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The struggle to develop regional industry policy: the role of the plastics and auto sectors in the Regional Chamber of ABC, São Paulo

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Summary

Much of the current policy debate on fostering the industrial upgrading focuses on the importance of local or regional policy networks. The question, which has been neglected in this debate, is whether conducting local or regional industrial policy is possible where local enterprises are part of a global production system. The ABC region of São Paulo provides a good opportunity for testing this proposition. Its two key sectors, auto and plastics, differ substantially in their involvement in the Regional Chamber, the most important public-private upgrading initiative launched in recent years. The paper shows how and why the very active participation of firms in the plastics chain contrasts with the passive attitude of firms in the auto chain. The main reason for this lack of interest can be found in the relationship of the auto-parts producer with their clients who are few in number and pursue global sourcing strategies. The pressures and the resources for upgrading come from within these hierarchical chains. In contrast, producers in the plastics chains have many clients and are therefore less dependent on specific vertical relationships. This has contributed to their greater reliance on collective efforts and greater involvement in the Regional Chamber.

Dedication

To the memory of Celso Daniel, who did so much for the Greater ABC Regional Chamber discussed in this Working Paper. His brutal assassination on 21 January 2002 cut short a life dedicated to the building of greater justice and social solidarity.

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1 Introduction

This paper examines the viability of regional industrial policy in the current global economy by way of a case study from Brazil. It seeks to understand whether and how vertical relationships between firms in chains affect their willingness and ability to participate in a collective regional restructuring initiative. To this end, it focuses on the Greater ABC region of the state of São Paulo. The choice of the ABC region is due to the fact that, since 1997 this area has been undergoing an important experiment in regional governance based on public-private partnership known as the Greater ABC Regional Chamber. Including the seven Town Councils that make up the region as well as a number of civil society bodies, companies, business associations, labour unions, parliamentary groups and several of the São Paulo State government secretariats, the Chamber proposed the development of an ambitious industrial re-conversion programme based on public-private partnership which is, without a doubt one of the most significant experiments in the construction of public space[1] within Brazilian development. Led by a number of progressive Town Councils, (amongst which that of Santo André clearly stands out for the work of its mayor, Celso Daniel, one of the main mentors and driving forces behind the experiment) the Chamber has not only been implementing initiatives related to infrastructure, social, environmental and urban issues, but has also been attempting to establish industrial development strategies that seek to increase collective efficiency with the aim of promoting diversification and strengthening the position of local firms in their respective chains.

This text, therefore, can be placed within the context of discussions on economic development, the focus and concerns of which have, in recent years been undergoing substantial transformations and generating new concepts and analytical tools and stressing the pivotal importance of a series of issues not previously been addressed, amongst which it is worth highlighting:

1. The importance of the territory, which is seen not only as a geographical or administrative space but as a socially organised space, with the potential to promote local and regional development initiatives.
2. Giving value to locally based development capacity that make use of locally existing potential (i.e. economic, human, institutional and cultural resources) and untapped economies of scale based on the view that: 'local business systems play an important part in structural growth and transformation, given that, similarly to large companies, they too encourage the development of externalities and, therefore growing profits and economic development (Barquero 1998: 2).
3. The key role played by specialised and complementary groups of small to medium enterprises within this context, given their capacity to adapt to the demands of flexible production.

[1] In this context the term 'public space' is being used in the Habermasian sense, i.e. as an intermediary space set between communications generated by civil society and political institutions; as an arena for negotiations between political bodies and collective demand, a space which interlinks the functions of the government and the representation of conflict; in other words, a sphere for collective decision making which, as it requires both mechanisms for representation and participation, becomes a conditionality for contemporary democracy (Habermas 1984).

It is within this context that many regions have tried to pursue development strategies through governance based on policy networks,[2] that is, by creating or strengthening partnerships, both between groups of private sector businesses, and between the public and private sector. It is worth noting however, that studies on these issues point towards the difficulty of local and regional development strategies 'based on clusters in a world where market relations are becoming increasingly global' (Humphrey and Schmitz 2000: 1). Schmitz (1998) rightly notes this issue in his analysis of the Sinos Valley experiment, in which a regional coalition was rendered nonviable due to the action of five large manufacturing firms that gave priority to their relationship (of dependence) with a large buyer in the US. Schmitz highlights the need to tie in research on collective efficiency in industrial clusters with research on global production chains, as a strictly local approach is by itself insufficient. It is necessary to gain a better understanding of the external factors that affect local partnerships, as these partnerships are essential in controlling the centrifugal effects of globalisation.

The importance of local-level industrial policies and inter-firm collaboration arises from the need for industrial clusters to improve their competitiveness in the face of global competition. However, although research on the issue has highlighted the importance of local governance, there remain a number of problems to be analysed. On the one hand, cooperation between local firms has tended to be selective rather than cluster-wide; on the other hand, certain forms of cooperation have increased more than others: vertical cooperation (between clients and suppliers) has become much more pronounced than horizontal cooperation. This increase in vertical cooperation has contributed to the strengthening of a number of large local firms, giving rise to a situation in which dynamic clusters have little to do with the communities based on cooperation amongst equals; on the other hand, they are organised around large leading companies in a 'hub and spoke' configuration (Humphrey and Schmitz 2000: 9).

In an attempt to provide a more in-depth study on the issue, Humphrey and Schmitz have looked at the different approaches taken by theories based on cluster analysis and those inspired by the study of global chains and have pointed out the limitations of both. Although both emphasise the importance of innovation capacity in the face of global market competition, the former stresses the need for better cooperation between firms and the importance of local governance but largely leaves links with the global market out of the analysis, whilst the latter highlight the relationships with the global, but leaves local issues out of the analysis (Humphrey and Schmitz 2000: 14).

2 The concept of policy network governance is being used here in the sense conferred on it by Messner (1997 apud Humphrey and Schmitz 2000: 5), who uses it to refer to the co-ordination of interdependent activities that include 'business associations, business leadership and technological centres as well as government agencies'.

In this sense, the authors advocate the need for new research work aimed towards theoretical advances on little explored themes, such as:

- To what extent do global chain relationships affect the possibilities for local cooperation based responses?
- In what way do the different types of relationships in value chains affect the development of policy networks?

It is on these issues that the present paper attempts to focus. The Greater ABC region lends it self particularly well to this discussion, not only because it is the site of both a high degree of industrial activity and the aforementioned Regional Chamber initiative, but also because its prior development has left it with its own industrial complex housing a number of large global chains as well as clusters of small to medium-sized enterprises. These features (particularly since 1997 with the creation of the Regional Chamber) have led the area to start developing industrial strategies aimed simultaneously at competitiveness within global chains as well as the formation of competitive clusters based on public-private partnership relationships.

This collective effort was initiated with discussion and analyses of the problems in the region and the creation of specific working groups (WGs) in accordance with the various challenges to be faced. Between them a number of sectoral working groups were set up with the aim of developing re-conversion strategies for various economic sectors, based on public-private partnerships.

The issue that concerns us here is that the participation of the plastics firms in the Chamber's initiatives has been far more effective than that of firms in the automotive sector, despite the fact that the latter has a longer and more significant history of organising and developing sectoral strategies. This text seeks to explore the extent to which an analysis of global chains can help understand the reasons why the Chamber's activities appear to work better in the plastics sector than the automotive sector. The central hypothesis is that the value chain linkages of firms participating in the plastics sector Working Group would be different to those in the automotive sector. This issue was explored through an examination of firms in the plastics sector that compared a small group of participating firms with a group of firms that, having once participated in the chamber, had ceased to participate and a group of never-participating firms. Some of these firms supplied the automotive sector. Our aim therefore is to attempt to find, by means of analysis of the relationships between firms and the value chain linkages of which they are a part, explanatory links that would help us understand the way in which the vertical organisation of the chain interferes in regional development strategies based on cooperation that the region has been undertaking. Our main focus consists, therefore, in understanding the reason why certain regional initiatives have come to prove more successful than others.

2 The crisis in the ABC and the Regional Chamber

2.1 ABC and its crisis

The Greater ABC region covering the Councils of São Bernardo do Campo, Santo André, São Caetano do Sul, Diadema, Mauá, Ribeirão Pires and Rio Grande da Serra, is situated in the Southwest of Greater São Paulo and is the most dynamic economic centre not just in the metropolitan region, but in the whole of Brazil.

The development of the region harks back to the beginning of the industrialisation process in the state of São Paulo. During the first half of the 20th Century, as a result of the expansion of São Paulo's industry along the Santos-Jundiaí railway and ABC's privileged location between the State capital and the port of Santos, it rapidly established itself as an important industrial area. It was however with the establishment of the durable goods sector in the second half of the 1950s that the region became known as the São Paulo Industrial Belt. Indeed it was from then onward that, thanks to a series of advantageous factors (proximity to the consumer market, easy access to the port of Santos, abundance of land and labour) the automotive industrial complex (consisting of vehicle assemblers and components suppliers) was established along with a series of other economic activities that gradually came to bring a new dynamism to the preceding industrialisation. These in turn were followed almost a decade later by the establishment of the Capuava Petrochemical Pole.

The subsequent large-scale economic development led to the region becoming the centre of the rapid industrial growth that characterised the Brazilian economy during the following decades. In fact once the decline of the 1960s was overcome, the ABC region became the heart of the 'Brazilian Miracle', and during the time when the economy was growing at rates above 10 per cent per annum the automotive industry was at the forefront of the process. Indeed it was this region that, until the mid seventies controlled almost all domestic vehicle production, as can be seen in Table 2.1.

Table 2.1 Vehicle production – ABC and Brazil (1975–97)

Year	(A) ABC	(B) Brazil	(A/B) %
1975	692,530	930,235	74.4
1980	651,914	1,265,174	55.9
1985	486,726	966,708	50.3
1990	336,665	914,466	36.5
1995	1,188,412	1,629,008	36.5
1997	1,283,712	2,069,703	31.0

Source: Albuquerque (2001)
Original data source: DIEESE (1999).[3]

[3] DIEESE (The Inter-Union Department of Statistics and Socio-economic Studies) is an organisation working for the Brazilian trade union movement.

Once the golden age was over however, the region began to experience a crisis, which can be said to have started during the early 1980s. During this time production units were either closed down or transferred elsewhere, investments were withdrawn, employment opportunities reduced, average wages fell and the region's share of the country's GDP declined. As can be ascertained from data in Table 2.2, these tendencies are fundamentally based on falling levels of industrial activity.

