El Ouahabi, Sanae; Bousselhami, Ahmed

Article

Markup estimate of industrial branches in Morocco

Journal of economics and political economy

Provided in Cooperation with:
KSP Journals, Istanbul

Reference: El Ouahabi, Sanae/Bousselhami, Ahmed (2017). Markup estimate of industrial branches in Morocco. In: Journal of economics and political economy 4 (4), S. 396 - 407.

Journal of
Economics and Political Economy
www.kspjournals.org
Volume 4 December 2017 Issue 4

Markup estimate of industrial branches in Morocco

By Sanae EL OUAHABI [a†] & Ahmed BOUSSELHAMI [b]

Abstract. In this paper, we will present an estimate of the intensity of competition in the different branches of the Moroccan industrial sector, in order to identify the branches that will be the subject of pro-competitive structural reforms, with the aim of strengthening the economic activity and job creation. For each industry, the intensity of competition is evaluated using the estimated margin factor (or markup) estimated from the method proposed by Roeger (1995). The econometric results obtained show that the relatively high margin factor in the "agrifood" and "chemical and parachemical" branches suggests that these industries are not very competitive over the 1985-2015 period. On the other hand, the branches of "mechanical, metallic and electrical" and "extractive" industries that have significantly lower markup rates compared to other industries appear to be more competitive. The estimate of margin factors over different periods will allow us to assess the evolution over time of the degree of competition in each of the branches studied. Thus, the estimate of markup rates during the period 1985-1999 remains unclear (the margin factor is significantly lower than 1), hence we need additional information to determine the degree of concentration of industrial branches. For the period 2000-2015, the "extractive", "chemical and parachemical" and "agro-food" branches are less competitive, while the "mechanical, metal and electrical" industries appear to be more competitive.
Keywords. Morocco, Industrial sector, Industrial branches, Markup, Competition.
JEL. L22, L25, L60, L71, O14.

1. Introduction

This study aims to estimate the intensity of the competition of the various branches of Moroccan industry, to determine the branches to be the subject of pro-competitive structural reforms likely to promote economic growth and job creation. Competition in the goods and services markets is often cited as a factor of economic growth. Increasing competition in a sector would indeed increase activity and employment by lowering the selling price of products but also by improving the productivity of the sector, particularly through innovation (Klein, & Romain, 2009).

From a theoretical point of view, however, the effect of competition on productivity is ambiguous. The fear of losing market shares and disappearing must certainly encourage companies to innovate, but it is also possible that firms are only willing to bear the costs of innovation if they receive in return sufficiently high annuities (Klein, & Romain, 2009).

For each industry, the intensity of competition is assessed using the markup margin, which fairly accurately reflects the effective competitive intensity of the sectors. It is defined as the ratio between the selling price and the cost of production of an additional unit of product (the marginal cost).[1]

[a†] Abdelmalek Essadi University, Faculty of Economics, Tangier, Morocco.
. +212653732603
. tangermap@gmail.com
[b] Abdelmalek Essadi University, Faculty of Economics, Tangier, Morocco.
. +212661351597
. Bousselhamia@yahoo.fr

A higher margin factor corresponds to a lower degree of competition (Martins, Scarpetta, & Pilat, 1996; Przybyla, & Roma, 2005). The estimate of margin factors over different periods also makes it possible to assess the evolution over time of the degree of competition in each of the sectors. The econometric estimate of the margin factors is based on the method developed by Roeger (1995), used in particular by the OECD and the ECB (Martins, Scarpetta, & Pilat, 1996; Przybyla, & Roma, 2005).

The markup is related to the Lerner index denoted B by the expression $\mu = 1 / (1-B)$. In pure and perfect competition ($\mu = 1$, $B = 0$), the Solow residual is independent of the growth rate of the capital/labor ratio and is equal to the rate of technical progress. The econometric results obtained from the markups estimate of the seven Moroccan industrial branches show that at the overall level the test is statistically significant for only four branches that have a positive Lerner index, which reflects the existence of a power without being able to determine the scale.

The relatively high margin factor in the "agri-food" and "chemical and parachemical" industries (1.42) suggests that these industries are not very competitive during the 1985-2015 period. On the other hand, the "mechanical, metallic and electrical" and "extractive" branches, which have significantly lower markup rates, respectively (1.25) and (1.28), appear to be relatively more competitive than "other non-manufacturing industries excluding oil refining"(1.32) and "oil refining" (1.34).

