105–110	110–115	115–120	120–125	125–130	130–135	135–140	140–145	145–150	150–155	155–160	160–165	165–170	>170
Capacity exits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Capacity entries	0	0	3	1	0	0	1	0	0	1	0	0	0	0	1	1	0
Acquisition entries/exits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

to 50% of RM. There were no acquisition entries in ranges of firm size below 15% of RM and above 65% of RM. On the other hand, there were more capacity exits than acquisition entries/exits, and they occurred in almost every range of firm size up to 80% of RM. Only one firm with size above RM departed from the market. These different patterns of entry and exit contributed to the shift in the size distribution of firms and to the decline of the share of small firms in the industry.

There are differences in turbulence among dif-

ferent stages of production. It seems useful to consider two groups of firms. Group 1, including weaving and spinning of carded wool, independent or integrated, and group 2 including combing, spinning of combed wool, independent or integrated, weaving and, in a few cases, spinning of carded wool. The role of small firms in turbulence was larger in the case of group 1 firms. Capacity exits and acquisition exits/entries were main sources of turbulence; capacity entries had a larger impact on market capacity in the case of inde-

pendent plants spinning carded wool (Table IV). In group 2, capacity entries were the single source of entry, particularly important in the combing stage of production (Table IV). There were no capacity exits.

It may be suggested that these different patterns of entry and growth are related to structural differences between group 1 and group 2 firms. The size distribution of firms in group 2 stages of textile production is remarkably different from the industry size distribution (Table V). Both in 1965 and in 1974, most plants had sizes above RM, meaning that they did not face regulatory restrictions on growth. This was likely to be the result of technology, conduct and regulation. The investment costs to achieve RM were higher for combing and spinning of combed wool than for weaving or spinning of carded wool. It is also likely that smaller plants would be more expensive in case of group 2 firms: because of indivisibilities of equipment units: the average price of each equipment unit in group 2 was higher than

the average price of the equipment units in group 1 stages of production. This meant that small firms might face severe financial constraints in group 2 stages of production. Moreover, managerial constraints might be added to the financial ones. For instance, in the cases of upstream integration of small and family owned weaving firms, managerial constraints might make difficult for many to acquire new knowledge. Finally, it should not be dismissed the possibility that regulatory restrictions, restricting or blockading small scale entry, also played a role in shaping the size distribution of firms in group 2.

4.2. Small firm growth

Small incumbents managed to survive and to have high growth rates and this was a major force behind the shift in the industry size distribution and the predominance of small firms in 1974. First, some firms attained RM, and it is likely that regulatory restrictions played a role in shaping

TABLE IV

	Number			Units of equipment as % of 1965 total Number of equipment units		
	Capacity entries	Capacity exits	Acquisition entries	Capacity entries	Capacity exits	Acquisition entries
Spinning of carded wool	2	4	8	4%	3%	6%
Weaving	1	25	12	1%	11%	8%
Spinning of carded wool and weaving	0	12	6	0	6% (spinning) 4% (weaving)	2.7% (spinning) 1% (weaving)
Spinning of combed wool	1	0	0	5%	0	0
Spinning of combed wool and weaving	2	0	0	8% (spinning) 1% (weaving)	0	0
Combing	2	0	0	38.8%	0	0

TABLE V
Size distribution of firms in group 2

%RM	< 80	80– 100	100– 120	120– 140	140– 160	160– 180	180– 200	200– 220	220– 240	240– 260	260– 280	280– 300	300– 320	320– 340	340– 360	>360
1965	0	4	9	26	13	9	0	0	9	9	13	0	0	9	0	0
1974	0	4	11	21	11	7	0	7	4	7	0	4	7	7	4	7

the size distribution of these firms: by 1974, they were concentrated on RM (Table VI). Among these firms, growth rates, measured by the increase in the number of equipment units, were substantially higher for those with sizes, in 1965, of 15% to 30% of RM. Second, it also happened that, in general, firms with size 30% below RM, had the highest average growth rates, although they also had higher standard deviations of growth rates (Table VII).

5. Concluding remarks on industrial policy

Shifts in the size distribution of firms between 1965 and 1974 were consistent with predicted effects of regulatory restrictions. Arguably, regulation contributed to explain observed patterns of entry and patterns of small scale growth and exit.

Despite the restrictions on small scale entry and growth, small firms still predominated in the size distribution by the end of the period. This predominance resulted from the survival of small scale incumbents and from small scale acquisition entries.