Table 2.2 Occupational distribution by sector – Greater ABC 1990–98 (%)

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998
Industry	51.2	40.1	42.1	44.1	32.3	34.9	30.6	34.8	35.6
Commerce	12.5	16.3	17.5	17.5	17.7	19.3	17.2	19.4	16.9
Services	36.3	43.6	40.4	38.4	50.0	45.8	52.2	45.8	47.5

Source: Municipal Institute for Higher Education (IMES), São Caetano do Sul (1999).

Despite variations, industrial employment shows a clear tendency to decline during the 1990s, falling from just over half the number of interviewees (51.2 per cent) in 1990 to 35.6 per cent in 1998. This long-term decline is corroborated by IBGE data on employment in the region, which shows a fall in manufacturing's share of total employment from 66 per cent in 1985, to 55 per cent in the period 1990–91 and 40 per cent in 1999.

It is worth noting that the two great drops in manufacturing's share of employment (1990/1991 and 1993/1994), correspond to the start of a major recession in the early 1990s and the change in economic orientation promoted towards the end of President Itamar Franco's term in office with the introduction of a stabilisation plan and a new currency (Plano Real). Although it is hard to evaluate the extent to which this fall is a result of the sectoral crisis and to what extent it is a result of the cut-backs in the labour force due to company restructuring (the two factors are often interlinked, as restructuring arises in response to crisis), the employment trend initiated a discussion in the Chamber regarding the region's vocation and the possibility that it might be turning away from industry to become a predominantly service and commercial centre.

It is worth noting however, that the data points to a relative recuperation of the industrial sector during 1997 and 1998. To what extent these small fluctuations express the sector's response to the Chamber's activities or to what extent they are due to other factors is difficult to answer within the context of the present research.

Fluctuation of employment rates between the sectors during the decade do not mean however that work places lost in industry are entirely compensated by new opportunities arising in other sectors. In fact if we take into consideration the numbers gathered by SEADE's[4] PED (Employment and Unemployment

[4] The SEADE Foundation is a state government body responsible for researching and analysing socio-economic data in the State of São Paulo.

Research), recent years show a fairly high unemployment rate, which is significantly higher than that of Brazil as a whole and of the Greater São Paulo area.

Table 2.3 Unemployment rates as a percentage of the economically active population: Brazil, São Paulo and ABC

	Brazil	São Paulo	ABC Region
1998	7.60	8.59	20.0
1999	7.64	8.42	21.4
2000	7.15	7.45	18.7

Source: SEADE/DIEESE/IBGE.[5]

In terms of GDP, a significant drop has been observed: from 9 per cent of the Brazilian industrial GDP in 1980, to 8 per cent in 1995; similarly a loss of added value can be observed in its economic activity from 13.9 per cent of the total in 1980 to 9.2 per cent in 1999 when compared to the rest of the state.

Table 2.4 Distribution of value added in the State of São Paulo (%)

Year / Distribution of value added	1980	1985	1990	1995	1999
State of São Paulo	100	100	100	100	100
City of São Paulo	37.00	29.76	28.07	25.75	26.07
Greater ABC	13.94	11.87	11.58	12.68	9.18
Santo André	3.40	2.77	2.39	1.97	1.61
São Bernardo do Campo	5.36	4.40	4.41	5.41	3.73
São Caetano do Sul	1.99	1.33	1.04	1.66	0.98
Diadema	1.41	1.63	1.77	1.61	1.20
Mauá	1.55	1.45	1.68	1.69	1.10
Ribeirão Pires e Rio Grande da Serra	0.23	0.29	0.29	0.34	0.20

Source: SEADE – State Data Analysis System Information of the Sao Paulo municipalities, (www.seade.gov.br).

Although it is part of the wider crisis that has affected the national economy in recent years, the crisis in the ABC is also related to two other factors that have been affecting the region: (i) the way in which the country has been inserted into the process of economic globalisation and the implications of this for its industrial structure and (ii) the exhaustion of an important section of local resources.

With regard to the first item, it is worth noting that trade liberalisation and cuts in import tariffs since the early 1990s have had a profound impact on the automotive components and machinery sectors,

5 Brazilian Institute for Geography and Statistics.

causing many companies to fold and numerous jobs to be lost. It is also worth remembering that even for those firms that have successfully withstood external competition, restructuring has occasioned a widespread process of employment cut-backs and huge job losses.

The second item arises from the industrial growth achieved in an earlier period. This is responsible for the appearance of a series of problems or economic disadvantages (diseconomies of agglomeration), such as chaotic traffic, flooding during the rainy season, high costs in the port of Santos, scarcity and high prices of industrial water, environmental pollution, overpriced land, etc.

As such the ABC region is currently undergoing a double-edged economic crisis: on the one hand an unemployment crisis, due to the high rates registered in recent years, and on the other hand a crisis of economic identity, given the exhaustion of the previous mode of economic development and the need for a wide-spread process of economic restructuring.

This has not resulted, however, at least up until now, in a serious de-industrialisation crisis, as the departure of firms from the region has not yet been significant. The fear that the ABC will face a profound process of de-industrialisation should the firms in the automotive sector and the petrochemical centre leave the region, seems unfounded, partly because recent investments by the automotive sector and partly because of the Petrochemical Pole's positive performance in recent years.

2.2 The Regional Chamber

The response of the region to the present difficulties has been supported by an accumulation of social capital that results from a complex process of formation of actors and spaces for discussion and dialogue that has taken place in the area over the last 20 years. This social capital is expressed in the presence of local councils committed to innovative management processes and programmes in various areas, in the presence of organised unions (which became the founders of the new Brazilian trades unionism at the end of the 1970s and acquired valuable negotiating experience during the process) as well as representatives of companies and management bodies that have, over the years, developed above average negotiating capacities. It is also expressed in the significant institutional density from which region benefits (Abramo and Leite 1998: 16).

This framework is, without doubt, fundamentally important to the nascent institutions that have arisen from the creation of the Greater ABC Regional Chamber. The first important moment in that process took place in December 1990 when the Bacias do Alto Tamanduateí and Billings Inter-municipal Consortium was established to bring together the seven town councils in the region.[6]

The consortium was established with the purpose of: (i) representing the common interests of the constituent local councils to other public or private bodies, whether national or international, (ii) planning, adopting and undertaking projects, works and other activities with the aim of promoting, improving and

[6] It is worth noting that one of the most important factors in the creation of the consortium was the fact that in 1988 the Workers Party took power of local governments in the three major cities in the region (São Bernardo, Santo André and Diadema). As Coelho states (1998: 34) despite the differences between the leadership of these three administrations this 'political conjuncture was particularly favourable to the joining of forces at the regional level.'

controlling the local infrastructure and (iii) promoting joint methods for regional development planning, creating joint consultative mechanisms, studies, and the execution, supervision and control of public works.

Another fundamental moment in this process of constitution of social actors and institutional strengthening took place during 1992–4, when the Automotive Sectoral Chamber was in operation as a means of confronting to the serious crisis that had affected the sector, as a result of the federal economic policy which had been adopted at the beginning of 1990.

Created by the central government as a means of managing production costs throughout chains of production, the sectoral Chambers were initially seen as bodies that would negotiate between the firms and the government, and they had little impact on the economic situation in Brazil until, on the suggestion of the ABC Metalworkers union, the Automotive Sectoral Chamber adopted a series of targets aimed at: (i) opening up the market whilst maintaining a positive balance of trade for the sector; (ii) updating production technology; (iii) introducing a new product mix that would favour cheaper, more basic vehicle models; (iv) increasing jobs and wages, and (v) giving rise to a new taxation structure for the sector.

Initiating an important reworking of labour-capital relations in the country, the agreements signed in 1992 and 1993 not only ensured significant economic benefits for the sector but also brought with them the seeds of a new compact and of more modern social relations, and of a transformation, in the apposite expression of Oliveira *et al.* (1993: 5–6) 'from a relationship of mutual negation to a relationship that, whilst not ceasing to be antagonistic in terms of interests at stake, changes the nature of this antagonism, turning it into something more like a convergent antagonism'. In this sense, the importance of the experience in institutional terms goes by far beyond its economic outcomes. In fact, although the decisions taken within its context no longer impact on the economic performance of the sector (despite the important part they played in overcoming the crisis during the first half of the 1990s) their effects on labour-capital relationship have been far more long-lasting, particularly in terms of overcoming conflict between the various actors and in terms of the union's capacity for negotiation with the assemblers during the restructuring process (Leite 1999; Bresciani 1997). These effects have lasted up until the present day.

The most significant step forward towards the formation of the Chamber took place, however, in 1996 when the state government of São Paulo made public the idea of creating a Regional Chamber for the Greater ABC region in which both municipal governments and the local community would be involved for the purpose of stimulating regional economic development.

As has been noted by Daniel, the election of the seven new mayors in 1997 led local governments to see inter-municipal issues as being essential to the future of their own local councils. 'The first step corresponded to a decisive reclaiming of the Inter-municipal Consortium which had been put in place early in 1997 before the new local government administrations took power. The working statute for the Greater ABC Regional Chamber was subsequently elaborated on a consensual basis. The official launch of the Chamber took place in São Bernardo, during the month of March, a number of the most important local leaders as well as members of the São Paulo state government being present at the occasion' (Daniel 1997: 4). The launch of the Chamber can be seen as an attempt to respond to the difficulties facing the region arising from the central concern of a number of influential actors (leading unions, entrepreneurs, the government of São Paulo, municipal governments and civil society representative bodies) willing to face up to the crisis threatening not just one particular sector (regardless of how important it is in terms of both the local and national economies) but rather the region as a whole (Abramo and Leite 1998:18).

It should be noted too that the Regional Chamber took much of its inspiration from the earlier experiences of the Automotive Sectoral Chamber. Along with the trade union efforts that characterised its formation (seeing in the proposal a means of getting round the political defeat suffered by the Automotive Chamber at the hands of the outgoing federal administration)[7] it took on two defining features of the previous experience: the focus on the concept of the productive chain and the attempt to build a space for public expression and negotiation of different interests (Abramo and Leite 1998: 18). At the same time:

> The Regional Chamber represents a significant advance in relation to the previous experience: (a) tripartism gives way to multipartism; (b) the vision of chains of production grows richer as these begin to be seen as constituent parts of a territory, which in turn is itself seen not merely as a geographical or administrative space but rather as a socially organised space (Albuquerque 1997); (c) the concern with the future of certain productive sectors incorporated into the attempt to define a wider local economic development strategy.
>
> (Abramo and Leite 1998: 18)

These conceptual advances arise from a basic understanding held by the various actors involved in the experience – that, as industrial development within the Greater ABC region had been built on the Fordist model of mass production, the present crisis was therefore related to the breakdown of that model at the international level. As suggested in the document *Câmara do ABC: a região encontra soluções* (Câmara do ABC Regional Chamber n.d.: 30), the ABC region was at the time trying to find a new model for economic and social development that would become a new paradigm.