In addition, the estimate of the margin factors over different periods makes it possible to assess the evolution over time of the degree of competition in each of the branches studied since the mid-1980s. The sub-period analysis shows that during the period 1985-1999 the margin factor estimate remains unclear (the margin factor is significantly lower than 1), hence we need additional information to determine the level of industrial branches' concentration. As far as the oil refining industry, the results show that firms have the ability to influence prices in the market, reflecting the low level of competition in this activity. For the period 2000-2015, the relatively high margin factor in the "extractive" (2), "chemical and parachemical" (1.71) and "agrifood" (1.47) industries means that these branches are less competitive with other industries.

However, the "mechanical, metallic and electrical" branch, which has a significantly lower markup rate compared to other branches (1.28), appears to be more competitive than "other manufacturing industries excluding oil refining" (1.36) and "oil refining" (1.32). With regard to the textile and leather industries, the results obtained, both for the overall period and in sub-periods, show a situation where the selling price is lower than the marginal cost, in a situation marked by the absence of market power. (existence of competition), which means that one faces either a practice of unfair competition, namely "dumping", or a situation of tax evasion.

2. Theory and literature

2.1. The reform of the competition law in Morocco

Morocco, which has an advanced status in its relations with the European Union, has for years been engaged in a process of regulatory convergence, particularly in the area of competition law.

The legal framework, which aimed at promoting healthy competition and consumer protection, was reinforced by Law No. 06-99 on freedom of prices and competition, which intervened to repeal the Act of 12 October 1971 on the regulation and control of prices, as well as by other rules to complete the institutional building (Law 17-97 on the protection of industrial property, Dahir on obligations and contracts, Trade Law, etc).

However, under this mechanism, the Competition Council was merely a consultative body, devoid of decision-making power or sanction, while the Head of Government had wide powers, ranging from the authorization of operations to impede the free competition until the appeals to the King's Prosecutor, with a view

to instituting proceedings in the case of anti-competitive agreements between market operators or abuse of dominant position.

With the promulgation of Morocco's new Constitution in 2011, the Competition Council was strengthened its status, establishing itself as an "independent administrative body responsible for ensuring transparency and equity in economic relations", thus marking an overhaul of the competition law in Morocco. This development was confirmed by the publication of two laws on August 7, 2014. It is the law no.104-12 on freedom of prices and competition and the law no.20-13 on the Competition Council, which came to devote the tasks of the Competition Council and to make it a veritable regulator of competition in Morocco. In this context, cases of referral to the Competition Council have been expanded, insofar as the Competition Council, as an independent administrative institution, has new powers of self-referral, control, sanction and decision-making, which should improve the conditions of the economic relations that are forming in the Kingdom.

2.2. Review of empirical studies on the estimation of the competition-productivity relationship

Several studies have dealt with estimating the competitive intensity of economic sectors and the relationship between competition and productivity grains. Thus, we will try to expose some works that constituted the frame of reference of our study.

This is a study of the Directorate of Studies and Financial Forecasts (DEPF) on "the freight transport sector: constraints and ways of reform", carried out in 2013, which reveals that the mining industry shows the highest markup (2.84), while the transport markup (1.33) was close to the trade mark (1.31) because of the similarity of their structure.

It also considers that a drop in the markup in the transport sector generates an increase in GDP, employment and final consumption of households.

Another study by Abbad (2017) on "the accumulation of capital and productivity gains in Morocco", published in 2017 by the OCP Policy Center, presents a change in the margin rate[2] of Moroccan companies during the period 2000-2014. Morocco's margin[3] rate improved significantly between the two sub-periods, from 62.3% on average between 2000 and 2007 to 64% on average between 2008 and 2014, a gain of 1.7 points. This rate stabilized at a maximum level between 2008 and 2010 (64.9%) before falling gradually to 63.6% in 2013 and 62.2% in 2014.

Another working paper by Bouis (2007) of the Directorate General of Treasury and Economic Policy (DGTPE) in 2007, entitled "Which sectors to reform to promote employment and growth", proposes an estimate and a comparison of the intensity of competition from different sectors in France compared to a group of European countries (Germany, Belgium, Denmark, Finland, Italy). The study reveals that three sectors of the French economy seem to be subject to relatively weak competition. These are retail trade, hotels and financial intermediation. An increase in competition in these sectors, leading to markup levels close to those observed in the most competitive countries, would eventually increase the value added of the market branches by 1.2% and the creation of around 200,000 jobs.

"Competition and productivity gains: sector analysis in OECD countries" is the title of a study conducted by Klein & Bouis (2009), which examines the estimation of the relationship between the intensity of competition and productivity gains from a sample of 11 OECD countries and some 20 sectors over the period 1981-2004. The results indicate, in particular, that competition would be favorable to productivity gains up to a certain level but unfavorable beyond that, and that increased competition would increase productivity in less competitive sectors but would have no effect on the less competitive sectors more competitive.

