

***Beyond the investment climate:
Why social interactions matter for growth***

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*“In order to grasp the way the economy works,
it is necessary to investigate its social structure”*

Mark Granovetter

INTRODUCTION³

The initial inspiration for this research was the need for a critical assessment of approaches to economic development originated in mainstream economics, which suggest general recipes for countries to grow. The investment climate idea, championed by the World Bank, is part of that recipe-based approach that claims global applicability – it stresses the need for “good institutions”, with respect to property rights, an independent legal system, macroeconomic stability, and includes other microeconomic guidelines for countries seeking to attract investments and grow.

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³ The authors are responsible for the final version of this text and the interpretations it carries. However, other people were crucial to the development of the research. Cláudio Amitrano played an important role in the conception of the research, especially in theoretical choices and methodological definitions. Marina Biancalana collected statistical data and documents, transcribed interviews, and organised bibliographical references, as well as assisted in writing the reports. Any Bittar was fundamental in managing fieldwork (selection of actors, contacts, and scheduling interviews). We thank Zil Miranda and Demétrio Toledo for their assistance in fieldwork and Alexandre Abdal for collecting statistical data. Thanks also to Glauco Arbix, Adrian Gurza Lavalle, and Hubert Schmitz for their careful reading of the preliminary version and their comments. Finally, we are grateful to the colleagues at the PAPI program of DRC for the Future State for their comments during the workshops in Brighton (UK), in June/2007, and in Jakarta (Indonesia) in March/2008.

Such elements are certainly very important to economic growth. However, they are not enough to generate growth or to explain the varied growth experiences of distinct countries in the world. The trajectories of nations that have been growing at substantial rates in spite of being far from having the so-called good institutions – such as China and India, are well known, and so are the trajectories of those that followed the recipes of international agencies in the 90s and grew below expected – of which there are good examples in Latin America. In sum, it is not possible to establish a cause-and-effect relationship between “good institutions” and economic growth.

Inspired by the assumptions of the “new economic sociology”, we intend to stress the importance of social context and, more specifically, of the distinct patterns of interaction between public and private actors in creating and sustaining growth dynamics.

The fact is that the investment climate approach virtually ignores important elements of the debate on development: 1) by assuming that any “environment” can be adapted to more or less institutional models, it dismisses the weight and variety of historical contexts; 2) by defining institutions as formal and abstract entities, it forgets the social networks that sustain it and vary enormously in time and space; 3) it does not cover the crucial differences between the conditions that start up growth processes and the necessary conditions to its long-term sustainability; 4) by considering investments and growth as variables that are neutral, it ignores the fact that regions and nations make political choices that often do not have pure and simple economic growth as their sole aim.

It should be noted that Brazil (our referential empirical context) is an excellent example of a large-scale economy that in the last 30 years has oscillated between short growth cycles (sometimes at high rates) followed by stagnation or retraction cycles, and also a country that made some choices based on the infamous recipes that would be the “best practices”. Some consequences – both of the stop-and-go growth process and the fact that it dismissed the historical context and social networks that sustain institutions – were deleterious from the viewpoint of the productive system and social indicators.

These limitations of the investment climate approach are the starting point for this research which raises two critical points for the discussion about economic development in this working paper:

- 1) Processes of economic growth cannot be understood only in quantitative terms, i. e. growth rates; rather, they must be considered in terms of their quality. It is essential to understand how social embeddedness mechanisms confer qualitatively distinct features to growth, which are measurable both for their impact and their ability for long-term sustainability;
- 2) Institutions are social constructions that both nourish and are nourished by constellations of social networks in which they are located; they both depend on the preexisting social dynamics to which they must somehow adjust in order to acquire effectiveness and induce the establishment of new social relation networks.

Therefore, the qualitative elements we attempt to identify here are not features of economic growth in itself, but rather of that feedback dynamic between institutional arrangements and social contexts.

The first argument develops into the claim that similar growth rates can be sustained by very distinct institutional and social dynamics. Growth experiences are qualitatively distinct phenomena whose understanding requires more than conventional economic analyses based on the costs of production factors and return-on-investment rates. Identifying interaction patterns between relevant actors (firms, government

agencies, financial agents, educational and research institutions) and the specific character they imprint on economic growth dynamics constitute one of the axes of this research.

The second argument seeks to refute the analysis that sees institutions as abstract and static entities and stresses dynamics factors of change in production systems. It is not about investigating how institutions can adjust (or not) to accumulation needs, but rather of understanding how social relations and institutions – many of which are not originally related to economic interests – induce growth dynamics, which in turn re-qualify those very relations and institutions. Instead of the classic circular argument “investment => growth => accumulation => investment”, we discuss how social relations influence the construction of economic institutions.

For the specific purposes of this study, we ask: 1) To which degree interactions between public and private actors, in local contexts, influence the construction of and change in those economic institutions? 2) Once the differences between context have been identified, which configurations are more favorable to growth process that are sustainable over time?

Therefore, in order to (re)establish the connection between social relations and economic development, in analytical terms, we take the ideas of the new economic sociology as our inspiration. Firstly, back to classic sociology, it sees economic actions as social actions. As a complement to that assumption, the authors argue that economic institutions are socially constructed. That occurs because: they result from social creations along historical processes; previous constraints influence present decisions (the idea of path-dependent development); actions embedded in social relations systems – social networks – shape institutions (GRANOVETTER, 1985; GRANOVETTER & SWEDBERG, 1992).

Alongside this relational approach, we introduce the idea that growth must be analysed considering the notions of quality and sustainability. Since the quality of growth has many dimensions, this research concentrates on the type of growth that includes: education and knowledge foundation, trained labour force, productive diversity, added value production, entrepreneurship, and the creation of new firms. We assume that growth processes based on the combination of such factors are more likely to become sustainable. The idea of sustainability is used here in a broad sense: as a long-term process of economic growth based on qualitative factors.

It is worth underscoring that both the need to provide education and that of encouraging a knowledge-based production are recognised by some of the investment climate assessments as well as by other approaches within orthodox economics. However, there is no acknowledgement that social relations among actors might directly influence such growth.

In order to explore the two critical points mentioned above, this study compares the growth trajectories of two Brazilian municipalities: Santa Rita do Sapucaí, in the state of Minas Gerais, and Ilhéus, in Bahia. Both are small-to-medium size cities which are not in metropolitan regions. Having been previously oriented to agriculture, after the 1980s both cities developed important productive systems in the electrical-electronic and computer industries. Subject to the same macro-regulatory national structure, the substantial growth of the two industrial clusters was nevertheless driven by particular combinations of municipal and state public policies and diverse local socio-institutional environments.

With purpose to capture the qualitative differences between the two growth trajectories, our research methodology was primarily based on personal interviews of actors from government (executive and legislative), firms (businesspeople and consultants), educational institutions (faculty and researchers), business incubators and business associations. In combination with such qualitative material, we used GDP

data, number of firms, number of employed personnel, and wages in order to measure the growth of the cities and their industrial hubs in quantitative terms.

Results from the analysis of the secondary data show substantial economic growth that is above the national average in both cases, especially after the 1990s and mainly due to development of the two industrial hubs⁴.

However, our research goes beyond quantitative data. It is necessary to examine the qualitative material in order to answer key research questions: Who are the actors involved in the growth process of each city? How are social networks built between them? What roles are played by the distinct interactions among the agents in configuring the set of qualitative factors? Finally, can the combination of qualitative factors found lead to a sustainable growth process?

In order to generalise empirical findings and make an analytical comparison, we created an interaction typology that combines the relational approach with qualitative factors of growth. The two analytical focuses – public-private and private-private interactions – allow us to identify substantial differences in both cases as to how relations influence core dimensions of the growth.

The typology of interactions had the following transversal dimensions: the role played by the State (whether it tends to coordinate agents and resources or to centralise planning); the hierarchy of the process to build local development (whether it is a bottom-up process with diffuse participation of several actors or a top-down process, with stronger participation by an actor); the design of social networks (according the wider and heterogeneous or stricter and homogeneous character); the character of the productive system (whether it is complementary, with several linkages, or competitive); the timing of actions toward growth (whether they are gradual or abrupt); and the possibility of spreading knowledge, technology, and innovation.

Comparison of both cases showed that Santa Rita is a case of development supported on multiple factors: the educational and research system; dense social networks that vary in their nature; local elites able to have state and national impact; local and foreign investors; and public institutions that are open to distinct interests. Ilhéus, in turn, is a good example of an experience triggered almost by a unilateral factor: government intervention through tax incentive policies focused on attracting businesses, especially from out of the region.

Dense social networks – involving municipal and state governments, businesses, as well as secondary and higher education schools – and the ability of public institutions to act as coordinators of existing local assets exerted a positive influence on the development of Santa Rita. The networks were crucial to building the necessary conditions, such as permanent labour training, educational institutions linked to firms, diversification of the production chain, permanent creation of new businesses, and lower dependence on tax incentives.

In spite of its high economic growth rates, Ilhéus is a good example of how constraints in terms of interactions between public and private actors can restrict the conditions for sustainability of growth as they do not exert a positive influence on the qualitative configuration of the process. The very creation of the computer industry cluster by a state government decree – a centralised decision – restricted the strengthening of a local social network since the beginning, and encouraged the

⁴ The debate on investment climate deals with economic growth as a consequence of investments, rather than as the main analytical variable. We have used economic growth in this research for two reasons: Firstly, historical series of data are not available on investments for states and cities in Brazil. Secondly, our focus goes beyond quantity of investment or growth, that is, we examined the quality of the economic growth process.

attraction of businesses from other parts of the country. The lack of qualified labour, the absence of a knowledge base linked to local production, and the very production virtually oriented to computer assembly (using imported parts) are factors that make up a fragile long-term development structure. This is even more problematic when we consider the excessive dependence of firms on the state government's tax incentives.

Besides strong growth in quantitative terms in both cases, in terms of quality and sustainability over time, it is possible to say that the growth trajectory of Santa Rita is robust while the Ilhéus trajectory would be fragile.

It is not a question of simply saying that Santa Rita is a success case while Ilhéus is a failure and suggesting a replication of the former. On the other hand, neither is it a question of arguing that each case is special and we should see them only according to their specificities. This research project aims to show that social interactions influence growth; that it is possible to identify similar qualitative factors in different cases; and that such factors might lead to more or less sustainable growth processes. It means that an analytical comparison can be made, identifying those qualitative elements that are critical to sustainable development processes.

That is, understanding development as an open process, permanently subject to being redirected, this research intends to show that the characteristics of social interaction networks influence economic dynamics in its strict sense, from the startup of growth processes until their long-term sustainability.

Besides the introduction, this text is structured as follows: in Section 1, we discuss the limitations of the investment climate approach and introduce the ideas of quality and sustainability in order to foster a debate on economic growth beyond indicators of GDP variation. In Section 2, we briefly review the principles of new economic sociology in order to show our preference for the relational approach, and then we explain the reasons for this research's focus on the interaction between actors. Methodology is included in Section 3, with explanations about case selection and the techniques used. Historical background and evidence for Santa Rita's and Ilhéus's economic growth are presented in Section 4. Section 5, divided into three items, focuses on the analysis of the material collected in the fieldwork, discussing interactions between agents and the quality of growth in each of the cases studied. Item 5.1 explains the triggering of industrialisation processes; Item 5.2 presents the interactions between public and private actors; and Item 5.3 presents the interactions among private actors. We close the article with the conclusions of this exploratory research study.

1) LIMITATIONS OF THE "INVESTMENT CLIMATE" APPROACH

The World Bank's *World Development Report 2005* has the suggestive title of "A better investment climate for everyone". According to the usual practice in this sort of document, an idea-force (and almost always a good motto as well) is sustained by a set of empirical evidence covering a large and varied spectrum of national cases and more or less generic propositions that aspire to status of good practical sense.

The definition of the elements that contribute (or not) to the existence of a "good investment climate" in developing countries combines the axioms of neoclassic economics ("intrinsic" virtues of low-regulation markets and macroeconomic stability) with the latest contributions by neo-institutionalists. From the latter, the importance of institutional and legal frames for economic development is incorporated – seen in a broad and flexible way in order to cover the informal networks and systems of organisation of economic activities and flows as well.

The investment climate approach implies the assumption that private investors' individual decisions determine the level of economic growth in countries (or regions, or localities), and that such decisions are made after contextual variables recognisable and measurable by decision makers. These variables can be grouped in three types:

- a) those that summarise opportunities: return on investment rate; access to strategic raw materials; potential consumer market; availability of trained labour force; configuration of the competition;
- b) those that establish guarantees on: property of assets; appropriation of gains resulting from investments; international circulation of financial assets; brands and patents; and finally, protecting contracts, mainly those involving public authorities;
- c) those that generate predictability: internal and external stability of political regimes; soundness of economic fundamentals; joining regional markets, multilateral organisations and international treaties; and the independence level of critical public agencies, such as central banks.