Since its formation, the Chamber has promoted a number of seminars, workshops, socio-economic studies and diagnoses of the different chains of production. The collected studies, debates and negotiations gave rise to a wide range of priorities that have been dealt with gradually by means of a number of general agreements. So far, three agreements have been signed: the first in November 1997, the second in August 1998 and the third in January 2000. The main activities implemented through these agreements have consisted in infrastructure projects aimed at improving traffic, reducing flooding, creating the ABC Economic Development Agency (with the aim of concentrating socio-economic information on the region, leading regional marketing activities and coordinating technical and financial support to the firms as a means of promoting sustained regional economic development) as well as the

[7] As stated by a member of the ABC metalworker's union, the idea behind the creation of the Chamber was the following: 'if the federal government neutralised the Sectoral Chambers, we will be placing our faith in the Regional Chambers supported by local governments'.

formulation and execution of a plan for training and skills development, which has mainly been developed in the plastics sector.

A more detailed analysis of the agreements shows that they are moving towards a broad-ranging and systematic regional development strategy. This strategy, which took shape in the Strategic Regional Planning exercise, forms the basis for what was defined during the 1st Regional Planning Workshop in March 1998 as the preferred outcome for the region during the following 10 years. This is based on three main understandings: (i) that the development model followed by the region up to the end of the 1970s, based on the large international firms acting in accordance with the principles of the Second Industrial Revolution had run out of steam by the 1980s;[8] (ii) that many of the problems currently affecting the region are the result of a 'predatory' development model that was damaging at the environmental level (pollution, exploitation of natural resources, traffic problems, floods etc) and at the social level (high concentration of income with widespread poverty, shanty towns, illiteracy, street children); (iii) that local public institutions in conjunction with an active civil society are agents with the capacity to redirect the regional economy, bring it up to the level of current world economic development and equip it to face the problems created by the previous development cycle. It is worth noting that this proposal is also based on the joint understanding of the various actors involved that the crisis in the region should not be seen as a serious problem of de-industrialisation which would give it very different features to the crisis affecting the country as a whole.[9] In fact these actors are aware that, although the region shows higher unemployment rates than most industrialised regions, the ABC continues to develop and modernise, maintaining its role as one of the country's important centres of industrial development.[10]

The potential for a local industrial strategy based upon the innovative capabilities of firms in the region is indicated by the results of a detailed study of innovation in the state of São Paulo undertaken for

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8 It is worth bearing in mind that the region in question benefited from that development model more than any other in the country, which makes the crisis deeper here than in the majority of other economic centres. In fact, in the opinion of those involved in the experience, it is this process that can be said to explain the specific nature of the regional crisis.

9 Note that the national crisis was reversed in 2000 when the country grew at a rate of approximately 4 per cent. According to the IPEA (Institute of Applied Economic Research), industry showed an even better performance, having been responsible for a growth rate of 6.4 per cent, most of which was in the automotive sector. 2001 has, however, seen a significant deepening of the national crisis and particular problems in the ABC region.

10 In this sense it is important to note that proposals put forward by the Regional Chamber can be adapted to a number of situations in Brazil, although one must not overlook the fact that the progress of local civil society organization and as such, its social capital, cannot be compared to that in the rest of the country, a fact that must not be ignored when considering public-private partnerships in which civil society organizations form an important element of the arrangement.

the first time in 1996. The data provided by the PAEP/ABC[11] confirm the innovative spirit of the ABC industries in relation to others in the State of São Paulo:

> When one compares the degree of innovation[12] of **the entire industry** in the Greater ABC with that of other regions in the State of São Paulo, it is evident that the **ABC** stands out for its **highly innovative performance.** Whilst 80 per cent of the value added of the entire industry in the ABC was generated by local units belonging to firms that had introduced some kind of innovation in their products or processes between 1994 and 1996, in other regions within the State, including the municipality of São Paulo, this proportion reached around 65 per cent. The intention to innovate was also more firmly present within industries in the ABC region, where 81 per cent of the value added was generated by units pertaining to firms wishing to introduce innovations in their products or processes between 1997 and 1999, whilst throughout the State of São Paulo this proportion was 67 per cent. Although with a slighter margin of difference, the ABC continues to be the most innovative when one takes the number of innovative local units as a parameter. On average 35 per cent of local industrial units belonged to industries that had introduced some form of innovation in products or processes between 1994 and 1996. In the whole State of São Paulo this proportion was 27 per cent.
>
> (ABC Economic Development Agency 2000: 16, stress in original)

On the basis of these central issues the economic development proposal being formed is that the region needs to restructure in both economic and urban terms by developing a development pole that concentrates technologically advanced activities, contributes to the formation of a structured network of small to medium sized enterprises that complement large-scale global industry, and strengthens the tertiary sector by configuring an advanced production sector for services related both to the secondary sector and to the tertiary sector, especially in relation to tourism, leisure, entertainment and culture.

In this sense, what is being discussed is a broad proposal for economic and social restructuring based on the principle clearly expressed by Daniel that, given current transformations in production, in order to remain attractive to large companies, the region would do well to promote a real technological revolution with the aim of strengthening its chains of production of goods and services, developing a centre for technological research and development based on production and skilled labour whilst also providing a healthy environment and good living standards.[13] With specific regard to industrial activity, this means: 'initiating a new cycle of local industrial development' (Câmara Regional do Grande ABC n.d.: 28).

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11 The PAEP/ABC consists of a special analysis of data from Research on Economic Activity in the São Paulo region (undertaken by the SEADE Foundation) for the Greater ABC region, by expanding one of PAEP's original samples for the Greater ABC region. This was commissioned by the Inter-municipal Consortium. The data have been analysed and made available in the form of booklets by the Greater ABC Economic Development Agency.

12 The degrees of innovation were obtained using a cluster analysis technique. This technique is used to group objects (or individuals) in groups (or categories) in which the objects of the same group possess a greater similarity with each other than with objects in other groups (ABC Economic Development Agency 2000: 11).

13 Interview carried out in 1999 (see Leite, 2000).

In strategic terms the proposal opens out into 'the renewal and refinement of the existing heritage, whilst stimulating the synergy and complementary nature of the productive chains from existing industries' (Câmara Regional do Grande ABC n.d.: 30). This kind of strategy appears to accord with the interpretation given by Scott (1998) who, in a paper presented to the ABC Economic Development Agency argued that:

> It is essential that much energy and thought be given to the complex tasks of rebuilding local industrial networks in the ABC region . . . One of the major tasks to be undertaken here is to construct collaborative inter-firm relations among network participants. At the same time, new market niches for the region's products need to be cultivated . . .
>
> (Scott 1998: 3)

Based on a careful analysis of the region and the transformations taking place in the international economy, the Chamber has been moving towards a proposal for economic development that constitutes a systemic response to the difficulties being faced by the region. As such this requires solving the particular problems affecting the region through measures no longer seen as isolated but rather as part of a wider concept of economic development that should be environmentally sustainable, socially just and regionally balanced.

This leap in the quality of the initiative became clearer in the latest agreement in which, along with the completion of infrastructure improvements (e.g. construction of reservoirs for collecting rain water; the implementation of a collector system to separate the Billings Reservoir water table from industrial water effluents and urban sewage; the production of industrial water to supply the Petrochemical Pole; the reinforcement of the banks of the river Tamanduateí; and the implementation of the southern section of the metropolitan ring road), the proposals take into consideration a broad spectrum of interconnected issues directly connected to the increase of competitiveness of production chains, reflecting a deepening of the discussion through concrete proposals for achieving these objectives. As such the following items can be highlighted:

1. To establish centres for the support and dissemination of technology and to run courses for the plastics and furniture sectors aimed at increasing competitiveness.
2. To ensure that micro, small and medium scale enterprises (including self-managed firms and producer co-operatives), have access to credit lines from the National Bank for Social and Economic Development (BNDES), the Special Agency for Industrial Funding (FINAME), the Workers' Support Fund (FAT) and the Studies and Projects Funding Body (FINEP).
3. To formulate, with the support of the World Bank/Habitat, a strategic plan for the strengthening of the service sector.

It is worth highlighting that the Chamber experienced an atypical period over the past year due to the local town council election process which mobilised not just local governments, but civil society too; this does not imply however a decline in its activities as a whole, as recent action taken towards the creation of the Regional Living Standards Observatory and the Quality Urban Spaces Laboratory, are all of great importance for future activities. In fact, although relationships between the various actors are far from harmonious (there being countless conflicts), negotiation is becoming an important characteristic of this experience.[14]

The enthusiasm shown by the Chamber, as well as the commitment of a number of town councils, business institutions, trades unions and civil society bodies does not mean, however, that it is not up against a number of extremely complicated and challenging problems, particularly when considering the huge weight of the global sectors and the lack of interest they have demonstrated (at least until now) in participating in the experiment. The analysis, which we will be undertaking concerns the relationship between the plastics firms and the chains in which they are inserted and aims to shed light on precisely these difficulties.

2.3 The automotive and plastics sectors in the Regional Chamber

The Regional Chamber adopted a multi-stranded approach to economic development. It pursued policies aimed at improving the overall industrial infrastructure (transport, flood defences etc.) and the provision of services to the industrial sector as a whole (e.g. training). It also created sectoral Working Groups (WG) to develop initiatives aimed at the needs of particular industrial sectors.

The first point to be raised regarding the participation of these two sectors in the Chamber is the huge difference in terms of their performance. The Automotive Sector WG lasted for only a short time and did not create any concrete partnership initiatives between firms. Although the vehicle assemblers are showing a renewed interest in the region, they do not appear to be interested in participating in the Chamber. The Automotive Sector WG lasted for only 18 months, during which time the leading assemblers as well as a few member of the ABC Component Manufacturers Association and the Metalworkers Union participated. Following the failure of the initial negotiations, the WG stopped meeting and, since the start of 1999 has been in a state of virtual paralysis.