The restrictions show that the government was deeply sceptical about the merits of small scale entry and small firm growth. The government was obviously sensitive to the role of smaller wages and family work in small firm survival, and also to the role of low wages in fostering entry, as the opportunity cost of entrepreneurial activity was low in a low wage country; entry was also seen as being often an opportunistic hit and run process.¹² In this sense, it may be suggested that the restrictions tried to avoid hit and run entries, as well as small scale entries resulting from the

TABLE VI
Size distribution of incumbents installing RM as % of RM in 1974 (firm's growth rates in brackets)

%RM in 1965	100	100–110	110–120	120–130	130–140	140–150	150–160	>160
< 20	–	–	–	–	–	–	–	–
20–30	–	286	373	–	–	402	–	–
30–40	178	–	–	–	–	–	–	420
40–50	120	–	–	–	–	–	–	–
50–60	42	72; 105	–	–	–	–	–	–
60–70	161	55	–	–	–	–	–	–
70–80	35; 33	82	–	–	74	–	–	80
80–90	14; 11	–	–	–	68	–	–	–

TABLE VII
Growth and firm size (1965–1974)

Firm size as % of RM c. 1965	Firms increasing the number of installed regulated equipment units		Firms replacing old equipment units	
	Average growth in number of equipment units	Standard deviation of growth rates	Average number of machines replaced as % of 1974 total	Standard deviation of rates of replacement rates
≤ 30	54%	0.95	11%	0.16
30–60	33%	0.64	22%	0.39
60–90	44%*	0.44	8%	0.08
90–120	23%*	0.32	15%	0.26
120–150	27%	0.29	19%	0.22
150–180	33%	0.48	5%	0.08
>180	30%	0.47	20%	0.36

* In these size ranges, integrated firms with growth rates above 50% might not attain the regulatory minimum whenever growth happened in the stages of production with smaller number of machinery units.

low opportunity cost of self employment in the Portuguese economy of the sixties.

It seems possible to suggest that another objective of the regulator was to accelerate the pace of market restructuring, in order to improve domestic market performance. It was considered that less efficient firms survived on the basis of lower wages, family labour and product differentiation in a protected market. Increasing the incentives to their exit would also increase the domestic demand available to larger producers and their possibilities to grow in the protected domestic market. These incentives would be paid by small firms growing rapidly.

The restrictions imposed followed a middle ground between conflicting views presented by different groups in Portuguese wool textile industry in the first half of the sixties. The Commission set in 1961 to analyse restructuring of the industry, proposed blockading small scale activity: no firm would be allowed to operate without the RM and incumbents would have an 18 month period of adjustment (C.R.I.L., 1962). This was strongly opposed by small firms, most of them owning weaving mills. They proposed the complete abolition of regulatory restrictions, arguing that their survival on the basis of product differentiation showed their greater flexibility to adapt to consumers preferences and, also, that they had some cost advantages adjusting to short production runs (A.A.V.V., 1962). Arguably, the government did not reject this point, but implicitly assumed that even product differentiation would demand longer production runs, and it would be necessary to increase plant scales,¹³ otherwise domestic unit production costs would remain too high and, in the near future, domestic firms would not resist the impact of European competition.¹⁴ In a sense, it might be suggested that this policy was based on a structuralist view of market dynamics – all firms would converge to a minimum optimal scale, and the objective of the regulation was to accelerate the process of convergence.

Further research might focus on the contribution of factor markets to changes in the industry size distribution. During the period considered there was a significant growth in the banking system, as well as a big improvement in economy wide real wages, that doubled between 1965 and 1974. Developments in banking might have

improved access to finance for small firms; however, the increases in real wages implied an increase in the opportunity cost of entrepreneurial activity, reinforcing the negative effects of the regulatory restrictions on small firm entry and growth.

Acknowledgements

The author thanks the Minister of Industry and Energy and the General Director of Industry for permission of access to the government files. The usual disclaimer applies.

Appendix

Data

A data base was built from government files relating to investments made from 1965 to early 1974. Each file relates to an investment by a single plant and contains the following data: name of the firm owning the plant, plant size, in terms of number of equipment units, the number of equipment units to be installed and effectively installed and their source: imported or domestically produced, new or second hand and, if second hand, the name of the seller. Variables as sales, profits, consumption of raw materials, labour force, wages and prices of equipment were not regulated and information about them is often not available.

Several restrictions on empirical analysis follow from these features of the data base. First, turbulence is evaluated in terms of number of plants and number of equipment units, no adjustments being made according to capacity utilisation rates or production capacity of individual equipment units. Second, it was not always possible to know if the firm leaving the market was bankrupt, or if the owner was just selling a profitable operation. Finally, it should also be noted that the database is not suitable for testing several theoretical propositions that might be of interest, for instance those relating to the effects of product differentiation or wage of differentiation on small firm presence.

Evidence about exits and acquisition entries was collected indirectly. Regulation created a demand for obsolete equipment of firms departing from the market, and reinforced the demand

for economic and technologically useful second hand machinery. That is, the machinery usually remained in the market. Exit was followed by the acquisition of equipment by survivors and by entrants. In this essence it is very likely that the data base includes every exit and entry.¹⁵ The following cases have been considered: a) individual units of equipment were sold to several incumbents, b) the plant was sold to a single incumbent, c) the plant was sold to an entrant. Capacity exit is considered to have happened in cases a) and b). Case c) is considered as associated to acquisition entries.