National states are left fundamentally with the mission of providing the "climate" (or "environmental") conditions needed to meet the requirements of decision makers, adjusting good practical sense extracted from documents of international organisations and best-practice manuals to physical, sociocultural, and historical peculiarities of their respective national contexts.

The conditions favourable to growth listed in the World Bank's document certainly cover many of the truly decisive factors, but clarify very little about how to reach optimal thresholds regarding those factors. Cause-and-effect relations between economic growth and institutional systems, for instance, are quite obscure. As Rodrik (2006) rightly points out, it is not possible to assure whether central countries have sounder institutional systems because they are richer or, on the contrary, they got rich because they have better institutional systems. Even more emphatic, Chang (2002) sustains that many of the regulation "distortions" that richer countries suggest poorer ones should eliminate in order to overcome their backwardness (such as protectionist trade rules, public subsidies to selected private investments, manipulation of exchange rates, weak property rights protection) were precisely what those rich countries have resorted to in the past in order to reach economic development.

The diverse trajectories of developing countries and the numerous case studies available suggest caution. Countries that have been experiencing substantial economic growth rates, such as China, are far from presenting institutional and regulation characteristics of the more developed countries, while those that strived to pursue institutional reforms to get closer to the paradigms of rich countries saw their growth rates stagnating in recent decades (it is the case of many in Latin America, including Brazil).

This sort of evidence is certainly not enough to refute the assumption that a "good investment climate" is positively associated to economic growth. Neither does it entail that the elements that make up a "good investment climate" are not those listed on the World Bank's document, grouped above under the labels of "opportunities", "guarantees", and "predictability". However, they clearly indicate that "opportunities", "guarantees", and "predictability" can be reached through distinct institutional tools and arrangements. According to recent contributions by neo-institutionalists, such tools and arrangements are often informal, not representing more than repeated patterns of relationship between actors critical for the development process – mainly public managers and private investors. And such institutional arrangements, as explained by authors from the new economic sociology, are socially constructed and constrained by local relations (GRANOVETTER, 1985; GRANOVETTER & SWEDBERG, 1992; GRANOVETTER, 2000). Summing up, social networks and interactions between public

and private actors play a central role in the construction of economic institutions, as we shall see along this text.

BEYOND QUANTITY: QUALITY OF GROWTH AND SUSTAINABILITY

A second disturbing element in the picture painted by the World Bank (and, in fact, in much of the current debate on development in poorer countries) results from the simplification in the equation “development equals growth”, better yet, “development equals high growth rates”.

Evidently, it is important to consider growth rates in the analysis. However, the definition of the current debate, focused on growth quantity, ignores the qualitative aspects of social fundamentals of development, which, in turn, contribute to explain the different trajectories of nations and regions, and specially why some are more sustainable than others over time.⁵

Brazil’s trajectory along the 20th century is highly paradigmatic to nurture the discussion about these two aspects. Having been one of the fastest-growing economies between the 1940s and the 1970s, the strategies adopted during that period – and the inability of leaders to review them at the right moment – created deficiencies of such magnitude (i. e., foreign debt, inflation, loss of industrial competitiveness, emergence of private monopolies in strategic industries, land concentration) that contributed to lead the country into a cycle of low and intermittent growth rates in the last quarter of century. Besides, the same growth model that made the Brazilian economy rise to be the world’s 8th largest industrial producer also helped to create one of the worst income distributions known among countries of the same development level⁶.

If we are to deal with the qualitative elements of the growth process and their possibility to be sustained in the long run, we must pay attention to a double shortcoming common to neoclassic development models: that of incorporating the existence of distinct contexts and the inability of dealing with changes over time – dimensions that are essential to think about growth beyond quantity and also in a “non-static” way.

⁵ Differently from what the contemporary debate usually calls sustainable development, where the focus is on the natural environment (ecology, natural resources etc.), in this research we freely use the notion of sustainability in a broader way, focusing on the idea of a long-term growth process based on diverse qualitative factors.

⁶ The distinction between development and economic growth was made several decades ago by some of the founders of the Cepal School (Cepal – the Economic Commission for Latin America and the Caribbean). In countries of late industrialisation, penetration of modern forms of production generates quite unequal impacts on the pre-existing social structure. The coexistence of truly capitalist industries and firms with traditional forms of production based almost exclusively on the abundance of labour (family-based agriculture, handcrafted products, low urban informal sector) tends to produce a highly heterogeneous and unequal social structure from the point of view of income distribution. Besides, the very historical experience of several developing countries shows that, even with fast expansion of modern sectors, the absorption of labour released by the gradual dissolution of traditional sectors is almost always limited (FURTADO, 1976). The concept of development was intended to account for the dual character of societies – and not only economies – in those countries, and one of its core thesis is the idea that accelerated economic growth might reinforce, instead of reducing, the gaps between more and less modern segments, therefore intensifying income concentration. The core assumption of the resulting notion of development is the need for the process of economic growth to be conducted in such a way that levels of capitalisation, productivity and income in the several sectors of the economy tend to converge.

Regarding the first point, the notion of “investment climate” virtually ignores the variety of possible contexts for development, as if the same “climate” could fit all and every type of investment; as if it were not up to nations and regions to make choices; and as if triggering a development process were the same as creating qualitative conditions to sustain it.

The examples are numerous: major countries with large domestic consumer markets have strategies distinct from those accessible to small countries; the availability of energy sources and strategic raw materials offers exclusive alternatives to certain countries and regions; encouraging domestic capital investments might require conditions that are distinct from those needed to attract foreign investments; important trade-offs between the short and the long terms are included in the definition of the investment climate when environmental issues enter the agenda; small and large companies seek conditions that are not necessarily equivalent. Many other situations could be listed, but, in sum, we intend to state that it is legitimate to work with the idea of several “investment climates” rather than only one, according to the choices to be made by each nation based on its historical characteristics and the consensuses negotiated by local actors⁷.

A second shortcoming in the literature on investment climate is the existence of timeless content variables, which means that they could be applied to every context, regardless of their development stages or historical limitations. Time concerns are limited to guarantees that the best rules of today will be maintained or only improved in the future. Neo-institutionalists (Douglas North, for instance) rightly point out that the mere definition of optimal institutional and regulatory parameters does not solve the problem of how to interpret them under varied political and historical contexts, and underscore the fact that the “second best choice” is often better than the “ideal option”, since it is viable at that time. Besides, those models do not cover the possibility that the very process of domestic development and changes in the world economy demand modifying the institutional and regulatory framework.

Examples here are also abundant: perspectives of exhausting natural energy resources or concerns for the environment might demand legislation to contain certain sorts of activities and therefore inhibit certain types of investment; to make certain industries that are strategic for development (such as telecommunications) viable might demand, at first, measures of capital concentration or provisional market protection; or yet, the need for public investments in new vital areas might demand changes in the taxation structure, with tax increases that by and large do not favour investments in the short run. In other words, as important as stability of rules for a sound investment climate is the existence of mechanisms to review those rules, in a feedback loop that can foster the development process. Dealing with the quality of growth and its sustainability demands thinking about time and change.

The notions of quality and sustainability are therefore inseparably linked to: a) the need to make long-term choices considering the qualitative factors present in the region; and b) the ability to redirect those choices as the development process itself carries on and the international context changes. These two imperatives are clearly beyond the scope of firms’ individual choices and the typical mechanisms of short-term adjustment provided by markets free of State intervention, and call upon public agents to play their role of coordinating conflicting interests, thus producing far-reaching and

⁷ That criticism to the inflexibility of the notion of investment climate can be illustrated by the idea of business climate. While the former deals with factors that affect the degree of uncertainty (unpredictable risks, comprehensive issues, and non-tangible elements), the latter – business climate – is concerned with those factors that affect the costs of doing business (predictable risks, specific issues, and tangible elements (MOORE & SCHMITZ, 2007).

lasting guidelines. Therefore, the construction of common interests between public and private actors emerges as central to establish conditions proper for investment, growth, and the sustainability of development.

In order to further explain what we understand as qualitative elements that determine possibilities of growth, some factors can be listed (they emerge combined in several ways within empirical contexts):

a) structural factors, understood as a nation's (or a region's, or a locality's) real or potential repertoire of natural, territorial, and human resources. Development will be as sustainable as those resources are "intelligently" (and not necessarily more intensively) explored.

b) institutional factors, not only those related to property rights, but mainly those that involve decision-making processes that result from strategic public actions for development. The more public actions are backed by broad coalitions of interests, the higher the sustainability of development arrangements will be. Equally important is the ability of those arrangements to redefine themselves over time by updating and redesigning such coalitions.

c) context-related factors, considering the dynamics of changes in the international scenario, changes in the relative prices of goods, geostrategic alliances between countries, guidelines of multilateral organisations;

d) technological factors, which imply product lines, the efficiency of national research and development systems, building human resources, and information and telecommunication technologies;

e) infra-structural factors, involving critical resources for economic development, which are typically long-maturing investments, depending on the ability to plan actions, especially by the State, and the availability of vast financial resources.

f) social factors, primarily related to the distribution of the gains from economic development and the resulting levels of welfare and social inequality.

Such systematisation of qualitative factors related to growth is not intended to be exhaustive, and several other elements could be added. The intention here is to underscore the multidimensional character of that notion, clearly showing that each of those factors has its own determinations and dynamics, in spite of their interdependence in each empirical context. Therefore, each local combination of factors is unique, and it is up to empirical analysis to distinguish and reflect upon the effects of each of them, ascribing weights and explanatory connections to them.

It is not a question of criticising the general recipes for a good investment climate by using exacerbated relativism such as "each case is unique", that is, each context is closed in itself. We intend to show how the study of two diverse cases can clarify the conditions and factors that contribute to successful growth processes not only in terms of their rates, but also of their quality and sustainability over time. The varied interaction types between public and private actors might also have a distinct influence on the combination of qualitative factors, thus leading to varied results in terms of quality of growth.

Given that there are several qualitative dimensions related to growth, at this point of this exploratory research we focus on certain factors shown to be essential in successful growth processes in contemporary capitalism: education, knowledge-base production, labour force training, production diversity, added value production, entrepreneurship, and capital formation (new businesses). Such factors, which will be briefly discussed below, are pointed out by authors of several leanings as essential for competitiveness and growth – and even by the literature on investment climate, but they are not seen from a relational viewpoint, that is, by observing to which degree

social relations between critical agents of a context might influence the development of such factors.

In countries with near-continental dimensions such as Brazil, even though the “comparative advantages” of some industries are large and generate a high level of specialisation and competitiveness, diversifying the productive apparatus is key in certain aspects. The excessive productive specialisation of a country means a high degree of dependence on international trade, and variations in the price of exports expose the whole economy to bumps and uncertainty. By and large, countries that are highly dependent on exports of a limited amount of goods eventually bias their policies (specially their exchange rates) in order to favour those sectors, eventually concentrating income and inhibiting the development of other types of activity. A higher degree of industry diversity, in turn, is associated to more investment opportunities for capital of distinct magnitudes, as well as better use of the labour force’s aptitudes. The differences in weather and available natural resources also favour regional diversity of productive vocations, with better regional distribution of development being itself a positive result.

A second dimension that seems important to assess the quality of investments and the resulting growth has to do with the fundamentals of competitiveness in industries. Low cost of labour has been a core element in the strategies of developing countries to attract foreign investments, as is the case of certain areas in China and Brazil, which is natural as long as labour is highly available and poorly trained. The perpetuation of such “comparative advantage”, however, bears evident risks. The first one is income concentration itself. The second one is low productivity of labour and its inadequacy to more sophisticated productive activities and processes. The third one – a result of the second one – is productive specialisation in industries with low added value and low potential for innovation. Virtuous competitiveness in qualitative terms should be more specifically related to innovation and more generally to knowledge.

Innovation is essential in the debate on economic development, mainly that concerned with the long run and specially innovation broadly seen, as processes of change in management, technology or logistics, which lead businesses to have gains in terms of competitiveness and therefore, of economic growth. Besides being crucial because of its close relation with scientific and technological development, it spills over other activities (both manufacturing and producer services).

As for knowledge, changes in world capitalism after the 1970s underscored its centrality for development. And it is not only about knowledge production itself, but rather the organisation and sharing of knowledge flows, whether tacit or codified. The idea of a learning economy, disseminated by Bengt-Ake Lundvall (LUNDVALL & JOHNSON, 1994 and LUNDVALL, 1996), helps us think that not only creating knowledge is an important activity, but the acts of processing, re-creating, and combining know-how elements are essential components for the quality of development as well. And it is not by chance that social networks allow interaction processes between agents – the optimal mechanism for creating, disseminating, and sharing knowledge.