Another study on "Competition, Productivity and Efficiency", conducted by Pilat (1996), which attempts to examine some of the empirical results on productivity gaps between OECD countries, to analyze the relationship between productivity and competition and to determine factors, including the conditions of

competition, that contribute to low productivity or the existence of inefficient behavior. According to this work, it appears that the differences between OECD countries in the level and rate of productivity growth appear to be related to a certain extent to the degree of competition facing industries and sectors in the different countries.

3. Data set and method

In this part, we will present the research methodology and the evaluation of the results of our econometric modeling.

3.1. Methodology

The markup or margin factor (= 1 + margin rate) is estimated, for each sector, from the method proposed by Roeger (1995) and explained in the appendix. It is a question of reversing the rate of growth of the production in value, not explained by the growth of the factors in value, on the rate of growth of the nominal productivity of the capital. The coefficient estimated in the regressions is the Lerner index, defined by the ratio (price - marginal cost)/price. It makes it possible to obtain the markup by the relation markup = 1/ (1 - index of Lerner).

The markups estimated in the context of our work correspond to markups on production (ratio of price to marginal cost of production). The markup is related to the Lerner index denoted B by the expression μ $\mu = {}^{1}/_{(1-\beta)}$. Solow's residue is rewritten

$$SR = \Delta q - \alpha \Delta I - (1-\alpha)\Delta k = \beta(\Delta q - \Delta k) + (1-\beta)\theta$$

In pure and perfect competition (B = 0), the Solow residue is equal to the rate of technical progress. Roeger (1995) shows that an equivalent expression can be obtained for a Solow residue based on the prices

$$SRP = \alpha \Delta w + (1-\alpha)\Delta r - \Delta p = -\beta(\Delta p - \Delta r) + (1-\beta)\theta$$

Subtracting SRP from SR and adding an error term yields an expression to estimate B

$$\Delta yt = \beta \Delta xt + \varepsilon t$$

or

$$\Delta y = (\Delta q + \Delta p) - \alpha(\Delta I + \Delta w) - (1-\alpha)(\Delta k + \Delta r),$$

is the growth rate of nominal Solow residue and

$$\Delta x = (\Delta q + \Delta p) - (\Delta k + \Delta r),$$

is the growth rate of the nominal production-to-capital ratio. The advantage of this method is that prices and volumes can be grouped so that only nominal variables are needed for the estimation.

It is possible to extend the approach by incorporating intermediate consumption. In this case, the markup is defined as the ratio between the marginal cost and the production price, and no longer the price of value added. Dependent variable and explanatory variables become

$$\Delta yprod = (\Delta qprod + \Delta pprod) - \alpha prod(\Delta I + \Delta w) - \beta prod\ (\Delta n + \Delta pci) - (1 - \alpha prod - \beta prod)(\Delta k + \Delta r),$$

$$\Delta xprod = (\Delta qprod + \Delta pprod) - (\Delta k + \Delta r),$$

or

qprod = log (production),
pprod = log (production deflator),
αprod = share of employment in production,
l = log (job),
w = log (salary),
n = log (intermediate consumption),
pci = log (price of intermediate consumption),
βprod = share of intermediate consumption in production,
k = log (capital stock),
r = log (cost of capital).

It should be recalled that markup estimates are obtained under the assumption of constant returns to scale. Taking into account increasing returns to scale would lead to even larger estimated markups. (on this point, see for example Hylleberg & Jorgensen, 1998).

The data needed to estimate the margin factors are available for all Moroccan industrial branches, through the HCP statistics, and the results of the annual surveys of the processing industries of the Moroccan Observatory of Industry, under the Ministry of Industry, Trade, Investment and Digital Economy, as well as published industry indicators. However, the cost of capital variable[4] is not available and is difficult to estimate due to the lack of data on capital stock in the industrial sector in Morocco. We thus opted for the industry-wide industrial price index variable as a proxy variable. The estimation method used is ordinary least squares (OLS).

4. Finding

The econometric results obtained from the markups estimate of the seven Moroccan industrial branches show that at the overall level the test is statistically significant for only four branches that have a positive Lerner index, which reflects the existence of a market power without being able to determine the scale.

Table 1. *Total Period 1985-2015*

Results of the Markups estimate		B	sig	markup	sig
Secteurs	Global	0,161	0,319	1,19220928	Non significatif
	Extractive Indu	0,222	0,804	1,2858361	Non significatif
	Agro Indu	0,299	0	1,42711545*	Signaficatif
	Chemical and parachemical Indu	0,298	0,283	1,42551279	Non significatif
	Mechanical, metallic and electrical Indu	0,202	0,07	1,25260555	Signaficatif
	Textile and leather Indu	-0,485	0,203	0,67322596	Non significatif
	Other manufacturing Ind excluding refining	0,248	0	1,32917896	Signaficatif
	Oil refining	0,256	0	1,34450043	Signaficatif

Note: (*) The confidence interval of the margin factors of the industrial branches over the 1985-2015 period is estimated at the 10% threshold.
Source: Authors calculations based on HCP data.