In marked contrast, the plastics sector has been developing a whole series of activities, which have been significant in terms of increasing systemic competitiveness. It is worth noting that initially only a single WG was set up for the chemical and petrochemical sectors. However, the emergence of conflicting interests between the large companies (particularly the multinationals) supplying raw materials for the plastics industry and the small firms buying them over the prices set by the large companies led the latter to set up their own WG. This has been running since mid-1997. From then onwards, the Plastics WG has been developing a series of projects with the aim of increasing the competitive potential of the firms and

[14] The importance of negotiation as practice becomes even clearer when one considers that, although one of the main organisers of the Chamber is a politician from the Workers Party, there is also active participation from leaders of a number of other parties including mayors. I would like to thank Jorg Meyer Stamer for drawing my attention to this fact.

creating a regional centre of excellence for the sector. The main proposals put forward to this effect are as follows:

1. The creation of a Technology Support and Dissemination Centre, seeking new niches in the market and an increase in competition thanks to the use of shared moulds. The project also envisages interaction with regional Universities[15] in order to provide the centre with technical support. Initially the WG has been discussing a Mould Making Centre as a first possible activity[16] for this Centre. If implemented, the Centre will be extremely important to the region, given the importance of injection-based processes (for which moulds are essential). In effect, recent research by the National Plastics Institute (Competitive Behaviour and Performance within the Plastics Transformation Industry in the ABC Region in São Paulo 2001) has shown that such processes clearly predominate over those of extrusion and inflation, accounting for 54 per cent of the plastics sector in the region (Plastinforma 2000). It is worth noting that our research also uncovered a certain weakness amongst the various firms regarding their ability to create their own moulds. Of the seven firms interviewed that worked with moulds, and of the nine which replied to this question, only one shared ownership of moulds with its clients and none of the six could actually claim ownership of their own moulds. This sheds light on the important role the Mould Centre would play in the region in terms of increasing the competitive edge of firms within the sector. As noted by Fleury and Fleury (1998: 12) moulds are 'of vital importance to a firm's competitive performance. The mould project requires a theoretical knowledge of plastics and its processes of production, as well as accumulated (tacit) empirical knowledge related to the real performance of moulds in operative conditions'.
2. Implementation of training courses in the plastics field. This is already underway in 'Projeto Alquimia'.[17] The training courses gain significant importance in terms of sector upgrading, especially when one considers that the sector's low visibility during the period prior to the creation of the Chamber must have been responsible for the lack of training policies within the sector. This fact must be at the root of the National Plastics Institute's research findings, which show that the demand for skilled labour continues to be higher than the supply.
3. The creation of a Raw Materials Purchasing Group for producers and distributors of raw materials. The Group is already up and running within the plastics sector, enabling the bulk purchase of

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15 Given the unsuccessful attempts made to negotiate with the State government for a State-owned University in the ABC region (which despite its economic importance for the economy of the State of São Paulo as a whole, still lacks vital support in terms of education and training) the Chamber has been proposing that the government expand parts of the University of São Paulo to the region in addition to the 12 private universities already established.

16 The Mould Making Centre project involves the creation of an institute aimed at creating technologically modern moulds; as the first activity of the Plastics Sector's Technology Support and Dissemination Centre it already has the support of the Paula Souza State Centre for Technological Education (CEETEPS), the São Paulo Secretariat for Scientific, Technological and Economic Development and the Brazilian Support Service for Micro and Small Enterprises (SEBRAE) as well as the support from the Regional Chamber.

17 Coordinated by the ABC Chemicals Union, and with funds from FAT (Workers Support Fund) administrated by the Labour Ministry, the project has already successfully trained around 2000 students between 1999 and 2000, a significant part of which (around 20 per cent) were previously unemployed.

materials at prices far more advantageous than before. The Group started up with only five member firms and has now gradually increased to 11.

There is no doubt that all these initiatives have had an important impact in terms of increasing the collective efficiency of local firms, whether in terms of technological innovation, quality, or cost.

Naturally, the WG has faced a complex set of problems that are still far from being solved. Along with relatively limited participation of firms relative to the total number in the sector (approximately 30 participating out of a total group of around 600,[18] the conflicts between capital and labour have not yet been satisfactorily worked out and frequently emerge as a counter-incentive to participation. According to the WG coordinator, however, apart from the Raw Materials Purchasing Group (which he sees currently as the main active initiative), the WG's main achievement has been the strong communication channels established between local entrepreneurs.

Perhaps one of the most important elements in this initiative is the fact that a number of sectors within the Chamber (the Economic Development Agency, the Petrochemical Pole WG, the Plastics WG and the Raw Materials Purchasing Group) are acting jointly to promote the sector's upgrading in terms of the production cycle as a whole including: funding (credit to firms), training for the labour force, technological development, marketing and purchase of raw materials.

These important steps towards collective efficiency through the Chamber are particularly notable when they are compared to the performance of the automotive sector. We hope to be able to contribute to a better understanding of this situation by analysing the relationship between firms active in the Chamber and the chains in which they are inserted.

The questions we aim to answer by means of this analysis is why do some firms show a greater propensity to participate in the Chamber than others, or, more specifically, why do the plastics firms which are inserted within the automotive chain appear to be less interested in participating in the Chamber's activities than plastics firms belonging to other chains?

In order to answer this question we collected data on the sectors, the region and the Chamber, and in particular: (1) in-depth interviews with representatives of firms and unions directly or indirectly linked to the two sectors (Sindipeças, Sindiplast, the ABC Chemical Workers Union, the Metalworkers' Union, the Regional Economic Development Agency, DIEESE, the vehicle assemblers); (2) a postal questionnaire (Questionnaire 1) applied to all the plastics firms that had, at any time been involved in discussions of the Regional Chamber's Plastic WG (out of a total of 27 firms listed by Sindiplast as group members, 9 responded to the questionnaire); (3) a detailed questionnaire (Questionnaire 2) applied directly to five firms participating in the Plastics WG and seven non-participating firms, amongst which five were automotive components firms, and are as such inserted into the automotive chain. Of course it is important not to overlook the limitations of the research whether in terms of breadth of the sample, the

[18] The WG coordinator however, has stated that the number of firms that have been accompanying the group's activities has grown to more than 60.

issues discussed, and actors interviewed. We believe however, that it is a useful approach and provides new insights.

3 The automotive chain and the Chamber

3.1 The vehicle assemblers

The automotive industry was first established in the ABC region during the second half of the 1950s, when a large number of car, truck and bus assembly plants were set up in the area. From then on, the automotive industrial complex and its constituent vehicle assembly-plants and automotive component suppliers established themselves in the region, and together with a series of other development activities in the Greater São Paulo Industrial Belt, transformed it into the largest industrial pole in the country (Leite 2000).

Vehicle production in the ABC had its glory days in the economic period between 1968 and 1974. However, from the mid-1970s onwards the automotive industry was faced with a dual process of hollowing out (Pacheco *et al* 1998). On the one hand, a new tendency towards decentralisation of vehicle production emerged, characterised by the establishment of a Fiat plant in Betim, a Volvo plant in Curitiba and the opening of a whole series of plants by existing assemblers in other regions, especially in the Vale do Paraíba (Volkswagen and Ford in Taubate and GM in São Jose dos Campos). On the other hand, economic instability and stagnation, particularly from the 1980s onwards led to a loss of dynamism in the automotive industry. Technologies and organisational practices gradually slipped behind global best practice: 'efforts at modernising products and processes were limited and selective, reflecting a lack of investment in a situation in which the role of Brazilian branch plants within the strategies of their parent companies was not considered a priority' (Pacheco *et al.* 1998: 37).

Such was the context in which the Brazilian automotive industry was operating during the early 1990s when trade liberalisation opened up the market for imports, eliminating non-tariff barriers on products that had not been imported for many years and suspending the majority of subsidies which had, up until then, benefited the domestic industry.

In the specific case of import tariffs for passenger cars, these dropped from base line of 85 per cent in 1990 to 20 per cent in September 1994. For parts and accessories, the tariff fell form 39.25 per cent in 1991 to 18.6 per cent in 1994 (Comin 1998: 22), placing the automotive industry under increasing competitive pressure. Although this new situation gave way to a deep crisis within the industry, it was able to provide a successful and creative response to the situation from 1992 onwards through proposals made by the Sectoral Chamber.

At the start of 1995, a reversal of this success arose from the deterioration of the country's balance of trade and global instability sparked by the Mexican crisis. In this context the Federal government decided in February of that year, to raise the quota for automotive vehicles from 20 per cent to 32 per cent and then again to 70 per cent in the following month although tariffs on parts and accessories remained unchanged. These measures were followed a few months later by the implementation of the new

Automotive Regime, which would take the place of the Sectoral Chamber and through which vehicle assemblers would come to negotiate directly with the central government, abandoning negotiations with the automotive components firms and the trade unions.

As Bresciani (1997: 17) makes clear, in alliance with the vehicle assemblers, the Brazilian Government introduced the Automotive Regime, bypassing legislation negotiated on international trade in the Automotive Sectoral Chamber during 1992 and 1993. The benefits went to the assemblers and measures ensuring the interests of the automotive components firms and the workers were ignored.

The new Automotive Regime had a positive outcome for the assemblers: 'the increase in investment and in productive capacity, the frequent launch of new models (particularly basic or 'popular' vehicles), the construction of new plants with a focus on the final stages of assembly in new regions (from Rio Grande do Sul to Bahia), the increased use of imported components' (Gitahy and Bresciani 1998: 31). It is worth stressing that one of the most important aspects of this new situation was the ease with which new opportunities were presented for these assembly plants to invest not just in plant restructuring but also in the construction of the new plants on greenfields sites that introduced new concepts in production such as the modular consortium (which was the basis of the Volkswagen plant in Resende and the Mercedes Benz plant in Lorena).[19] The situation was highly favourable to the assemblers, leading them to make a significant number of investments in the country, as part of a general movement, that seemed to be indicative of an international strategy to turn Brazil into an important production centre.

With this attitude, the large firms within the sector appear to have gone back to ways of operating prior to the Automotive Sectoral Chamber. This involved maintaining preferential relationships with the Federal Government and its agencies. As a result of their economic and political importance, they were accustomed to benefiting from a series of substantial state subsidies, as well as discussing the future of the sector directly with Federal ministries in Brasilia or with the State-level governments, disdaining the participation of the other sectors involved, and in particular the trade unions and other firms in the chain.