Comparisons between the trajectories of Brazil and South Korea are unanimous in pointing out that the highest attention devoted by the latter to education was one of the decisive factors contributing to its better performance, once the initial industrialisation stage ended at the turn from the 70s to the 80s. The success of India in the software industry, a result of an extremely competitive university system, and China’s strong investments, especially in the areas of engineering, are evidence that large developing countries have been seeking to improve their international position beyond competitiveness based on low labour costs.

Finally, as Peter Evans (1995) reminds us, even more important than the variation of return rates for each industry or product chain is the fact, already pointed out by Albert Hirschman (1977), that productive niches might create numerous spillovers that can irrigate other activity sectors as well as favour other aims that are not directly economic:

“Some sectors create a ‘multidimensional conspiracy’ in favor of development, inducing entrepreneurial energies, creating positive spillovers in the rest of the economy, and molding political interest groups into a developmental coalition (Hirschman 1977, 96). Niches in the international division of labor are desirable not just because they may entail higher profits and more rapid accumulation of capital, but also because they facilitate the achievement of the social and welfare goals associated with “development” in the broadest sense of the term” (HIRSCHMAN, 1977 apud EVANS, 1995: 7).

Such qualitative factors, among others that are not dealt with here, bestow a more or less sustainable character on growth processes. The sustainability of the process is derived from the quality of those factors, since distinct combinations of factors, in turn, forge distinct growth processes.

Therefore, the possibility of comparing cases comes from the analytical ability to identify those combinations. It is not about encouraging proliferation of cases like that of Santa Rita do Sapucaí, for instance, but rather of finding elements in the case that contribute to its sustainability and that might be considered for other contexts. Likewise, we should point the qualitative weaknesses of a case like Ilhéus, rather than simply concluding that it is “worse” than Santa Rita’s. On the contrary, we can see how those two experiences have been “learning” from one another, each trying to absorb characteristics seen as more positive from the other.

We briefly present some limitations of the literature on investment climate, stressing the weakness of any recipe for optimal institutional arrangements and the need to look beyond economic growth rates. Such investment climate approach is not enough for a more complex understanding of growth processes, since it deals neither with the role of agents in the construction of institutional arrangements nor with the qualitative factors that allow the sustainability of the growth process. We should clarify how and why, under very similar macro-regulatory circumstances, growth results might be sometimes quantitatively similar, but quantitatively quite diverse.

Next, we succinctly discuss the relational approach used in this research, which allows the analysis to account for the fact that economic actions are socially embedded in the networks of relations and that institutions are socially constructed. That is, in the case of this research, to consider how interactions between public and private agents influence the development of qualitative factors related to growth and therefore its sustainability.

2) WHY FOCUSING ON INTERACTIONS BETWEEN ACTORS?

The advances of the so-called New Economic Sociology have opened numerous investigation windows on development processes based on factors generally dismissed by conventional economic theory. The starting point of that school is the understanding that economic actions are socially structured (GRANOVETTER, 1985).

In the words of Mark Granovetter and Richard Swedberg:

“Economic action is socially situated and cannot be explained by reference to individual motives alone. It is embedded in ongoing networks of personal relationships rather than being carried out by atomised actors. By network we mean a regular set of

contracts or similar social connections among individuals or groups. An action by a member of a network is embedded, because it is expressed in interaction with other people". (GRANOVETTER & SWEDBERG, 1992: 9).

Therefore, the authors who belong to that school criticise the simplistic way in which much of economic science conceives the market: an autonomous mechanism of price formation governed by the dynamics between offer and demand of goods and services. And, in a more ontological sense, they challenge rationality and self-interest as the only source of legitimate motivation for understanding economic phenomena:

"(...) economic sociology can make a first contribution to understanding economy by calling attention to the mixture of economic and social motives that people pursue while engaged in production, consumption and distribution" (GRANOVETTER, 2000: 37).

In the "real" world, distant from abstract market models, individuals might even act rationally when pursuing their individual interests, but they always do that constrained by rules, institutions, and custom, and driven by values, beliefs, and feelings. Commercial exchanges between individuals and businesses, searching for and finding a job, and deciding to invest capital in some productive activity are acts explained both by instrumental rationality and by reasons of trust and solidarity (which result in cooperation actions), of domination and consent (which involve power relations) (GRANOVETTER, 2000).

Finally, economic institutions themselves are social constructions, since: 1) they are results of social creations over time; 2) they are based on previous constrains that influence present decisions (the idea of path-dependent development); and 3) they are designed by actions embedded in existing, concrete systems of social relations – networks (GRANOVETTER & SWEDBERG, 1992).

The pathways (re)opened by New Economic Sociology – many of which were already present in sociology classics such as Weber, Simmel, and Marx – have been evolving into varied and richly complementary questions, research programmes, and methodological frameworks: social ties of all sorts (family, affective, religious, ethnic, political, local, etc.) (GRANOVETTER, 1973); social networks and their distinct morphologies (PORTES, 1995); urban space as a unique form of sociability and learning (STORPER, 1997); group identities based on particular institutional environments (such as schools and universities); organisations (unions, professional associations; non-government organisations) as forms of social capital; that is, social relations and interactions that are not necessarily economic become very important in explaining the dynamics of economic phenomena. And such approaches have been especially fruitful in analysing regionally circumscribed productive contexts (as is the case of this research study) whose denominations multiply: local productive arrangements, clusters, industrial hubs, industrial systems, city-regions, and metropolitan economies.

A particularly interesting reference for the purposes of this work is the widely known study by Annalee Saxenian (1994) about the electronics/computer industry development in two regions of the USA: the Silicon Valley in California, and Route 128 in Massachusetts. Two contemporary regional development contexts based on high technology industries are confronted from the characteristics of relations between firms and professionals, and between them and local governments, local educational institutions, government agencies, other economic activities, and the sociocultural environment in a more general sense. This comparison is made to explain how similar "economic structures" might engender radically distinct productive dynamics and economic results due to different patterns of social relations prevailing in each region. In the words of the author:

“Far from being isolated from what lies outside them, firms are embedded in a social and institutional setting that shapes, and is shaped by, their strategies and structures. The concept of an industrial system illuminates the historically evolved relationship between the internal organisation of firms and their connections to one another and to the social structures and institutions of their particular localities” (SAXENIAN, 1994:7)

Saxenian defines three dimensions for the study of industrial systems: local institutions and culture; industrial structure; and corporate organisation. Local institutions include public and private organisations, such as universities, business and professional associations, local governments, and recreational associations. Those institutions are, in turn, shaped by local culture and history. The industrial structure refers to the social division of labour and the nature of links between consumers, providers, and competitors within a related industry or complex of industries. Finally, firms’ internal organisation summarises the degree of hierarchy or horizontal coordination, centralisation or decentralisation, allocation of responsibilities and specialisation within firms (SAXENIAN, 1994:7). None of those dimensions alone is new to studies on regional economy and firms. The novelty in Saxenian’s study resides precisely in the integrated treatment of all three dimensions.

Our empirical analysis focuses on two regional spaces that concentrate producers of electrical-electronic and computer equipment, as will be better explained later. They are medium-size cities whose industrial clusters developed after particular combinations of incentive policies by local and regional public authorities and the interactions among educational institutions, local elites, and individual entrepreneurs. All major scale and context differences aside, we believe that Saxenian’s approach offers an analytical framework that fits our purposes quite well. Due to the exploratory character of this research, we will focus on the two first dimensions defined by the author: 1) local institutions and culture, and 2) industrial structure.⁸

Since the two cities studied are under the same regulation regime and the same nationally defined macroeconomic conditions, our understanding is that the differences in the trajectory of each industrial cluster should be explained by elements of the structure and social relations of each of those contexts. Inspired by New Economic Sociology’s relational approach, this research is aimed at understanding how the social embeddedness of (public and private) agents forges different configurations of interactions that, in turn, lead to distinct configurations in terms of quality of growth and its sustainability. Our central hypothesis is that distinct types of interactions between public and private actors not only have a direct influence on growth (quantity) but also lead to varied results regarding the quality of that growth process.

Redirecting the focus from abstract institutional frameworks (the investment climate) to the level of concrete relations between actors is also justified by the fact that we are dealing with contexts where public actors are subnational entities with little ability to influence macroeconomic conditions of regulation. If local and regional governments are to make a difference in the development of their spatial circumstances, that should be sought mainly in the way they create conditions that complement or add advantages to the national economic context (that is, they should not be expected to play roles that can only be played by the federal government). Rather, the distinct forms of action by state and municipal public agents should be expected to be determinant in building common interests together with private agents that are able to leverage lasting development processes.

⁸ A second stage of this work is intended to carry out a more systematic information collection about firms’ internal organisation and individual characteristics, which will allow us to advance into the third dimension pointed out by Saxenian: firms’ internal organisation.

The focus of analysis adopted and the information collected in the fieldwork focus interactions between the relevant actors for the growth trajectories of the cities' industrial clusters. In sum, we sought to understand how interactions between public and private agents: a) Impact on investment decisions and consequently economic growth (creating or not opportunities); b) Favour (or not) the construction or strengthening of trust-based relations (guarantees) that induce or not investment as well as cooperation between the several agents involved (synergy and spillover); c) Stretch the horizons of agents (predictability), favouring actions, strategies and long-term investment alliances.

By observing the influence of interactions, we have analytically rebuilt the combination of qualitative factors that make up the quality of growth. Therefore, we discuss the economic development that comprehends its qualitative character, rather than only the quantitative one, based on a relational approach that considers the role of social networks on the construction of economics institutions.

3) METHODOLOGY

The two municipalities studied (Santa Rita do Sapucaí and Ilhéus) represent recent and concomitant attempts at industrial development stressing the same sectors (basically electronics, telecommunications, and computers), but from significantly diverse local socio-institutional environments. In both cases, growth has been significant in the last 30 years (well above the national average) and that is precisely why they offer an interesting window to analyse the effects of distinct social configurations on economic growth – not only on quantity, but also, according to the terms previously discussed, on the quality and sustainability of that growth.

Therefore, fieldwork in both cases seeks to answer mainly:

- 1) Who are the actors involved in the development of regions?
- 2) How have they influenced the construction of local institutions?
- 3) What types of interactions do they establish and how do such interactions influence growth processes?
- 4) Which qualitative factors can be identified in each growth trajectory?
- 5) To which degree these qualitative factors can be considered for other development cases?

The comparison will show which actors are behind growth in each region, how they influence such processes, which sorts of interactions are established and how these interactions influence constellations of qualitative factors, advancing towards sustainability of growth.

3.1) CASE SELECTION

We have carried out previous selection of 20 cities after a list of approximately 220 local productive arrangements all over Brazil. We have conducted research on secondary sources (newspapers, magazines, and the internet) in order to obtain information about the cities and we came to four interesting cases: Santa Rita do

Sapucaí (state of Minas Gerais), Ilhéus (Bahia), Campina Grande (Paraíba), and Benevides (Pará). For analytical and budget reasons, we decided to base the study in the first two cities.

Selection criteria for the cities studied were defined based on the relevance of the area for Brazil's development and the analytical relevance of each case. They include: a) The size of the city: focus on small- or medium-size cities (population under 300,000); b) Investment characteristics: modern industries, possibility of developing technology and innovation processes; c) Diversity of the agents involved in the interactions: public actors (federal, state and municipal levels), businesses, universities, schools, business incubators, class associations; d) Investment efficiency: job and income creation and possibility of multiplying growth; e) Possibility of analytical comparison between the cities.

3.2) RESEARCH TECHNIQUES

a) Qualitative data based on interviews

Interview plans were prepared in order to collect information both from the interviewee and the institution he or she represents – questions were asked both about individual trajectories and the characteristics and history of the institution. Five different interview plans were prepared, since we collected information from firms, business incubators, business associations, educational institutions, and public actors (politicians and members of different levels of government). Another goal of the interviews was to find social connections between individuals and groups in the cities, so the interview plans included questions on interconnections, partnerships, and cooperation between institutions and individuals. The main objective is to understand which actors make up the region's development context and how they are interconnected.

A total of 56 interviews were conducted: 22 in Santa Rita do Sapucaí (Minas Gerais), 20 in Ilhéus (Bahia), 11 in Campina Grande (Paraíba), and 3 in Benevides (Pará) (the last two cities were not included in the analysis).

b) Secondary quantitative databases

The main source was the Annual Report on Social Data (*Relação Anual de Informações Sociais, RAIS*), a census database whose units are individual firms. The variables used were firms, workforce, and wages for each of the cities and their respective states. Such information is available for the 1996-2005 period.

Gross Domestic Product (GDP) data for the two cities and their respective states were collected for the 1970-2004 period.