These are the "agro-food", "mechanical, metal and electrical", "other manufacturing industries excluding oil refining" and "oil refining" industries where firms have the ability to influence prices in the market, but cannot determine the extent of that power. It should be noted that there is more market power in "chemical and parachemical" than "extractive" industries, because the B coefficient of the chemical branch is higher than that of the extractive industries and is thus the closest to 1. For the textile and leather industries, the test is statistically insignificant with a negative B coefficient, which means that this situation is unlikely to occur because B ε [0,1) is below the profit maximization.

On the other hand, the relatively high margin factor in the agri-food and chemical and parachemical industries (1.42) suggests that these industries are not very competitive during the 1985-2015 period. In Addition, the "mechanical, metal and electrical" and "extractive" branches, which have significantly lower markup

rates, respectively (1.25) and (1.28), appear to be relatively more competitive than "other manufacturing industries excluding oil refining "(1.32) and" oil refining "(1.34) during this period.

In this context, estimating margin factors over different periods will allow us to evaluate the evolution over time of the degree of competition in each of the branches studied since the mid-1980s. In this respect, we divide our database into two. A choice that seems perfectly justified, given the restructuring experienced by the industrial sector, thanks to the launch of several plans from the 2000s aimed at promoting the emergence and industrial acceleration of Morocco. It is thus necessary to estimate the margin factors of the industrial branches during the periods 1985-1999 and 2000-2015, in order to evaluate its degree of evolution and thus the impact of the reforms undertaken and the plans launched on the competitive intensity in Moroccan industry.

Table 2. *Results of the 1985-1999 sub-period*

Years	Branches	B	sig	markup	Sig
	Extractive Indu	-16,284	0,027	0,05785654*	Significant
	Agro Indu	-0,82	0,043	0,54956281	Significant
	Chemical and parachemical Indu	-4,234	0,012	0,1910436	Significant
1985-1999	Mechanical, metallic and electrical Indu	-1,356	0,086	0,42438866	Significant
	Textile and leather Indu	-2,044	0,217	0,32846306	Non Significant
	Other manufacturing Indu excluding refining	-0,088	0,527	0,9193545	Non Significant
	Oil Refining	1,339	0,049	-2,94689618	Significant

Note: (*) The confidence interval of the margin factors of the industrial branches over the 1985-2015 period is estimated at the 10% threshold.
Source: Authors calculations based on HCP data.

During the 1985-1999 period, the test is statistically significant for five branches, four of which have a negative Lerner index. These are the extractive, agro-food, chemical and parachemical, and mechanical, metal and electrical industries.

The negative sign of the Lerner index means that no conclusion can be drawn as to the degree of market power that exists, as this can occur both under conditions of competition and non-competition which requires additional information on the prevailing conditions of competition in this market. Regarding the oil refining industry, the test reflects the existence of market power, but its degree cannot be determined. For the textile and leather industries, and other manufacturing industries excluding oil refining, the test reveals that this situation is unlikely to occur because B ε [0,1) is below profit maximization.

We would like to remind you that in our analysis Morocco's orientations of the industrial policies we could note that the industrial development during the 80's and 90's remained based on the downstream transformation and the assembly, the valorization of the natural resources, in particular phosphates, and the encouragement of exports to alleviate the deficit of the trade balance. This explains the insignificant markup rates (<1) obtained, which do not allow us to determine the degree of competitive intensity of industrial branches during this period.

Table 3. *Results of the 1985-1999 sub-period*

Years	Branches	B	sig	markup	Sig
	Extractive Indu	0,502	0,12	2,00653947	Non Significant
	Agro Indu	0,323	0	1,47733406	Significant
	Chemical and parachemical Indu	0,416	0,186	1,71366428	Non Significant
2000-2015	Mechanical, metallic and electrical Indu	0,219	0,091	1,28107819	Significant
	Textile and leather Indu	-0,568	0,273	0,63774571	Non Significant
	Other manufacturing Indu excluding refining	0,269	0	1,36831664	Significant
	Oil Refining	0,248	0,002	1,3291217	Significant

Source: Authors calculations based on HCP data

For the period 2000-2015, the test is statistically significant for the "agri-food", "mechanical, metallic and electrical", "other non-refining manufacturing" and

"petroleum refining" branches with a positive Lerner index which refers to the existence of market power, without being able to determine its extent. For companies operating in the extractive industries and chemical and parachemical industries, the results show that during this period they hold market power, with more power in the extractive sector. For its part, the extractive sector is less competitive, because of the significant weight of the phosphate industry, whose production is monopolized by the Office Chérifien des Phosphates (OCP).