As such it is worth noting that discussions between the firms and the union that began as a result of the crisis that hit the industry late in 1998, took place outside of the ambit of the Regional Chamber and took concrete form as programmes operating outside its remit. This was the case with the deal made with Volkswagen in December 1998 that managed to prevent the firm's proposal to dismiss 7,000 workers,[20] as

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[19] According to ANFAVEA, output from the Brazilian Automotive Industry has been extremely positive during the past few years, with the domestic sales practically doubling between 1992 and 1997. Overall the sector is responsible for 12 per cent of GDP.

[20] The agreement included the establishment of a reduced working day accompanied by a reduction in wages for workers receiving over R$ 2,416, as well as a Voluntary Redundancy Programme that affected almost all workers of retirement age or those already retired but still working.

well as the deal made in February 1999 with Ford that prevented the dismissal of 2,800 workers (Leite 2000).[21]

This set of activities and agreements ended up forming the Emergency Programme which, superimposed on the new Automotive Regime, lasted until July 1999 and established differentiated Industrial Product Tax reductions for various types of vehicle according to engine size, preferential consumer credit lines to the Bank of Brazil (for the purchase of domestically-made vehicles according to agreed categories), and a commitment to maintaining employment rates on the part of firms throughout the country, as well as a transfer to the consumers through price reductions of the total effect of the reduction of IP tax, as well as a small reduction in the price of diesel-engined cars and light commercial vehicles.

Once again these agreements were made outside the ambit of the Regional Chamber. It was difficult to ensure that negotiations took place within it because the financial and industrial policy issues involved fell outside the sphere of competence of local government.[22] This is clear proof of the problems experienced by the Chamber in dealing with a global-level automotive sector weakly integrated into the local economy. Its links at the global level as well as with the more powerful State agents, such as the Central Government, lead it to dispense with local policies, which, in turn are unlikely to affect its performance.

For the union, the behaviour of the assemblers enabled it to make a qualitative leap regarding its understanding that only with difficulty would the region be able to attract new firms, meaning that employment opportunities within the sector would be dependent on investments in new products by firms already in the region. This then became the axis of union action from which a number of discussions arose, and agreements were made with firms to ensure new investments were made in the region's plants.

Once again, these discussions and agreements were carried on outside the Regional Chamber's institutions, highlighting once again the sector's distinct lack of involvement with the experience. This does not mean that the agreements were not important. On the contrary, over the past few years, they led the firms in ABC to implement important restructuring projects for old plants, which underlines their intention to remain and continue investing in the region. This was also confirmed in an interview with a Volkswagen manager, and corroborated by the high level of investment made in plants belonging to the main firms in the region (Volkswagen, Ford, Mercedes Benz and General Motors).

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21 Putting an end to a a crisis that started in December 1998 when the firm proposed compulsory redundancies, the agreement reached in February 1999 included a voluntary redundancy programme (to which 882 workers subscribed); a temporary suspension of work for 1,918 workers until the 31st of May with the maintenance of net income for the workers, and the guarantee of a discussion process around the factory's adjustment needs through the formation of five working groups (management actions, outsourcing, medical care, labour disputes and union action).

22 I would like to thank John Humphrey for having called my attention to this factor.

These firms have undergone a wave of aggressive restructuring over the past few years, during which substantial technological and organisational innovations were implemented, allowing them to reach high levels of productivity – in fact, the highest in the State of São Paulo (Klink 2000: 218).[23]

Furthermore, firms based in the ABC region are not only integrated into local chains of production but also into the plants being set up in new regions: 'For example, parts for the Mercedes Benz Class A Model are produced in São Bernardo do Campo and sent on to Juiz de Fora in Minas Gerais. Parts for Volkswagen Golf vehicles assembled in Curitiba are produced in Diadema [in ABC]. In fact, the ABC plants supply parts for all the automotive centres: Resende (Rio de Janeiro), São José dos Pinhais (Paraná) and Juiz de Fora (Minas Gerais), and in the future, possibly to Rio Grande do Sul and Bahia' (Arbix and Zilbovicius 2000: 20).

In the light of these factors, it is not surprising that the assembly firms in the region showed little interest in participating in the Chamber. The Automotive Sector WG lasted only a short time, during which time the main assemblers, a few members of Sindipeças [the component manufacturers association] and the ABC Metal Workers' Union participated. After the failure of the first round of negotiations, the WG stopped meeting and has been practically paralysed since the beginning of 1999, without having developed into any other form of sectoral organisation related to the Chamber's work.[24] The words of the director of one of the assemblers are important in clarifying the firms' viewpoint: 'the WG has not worked because the firms were seeking to reduce their costs and were not in a position to make available the resources involved in the proposals. **The Town Councils need to understand that the assemblers are not in the position to invest in the region'**. Referring specifically to the sub-groups set up to discuss the sector, the interviewee explained the failure as follows:

> Initially the assemblers participated in all the sub-groups . . . The Technological Development sub group suggested the construction of a test-run, but there was no interest on behalf of the local council in paying for this. The Tax sub-group also offered a series of suggestions to the councils but again there was no willingness to put forward resources. The Infrastructure sub-group promoted three meetings during which the reduction of water, sewage and electricity tariffs was discussed along with the proposal to construct containers for protecting material arriving from the Port of Santos. However, the Council was not willing to reduce its charges . . . **Without the assistance of the Federal and State Government it will be impossible for Strategic Planning to work.**[25]

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[23] It is worth highlighting that, as noted by Klink, this performance has served in part to de-mystify 'the theory that the new productive investments being made outside the ABC region and the metropolitan area with increasing frequency since the 1980s have provided more facilities for the establishment of new forms of management, thereby ensuring high productivity rates than those in the ABC region' (Klink 2000: 216).

[24] Even the participation of the ABC Metalworkers' Union (which, as was shown earlier, was initially at the forefront of the experiment) has been restricted to issues unrelated to the development of the sector in the region.

[25] Note that the low expectations of the local assemblers in relation to municipal governments is also related to the Chambers' strategy of not participating in the tax war between municipalities aimed at attracting investment from firms by exempting them from certain local taxes. This strategy is also expressed in the proposal to avert the fiscal conflict between municipalities in the region by establishing a common fiscal policy.

The difficulty that this behaviour on the part of the assemblers posed for the development of the Chamber and its efforts at local governance are clear to see. As has been noted by Arbix and Zilbovicius (2000: 73), the absence of the assemblers and large automotive firms from the Chamber has made it difficult for the other actors involved in the experience to understand the deep transformations the sector has been going through and the direction of its reorganisation.

This framework puts forward a series of reflections in favour of the sector's participation in the Chamber to which it might be worth paying some attention. Firstly, the low level of participation is not due to a lack of partnership experience. On the contrary, the sector is well prepared to participate due to its experience in negotiation within the context of the Sectoral Chamber. Secondly, there is no detectable lack of interest on the part of firms in ABC. If, for a while this appeared to be the case, due to government action (through the New Automotive Regime), recent findings show a very strong interest on the part of firms in the region. In this sense, the main reason for the lack of participation seems to be related to the way the firms fit into the global chain, which leads them to have far stronger links with the international segments of the car industry as well as with government bodies that are more powerful than those at the local level.[26]

This viewpoint is clearly confirmed in interviews with sectoral representatives, as can be deduced form the comments of the above quoted director when comparing the Regional Chamber's experience with that of the Sectoral Chamber:

> The difference I notice between the Regional and the Sectoral Chambers is that in the former all the decision makers were seated at the same table . . . I think that is a factor of prime importance, because the big player lacking at the table is the Federal Government; just in terms of importance. The local councils don't have the bargaining power to reach a final agreement.

Whilst the interviewee emphasised his firm's interest in the region, he considered it extremely unlikely that a regional restructuring proposal would be established on the basis of a simple partnership between the firms and the local governments:

> I underline that if the Federal Government or even the State Government is not involved, nothing will happen. Maybe small one-off things may happen: we make land available for a reservoir,[27] or a chemical plant does something for the environment, but something big, something involving the effective economic re-restructuring of the region . . . I really can't see it happening . . . **Without considerable state or federal participation, there is no way strategic planning is going to happen.**

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[26] I would like to thank Hubert Schmitz for suggesting this argument.

[27] The interviewee is referring to the fact that the firm he works for donated a part of its land for the construction of a reservoir for rainwater collection.

It is this point of view that has largely been responsible for the firms' decision to stop participation in Chamber meetings, so as not to waste their energy on something that in their eyes was not particularly effective:

> We participated in the beginning and gave our best; our leading technical staff from each areas were present; we sent top level staff. It didn't work because the assemblers were in a difficult situation and the local government was not able to make the necessary concessions. There can be no doubt that the greatest problem is the absence of the federal government at the debating forums.

If this picture leaves little room for doubts about the assemblers' lack of interest in regional policies, we have yet to examine the behaviour of the automotive components firms in relation to these issues in order to formulate an understanding of the sector as a whole. The next section is therefore given over to this issue.

3.2 The automotive components firms

The automotive components sector in the ABC region developed rapidly following investments by the assemblers. The development brought by international capital with the arrival of the automotive industry during the second half of the 1950s opened up this sector to domestically-owned firms. Given the demands of the assemblers this sector was always concerned with technological development, even during times of limited competition in the market. Gitahy and Bresciani note that, 'whilst the 1950s saw the industry grow on the base of national firms and entry barriers were low, the crisis in the 1960s began to promote differentiation between firms, and those that survive are those with more aggressive competition and a greater degree of technological learning' (Gitahy and Bresciani 1998).

The demand for innovation becomes even greater in the 1990s with the lowering of import tariffs and the new Automotive Regime. Pressured by international competition and the power asymmetry within the automotive chain – which allows the assemblers to exert huge pressure on their suppliers without providing them with support to help them increase their competitiveness (Leite 1999) – the firms within this sector entered a period of deep crisis characterised by closures, take-overs and mergers which led to a clear process of concentration of capital and de-nationalisation. This process has intensified in recent years, with an acceleration of the de-nationalisation process (Humphrey 2000), which is beginning to spread to second tier firms. It is worth remembering, however, that the sector still consists largely of domestically owned companies as can be seen from data on firms affiliated to Sindipeças.

Table 3.1 Automotive components firms according to origin of capital *, 1999 (%)

National capital	60.8
Foreign capital	26.9
Mostly national capital	3.0
Mostly foreign capital	7.0
Mixed capital (50% national/50% foreign)	2.3

Source: Sindipeças, Statistical Yearbook (1999).
*469 firms

It should also be highlighted that despite the reduction in the number of firms and the level of employment in the sector in the ABC region from 1991 to 1999, it remains of considerable importance at the regional level.