Other secondary sources were used, such as information from businesses associations, incubators, and municipal governments.

c) Field observations

All interviews were conducted personally, thus allowing us to visit the elected cities several times and establish direct contact with the reality studied. Therefore, in each visit, fieldwork reports were written in order to record the researcher's impressions. Systematisation of the material resulting from the researcher's observation in each field visit was very important to configure the analysis.

4) HISTORICAL BACKGROUND AND EVIDENCE OF GROWTH: WHAT DO SANTA RITA AND ILHÉUS HAVE IN COMMON?

4.1) THE CITIES' HISTORICAL BACKGROUND

Brazil's industrialisation process was extremely concentrated in time and space. Between the 1940s and the 1970s, the country ceased to be predominantly agricultural to become one of the world's ten largest industrial economies, highly diversified and based mainly on the domestic consumer market. São Paulo's metropolitan region (now with a population of about 20 million) was the epicentre of all that growth cycle, and in the mid-70s it concentrated almost half of the country's industrial production. From then on, two connected movements marked the dynamics of Brazil's economy: a substantial fall on GDP global growth rates and a relative trend of industrial de-concentration⁹.

Although it was not able to change the country's extreme regional concentration of wealth, that industrial de-concentration movement is related to industrial development in the two micro-regions chosen for this study. Between the early 70s and the mid-80s, still under a highly interventionist central state and an authoritarian political regime, and in a very protectionist regulatory context, a series of public policies (notably state investments in infrastructure and heavy industry) were adopted in order to transfer to poorer regions at least part of the economic dynamism already reached by the Southern and South-eastern parts of the country.

The state of Bahia – the fourth largest state population in Brazil, the most developed in the country's north-eastern region, and where the city of Ilhéus is located – was one of the most important economic and political regional spaces in the country from the colonial period until the first decades of the 20th century. It then plunged into a long cycle of economic decline as world markets for its main exports (especially sugarcane, cocoa, and tobacco) gained many new competitors from Central America, the Caribbean, Africa, and Asia. The area of Ilhéus was one of the major cocoa producing and exporting hubs and, during the golden cycle of that activity, it fed truly sumptuous family fortunes. Whatever destiny those family fortunes have had, they did not prevent the area of Ilhéus from also undergoing strong economic decline after the decline of the cocoa industry.

Heavy State investments – concentrated mainly on the petrochemical and fine chemical industry chain, such as the creation of the Camaçari Petrochemical Cluster in Bahia – had strong effects on the economy of that north-eastern state, but they did not last long. The repeated economic crises that brought down the trajectory of fast growth of the country after the 1980s and completely weakened the state's investment ability, followed by the wave of privatisations carried out from the 1990s on, severely limited the effects of previous investments, leaving Salvador (Bahia's state capital) a heritage of the largest unemployment rate among all metropolitan areas.

The almost total shrinking of direct state investment and industrial and regional policies within a context of fast commercial and financial opening induced a fierce "tax war" among Brazil's federation units and municipalities. The state of Bahia was one of the most aggressive in this field. The use of tax exemptions as a resource to attract new investments is a recent phenomenon in Brazil. During the whole military cycle (1964-1985), Brazil's tax structure, although extremely complex – since it includes tens of tributes – remained strongly concentrated in the hands of the federal state. It was

⁹ For a recent discussion about the process of industrial de-concentration in Brazil and its regional effects, see: COMIN & AMITRANO (2005), PACHECO (1998) and AZZONI (1986).

only after the new post-redemocratisation 1988 constitution that federation units and municipalities gained higher tax autonomy. The latter are basically responsible for tributes on service provision activities and land property (urban and rural), which are weak tools to bargain with major industrial investors, but can have an impact on attracting small businesses. Therefore, through the Tax on Circulation of Goods and Service Provision (ICMS)¹⁰, states are the main competitors in the war to attract industrial investments, especially the less industrialised ones where the risks of a clash between tax relief and the interests of existing firms are lower.

In the case of Bahia, the focus was precisely on manufacturing industries where the state did not have relevant installed capacity – the automobile and computer equipment industries – the latter installed in Ilhéus. The next section details the trajectory of that regional arrangement. For now, it is worth pointing out the green-field characteristics of the case of Ilhéus, that is, implanting a manufacturing industry in an area with no industrial antecedents, at least not for the industry chosen as development focus.

Minas Gerais (where Santa Rita do Sapucaí is located), in turn, has the second largest state population in the country as well as one of the largest territorial areas. Its extension and location make it a region of transition between the poorer and less industrialised Northeast and the more developed Southeast. The northern parts of the state border on Bahia and have quite similar characteristics, especially the occurrence of vast areas subject to prolonged droughts, naturally less favourable to agricultural and cattle raising activities and concentrating huge poverty pockets. Southern Minas Gerais borders on the two most industrialised states in the country – São Paulo and Rio de Janeiro – to which it has historical complementarities. Santa Rita is located very near São Paulo's border and its recent development is somehow interconnected to the spreading of industrial concentration from São Paulo's metropolitan area (the state capital) onto adjacent regions and states.

The states of Minas Gerais and São Paulo were the two major centres for coffee production and exportation – the largest source of wealth for the country until the mid-20th century. Accumulation of wealth provided by coffee helped to build the basis for the country's industrialisation, which therefore tended to concentrate strongly in that region. Coffee exerted a huge population attraction (met, for over a century, by international immigration flows) and was decisive for the demographic growth of the whole Southern part of the country, where the first spontaneous upsurges of industrialisation took place in the early 20th century. The economic and demographic weight of those states systematically reflected on the political influence of their elites on the National State.

After the end of the Second World War, the Brazilian state takes on typical "developmentalist" features, with high emphasis on long-term economic planning and industrialisation as the motor of economic development. The city of São Paulo and its immediate surroundings, which already presented a reasonable concentration of light industries of non-durable consumer goods, were chosen to host the major chains of modern industries: metal-mechanic, capital goods, electrical-electronic, automobile, intermediary, and fine chemical. The state of Minas Gerais, because it concentrated the largest Brazilian reserves of ores associated to those industries (iron, steel, coal, among others) became a major centre for heavy base industries and maintained a high integration with the industrialisation process concentrated in São Paulo. After the 1970s, in turn, Southern Minas Gerais starts receiving important investments in chains such as automobile and electrical-electronic.

¹⁰ See appendix on taxes in Brazil at the end of the text.

Urban saturation in São Paulo's metropolitan area, responsible for the rise in location costs, provided the impulses necessary for adjacent regions (within the state itself and in neighbouring states) to develop their own industrial vocations. Several more labour-intensive industries started to move to smaller cities with lower land and labour costs, but the need to remain near the consumer market and the service infrastructure, which were concentrated in São Paulo, determined that this industry de-concentration movement took place not very far from the main nucleus.

In the wake of industrial expansion, vocational and higher education schools multiplied, at first directed to training specialised labour to meet the new demands posed by industries, but which also became centres for scientific and technological development and helped to give many of those smaller cities their own dynamism.

Adding to the discussion above, Table 1 presents some complementary general data about Ilhéus and Santa Rita.

Table 1**General Data: comparison between Santa Rita do Sapucaí and Ilhéus**

	Santa Rita do Sapucaí	Ilhéus
Land area (km ²)	351	1.841
Population (total, 2006)	34.920	220.932
Illiteracy (% of people who are 15 years old and over, 2000)	12%	21%
HDI (2000)	0,789	0,703
Economically Active Population (total, 2000)	14.409	93.918
Economically Active Population (% urban, 2000)	83%	77%
Municipal GDP 2004 (R\$, in thousands)	446.560	1.853.021
Municipal GDP 2004 per capita (R\$)	13.211	8.373
Municipal GDP 2004 (% industry)	55,0%	56,8%
Municipal GDP 2004 (% agriculture)	5,0%	2,8%
Municipal GDP 2004 (% services)	32.7%	33. %
Exports (in US\$, 2004)	US\$ 4,671,858	US\$ 201,612,343
Electrical-electronics companies in total economy (divisions 30, 31 e 32 of CNAE)	10.5%	2.5%
Personnel employed in the electrical-electronics industry in total economy (divisions 30, 31 e 32 of CNAE)	35.6%	5.4%
Wage mass of electrical-electronics in total economy (divisions 30, 31 e 32 of CNAE)	36.8%	4.9%
Other activities in the city	Production of coffee, sugarcane, corn, beans, banana, rice, and milk	Production and processing of cocoa, dendê oil, piaçava and manufacture of furniture
Vocational electronics schools	ETE	None
Higher education and research centres	Inatel and FAI	UESC and Cepedi

Sources: IPEADATA (www.ipeadata.gov.br); IBGE; PNUD Brasil (www.pnud.org.br); IBGE Cidades (<http://www.ibge.gov.br/cidadesat/default.php>); *Relação Anual de Informações Sociais (RAIS)*.

Therefore, the historical background presented here provides the backdrop for us to start the debate on economic growth in each of the cities.

4.2) EVIDENCE OF ECONOMIC GROWTH IN SANTA RITA AND ILHÉUS

Santa Rita's industrial cluster is a good example of the changes that Brazil's economy underwent in the 20th century. In the 70s, the city moves from a strongly rural economy (based on coffee) to a urban economy where the manufacturing industry (specially electrical-electronic and telecommunications) prevails. Key elements in the process were the creation of educational institutions interconnected to local public and private actors – as will be discussed in Section 5 –, as well as its proximity with Belo Horizonte's (Minas Gerais's capital) and São Paulo's metropolitan areas, with which the cluster maintains intense flows of goods, services, labour, and knowledge. Besides, between the 1960s and 1980s, part of Southern Minas Gerais, where Santa Rita is located, experienced a significant technological development in areas such as mineral engineering (in Poços de Caldas), mechanic and electrical engineering (in Itajubá), and materials engineering (in Lorena – already within the state of São Paulo, close to Minas Gerais).

As can be seen in Tables 2 and 3, the two cities studied experienced significant growth in the late 20th Century, mostly due to the efforts to establish their industrial clusters. In the 1970-1980 period, both cities, their respective states, and Brazil experience robust growth (Table 2).

Table 2

**GDP increase rate (average annual % in the period)
Cities, states, and country (1970-2004)**

	1970-1980	1980-1996	1996-1999	1999-2004
Santa Rita do Sapucaí	7,6	7,2	1,3	6,9
Minas Gerais	11,7	2,8	-0,2	2,2
Ilhéus	8,1	-2,0	20,7	3,9
Bahia	11,7	2,2	2,0	5,3
Brasil	10,3	2,3	1,4	2,6

Source: IPEADATA (www.ipeadata.gov.br)

Note: GDP at constant prices (2000)

Table 3

**GDP increase rate according to large sectors (average annual % in the period)
Santa Rita do Sapucaí and Ilhéus (1970-2004)**

Period	Santa Rita do Sapucaí			Ilhéus		
	Industry	Services	Agriculture	Industry	Services	Agriculture
1970-1980	10,5	7,5	3,6	16,1	5,1	7,7
1980-1996	8,1	6,6	6,7	-3,5	-0,2	-5,5
1996-1999	-2,1	5,0	-14,8	51,0	2,6	1,0
1999-2004	14,2	1,1	-7,2	7,1	0,1	-11,8

Source: IPEADATA (www.ipeadata.gov.br)

Nota: PIB at constant prices (2000)

Santa Rita grows above the average between 1980 and 1996 (Table 2). In that period, its industry grows at a significant average of 8.1%, driven by the boom in the electrical-electronic and telecommunications industry (Table 3).

In the same period, Ilhéus suffers with the crisis in cocoa production and undergoes recession, with abrupt declines in all manufacturing industries. No wonder the city rises precisely between 1996 and 1999, driven by the creation of the computer industry cluster in 1995: its GDP increases an annual average of 20% while the state of Bahia grows only 2% (Table 2).

Between 1999 and 2004, Ilhéus grows near 4% per year and Santa Rita grows 7% - that is a period when Brazil's GDP increased an average of 2%-3% (Table 2). In both cases, the manufacturing industry was also the main activity driving the local growth rate, with an average of 7% in Ilhéus and 14% in Santa Rita (Table 3). Among manufacturing industries, those associated to their respective electronics and computer clusters stood out, as we will see on Table 4 and in the charts below.

Notwithstanding the differences between the two cities – in 2006 Santa Rita had a population of about 35,000 while Ilhéus had little over 220,000 – the dimensions of their respective clusters are similar. In 2005, there were about 90 companies in the electrical-electronic and computer industries in Santa Rita while in Ilhéus they were 60.¹¹ Besides, in both cities, the vast majority of businesses are 'micro-size' or small firms, that is, about 90% of them have fewer than 50 employees.