For the textile and leather industries, the test is statistically insignificant with a negative B coefficient, a situation that is unlikely to occur because B ε [0,1) is below profit maximization. This situation means that the selling price is lower than the marginal cost, in a context marked by the existence of competition, which leads us to think that we face either a practice of unfair competition, namely "dumping", or a situation of tax evasion, in which costs are inflated and prices declared do not reflect reality.

5. Conclusion

Estimating the intensity of competition in the various branches of the Moroccan industrial sector during the period 1985-2015 has shown us that the relatively high margin factor in the "agro-food" and "chemical and parachemical" branches leads to think that these branches are not very competitive.

On the other hand, the "mechanical, metal and electrical" and "extractive" industries with significantly lower markup rates appear relatively more competitive than "other non-oil refining manufacturing industries" and "oil refining". The sub-period analysis reveals that during the period 1985-1999 the estimate of the margin factor remains imprecise (the margin factor is significantly lower than 1), hence we need additional information to determine the degree of concentration of industrial branches. With the exception of the oil refining industry, for which the results show that companies hold market power and hence the ability to influence prices in the market, reflecting the low level of competition in this activity.

For the period 2000-2015, the relatively high margin factor in the "extractive" (2), "chemical and parachemical" (1.71) and "agrifood" (1.47) industries means that these branches are less competitive with other industries. However, the "mechanical, metallic and electrical" branch, which has a significantly lower markup rate compared to other branches (1.28), appears to be more competitive than "other manufacturing industries excluding oil refining" (1.36) and "oil refining" (1.32). With regard to the textile and leather industries, the results obtained, both for the overall period and in sub-periods, clearly show that this branch suffers from a lack of competitiveness, structuring and performance, due to the predominance of informal fabric and low value-added activities, in particular linked to outsourcing.

This branch also faces a number of structural problems that prevent operating companies from benefiting greatly from the proximity advantage vis-à-vis the European markets and subsidies granted by the State to improve the industrialization and productivity of this sector, which is the main employer of Moroccan industry and one of the main pillars of the national economy. Moreover, during the second half of the period, the econometric estimate clearly shows that the effects of the restructuring of the industrial sector, while having a clear vision and a well-thought-out strategy, are beginning to be felt, at least they provide the opportunity to identify low-competitive industries that need pro-competitive reforms to boost competitiveness, economic growth and job creation.

Notes

[1] The markup rate considered here must be distinguished from the margin rate defined by the EBE / GVA ratio insofar as in calculating the difference between the sales price and the production costs, the latter already include the "normal" remuneration of capital. A high markup rate indicates abnormally high profits, while a high margin rate (EBE / GVA) may simply reflect a high capital intensity of the sector.

[2] The margin rate is defined, according to the national accounts, as the ratio between the gross operating surplus (corresponds to the remuneration of capital before depreciation and tax) and the value added. An examination of its evolution compared to that of wages makes it possible to give an idea of the profile of the division of the VA between the remuneration of the labor factor and the capital factor.

[3] A high margin rate may simply reflect a high capital intensity of the sector, while a high markup rate indicates abnormally high profits.

[4] The cost of capital is defined by the following formula: (nominal interest rate - expected inflation + decommissioning rate (= 5%)) * capital deflator. Anticipated inflation is obtained by applying an HP filter (parameter lambda = 100) on the GDP deflator series.

Appendix

Markup estimate method

The markup (or margin factor) is evaluated for each sector using the method developed by Roeger (1995), which is an extension of the Hall (1988) approach, which proposes a method for estimating the marginal costs of industries. The marginal cost of a firm can be expressed as follows:

$$Cm = \frac{W.\Delta L + R.\Delta K}{\Delta Q - \theta Q}$$

Where Q is the value added (real), W, the wage, R the cost of capital and θ the rate of technical progress. This expression is rewritten:

$$\Delta q = \mu\alpha\Delta I + (1 - \mu\alpha).\Delta K + \theta,$$

Lowercase variables representing logarithms. When returns to scale are constant, the share of capital and labor in value added is 1. The margin factor is defined as the ratio of the price of value added P to marginal cost (μ = P / Cm) and noting α = WL / PQ, we obtain

$$\Delta q = \mu\alpha\Delta I + (1 - \mu\alpha).\Delta K + \theta,$$

Subtracting $\alpha(\Delta I - \Delta K)$ from both sides of the equation and rearranging yields the Solow residue

$$SR = \Delta q - \alpha\Delta I - (1 - \alpha)\Delta K = (\mu - 1).\alpha(\Delta I - \Delta K) + \theta$$