For each stage of production, the number of incumbents, in 1965 and early 1974, is presented in Table Ia (for entries and exits see Table IV).

Sources of error, other than observation errors, may result from missing files at the government: a) some firms might be missing at all, either because the files were lost or because they did not undertake any regulated investment during the period; b) for other firms, some files were available but it might happen that others were lost; for instance, in some cases the first investment was recorded in 1968, and it might happen

TABLE Ia

	1965	1974
Independent spinning of carded wool	34	32
Independent weaving	103	79
Integrated spinning of carded wool and weaving	70	58
Independent spinning of combed wool	5	6
Independent combing	2	4
Integrated combing, spinning/weaving	9	9
Integrated spinning (combed wool and carded wool) and weaving	7	9

that other investments were made during the three previous years. In these cases, the number of equipment units assumed in 1965 was the number recorded in 1968, previous to the investment. Case a) would lead to some underestimation of industry machinery in 1965 and in 1971 and case b) to overestimation in 1965. The latter is likelier. Computing the ratio between estimates from one government officer (Afonso, 1967) and the estimates resulting from the data base, both related to 1965, also suggest some overestimation of industry equipment in 1965. The results are as

follows: number of combing machines, 98%, number of spindles for combed wool, 98%, number of spindles for carded wool, 85%, number of looms, 98%. For lack of reliable additional information, no adjustments were made to the data base.

Notes

¹ The number of equipment units was taken as a proxy for capacity of production. Given the enormous variety of equipments available and, also, product differentiation, regulation in terms of a strict concept of capacity would probably be too expensive, if possible at all.

² As defined, capacity entries are close to Johnson's (1986) concept of output entries and Silva's (1991) concept of pure entries.

³ However, any acquisition, by an entrant, of the operations at any stage of production of any plant was allowed only if the size of the stage of production sold was maintained. For instance, in the case of an integrated firm selling the weaving business, every loom had to be sold to the same buyer. If not, the looms had to be sold to incumbent firms. In practice, a milder version of this was often followed: firms were allowed to sell machinery in any stage of production as long as they retained a size above RM set for that stage of production.

⁴ See note 3.

⁵ See *Decreto n° 19354*, February 14, 1931.

⁶ See *Decreto-Lei n° 75/74*, February 28.

⁷ Obviously, the government assumed that there was a minimum optimal scale for each regulated stage of textile production, and that the average cost would not increase over the relevant ranges of production). RM was set in number of equipment units, based on international comparisons, and the government usually assumed that RM implied capacities of production below the minimum optimal scale, but close enough so that it did not imply meaningful cost disadvantages (see *Despacho Normativo*, 1946, *Despacho orientador*, 1966 and C.R.I.L., 1962).

⁸ For a formal proof see Confraria (1992). It should also be noted that the restrictions created incentives to growth through the acquisition of second hand equipment, without replacement by new machinery.

⁹ As noted above, according to the restrictions, whenever one unit of equipment was sold by an incumbent, the plant had to exit the market. Exceptions to this rule were only found in plants with size larger than the RM.

¹⁰ It might be expected that the size distribution of firms in 1965 was influenced by the regulatory restrictions in place during the previous decades, but it should be noted that those restrictions were different from the set that was imposed from 1965 onwards.

¹¹ Alternative approaches, as building a counterfactual of market turbulence in the absence of regulation would probably be excessively demanding concerning the kind of assumptions to be built into the model. For an example, but for a different problem, see Geroski and Toker (1996).

¹² Storey (1990) argued that most small firm entries were strongly influenced by the opportunity cost of self employment and that this was one of the reasons to expect that small firms would behave differently of larger firms. The regulatory agency obviously understood these motivations, but were deeply sceptical about the potential effects on market performance of small firm conduct. See Confraria (1992) for a discussion of the foundations of Portuguese regulatory policy in this period.

¹³ Trade barriers would decrease, following membership of the European Free Trade Association.

¹⁴ Implicitly, it was accepted that there were economies of scale at the level of individual units of equipment (*e.g.* a shuttleless loom vs a mechanical loom) as well as at the plant level. The point was not made explicit and regulatory restrictions focused on plant size measured in number of units of equipment. Sometimes, the regulatory agency did not allow the import of second-hand machinery, on the grounds that it was technologically obsolete. Anyway, to regulate individual units of equipment would impose tremendous restrictions on firms investments, as well as increase the costs of regulation.

¹⁵ Concerning acquisition entries and exits it should be noted that they were recorded as long as they were followed by a change in the legal name and, sometimes, in the legal form, of the firm operating the plant. Whenever the shareholders or owners changed, but the name and legal form of the firm remained the same, entries and exits were not recorded. Accepting that these cases should be considered as entries and exits, acquisition entries and exits might be considered as underestimated. There is some well known ambiguity about the concept of "newness" of a firm. Ownership is often used as criteria for newness; Johnson (1986) discusses the point and suggests that a better criteria might be changes in the underlying accounting framework.

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