Note that in both cases, the increase in the number of firms in the electrical-electronics and computer industries between 1996 and 2005 was fast and well above the variation in their respective states and in Brazil as a whole (Table 4 and Chart 1, below). In Santa Rita, the increase in the number of firms is nearly 200%, while the same industries in Minas Gerais grow 50% and in the country, nearly 20%. In Ilhéus, in turn, variation is extraordinary due to the creation of the Computer Industry Cluster in 1995. That is, public action virtually started that industry in the city.

Table 4

Number of firms, workforce, and wage
Industrial sectors of electroelectronic and computers (NCEA 30, 31 e 32)
Cities, states, and country, 1996-2005

	Number of firms			Workforce			Wage		
	1996	2005	Variation (%)	1996	2005	Variation (%)	1996 (R\$ Dec./2005)	2005 (R\$ Dez./2005)	Variation (%)
Santa Rita do Sapucaí	30	88	193,3	720	3.304	358,9	627.047	2.572.038	310,2
Minas Gerais	372	561	50,8	15.761	25.700	63,1	18.549.648	24.171.483	30,3
Ilhéus	4	60	1.400,0	325	1.413	334,8	220.996	1.155.192	422,7
Bahia	52	136	161,5	1.238	4.467	260,8	2.532.019	4.808.133	89,9
Brasil	4.895	5.862	19,8	225.390	259.840	15,3	421.153.928	407.864.349	-3,2

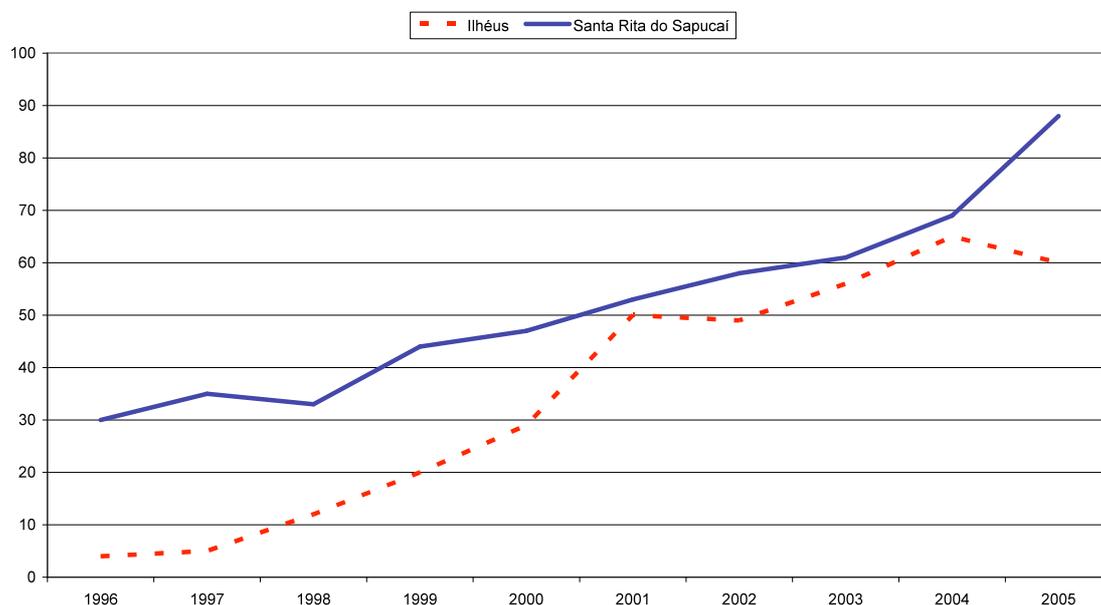
Source: *Relação Anual de Informações Sociais* (RAIS), 1996-2005.

¹¹ Industries selected for the analysis are precisely divisions 30, 31, and 32 of the National Classification of Economic Activity: Manufacturing of Office Machines and Computer Equipment, Manufacturing of Electronic Material and Communication Device and Equipment, and Manufacturing of Electric Machines, Devices, and Materials. The charts on the number of firms, workforce, and wages were made based on data from the *Relação Anual de Informações Sociais* (RAIS) for 1996-2005. Furthermore, it should be noted that there is a difference in the total number of companies in Santa Rita when counted from RAIS (88 firms) and that provided by Sindvel, the region's business association (120 firms). The reasons for that are: Sindvel's information concerns 2006 while RAIS's is for 2005; in spite of being a census data base, there is an acceptable imprecision in RAIS when it is information on companies with under 30 employees; and finally, Sindvel's count includes firms classified in the service industry while we considered only manufacturing divisions 30, 31, and 32 of CNAE, as explained above.

Table 4 also shows that in Santa Rita, the number of people employed in the selected industries increased from 720 to 3,304 between 1996 and 2005 (363%) – well above the variation in the workforce of the same industries in Minas Gerais and Brazil as a whole (besides being above the total of the city’s economy in the period – 54.6%). The same happens in Ilhéus, where variation of the workforce after the creation of the computer industry cluster was 335%. This outstanding increase, from 352 to 1,413 employees, is also above the total growth in workforce in Ilhéus, 96% (Chart 2, below). Similar increases are seen regarding the wages, except in the variation for that industry in Brazil as a whole, which was negative. This data reinforces the extraordinary growth of both cities studied.

Chart 1

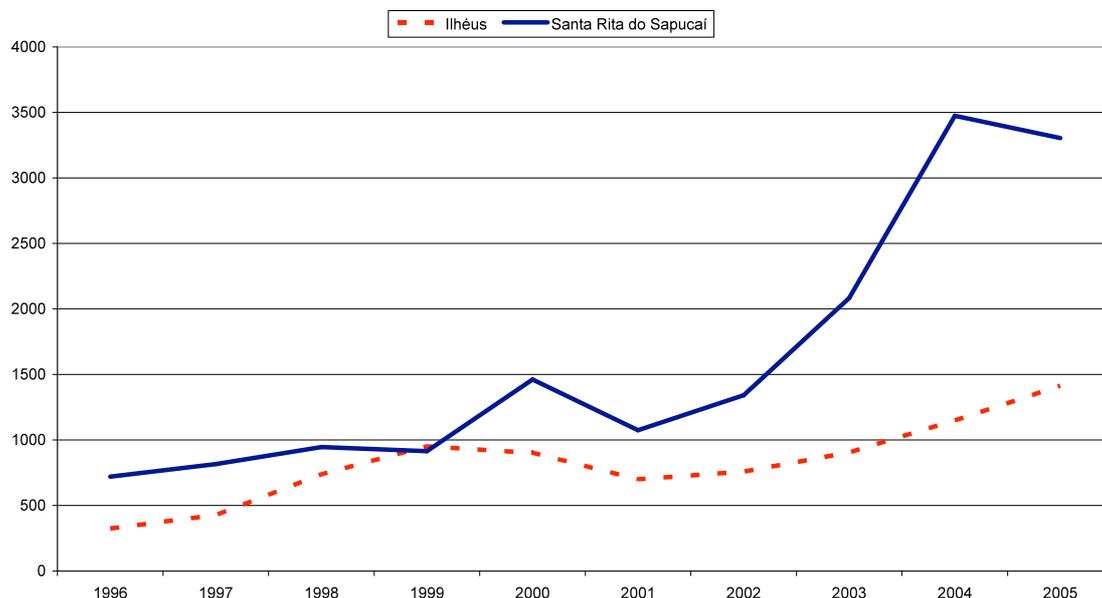
Variation in the number of firms in Santa Rita and Ilhéus - 1996-2005
(CNAE: 30, 31, 32)



Source: *Relação Anual de Informações Sociais* (RAIS), 1996-2005.

Chart 2

Variation in the workforce in Santa Rita and Ilhéus - 1996-2005
(CNAE: 30, 31, 32)



Source: *Relação Anual de Informações Sociais (RAIS)*, 1996-2005.

The growth experienced by electrical-electronics industries in Santa Rita and Ilhéus is evident. The relative weight of those segments in each city, however, is very different, being much higher in Santa Rita than in Ilhéus. In the former, businesses within those industries represented 10.5% of the total of businesses in all sectors, accounting for 35.6% of the total of formal jobs in the city and 36.8% of wage income generated by the same formal jobs. The weight of the selected industries in Ilhéus is much lower: they are 2.5% of the total of businesses in the city, 5.4% of formal jobs, and 4.9% of the wage income related to the whole of formal jobs. Ilhéus is indeed a larger city, with an economy that is more dependent upon activities such as commerce and services (which account for a significant share of establishments) and public administration (which accounts for nearly half of the wage mass in the city and a quarter of its workforce).

Data are clear regarding the substantial growth in the two cities, especially concerning industries related to electrical-electronics. However, such information about how much they have grown hides several differences between these two cases. Only saying that Santa Rita and Ilhéus grew is not enough. We should point out how this happened, who the actors involved are, how interactions between them and the formation of social networks took place, and how sustainable those growth processes can be. Which are the qualitative differences between these two growth processes? The following sections will deal with these questions.

5) INTERACTIONS AND QUALITY OF GROWTH: WHAT IS DIFFERENT BETWEEN SANTA RITA AND ILHÉUS?

In this section, we analyse the material collected in the interviews, discussing the differences in terms of interactions between the agents involved in both contexts and the characteristics of growth processes of each city. The following points will be discussed: the triggers of their growth processes (Item 5.1); relations between public and private agents (Item 5.2); and lastly, relations among private agents (Item 5.3).

5.1) UNDERSTANDING THE TRIGGERING OF LOCAL INDUSTRIALISATION PROCESSES

EDUCATIONAL INSTITUTIONS AND SOCIAL NETWORKS: THE CASE OF SANTA RITA DO SAPUCAÍ

The first electronics equipment firms emerge in Santa Rita do Sapucaí in the mid-70s, but the key to understand the success of the city's industrial cluster dates from the late 50s, more precisely 1959, when the Electronics Vocational School (*Escola Técnica de Eletrônica*, ETE) was founded, followed a few years later by the National Telecommunications Institute (*Instituto Nacional de Telecomunicações*, Inatel), in 1965, and the Businesses Administration and Computer Science College (*Faculdade de Administração e Informática*, FAI), in 1971. All informants consulted during fieldwork pointed out the educational basis represented by those institutions (especially the two first ones) as the core element in Santa Rita's recent development.

ETE was founded after the initiative of a member of the local elite with social and political ties with leaders in the state of Minas Gerais, some of whom, in turn, were influential in national politics. The foundation of Inatel was not as dependent on a sole benefactor, but rather on the organisational ability of the local elite. The two institutions (both of them private) emerge in a moment of decline in the importance of coffee production and when all efforts by the Brazilian State are directed to industrialisation. The future possibilities for the city were opened by the creation of a secondary vocational school and a higher education institute linked to engineering – both focused on training the labour force for the new industrial activities in an area that still did not have such productive basis. That clearly shows how development processes can be triggered primarily by “marginal” elements (marginal from the point of view of orthodox economics).

When it opened in 1965, the National Telecommunications Institute was Brazil's first institution in that area (and remained so for a long time). According to statements collected, the idea of founding a telecommunications institute emerged because that industry was rapidly expanding in Brazil, under the leadership of state-owned companies (both by the federal and state governments) and there was no academic educational and research basis in the field yet. The connections of members of the local elite with major politicians at state level and the association of Inatel with the telecommunications company owned by the state of Minas Gerais were crucial for the success of the institute, which started to account for the training of many of their personnel (and later leaders), thus also attracting investments and partnerships for research and technology development.

Educational institutions are important for the development of Santa Rita in several aspects, and their identification will highlight some of the elements that until

now explain its peculiar dynamism. Thus, the local construction of a type of labour force that is specialised and still rare in the country has given the city exceptionally favourable conditions for the kind of development seen later, but the availability of human capital alone would not be enough to explain it.

Expansion of secondary and higher education is recent in Brazil, especially in smaller cities. The early emergence of good local institutions offered alternatives to the education of the local elite's youth who otherwise would have to leave the city to finish their studies. Some of the electronic equipment firms that emerged in Santa Rita were created by young descendants of families with tradition and wealth accumulated in the coffee business. After acquiring vocational and/or higher education, they decided start their own industrial companies. Besides, and perhaps more important than the participation of the children of the local rural elite, according to the statement collected, was the attraction of students from other cities and states in Brazil. Today, many of those students still graduate at the vocational school and at Inatel, and remain in town; some of them end up working for local firms or become entrepreneurs themselves.

Some of the private actors interviewed are examples. One of them was born in Northern Minas Gerais and went to Santa Rita for his secondary education at ETE, studied engineering at Inatel, taught at both institutions and then started his own business. Another interviewee mentions his own case to make an interesting point about the changes in the dynamics of students and workers in Santa Rita. According to this businessman, in the 1980s, people would go to Santa Rita to study and then they would leave (he took the vocational course in electronics at ETE, graduated in engineering from Inatel, went to São Paulo and then returned to create his company). According to him, this picture seems to have changed in the last 10 or 15 years – something essential for the growth of the city in the last decade, since it makes it attractive for the professionals who graduated from local schools to settle down and reinforces the dynamism of the electronic industry cluster.