In a situation of pure and perfect competition (μ = 1), the Solow residual is independent of the growth rate of the capital / labor ratio and is equal to the rate of technical progress θ. In reality, this property, known as the invariance property of the Solow residue, is not observed. The markup is related to the Lerner index denoted B by the expression $\mu = {}^{1}/_{(1-\beta)}$. The Solow residue is rewritten:

$$SR = \Delta q - \alpha\Delta I - (1 - \alpha)\Delta K = \beta.(\Delta q - \Delta K)$$

In pure and perfect competition (B = 0), the Solow residue is equal to the rate of technical progress. Roeger (1995) shows that an equivalent expression can be obtained for a Solow residue based on the prices $SRP = \alpha\Delta w + (1 - \alpha)\Delta r - \Delta p = -\beta.(\Delta p - \Delta r) + (1 - \beta).\theta$

Subtracting SRP from SR and adding an error term yields an expression to estimate B

$$\Delta yt = \beta\Delta xt + \varepsilon t,$$

where $\Delta y = (\Delta q + \Delta p) - \alpha.(\Delta I + \Delta w) - (1 - \alpha).(\Delta K + \Delta r),$

is the growth rate of nominal Solow residue and

$$\Delta x = (\Delta q + \Delta p) - (\Delta k + \Delta r),$$

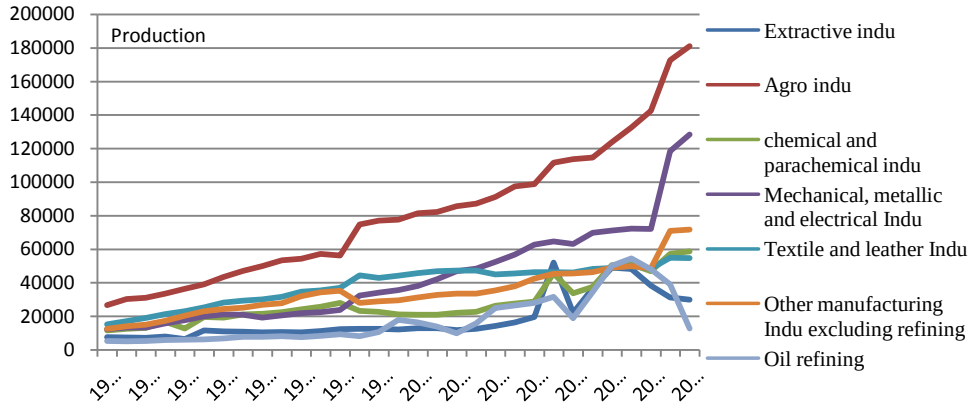
is the growth rate of the nominal production-to-capital ratio. The advantage of this method is that prices and volumes can be grouped so that only nominal variables are needed for the estimation.

It is possible to extend the approach by incorporating intermediate consumption. In this case, the markup is defined as the ratio between the marginal cost and the production price, and no longer the price of value added.

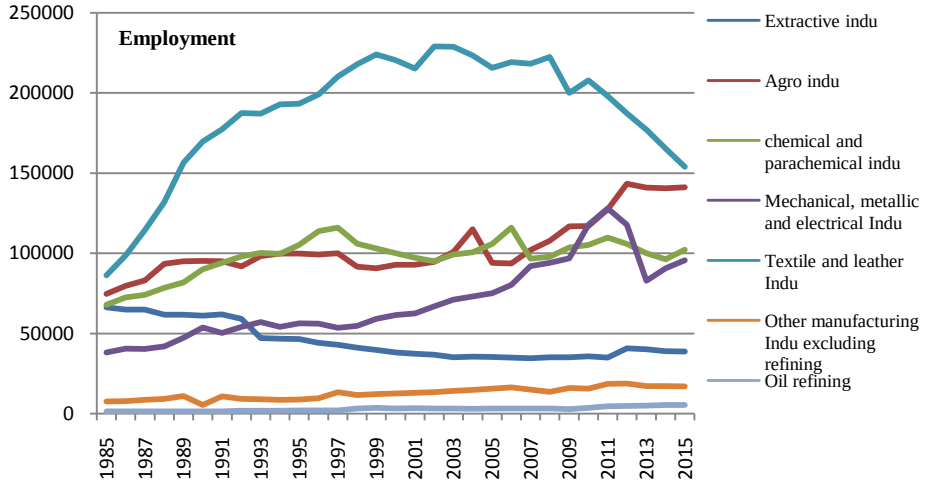
Conclusions on the basis of L and the outcome of a profit maximization test[4]