Table 3.2 Geographical distribution of automotive component firms associated to Sindipeças

A – Number of firms (%)

Regions	1991*	1999**
City of São Paulo	38.9	28.7
Inner S.Paulo State	17.2	18.7
ABC	18.4	16.4
Rest of Greater S.Paulo	16.2	17.6
Other States	9.3	18.6

*506 industrial units
** 550 industrial units

B – Employment (per cent)

Regions	1991*	1999**
City of São Paulo	30.2	15.4
Inner S.Paulo State	23.5	27.2
ABC	15.8	14.0
Rest of Greater S.Paulo	19.9	17.6
Other States	10.6	25.8

*260,000 employees, ** 167,000 employees
Source: Sindipeças Statistical Yearbook (1999).

The data shows that the region did not lose a significant percentage of its economic activity during the last decade, either in terms of the number of firms, or in terms of the number of employees.[28]

[28] Note that the data points to a significant de-concentration of production for Brazil as a whole, with plants shifting from the State of São Paulo as a whole towards other States. However, the shrinkage in numbers of firms and employees took place in the city of São Paulo rather than the ABC region.

According to the ABC Economic Development Agency, the sector continues to have a '**great weight in local industry**, and in 1996 it alone accounted for 23,636 employees (9.5 per cent of the entire region) and 120 local plants (3.7 per cent of the industrial total)' (2000: 20, stress in original). The importance of the sector, is also highlighted by greater than average concentration in the ABC region: 'this sector presents a "coefficient of specialisation" (ABC Economic Development Agency, 2000: 18) close to 2, which indicates that the sector shows a **marked concentration in the ABC region** (around 23 per cent of São Paulo's added value for this group was in the ABC)' (ABC Economic Development Agency 2000: 20, stress in original). [29]

This fact is not to be overlooked in our discussion, given not only the greater possibility for the implementation of partnership policies between local firms, which is already favoured by regional concentration in itself, but also the fact noted by the PAEP that the firms' capacity to provide positive responses to regional financial, technological, organisational or institutional stimuli is associated to the degree of regional concentration of the sector and the degree to which it participates in income generation and local employment (PAEP, Caderno 2: 18).

Within this context, therefore, given the pressure from the assemblers which spreads through the whole chain without the necessary support to ensure the upgrading of the Automotive Components firms, and given the presence of a significant number of firms belonging to the sector throughout the region, the question arises of why the automotive components firms have not become involved with the Chamber. Potentially, they might have participated in activities that could have (particularly in the absence of support from their clients) promoted the necessary instruments for making the process of innovation easier and more viable.[30] It is this issue that we will attempt to address in the following section by looking at the analysis of the relationships that the plastics firms have established within the chains they are inserted into.

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[29] The degree of regional specialization of an industrial sub-sector X in ABC can be measured by means of a regional concentration quota that is a relationship between the participation of the sub-sector X in the totality of the ABC's industrial added value and the participation of the sub-sector X in the industrial added value of the rest of the State of São Paulo (not including the ABC). When this quota is greater than 1, there is specialization of the ABC in sub-sector X, that is, sub-sector X tends to be concentrated in the ABC (ABC Economic Development Agency 2000: 18, stress in original).

[30] It is worth remembering that the possibility of the Chamber fulfilling this role was noted by the Sindipeças director himself, who had participated in the automotive WG whilst it was in operation. He offered the following comment: 'I think that the dialogue initiated in the Chamber was very positive although the results did not really lead to anything concrete in terms of results. I think that the Chamber is a very important initiative and that it is still possible to start up the sector WG, especially the discussions regarding partnership strategies between firms and the creation of a Centre for Technological Dissemination. I believe that this would be of use to a large number of automotive components firms in the region.'

4 The plastics sector and the chamber

4.1 The chemical/petrochemical sector in the ABC region

The Petrochemical Pole was established in 1972 as a part of the União Petrochemical Company in Capuava (an area located between Mauá and Santo André) in response to the growing demand for intermediate products in the Brazilian economy.

Capuava was the first Petrochemical Pole in the country, but is currently the smallest The output of the two other important poles in the country – Camaçari (COPENE) in Bahia and Triunfo (COPESUL) in Rio Grande do Sul. Copene in Camaçari is the largest in terms of output followed by Copesul in Triunfo, which leaves Capuava's Petroquímica União in third place.

In spite of its smaller output, the Petrochemical Centre at Capuava is considered one of the most important due, in particular to its privileged location in terms of proximity to the consumer market [31] which serves as a stimulus to the development of the plastics sector. However, it faces certain constraints: 'compared to the other two centres, the establishment of the centre was not led by particularly adequate logistical planning' (Economics Institute/UNICAMP 1998), which places certain limitations on its expansion and the supply of raw materials for certain firms which, despite being in the same region, need to be supplied via a gas pipeline. This, according to Rizek (1994) is because in contrast to the development of the Camaçari and Triunfo poles, the planning of Capuava did not take producer and consumer firms into account.

Table 4.1 Net output by Petrochemical Pole, 1990–97 (US$ 000s)

Name	Location	1997	1996	1995	1994	1993	1992	1991	1990
União Petroquímica	Capuava	574,379	382,078	469,365	447,692	347,050	316,031	305,757	nd
Copene	Camaçari	1,221,505	1,134,049	1,209,552	1,230,329	815,440	795,431	609,742	871,927
Copesul	Triunfo	757,612	596,546	677,780	661,196	394,030	497,000	487,000	630,000

Source: Brazilian Chemical Industry Year-Book, Brazilian Chemical Industry Association (1992/1998).

Despite the difficulties related to the Centre's layout, some of the most important firms both national and foreign have been active in the region due mainly to the centre's comparatively privileged location in terms of the consumer market. Further, in spite of its relatively low share of national production, Petroquímica União's net output throughout the 1990s (see Table 4.1) has been growing. The petrochemical sector as a whole has been performing well in the region, having been the most profitable of the three poles during both 1998 and 1999 and the PQU (despite evidence of space constraints) is currently a highly competitive business.

[31] Approximately 75 per cent of Brazilian petrochemical production is consumed in the South-East region (São Paulo, Minas Gerais, Rio de Janeiro and Espírito Santo).

The pole currently houses first, second and third generation firms distributed as follows:

- **First generation:** production of raw materials (naphtha, petroleum and natural gas by-products);
- **Second generation:** transformation of raw materials into thermoplastics (polystyrene, polypropylene, polyethylenes, butadiene styrene, PET, etc.)
- **Third generation:** transformation of thermoplastics into plastics; these firms demonstrate a large degree of heterogeneity, producing for various sectors such as the automobile sector, the electro-electronic sector, construction, packaging and domestic uses. It is these firms that are the focus of our research.

4.2 The plastics sector and its production chains

The ABC plastics sector began to emerge with the development of the Petrochemical Pole due not only to easy access to raw materials but particularly thanks to the proximity of the consumer market, an essential element in defining the location of firms in this sector. It is worth pointing out however, that it would seem that the region was unaware of the extent of the plastics sector until SEBRAE commissioned a report on the chemical and automobile sector from University of Campinas in 1998. This report revealed almost 600 firms (employing approximately 19,000 workers) involved in the production of plastics by transforming polyethylene, PVC, polystyrene, PET etc. (Instituto de Economia/UNICAMP 1998).

By means of interviews carried out in 122 of those firms, it was revealed that the sector was composed of firms of varying sizes, with a significant number of large firms exporting at least one product, as is indicated in the table below:

Table 4.2 The structure of the plastics industry in the Greater ABC region

Size	Number of Firms		Number of Exporters	Number of Employees
	Abs.	%		
0–49	76	62.3	14	927
50–99	14	11.4	8	1,050
100–499	26	21.3	18	5,756
500+	6	5.0	5	7,966
Total	122	100	45	15,699

Source: Instituto de Economia/UNICAMP (1998).

The six largest firms accounted for half of all employment, although 26 medium sized firms employed about 35 per cent of the labour force (equivalent to almost 6,000 workers). The majority of the sector however, is made up of micro and small enterprises (73.7 per cent), a high percentage of which are micro-enterprises.

The PAEP/ABC research also uncovered a significant number of sector firms in the region, although considerably fewer in number than shown by UNICAMP's research. According to the analysis carried out by the Economic Development Agency:

> Although there is no concentration of that sub-sector in the ABC region ('specialisation quotient 1' indicating that the ABC does not, on the whole specialise in plastics), it should be highlighted for its significant weight in regional industry. In 1996 the plastics sector owned 8.6 per cent of local plants employing 5.86 per cent of the labour force and accounting for 3.68 per cent of ABC's industrial value added. At that time it employed 14,539 people and had 156 local micro-enterprises and 78 small enterprises.
>
> (ABC Economic Development Agency 2000: 12)

It would be worth highlighting moreover, that although the sector has been growing significantly both at the national level [32] and within the ABC (at around 8 per cent per annum according to a representative from Sindiplast) PAEP/ABC's data shows a low capacity for innovation within the sector as a whole:

> It is important to point out that, independently of a comparative approach, whether in comparison with the eight most important sub-sectors or with industry as a whole – the 'rubber' and 'plastics' sectors . . . remain consistently in the group of least innovative firms.
>
> (ABC Economic Development Agency 2000: 15)

This lack of innovation does not, however, apply to the small and micro enterprises in the plastics industry, which on the contrary:

> showed important innovative performance: 59 per cent of firms in the small enterprise category were planning to innovate in some form between 1997 and 1999 (as against 46 per cent of all small manufacturing enterprises); moreover 27 per cent also produced at least one entirely new product in the period between 1994 and 1996 (as against 18 per cent of small enterprises as a whole); 41 per cent of the plants in the micro-enterprise category were planning to innovate in some form between 1997 and 1999 (as against 31 per cent of micro-enterprises in industry as a whole).
>
> (ABC Economic Development Agency 2000: 21)

[32] According to Abiplast, the plastics sector has grown 10.55 per cent from 1999 to 2000, although the profit margins have been significantly damaged by the sharp increase in input costs that could not be passed on to customers. Turnover went from US$ 8.34 billion in 1999 to US$ 9.93 billion in 2000, a rise of 12.4 per cent.

This data is extremely important for our argument, as those firms participating in the Chamber are precisely the small and micro enterprises, which individually possess little negotiating power when dealing with suppliers of raw materials.[33]

Considering the innovation efforts made by small and micro-enterprises, we aim to discuss the sector's participation in the Chamber on the basis of the way it fits in to different production chains, because, as has been noted previously, it is our belief that the propensity for firms to participate in the Chamber can be clarified by a discussion of their relation to the internal workings of the chains to which they belong.