Besides providing a considerable amount of trained labour force, ETE and especially Inatel function as important social hubs: a) where highly dense social networks converge, originated in families and community relations, significantly spilling over the local political and cultural spheres; and b) where new socio-technical networks start, based on the personal and group ties created among students (as well as teachers); such ties are later projected onto their careers, whether as employees of local businesses or as businesspeople, which helps explain the highly cooperative environment between those companies (as we shall see in Section 5.3).

Relations between Inatel and the industrial cluster are very close. The institute fosters partnerships with firms to use labs and facilities to develop and test new products, college extension courses tailored to firm's demands, agreements with education and research institutions from other states and abroad, as well as trade fairs and product exhibitions¹².

This role of node in the networks is also reinforced by the fact that Inatel includes the first and most successful business incubators in the city, where new enterprises related to the electronics cluster have emerged and continue to emerge. Created in 1985, when the city government launched its incentive programme for the electrical-electronics industry, the institution is strongly integrated with ETE, especially through internships offered by the "incubated" companies to ETE students, and with FAI, through the provision of its consultancy services to the companies of the

¹² Entrepreneurship is highly encouraged in the city, and some students from ETE and Inatel have actually become businesspeople. For instance, the trade fairs promoted by the institutions are opportunities for their students to show new ideas (some already as products), receive incentives to start their own business, or negotiate their projects to be commercialized.

incubator.¹³ That is, besides allowing the creation of businesses with no need for high investment, the incubator has good relations with the educational institutions and businesses, thus reinforcing the social networks in the city.

The first makers of electrical-electronic products appeared in Santa Rita still in the 70s, but it was only in the mid-80s, and after a series of initiatives by municipal authorities (most of them quite simple), that the creation of businesses increased and the city started to be called the “Electronics Valley”. As has been pointed out, city governments in Brazil have very limited tax tools (and before 1988 they used to have even fewer) to encourage new industrial investments. The offer of land plots (rented or directly granted by the city) and basic infrastructure (electricity, telecommunications, road pavement, water provision, and sewerage) for the establishment of new firms was one of the first measures adopted by the Santa Rita government. Three of the companies whose owners were interviewed for this research were benefited at that time (around 1985) and their statements agree on the importance of that instrument for creating businesses. Donation of land, for instance, besides providing the physical base for the establishment of companies, worked as a counterpart for credit institutions as well.

In the late 1980s, under Mayor Paulo Toledo (who became known as one of the crucial people for the industrial cluster to have flourished), initiatives of incentive to open electronics businesses ceased to be casual and took on a more formal and permanent status, with the passing of laws in the local legislative allowing the donation of land plots, the offer of properties whose rent was paid by the municipality, and the tax exemptions granted via agreements with the state government. It is also during that period that the nickname “Electronics Valley” starts to be used institutionally by the city government as an advertisement tool in Brazil and abroad, whether to leverage business of existing firms or to attract new investments.

Nevertheless, it was only in the mid-1980s, with the fast increase in the number of companies, as we saw in the data presented in the previous section, and the adoption of more aggressive tax policies supported by the Minas Gerais state government, that the Santa Rita industrial cluster consolidates. Its development thus combines several factors that, alone, would probably not have been able to create the dynamism reached in recent years. The main ones were:

- a) the existence of dense social networks that can connect several spheres of local community life – educational institutions, private businesses, civil society organisations, local authorities, unions, state-owned companies, and influence networks beyond the city – as well as to mobilise material and symbolic resources from those several spheres to convergent goals;
- b) local business, community, and political leaders able to connect those several agents internally, into diffuse coalitions of interests as well as to mobilise resources from high spheres;
- c) the educational foundation, responsible not only for training the labour force, but also for encouraging strong entrepreneurship among its students. They have the business incubator as a highly effective support tool to open their firms and the labs (also used by firms) as a favourable environment for research and development of innovations;
- d) location factors: the proximity of several hubs for the production and consumption of manufactured products, and educational and research

¹³ We will return to incubators at item 5.3, below.

institutions (major centres such as São Paulo, Rio de Janeiro, and Belo Horizonte; and secondary ones, like Itajubá, Juiz de Fora, and Campinas);

e) the increase in the demand for electrical-electronic and telecommunication equipments in the second half of the 1990s due to the privatisation of the electricity and telecommunications industry carried out by the Brazilian federal government. Regulation of the mobile phone industry allowed that market to grow, which also strongly increased the demand for parts to produce phones, antennas, and transmission networks. And, more recently, the arrival of digital TV in Brazil produced new opportunities that, since the beginning, have been well taken by local companies. For instance, they developed the set up boxes needed to adapt conventional TV sets to the new technology.

In sum, it is the convergence of those factors that explains, in the case of Santa Rita, the emergence of what Hirschman called “multidimensional conspiracy” for development or, in Peter Evans’s words, how social embeddedness was created, bestowing legitimacy and effectiveness on long-term coordinated actions. In that case, the conditions for the industrial cluster to flourish were gradually built over time, resulting from conditions and events that were not necessarily structured to that end and through incremental and cumulative actions, more than by breakthroughs (as is the case of Ilhéus, which will be discussed later). It should be noted that, in the case of Santa Rita, the forces mobilised around the strategic action of creating the industrial cluster were basically local and their motivations extrapolated those strictly economic. The social embeddedness of those forces appears to be successfully transferred to the productive arrangement, so that the city now clearly identifies its future perspectives with those of the electronics cluster. The good economic results of firms as a whole, manifested in the significant number of jobs and the income derived from them, in export revenues, and the projection the city gained as “Electronics Valley” (a frequent target of press stories), in turn, feeds back the involvement of those social and political forces with the future of the industrial cluster, in a sort of virtuous growth circle.

TAX EXEMPTIONS AND SPECIFIC COALITIONS OF INTEREST: THE CASE OF ILHÉUS

The events that mark the emergence of the computer industry cluster of Ilhéus are a lot more circumscribed in time as well as regarding the agents involved. As we mentioned, in the 1990s Brazil saw a reasonably strong cycle of disputes between federation units and municipalities to attract investments based on tax incentives and benefits. The almost absolute emphasis by federal administrations between 1990 and 2002 on the economic liberalisation agenda (commercial opening and privatisation) and monetary stability (control of inflation and public deficit) and the almost deactivation of segment-specific industrial and regional development policies encouraged state and municipal governments to pursue, with their own means (by postponing or simply cancelling taxes), the attraction of new investments¹⁴ as well as plants from other regions to their territories. The most widely known episodes in the so-called tax war almost always involved direct negotiations between state and municipal government officials and large multinational companies, often taking on the features of actions where different governments made increasing offers to dispute the possibility of hosting new industrial plants.

It is not our intention here to get into the controversy over the effectiveness of tax exemption policies, but rather to draw attention to the fact that, in the case of

¹⁴ Foreign direct investment rates in Brazil were very high in that period, specially because of privatisations.

Ilhéus, circumstances that favoured the emergence of the industrial cluster have less to do with endogenous historical factors in the city and more with the opportunities created by the country's macro-regulatory framework – the decision to create an industrial cluster in Ilhéus came from Bahia's state government, under a tax war among states of the federation. Until the official creation of the computer industry cluster by a state decree in 1995¹⁵, Ilhéus did not have businesses in that industry or even a relevant tradition in other manufacturing activities. Therefore, the truly business-oriented element has no local roots; on the contrary, almost all firms came from other places. Neither there were educational institutions in Ilhéus with a clear vocation to train labour and to build knowledge for the just-emerged industrial sectors.

There are two complementary versions for the decision to create a computer industrial cluster in Ilhéus, which are very meaningful to understand how the case under study evolved. In both of them, the initiative comes from state governor Paulo Souto (in his first term in office, 1995-1998), whose decree establishes official advantages for computer firms that came to Bahia, with specific benefits for the city of Ilhéus – the region of the governor and already with an area designed for an industrial cluster, which, however, had never flourished. The decision emerged from direct negotiation between the governor and a major businessman of that industry segment with a plant then established in another state (Espírito Santo). So far, our informants were unanimous, and discrepancies were limited to whether the original initiative came from the governor, interested in the development of some activity that could solve the serious crisis caused by the debacle of cocoa production or from the businessman in question.

In any case, the fact is that the State takes on a protagonist role over development-oriented actions, defines the industries and economic groups to be encouraged, and builds agreements and partnerships ad hoc with investors. While in Santa Rita the actions of the municipal government tended more to coordinating already established interests – reflecting “bottom-up” influence flows – which resulted in a type of business actions spread over locally originated small enterprises, in Ilhéus, the state government's actions take on the character of planning States, which define goals and the means to reach them (“top-down”) and seek to mobilise outside, larger-scale business forces that are able to generate faster and more visible impact.

In the case of Ilhéus, tax exemptions were and still are the major attraction of the industrial cluster. Business leaders interviewed clearly sustain that without tax incentives they would not have taken the risk of establishing their businesses in an area with clear problems in terms of location, infrastructure, logistics, and trained labour force. Many of them manifest explicit intentions to leave the area if the tax incentives, which should end in 2014, are not extended. Even the public agents interviewed regret the need for a tax war, admitting that it prevents better planning of long-term policies for states and is often a predatory competition mechanism. The ultimate justification is purely pragmatic: once the logic of the tax war has been established, those who do not practice it will inevitably be left behind by other competitors and eventually lose ground in the dispute for new investments, besides running the risk of losing what they already have in terms of installed industrial basis.

¹⁵ Decree no. 4.316, of June 19th, 1995, establishes the “State programme of incentive to the computer, electronics, and telecommunications industry”, also known as “*Pólo de Informática*”. Available at: www.bahiainvest.com.br/port/incentivos/download/Decreto4316.pdf

5.2) CHARACTERISING RELATIONS BETWEEN PUBLIC AND PRIVATE AGENTS

In order to translate empirical elements of the cases into more abstract language and thus give our provisional conclusions some degree of universality, we resorted to a stylising exercise presented as two boxes with the types of interactions associated to the characteristics of each case.

Patterns of interactions between actors were organised according to the basic focus proposed in the general research design, i. e., between public and private actors. This first focus led us to two groups of interaction types: a) public-private interaction (discussed next); and b) private-private interaction (discussed on Section 5.3)¹⁶. More specific dimensions of these interactions were identified within each group and will clarify the economic dynamics of the industrial clusters based on variables that are not strictly economic. This analysis allows relating the types of interactions among agents with qualitative factors that make up growth.

The first group – that of public-private interests – includes four dimensions:

- 1) The role played by the state, which seeks to summarise the main form of intervention by the public agent into the local economy. The type of coordination consists mainly in interconnecting the multiple agents (firms, schools, associations) between themselves and with other spheres outside the local environment (federal funding agencies, international organisations, large businesses). The type of planning is related to the role played by the state as the core decision-maker and provider of resources and institutional mechanisms for the execution of predetermined goals;
- 2) The type of hierarchy existing between public and private agents – according to the type of initiative: more diffuse and coming from the market itself or having the state as its main source;
- 3) The nature of relations between agents: formal or informal;
- 4) The timing of actions: whether they take place gradually and incrementally or abruptly and radically.

¹⁶ “Public-public” relations need to be further examined. For lack of empirical elements, it was not possible to conduct the same stylisation of interactions we made for “public-private” and “private-private” relations. It would be necessary to investigate more in depth in order to capture the complementarities and tensions in the relations between the several public agents, especially in government spheres (federal, state, and municipal). At this step of the investigation, we found some events where it was possible to see more and less conflicting relations, but we understood that it would not be enough to suggest a more common interaction to each case studied.

Public-Private Interaction

Dimension	Santa Rita	Ilhéus
1. Role played by the State	Coordination (interconnection of actors; mobilising resources)	Intervention (providing tax exemptions and other incentives)
2. Hierarchy	Horizontal (main stimulus by firms and educational institutions - "bottom-up")	Vertical (main stimulus by State - "top-down")
3. Nature	Formal (agencies; incubators; specific contracts) Informal (“hand-in-hand” relations, based on dense social networks)	Formal (state law; universal character) Informal (“hand-in-hand” relations, based on casuistic or temporary interests)
4. Time	Gradual (“Step by step”; incremental; long term)	Abrupt (“At once”; eruptive; short term)

Based on the box above, let us examine how relations between public and private agents develop in Santa Rita and Ilhéus.

DIFFUSE PROTAGONISM, COORDINATING STATE, AND EMPHASIS ON LOCAL ENTREPRENEURSHIP IN SANTA RITA

A relevant feature in the trajectory of the Santa Rita industrial cluster is that it is based on a continuous creation of firms, almost all of them originally of small size, notwithstanding their current leadership positions in the national market in their respective product niches. The reasons for that are several.