Test (H0 : profit max)	Value of B	Market power present?
Reject	B > 0	Yes, but unclear how much
Reject	B ≤ 0	Unknown, additional information needed
Fail to reject	B > 0	Yes, and there is more market power the closer B to 1
Fail to reject	B = 0	No
	B < 0	Unlikely to occur because B ϵ[0,1) under profit maximization

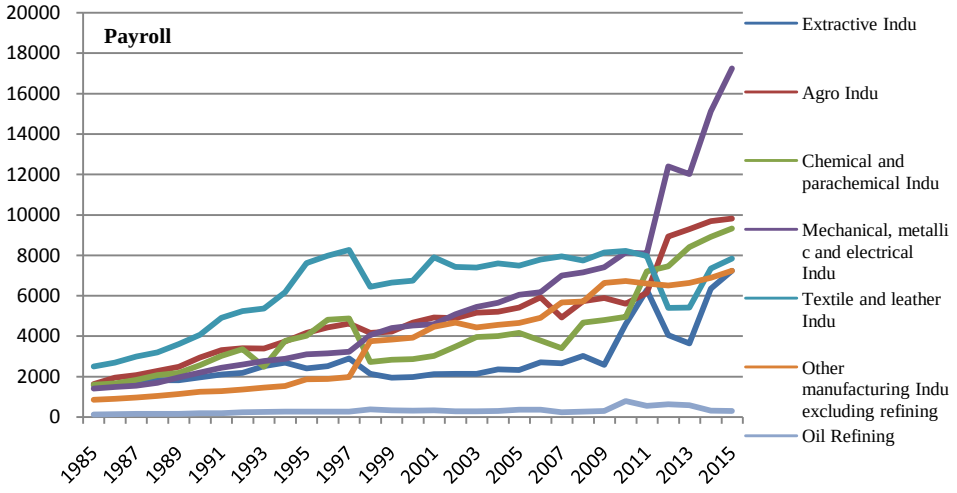
Time evolution of the variables of the model



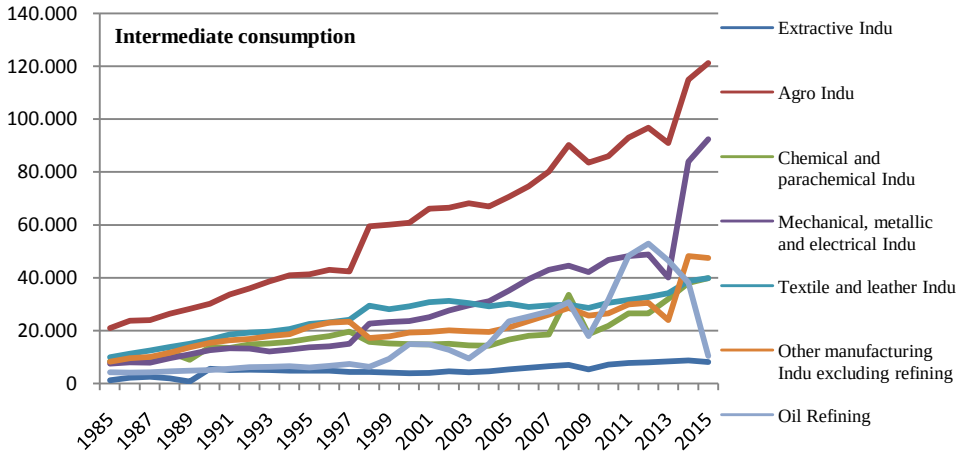
Graph1. *Evolution of industrial production*
Source: HCP



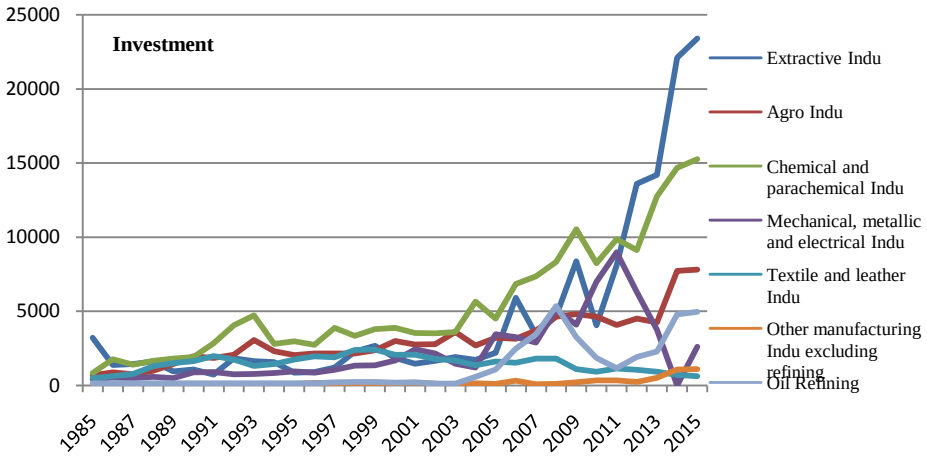
Graph 2. *Evolution of employment by industrial branches*
Source: *The Moroccan observatory of industry*