Following the general tendencies of the sector, the regional plastics firms possess particular features according to the production chains they are inserted into. Fleury and Fleury (1998: 3) argue that 'there are plastics manufacturing firms that are aligned to or seeking to become aligned to production chains in which the strongest player is the one that produces directly for the consumer market, such as the automobile and electronic goods chains that are commanded by large powerful international companies, as well as those that have the vast supermarket outlets at the end of their distribution networks.'

What is important to note in these cases is, as Fleury and Fleury emphasise (1998: 3), that 'local firms are being "sandwiched": squeezed from above by the resin manufacturers (large companies linked to huge international monopolies or the state-owned production system) and from below by the large transnational companies buying their products. These large companies command chains, which compete in terms of appropriation of added value. Therefore, the plastics transformation firms are under pressure from both sides and must reduce their prices, improve quality and innovate. In this context one of the main difficulties is in price negotiations, both for raw materials (thermoplastics/resins) and for the products going to their customers.' These problems are particularly acute for firms working for the automotive and electrical industries, which we refer to as the automotive/electrical chain. However, there is also 'a second type of plastics transformation firms, such as construction firms and those producing household articles, for which the pressure from below is "normal market pressure" which allows for less conflictual relationship' (Fleury and Fleury 1998: 3). The authors also refer to a third group, which consists of small and medium sized enterprises specialising in the production of packaging and household articles for sale in the domestic market. These firms have a highly diversified client base and cannot be said to form part of any one chain. Basically, the plastics firms in the region can be divided up into these groups and each fits into different chains with different governance structures.[34]

Fleury and Fleury argue that the firms aligned with the automotive/electrical chain have 'no means of negotiating prices with their clients (assemblers and mega-suppliers). On the contrary, in order to maintain their position as suppliers the producers need to adopt the pricing relationships systematically imposed by

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[33] According to PAEP's classification, micro-enterprises have up to 29 employees; small enterprises between 30 and 99; medium-sized enterprises between 100 and 499; and large enterprises over 500 employees. Of the total of 27 firms that have been highly active in the WG with Sindiplast, 14 are micro-enterprises, 8 are small enterprises and 5 are medium-sized enterprises. The research sample included a total of 3 micro-enterprises, 4 small enterprises, 4 medium-sized enterprises and 3 large enterprises.

[34] For a discussion of different types of governance in value chains, see Humphrey and Schmitz (2000).

the assemblers'. In terms of the packaging chains 'the command of the chain resides in distribution, in the food-packaging firms, in the pharmaceutical and cosmetics firms and the industrial packaging clients' (1998: 18). Although it is a heterogeneous chain that covers a wide variety of firms, from those under the strict control of large companies (as is the case of those in the food sector), to those under very slight pressure (such as the manufacturers of industrial packaging), in reality their management pattern 'does not yet appear to have been modernised: the firms that command the chain continue to buy on the basis of price . . . on the other hand, the relationship with the resin producers is, on the whole, conflict-ridden due to the prices these companies set' (Fleury and Fleury 1998: 32). It is precisely this challenge that the Raw Materials Purchasing Group was set up to face.

These comments lead us to raise two important points to guide the discussion: (1) the government and local partnerships can do little to ensure the upgrading of firms that are inserted into the chains dominated by large multinational buyers, as is the case in the automotive/electrical chains; (2) therefore, the firms most likely to participate in the Chamber would be those outside of these chains, those inserted into the packaging chain or not inserted into any specific chain either because they are small locally-oriented firms or because they produce for a diversified group of clients.

4.3 The Chamber's Plastics Working Group

As was noted previously, the firms featured in this research were approached on two separate occasions. Firstly a preliminary questionnaire was sent to the 27 firms identified by Sindiplast as being active in the Chamber; nine firms responded to the questionnaire. Four of these firms were no longer participating in the Chamber's activities at the time of research.[35] Secondly, a detailed questionnaire was sent to twelve firms. Seven of these firms were respondents to the first questionnaire, and five were not. As our initial theory was that the propensity of firms to participate in the Chamber varies according to the chain they are inserted into, five further firms were selected for study. Three of these firms were chosen from the automotive/electrical chain, and two supplied products to a number of different chains. The selection criteria also took into consideration the knowledge of firms within the sector thanks to the research carried out by Fleury and Fleury. Therefore, the research took into account a total of 14 firms, which can be divided into three groups: participating firms (5 cases), lapsed firms, which had ceased participating in the Chamber (4 cases) and non-participating firms (5 cases).

[35] This fact cannot be interpreted as a decline of the WG, as according to the coordinator other firms have been joining.

Table 4.3 Firm characteristics by participation in the Chamber

	Participating firms (5 cases)	**Lapsed firms** (4 cases)	**Non-participating firms** (5 cases)
Number of employees (mean number)	50 40 50 28 85 (51)	250 200 170 5 (156)	100 1100 800 25 1100 (625)
Activities of major customers	Plastics Food packaging General packaging Diversified Diversified	Auto/electrical Auto/electrical Auto/electrical Diversified	Paper Auto/electrical Diversified Auto/electrical Auto/electrical
% of sales to firms in the auto/electrical sectors (mean percentage)	0 0 0 0 16 (3)	70 100 98 45 (78)	0 90 0 100 100 (58)
% of sales to largest three customers (mean percentage)	20 38 28 48 50 (38)	65 56 93 30 (61)	Not available

Data on the characteristics of the firms in the sample as a whole are presented in Table 4.3. The data provides a clear relationship between type of firm and involvement in the WG:

1. Size: the five firms with continuing involvement in the Regional Chamber's plastics Working Group are all small, with the number of employees ranging form 28 to 85. This data matches the characteristics of the firms on the list of the 27 participants supplied by Sindiplast, which also points to a high incidence of micro and small enterprises compared to medium-sized enterprises and a complete absence of large companies (see note 33).[36] It is worth noting that although the data are not entirely comparable (as they are based on different classifications), the concentration of micro- and small enterprises amongst the 27 firms that had participated in the experience is greater (81.4 per cent) than the percentage shown in the sample from the study undertaken by the Instituto de Economia (73.7 per cent, see Table 4.2). It can also be observed that there is a significant difference between participating and lapsed firms. The average size of the four lapsed firms was 156 employees, more than three times greater than the participating firms. This may indicate that the under-representation of the larger firms in the WG is increasing over time.
2. Sector of activity. It was argued in Section 2.3 above that the plastics firms were inserted into sectors with significant differences in value chain characteristics. In particular, Fleury and Fleury (1998: 3) argued that firms in the automotive and electronic sectors had significantly different relationships to

[36] Although the research brought to light a certain movement between firms participating in the WG with constant comings and goings, the list can be taken as an important reference inasmuch as it reflects the situation of those firms that had, at any given moment, taken part in the experiment, although it cannot be seen as a reflection of the current situation.

customers compared to those in other sectors. Table 4.3 shows that there are important sectoral differences between the participating and non-participating firms. The participating firms produce for the packaging, tyres, cleaning, cosmetics, telecommunication, agricultural machinery and plastics sectors.[37] With a diversified client base, none of them is inserted into any one particular chain, although the production of packaging should be highlighted. None of them commits an important amount of their production to the automotive/electronics sectors. In contrast, three of the four lapsed firms produced for the automotive/electrical sector. On average, 78 per cent of the total sales of the lapsed firms were directed to the auto industry.

3. Dependence on a few customers. A similar contrast between categories is seen in the level of concentration of sales. The participating firms are much less dependent on a few large clients than the lapsed and non-participating firms. None of the participating firms sell more than half of their output to their three largest customers, and the average level of sales to these customers was 38 per cent. Amongst the lapsed firms only one out of four sold less than 50 per cent of output to its three largest customers, and the average level of sales to these customers was 61 per cent. The exception was the smallest of the four and the one that did not sell to the auto-electrical sector.

These data allow us to confirm the hypothesis that those firms most likely to participate in the Chamber would be small firms outside the chains dominated by the large multinational buyers and producing, on the whole, for a diversified client base.

On the other hand, when we look at those firms inserted in the auto-electrical sector we find the following:

1. Firstly the data confirms the lack of involvement of Automotive Components firms in the Chamber; in fact, none of the six firms inserted in the automotive/electrical chain participates in the WG. Three of them had participated at some point, but had ceased to do so.
2. The data also confirms the statements made earlier regarding the dependence of firms inserted into the automotive/electrical chain: of the five firms in this group[38] that responded to the second, detailed questionnaire, four admitted to being very much dependent on their client(s) – so dependent, in fact, as to face bankruptcy should they lose them. Only one firm felt that it would not face this danger, although it had stated that it would be worrying and complicated and that it could not in fact afford to lose any clients. For the firms participating in the WG, in contrast, the level of dependence on their largest customers was much lower.
3. The data also confirm that the pressure of the clients in terms of the quality or obedience to production norms is very high. The pressure for certification and to abide by the standards is in fact significant: four of the five firms inserted in the auto-electronic chain that responded to the

37 This is a firm that produces machines for the plastics sector in general.

38 These five include the micro-enterprise, the 2 large enterprises and the 2 medium sized ones (200 and 250 employees).

questionnaire 2 are certified in QS 9000, two in ISO 9002 and two in APQP; besides that there are seven types of certification that firms are considering putting into place, all the firms comply with standards related demands and three of them stated that they are under pressure to comply with norms of another kind of standard.

This data therefore corroborates the fact that both pressure from and dependency on the clients are very high. They do not explain however, the reasons why the firms do not become involved with the Chamber. In order to advance on this issue, we would need to proceed to a more in-depth analysis to enable us to understand the relationship within the chain in terms of upgrading support. In this context it is worth highlighting the following:

1. The five firms inserted in the auto-electronics chain that responded to the second, in-depth questionnaire have been making considerable effort to promote upgrading, having particularly invested in manufacture, design and research and development (R&D).
2. These firms state that they have received technical support especially from their clients, equipment suppliers and resin suppliers, in this order of importance. However, when questioned about how this support is provided, the type of support most commonly referred to (by three of the five firms) was joint project elaboration with the client. This was the most important form in which assistance was provided.

The data suggest then that even though these firms are under pressure and receive little assistance form their clients, it is from them that they receive most of their upgrading support; in fact they lead us to assume that although power relationships within the chain are asymmetrical and there is a lack of support for the upgrading of the automotive components firms, it is still mainly in terms of interaction with their clients that these firms acquire the conditions to promote the necessary technological innovations to ensure competitiveness. In other words, the hierarchical way in which the chain is organised means that (although in a limited and conflict-ridden manner) it is mainly through interaction with clients that the automotive components firms achieve their upgrading.