The first companies of electrical-electronic products to be established in Santa Rita, still in the 70s, resulted from isolated initiatives by individuals that went to one of the aforementioned schools. At that point the electronic equipment industry experienced very fast growth in Brazil, but large companies – national and multinational – still favoured large urban centres already industrialised or were attracted by the new industrial frontier located at the Manaus Free Trade Zone, in the remote Amazon region.

The success of those pioneering firms seems to have been decisive to help shaping the future consensus in the city, not only about the importance of developing an industrial sector, but also regarding the virtues of small companies and local entrepreneurship. Santa Rita received a large manufacturing firm (which at some point employed 4,000), but shareholder disputes, the later sale of part of its control to a multinational company, and the subsequent re-structuring carried out by the new owners, which cut over half the employees, with strong social impact on the city, reinforced the preference of the several actors for smaller, local enterprises that are less unstable and more committed to the city's life.

As we have seen, the “option” for micro-entrepreneurship is already firmly rooted in the character of Santa Rita’s vocational and higher education institutions. Accounting for the education of several generations of specialised professionals in industries that did not offer jobs in the region, ETE and Inatel (and later FAI) set the goal of encouraging their students to employ knowledge in creating new firms. Some initiatives are worth pointing out.

In the early 90s, Inatel hires a Santa Rita-born director who had developed a successful career, first as an executive for a large multinational company and later as dean at one of the country’s most renowned private universities (PUC, Rio de Janeiro’s Catholic University). The unique combination of technical and managerial knowledge and networks of personal contacts gained during those two professional experiences, together with his personal commitment to the city’s history, made Mr. Ely Kállas – a trained sociologist – a core figure in the evolution of this case. Symptomatically, Mr. Kállas’s involvement starts at Inatel, but he now heads the municipal government’s Department of Science and Technology, showing how the fluidity of social networks can establish ties between the public and private spheres, spreading common orientations of collective reach.

At Inatel, he took part in the conception of an international cooperation agreement with GTZ (the German Agency for Technical Cooperation), aimed mainly at incrementing management and production at the technology cluster, which had been officially created a few years later. The programme, coordinated by a German consulting firm, was developed between 1995-2003, and besides Inatel – the institution executing the project and its main beneficiary – involved the participation of ETE, FAI, the municipal government, and Sindvel (Sindicato das Indústrias de Aparelhos Elétricos, Eletrônicos e Similares do Vale da Eletrônica – the cluster’s business association).

The interconnection established between interests and resources of those several actors is reflected on the diversity of actions resulting from that partnership: support to business incubation programmes; constitution of an information technology investment fund (which mobilised financial resources from several institutions of the Minas Gerais state government and the Federal government); establishment of a common databank for the region, in order to promote the technology cluster for potential new investors and publicising the existing firms to other consumer markets; modernising Inatel’s libraries and labs, which serve not only the academic community, but also businesses, which use them to conduct tests and develop new products; consulting for R&D projects involving businesses, universities, and the city; promoting national and international partnerships with research centres and universities; and training labour force through Brazil-Germany interchange projects.

Now heading the municipal department of Science and Technology, Mr. Kállas is the deputy of the mayor for the relationship with businesses. The very existence of a municipal department with that mission is very uncommon in Brazil, even in larger cities. As we saw in the previous section, the involvement of the municipal government with the development of the electronics cluster dates formally from the second half of the 1980s, under Mayor Paulo Toledo, and it focused on providing infrastructure.

In recent years, the practice of donating land plots for new enterprises developed into more structured action: the construction of business condominiums where all basic urban facilities are gathered in the same plot – zoning, street pavement and lighting, sewerage collection and treatment, water provision, electricity, and telecommunication networks. Besides the concession of land plots and infrastructure, the city intermediates the provision of credit for the construction of industrial facilities at federal banking institutions. The first condominium, created in 2003 in a land plot that was not in use, has already 30 companies, beside the headquarters of the clusters’

business association. A second one is in its final stage of installation and resulted from the remodelling of a group of old factories and warehouses. Infrastructure offered as business condominiums, combined with tax exemptions, have also proven to be a promising system in recent years to attract firms from other areas to Santa Rita.

Almost always in collaboration with educational institutions and with the business association, the municipal government is also responsible for efforts focused on technological innovation. That happens by prioritising support to technology-based small enterprises and actions such as a system to monitor the production of scientific knowledge in the city. Such monitoring system collects information about ongoing projects and funds used, from both firms and educational and research institutions, in order to strengthen the dialogue between academy and entrepreneurs.

The technological cluster's business association (Sindvel) also plays important roles in promoting and interconnecting enterprises. It is worth mentioning an annual trade fair in the city where companies can exhibit their new products; organisation of participation by local companies in international fairs, which involves negotiations with diplomatic bodies and federal trade agencies, as well as raising financial resources to fund travelling of businesspeople and exhibitors who would not be able to do it at their own expenses, and the organisation of business pools to access special state and federal funds for exporting and technological innovation, typically unavailable to small business alone.

A few years after the creation of the Ilhéus industrial cluster, businesses from Santa Rita decided to move there, attracted by tax-related benefits. Sindvel then gathered information on the tax incentives offered by Bahia and went to those in charge at the Minas Gerais state government, asking for actions to prevent the state from damage by the advantages offered by the neighbouring state. By a 2003¹⁷ state decree including legal mechanisms similar to those given by Bahia's state government to Ilhéus, Minas Gerais granted the demanded exemptions and guaranteed the enterprises in its market. On the one hand, that shows good ability for political action by the business association towards several governing bodies, and on the other hand, how tax incentives gained importance for Santa Rita's competitiveness (even though they were not as crucial to maintain the cluster as they are to Ilhéus).

As far as our investigation can go, the several agents (public authorities, business associations, and educational and research institutions) seem to be more aligned in Santa Rita, and efforts that do not involve several of them in collaborative actions are very rare. Circulation of individuals playing many of those roles along their personal histories (sometimes as students, sometimes as professors, as businesspeople, or as public officials) is a good cue to understand the informal and sometimes invisible mechanisms that give structure and continuity over time to such productive arrangement, and contribute in a diffuse way to its social embeddedness. It is a situation where several agents involved in the development of the industrial cluster give an essential contribution and they can hardly be credited with the main responsibility for the process's success in isolation. The most marked characteristic of public authorities in this case is not to take on the features of vested authority, as in a planning state, acting rather like a body coordinating interests and mobilising resources.

¹⁷ ICMS reduction or exemption is allowed through a protocol of intentions between the company and the state, according to decree no. 43.617 of September 29th, 2003, available from the State Treasury Department at www.fazenda.mg.gov.br.

STATE PROTAGONISM, TAX EXEMPTIONS, AND EMPHASIS ON ATTRACTING OUTSIDE FIRMS IN ILHÉUS

Ilhéus lacked virtually all elements that helped the gradual and more or less endogenous development seen in Santa Rita. Rigorously, the agents that played a relevant role in the establishment of the computer industry cluster in the former do not have the strong ties with the city seen in the latter. As we have seen, the decision to establish a computer industry cluster in Ilhéus was mainly due to national circumstances favourable to the adoption by local governments of a more aggressive stance in attracting investment based specially on tax exemption policies. Furthermore, the very triggering of the process combined negotiations conducted ad hoc between the state government and a large businessman with the state's need to encourage some productive activity for a region that came from a strong crisis after the decline in the production of its main product, cocoa.

Such arrangements of interests were made possible by editing a decree establishing special tax conditions for firms that came to Ilhéus. Besides tax exemptions, several other needed benefits should complement the package of attractions, such as land and logistic infrastructure, for instance. However, it was not properly established due to lack of continuity in the orientation of the state planning and of involvement by the municipal government. It should be noted that when the experience in Ilhéus started, Bahia's state government played a strong and almost exclusive role, and the array of pre-existing conditions and agents had virtually no influence on the design of the strategy adopted – local businesspeople interviewed complained that they heard about the cluster initiative after the government had conceived its original project. This shows that the action undertaken by the state government was far from being a partnership with local investors. Rather, it focused on the attraction of businesses already established in other places.

Differently from the highly positive tone used to refer to Santa Rita's local government, Ilhéus's businesspeople are highly critical towards the action of the Bahia state government, which would have created the industrial cluster and then ceased to treat it as a priority. Once it was established in 1995, little was done during its first four years to make it actually attractive.

According to statements by business leaders, scarce trained labour force is still a restricting factor for firms' performance and a good example of the lack of interconnection between local public and private agents. A solution demanded by those leaders – which was included in the industrial cluster's original plans – was the creation of vocational courses to speed up the placement in the market of workers apt to operate manufacturing processes. That was not the solution adopted by the government, which chose to support the creation of an engineering college at the institution that already existed in the region, UESC (Santa Cruz State University). In order to establish professional training courses, firms resorted to Senai (an institution linked to the national industry federation, oriented to labour qualification), but that was not enough either. The fact is that the absence of trained workers still leads companies to bring them from other places, such as Minas Gerais, Paraíba, and other cities in Bahia, which in turn reduces the local impact of job creation.¹⁸

¹⁸ In 2001, the Ilhéus Centre for Research and Technology Development of Computer Science and Electrical-electronics (*Centro de Pesquisa de Desenvolvimento Tecnológico em Informática e Eletroeletrônica de Ilhéus*, Cepedi) was created in order to train the labour force and encourage R&D projects in the region. By developing research, consulting and training, Cepedi has become an excellence island that hosts high-level professionals, but still with little integration to the local productive environment. It develops quality

Besides lack of trained labour force, other problems related to infrastructure and logistics hamper the development of the industrial cluster and the attraction of new businesses. Such deficiencies show the low interaction between public and private actors – poorly paved streets, poor lighting, insecurity, lack of proper public transport and totally abandoned land plots, to mention a few. Regarding land, for instance, there are areas in the industrial district that could be used for new companies, but most of them need levelling, others need to be bought from companies that have shut down or left the cluster, and others still are under legal disputes.

Logistic problems are not limited to bad streets and roads; they include the lack of an airport with a customs house – a common demand by all firms interviewed. Business leaders and their association strongly emphasised the need to solve this problem. Besides helping firms' logistics and reducing costs, it would be a source of revenue for Ilhéus, since taxes collected on imported parts would go to the city and not to Salvador, as they go now. Even though the airport is a federal issue, private actors want the municipal and state governments to support their demands, apparently unsuccessfully. A large part of those problems are under the responsibility of the municipal government, but since strategic decisions related to the creation of the cluster were unilaterally made by the state government, the city ended up not committed to the project.

It is also worth pointing out that in Ilhéus there is a conflict between state and municipal governments and also within departments of the state government itself. Since the industrial cluster was established, no sort of interaction is known between the city and the state. That situation worsened during the second term of Bahia governor Paulo Souto (2002-2006), when the priority was the capital, Salvador. The lack of interconnection among state government agencies is very clear in the interviews. An example was the failure of a project to improve the industrial cluster designed by local business association (Sinec) together with sectors of the state government. In spite of the good relationship between Sinec and the State Department of Science and Technology, the process seems not to have advanced for lack of support by the Agency for Industrial and Trade Development, Sudic (*Superintendência do Desenvolvimento Industrial e Comercial*)¹⁹.

Relations between the business association and public authorities in Ilhéus are different from those in Santa Rita. In the latter, Sindvel is a reflection of the more complementary and cooperative nature of relations among firms themselves and plays a coordination role, working closely with the other actors to promote more integrated relations. In Ilhéus, where competitive relations prevail more directly between firms, Sinec, founded in 1998, acts in a more punctual and direct way. Firms relate exclusively through the association (as will be shown in Section 5.3, below), which takes their demands to the local and state governments, especially regarding infrastructure investments and changes in the decree regulating the industrial cluster.

Businesspeople and even government officials admit the importance of businesses' joint action through Sinec. The praise extends to the person of current president Mr. Gentil Pires. Public and private actors commend him for his action to bring governments and businesses closer. He is seen as someone that can "make things happen", such as solving minor problems, pointing out solutions for bureaucracy obstacles, and establishing contact between people, for instance. A campaign is headed by the association to improve the image of the industrial cluster and show that

control processes as well as software – activities somehow marginal to the local production, which is directed to assembling computers.

¹⁹ Sudic is an autonomous department that works as an "operational arm" of the Industry and Trade Department and is in charge of executing construction works and managing the industrial area.

there are no firms of the so-called “grey market” (linked to bootlegging of computer parts). Such action has sporadic support from local representatives and senators, but no involvement by municipal and state governments. Besides, companies that have been establishing themselves in the industrial cluster start even from contacts with other firms and the business association, that is, rarely after a public initiative or programme of attraction, whether it is state or municipal.