Graph 3. *Payroll*
Source: HCP



Graph 4. *Intermediate consumption*
Source: HCP



Graph 5. *Investment*
Source: The Moroccan observatory of industry and the ministry of energy and mines

References

Abbad, T. (2017). Accumulation du capital et gains de productivité au Maroc, *OCP Policy Center*.

Aghion, P., Bloom, N., Blundell, R., Griffith, R., & Howitt, P. (2005). Competition and innovation: An inverted u relationship, *Quarterly Journal of Economics*. 120(2), 701-728. doi. 10.1162/0033553053970214

Baily, M.N., Gordon R.J., & Bresnahan, F.T. (1993). Competition, regulation and efficiency in service industries, *Brookings Papers on Econornic Activity: Microeconomics*, p.50-71. doi. 10.2307/2534738

Bouis, R. (2007). Quels secteurs réformer pour favoriser l'emploi et la croissance, Documents de Travail de la DGTPE.

Bos, J., Kolari, J., & Van Lamoen, R. (2013). Competition and innovation: Evidence from financial services, *Journal of Banking and Finance*, 37(5), 1595-1601. doi. 10.1016/j.jbankfin.2012.12.015

El Aoufi, N., & Hollard, M. (2010). Fondements d'une pragmatique de la concurrence au Maroc, Note D'orientation, Conseil de la Concurrence.

Klein, C., & Bouis, R. (2009). Concurrence et gains de productivité: Analyse sectorielle dans les pays de l'OCDE, *Économie et Prévision*, 189, 131-152. doi. 10.3406/ecop.2009.7930

Klein, C., Bouis, R. (2008). La concurrence favorise-t elle les gains de productivité? Analyse sectorielle dans les pays de l'OCDE. *Économie et Statistique*, 419, 73-99. doi. 10.3406/estat.2008.7728

La Direction des études et des prévisions financières (DEPF) (2003), Le secteur de transport des marchandises: Contraintes et voies de réformes.

Loecker, J., & Warzynski, F. (2010). Markups and firm-level export status, *American Economic Review*, 102(6), 2437-2472. doi. 10.1257/aer.102.6.2437

Martins, J-O., Scarpetta, S., & Pilat, D. (1996). Mark-up ratios in manufacturing industries: Estimates for 14 OECD countries, OECD Economics Department *Working Papers*, No.162. doi. 10.1787/007750682315

Norrbin, S. (1993). The relation between price and marginal cost in the U.S. industry: A contradiction, *Journal of Political Economy*, 101(6), 1149-1164. doi. 10.1086/261918

OCDE, (2003). Concurrence sur les marchés de produits et performance économique, *Revue de l'OCDE sur le Droit et la Politique de la Concurrence*, 4(4), 27-38. doi. 10.1787/clp-v4-art14-fr

Pilat, D. (1996). Concurrence, productivité et efficience, *Revue Economique*, 27, 124-145.

Portier, F. (1995). Le rôle des variations de taux de marge dans les fluctuations macroéconomiques conjoncturelles, *L'actualité Economique, Revue D'analyse Economique*, 71(2), 218-249. doi. 10.7202/602175ar

Przybyla, M. & Roma, M. (2005). Does product market competition reduce inflation? Evidence from countries and sectors. ECB Working Paper, No.453. [Retrieved from].

Roeger, W. (1995). Can imperfect competition explain the difference between prima and dual productivity measures? Estimates for US manufacturing, *Journal of Political Economy*, 103(3), 316-330. doi. 10.1086/261985

Sembenelli, A., & Siotis, G. (2008). Foreign direct investment and mark-up dynamics: Evidence from Spanish firms, *Journal of International Economics*, 76(1), 107-115. doi. 10.1016/j.jinteco.2008.05.003

Siotis, G. (2003). Competitive pressure and economic integration: an illustration for spain, 1983-1996, *International Journal of Industrial Organization*, 21(10), 1435-1459. doi. 10.1016/s0167-7187(03)00051-1

Spierdjik, L., & Zaouras, M (2016). The lerner index and revenue maximization, *Applied Economics Letters*, 24(5), 1075-1079. doi. 10.1080/13504851.2016.1254333