These findings are in marked contrast to those found for the five firms participating in the Chamber, all of which are involved in the Raw Materials Purchasing Group, as can be seen below:

1. These firms have a much lower level of certification than those in the automotive/electrical sector; only two of them are in the process of ISO 9002 certification, and no other types of certification were mentioned. Three of them however, admitted to be under pressure to gain certification and two of them stated that they were being pressured to comply with standards. All this indicates therefore that although pressure for certification is lower here than amongst the firms inserted into the automotive/electrical chain, it remains significant. The low incidence of certification seems to indicate, however, that the firms are not able to keep up with the pressure.

2. These firms stated that they receive technical assistance, particularly from the resin and equipment suppliers. Only one of them mentioned a client that provides this type of assistance. It is worth noting however that some of the interviewees alluded to the fact that assistance from the resin providers varies in terms of the quantities the firm purchases: when the volume purchased is greater, assistance is more affective; for small purchasers, assistance is less effective.
3. Only two of the five firms received support through elaboration of joint projects (which implies a more effective partnership and transfer of technology).

What this appears to indicate is that these firms are also under significant pressure to upgrade, but that they have few opportunities to respond to this type of pressure. Although their clients pressure them, they provide little assistance; the resin and equipment producers moreover, do not appear especially interested in supporting them in these efforts given the small quantities of materials they purchase. These firms therefore are left without the support they need to ensure their upgrading, a fact that would make them keener to look elsewhere for support. Given this situation, they are far more receptive to initiatives seeking to promote collective efficiency, particularly those ensuring improved relationships with the resin companies.

This possibility is backed up by the findings relating to efforts being made towards upgrading.

1. Although investments in manufacture and design have proved largely ineffective, three of these five firms have been investing in R&D to a greater extent, in fact more than the firms in the automotive/electrical sector (amongst which, only two claimed to see R&D as a priority in investment terms).
2. This effort to upgrade also becomes clear when observing the levels of labour force education and investments in training. There is no significant difference between the five firms participating in the WG and the five belonging to the automotive/electrical chain that responded to the second questionnaire in terms of efforts made to hire employees with high levels of education. In terms of training too, these firms display significant efforts, higher even, than the five in the automotive/electrical chain (only three of the latter have increased their investment in training as compared to four of the former). It is worth highlighting the importance of the Chamber's activities for one of these firms, which has been involved in Projeto Alquimia.
3. This effort also comes to light when noting the fact that the only firm (out of the nine that responded to the first questionnaire) that owns its own moulds and product designs participates in the Chamber (firm 7). Although this firm stated that the client had joint ownership of the moulds, the very fact that firm and client shared the ownership of moulds and designs shows a significant effort towards upgrading.

This set of results shows that in the chain in which the small plastics firms operate they do not have the same kind of interaction with their clients in terms of upgrading as do firms in the automotive/electrical sector. Given the lack of this type of interaction, they have been seeking other means of ensuring competitiveness such as the establishment of more cooperative and associative relationships with the aim of increasing their power of negotiation with the resin suppliers.

4.4 Firms in the auto-electronics chain compared to others

These results offer important insights into the issues raised at the outset regarding the effect of global chains on possibilities for responses based on local cooperation and on the implications of relationships within global chains to the formation of policy networks.

As we have sought to clarify in the previous sections the research confirms the small role of the government and local partnerships in the process of upgrading in firms inserted into chains dominated by large multinational buyers as shown by data on the plastics firms inserted into the automotive/electrical chain. These data suggest the difficulty of thinking about the formation of policy networks in regions with a strong concentration of global networks such as the ABC Region. As we sought to show earlier, it is precisely the small firms producing for different sectors that appear to show a greater propensity to participate in competitiveness oriented policies in order to achieve collective efficiency.

These findings do not, however, mean that the analysis focusing on issues of governance in global and national chains for regional upgrading strategies is sufficient to allow an understanding of the relationship of those two sectors towards the Chamber. There are evidently other factors affecting those strategies that also need to be taken into consideration.

In terms of the firms participating in the Chamber for example, it is necessary to take into account the fact that all of them stated that they had considered moving away from the region.[39] Although this response may be connected to the aforementioned difficulties and also to a certain apathy within part of the Chamber (in terms of activities) during the past year because of municipal elections, which had greatly mobilised civil society and the local Town Councils, and as a result distracted effort and attention from the operation of the Chamber. These difficulties show that the experiment still has a long way to go before it can begin to have more encouraging effects for the firms.

In terms of those firms inserted into the automotive/electrical chain, it is worth noting that, although the data shows a marked difficulty for firms inserted into global chains to become involved in policies aimed at increasing competitiveness based on local collective efficiency, they do not mean, however, in our opinion that such projects will face insurmountable difficulties. In fact, other data and information, which came to light during the course of our research, has allowed us to make further advances. We would therefore like to highlight the fact that if a weak involvement on the part of the automotive sector has proved to be one of the greatest problems both for the Regional Chamber experiment as well as for the very future of the sector in the region, there are a number of issues that need to be considered and that may point towards the possible changes in the situation.

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[39] In the case of the five firms in the auto-electronic chain that responded to Questionnaire 2 only two expressed a desire to leave the region. It is worth remembering, though, that one of them did in fact leave the region in the recent months. This firm, originally from São Paulo, had moved to the ABC Region in 1996 and had, according to the management, encountered difficulties in expanding in the region due to the high costs of land and rent.

Firstly, as noted by Arbix and Zilbovicius (2000: 74), the fact that the assemblers continue to invest in the region, and make no plans to leave it must, in one way or another, end up having an effect on their involvement in regional forums in the near future. Secondly, the development of the Chamber's activities and the benefits of the experiment for those sectors that participate the most, such as the chemical and petrochemical sectors, must certainly begin to have some effect on the automotive sector, which could in turn lead the latter to review its strategies. There is no denying, however, that despite the possibility that by becoming involved with the Chamber the assemblers will feel more motivated to participate in its institutions either due to their rootedness in the region (to which Arbix and Zilbovicius refer) or to the demonstrable effect of the benefits of this participation to other sectors, this process will not be easy, nor free of conflicts and contradictions, given the tendency they show to prioritise global commitments over local ones.

In terms of the Automotive Components firms sector, despite the de-nationalisation process and the concentration of capital that has been affecting it, the sector continues to demonstrate a set of features that lead us to suppose that upgrading policies (that could be implemented through the Chamber) could come to have considerable importance to the sector as a whole:

1. As we saw in the section given over to a discussion of the sector, despite a reduction of the number of Automotive Components firms in the region – both in terms of the number of plants and the level of employment – this decrease is not so great. On the contrary, as can be observed from the data in Table 3.2, the one area that does appear to be affected by a significant process of de-industrialisation in the automotive sector is the city of São Paulo;
2. Although de-nationalisation is already reaching second tier manufacturers, the sector continues to be mainly made up of small and medium-sized Brazilian-owned enterprises.
3. According to the data from the PAEP/ABC (Book 2) the sector has been showing a good degree of innovative performance in the region, especially between micro and small enterprises for which partnership strategies in terms of purchasing production materials or acquiring transport services, medical assistance, etc. could be of great importance.[40]
4. Despite the 'ABC cost' represented by higher wages, as well as the high prices of land, transport and other important production items, the availability of materials is greater than in any other region in the country and the state of São Paulo which, as noted by the director of Sindipeças who represented the sector in the WG, could eventually neutralise the aforementioned disadvantages;

[40] It is worth noting that it was precisely these issues that were discussed in depth at the meetings of the Automobile Sector WG whilst it was running.

5. The development of the WG's activities, particularly the establishment of the Mould Centre (which will gain fresh incentive from the results of research undertaken by the National Plastics Institute) could come to play an important role in attracting these firms, inasmuch as it could make them less dependent on their clients.[41] It is worth highlighting in this respect that none of the automotive/electrical firms that approached the Chamber at the outset owned their own moulds.

These factors paint a favourable picture in which small and medium sized firms in the sector would be able, in the near future, to return to discussions initiated in the WG in 1997. It is possible that, if the strategies employed by the Town Councils and the Metalworkers Union to mobilise the assemblers were used on the automotive components firms, offering them support that they are unable to obtain within their chain, such as for example training for employees (one of the reasons most frequently mentioned by the firms as an advantage of being located in the ABC), greater successes could be achieved.

5 Conclusions

Seeking to bring further depth to the debate on Local and Regional Economic Development and Policy Networks, this paper discussed the extent to which the relationships within global chains affect the chances of local cooperation-based development strategies between firms. To this end it focussed on the important experiment of the Greater ABC Regional Chamber and compared the involvement of firms belonging to the tightly controlled global auto chain with firms operating in the diffuse plastics chains.

Although these cannot be seen as more than preliminary results, given the various limits of the research noted throughout the text, the finding of the research indicate the difficulties of developing a local policy network in a sector with strong global linkages as in the automotive sector. Firms in the automotive sector demonstrated little interest in participating in the Chamber's activities. The sector's global linkages and the hierarchical structure of the chain, appear to establish strong relationships between the firms involved, leading them to show less of a propensity to participate in other forums aimed at raising competitiveness. This type of behaviour was to be found not just amongst the assemblers but also amongst the automotive components firms belonging to the plastics sub-sector. Other firms within the plastics sector (particularly small firms committed to producing various products aimed at a varied client group and not directly inserted into any one specific chain) showed a greater propensity to participate in strategies within the Chamber and aimed at increasing competitiveness by improving collective efficiency.

As noted previously, however, these findings cannot be taken as proof either of the impossibility of participation from firms inserted into global chains, or of the inclination of micro and small enterprises not inserted into those chains to participate in local economic development strategies. If, on the one hand, they point towards important movements to be considered it should not be forgotten that, on the other hand, they should not be seen as deterministic, as various other factors that could affect this type of

[41] In effect, the fact that they do not posses their own moulds and projects leaves firms in the sector completely dependent on their clients who could easily switch to other suppliers.

participation should also be taken into account. These include, amongst others, the region's social capital, its social history and the economic performance of the firms concerned. However, the paper is thought to provide important new insights which help to explain the difficulties that face policy networks such as the Greater ABC Regional Chamber. The approach adopted might also be useful for assessing the chances of local development strategies succeeding in other regions.

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