Regardless of little public support to bring new enterprises, infrastructure problems, poorly trained labour force, and little added value production (merely assembling computers), the industry has been growing in recent years in Ilhéus, following the acceleration of the demand for computers in Brazil.

One of the main reasons for the good performance of companies established in Ilhéus, besides competitiveness based on state tax advantages, is the recent support from the federal government (the Luis Inácio Lula da Silva administration) through a programme of tax exemption for microcomputers in order to reduce their value to the final consumer: the goal is to make computers cheaper and increase sales in the lower income segments. Furthermore, the federal government has been making large scale purchases through public tenders for the several levels of state bureaucracy and to equip public schools (some firms in Ilhéus aim directly the public sector rather than the retail market). Finally, the increase in credit offer (also with federal support) explains the consistent growth in the computers’ sales.

Such positive scenario for the industry, however, has led other regions to mobilise in order to cancel the tax advantages in the Ilhéus industrial cluster – not to extinguish them, but rather to make them nonexclusive. Computer assembly companies welcome that possibility, which would give them more freedom of location, but that obviously interests neither the city of Ilhéus nor the state of Bahia.

In sum, in the Ilhéus experience the state government owns the initiatives and the industrial cluster’s conception did not involve significant participation by the local government or economic interests already established in the area. Capitals and capitalists had to be almost totally imported and the alignment between the cluster’s private investors and the local political elites seems to be very weak, which translates as a low social embeddedness of that new economic elite. Comparing to Santa Rita, we see that as a crucial element in favour of its higher sustainability.

5.3) CHARACTERISING RELATIONS BETWEEN FIRMS

The second interaction focus – that of private-private character, seeks to stylise relationships among private agents based mainly on the types of relations between firms. That group of interactions unfolds as three specific dimensions:

- 1) That of market relations, defined by the actions of firms in each cluster, whether they produce complementary goods (that is, different parts of the same product chain) or competitive ones (firms that produce the same type of product, for the same market);
- 2) That of circulation of knowledge and technology, which can be more open and favourable to interchange or closer and prone to exclusive disputes between firms;
- 3) That of collective actions, according to goals that bring companies and businesspeople together in cooperative actions based on long-term demands aimed at several and scattered gains or on short-term demands aimed at achieving more punctual demands.

Private-Private Interaction

Dimension	Santa Rita	Ilhéus
1. Market	Complementary (providers and clients network; distinct products; varied final consumers)	Competitive (no provider and client network; similar products; same final consumers)
2. Knowledge and technology	Cooperative and dynamic (diversification of sub-sectors; different parts and products; circulation of knowledge and possibility for innovation)	Noncooperative and static (same sector, equal products and parts; no knowledge circulation and low possibility for innovation)
3. Collective action	Coordenative (building long-term common interests)	Corporative (punctual demands and construction of short-term interests)

COMPLEMENTARY KNOWLEDGE NETWORKS AND COOPERATIVE RELATIONS IN SANTA RITA

The characteristics of firms and the type of relations established between them proved to be crucial both to understand the patterns of interactions between private and public agents and to assess the quality of spillover effects of the electronic industry on the local society.

Firms in the Santa Rita industrial cluster are mostly of small and medium size, directed mainly to very specific market niches (rather than those disputed by large companies in the industry). Technological base and product customisation are their essential characteristics. A quick visit to the business association's product exhibition room reveals a huge variety of products and very low superposition between companies. Many of them, rather than competing, have a complementary relation via provision of parts and inputs between themselves. That sort of relationship strengthens knowledge flows between firms and they very often establish joint ventures to develop products, seeking new consumer markets and the provision of postsale assistance – a crucial factor for several products made in the region.

Again, Santa Rita's educational system seems to play a core role for the dynamic of firms. Firstly, because part of the cluster's businesspeople graduated at those institutions and have close ties of friendship or personal contacts or, in other words, establish social networks whose origin and basis precedes their conditions of entrepreneurs, which certainly favours the pervasion of their economic relations by more mutual trust. Secondly, their training in common academic environments makes the technical specialisations obtained in local schools and universities complementary, which is later transferred to their firms. Finally, the experience of shared learning, since school labs "train" those individuals for cooperative work and establish trust in one another's technical abilities.

Interconnections between companies are very common and range from informally sharing machines and equipments (more common among micro-sized companies) to formal contracts for provision of parts or joint product development. For instance, it is very common that firms with orders above their production capacity "outsource" part of the demand to other producers, with no need even for formal contracts. Equally common are the cases of companies that emerge after "division

processes” – where employees of one firm, encouraged and often materially supported by their employer, open their own business and become the employer’s provider.

Such complementary characteristics are also reinforced by the action of business incubators, as previously mentioned. The older of the two such organisations existing in Santa Rita, Inatel’s, created 30 companies over its 20 years (until 2006). The incubation process takes an average of two years, during which the businesses established enjoy facilities and infrastructure (space, basic electronic equipment for tests, furniture, phones lines, internet connection, and secretary services) at very low cost (R\$ 100 to R\$ 400 a month). They receive legal, marketing, and business management assistance. Each new company is almost always the result of an also “new” product (mostly changes or improvements in existing products). When emancipated, they are monitored and assisted for three more years as needed. Inatel’s incubator hosts up to 20 companies at once, which work in adjacent rooms, favouring everyday communication between their owners and employers. There is exchange of experiences and information, such as contacts among providers of goods and services or incentives to import parts and export products.

Agreements with ETE guarantee trained and low-cost labour force through internships, where, in turn, secondary students gain knowledge and learn attitudes typical of the businesses creation environment. Note that both Inatel and ETE include entrepreneurship courses in their curricula as a way to encourage their students to pursue a career by opening their own businesses.

The incubator created by the municipality in 2006, in turn, can host up to 13 companies and works on very similar principles. The differences reside on the fact that incubated companies do not necessarily have a previous relation with the educational institutions (Inatel’s incubator serves preferably its own students) or even with the city. Furthermore, the municipal incubator does not have an infrastructure of labs and equipment as Inatel’s.

The action of incubators seems to be crucial to reduce the mortality rate of new firms in their first years of life – a very common problem for micro-sized firms in Brazil. And even those who cannot go on with their companies gain experience that increases their chances to enter the job market as employees in other firms.

Finally, incubators are environments proper for spreading ideas. They encourage not only the creation of new companies but also the development of novel products and processes. This practice is seen as a core element for adding value and diversifying production. The industrial cluster hosts companies that produce parts and equipment for the areas of communication and phone services, electricity, electronics, computers, commercial and industrial automation, and security. Equipments are as diverse as: displays, printed circuit boards, electronic devices for testing, mobile phone batteries, energy generators and transformers, printers, cameras, alarms, electric fences, sensors, antennas, transmitters, modulators, among others.

A good example of Santa Rita’s production power combined with knowledge generation is the fact that the industrial cluster pioneered the development of technology for the new generation of digital image TVs in Brazil, competing with major companies from Manaus Free Trade Zone, which enjoy a much more comprehensive package of tax incentives.

*AGGLOMERATION OF SELF-SUFFICIENT FIRMS AND COMPETITION RELATIONS IN
ILHÉUS*

The fact that it was shaped by a tax exemption law led the Ilhéus industrial cluster to a configuration that is completely different from Santa Rita's. Laws of tax incentive clearly delimitate the industries to be benefited and sometimes naturally favour agglomeration of similar businesses based on their final products. That is the case of Ilhéus, where most companies in fact assemble computers and peripheral equipments. In most cases, they are companies that existed before the creation of the industrial cluster, makers of standard products and whose technology (in the case of computer assembly, the major difference is related to the parts) is imported from outside Ilhéus and almost always, from outside the country. Therefore, they do not really make up a chain of producers, since their productive complementariness is very low; on the contrary, their relations are often of direct competition.

The fact that the industrial cluster is based on computer assembly companies has at least two negative consequences: the low level of value that is locally added to the products (which also translates as lower potential for job and income generation) and the lack of encouragement to knowledge spreading and technological innovation.

The computer produced in Ilhéus has indeed low added value, according to manufacturers themselves. Parts used are brought from other countries (most of them) and in some cases from other Brazilian states (computer memory is made in Manaus). The idea of thickening the local value chain is always pointed out as a possibility to increment the productive system in Ilhéus, but local obstacles are not negligible. Attracting companies that make computer parts (hard disks, chips, motherboards, etc.) would depend on huge investments and probably on a strategic decision by the federal government, since the main producers of those items are countries such as the United States, Japan, South Korea and China, which work at large production scales as well as global operation and market strategies.

Even the firms already established in Ilhéus, which generate jobs that demand higher qualification and are really concerned with the growth of the industrial cluster, do not carry out high added value activities or show interest in working with some kind of involvement to improve the cluster's capacity for technological innovation. Firstly, because many of the parts for production are imported and there is no technology in Brazil for their development; secondly, as mentioned above, because most companies need to deal with problems that precede this one, such as infrastructure and logistics, as pointed out in the previous section.

An important indicator of the differences between the two clusters is precisely how much they use the laws of incentive to technological innovation recently created by the federal government (e. g. the "Law of Innovation" and changes in the "Law of Informatics"). In Santa Rita, cooperation between public authorities and educational institutions has resulted in several collective projects for small companies, aiming at special funding conditions by federal and state funding agencies. In Ilhéus, in turn, since most companies do not invest in R&D, laws designed to foster innovation are poorly used – when it occurs, it is in marginal activities such as development of software for the firms' management and not for developing or improving products.²⁰

However, there are exceptions in Ilhéus. One example is a firm called Waytec, which has partnership projects with universities and research centres in Bahia and

²⁰ See details about the laws in the appendix on taxes, at the end of the text.

other states. Symptomatically, it does not assemble computers, but rather computer monitors, especially the so-called “touch screens”. It is a much more complex production process than assembling computers and its technology is mostly developed in Brazil. The firm also has expertise in software development, based on a subsidiary company called Waylog, which allows it to associate touch-screen technology with its own software. But that is only one more case where the exception proves the rule.

6) PRELIMINARY CONCLUSIONS

The description and the analysis of the two cases focused on relevant actors (politicians and state agencies, firms, schools and universities, unions, business associations, civil society organisations) and on the types of interactions among them. The relational approach allowed us to examine the participation of actors in the combination of qualitative factors that make up sustainability of economic development. Thus, we show that we are more interested in discussing the quality of different growth contexts, which leads to sustainability, than dealing with quantity by focusing on GDP growth, investment rates, and other variables.

The analysis presented allows pointing out some factors as essential to distinguish the two cases studied and therefore evaluating the relevance of interactions for sustaining development:

- 1) dense social networks that pervade institutional spaces (municipal and state government, businesses, and schools);
- 2) pervasiveness of public institutions and the ability of public actors to gather existing private interests, that is, the ability of governments to conduct coordination;
- 3) quality of educational infrastructure and consequently, spreading of knowledge and information, mainly due to proximity between schools and firms;
- 4) productive diversity, constitution of production chains (or networks) and added value products;
- 5) creation of new companies;
- 6) degree of dependence on tax exemptions.

Even though both cities experienced growth, there are reasons to sustain that distinct forms of interaction between public and private agents played different roles in creating conditions for sustainable growth. The aforementioned factors illustrate how Santa Rita’s growth process can be more sustainable than that of Ilhéus and how interactions between agents are crucial for that.

Santa Rita’s educational structure was crucial not only to train the labour force and build a nationally respectable knowledge-based production on electronics and telecommunications. Social networks including teachers, businesspeople, and local politicians were also established around those institutions. They strengthened an environment fit for a development process integrating schools and companies. Public actors coordinated local assets, creating conditions for and facilitating local production.

In Ilhéus, in turn, the centralised action of public authorities – creating an industrial cluster by a state decree based on strong tax exemptions – and the lack of

both a local productive network and tradition in the electronic/computer industry contributed for the construction of a weak basis in term of quality of the growth process.

In Santa Rita, the knowledge base is founded on the vocational school and the university, but it has been always integrated to the market through joint ventures with companies, firms created by former students, and the businesses incubator. Both the training of professionals for the labour market and the formation of entrepreneurs are crucial for this virtuous process. Besides, generation of new knowledge, often helped by state and federal agencies that fund research and international agreements, makes Santa Rita better prepared than Ilhéus to increment knowledge, create new technologies, and encourage innovation.

In Ilhéus, in turn, the introduction of a computer industry cluster in a place with no tradition in the sector (or in similar sectors, for that matter) faced the lack of trained labour force since the beginning. While outside firms were attracted by tax exemptions, more qualified workers also had to be brought in. Some initial attempts were made to create vocational courses, but disagreements between public and private agents got in the way of a satisfactory solution. Engineering courses were created at the nearby state university and a computer science research centre was founded. However, in spite of the latter being an “excellence island”, with highly achieved and highly competent professionals, the disconnection of those institutions with the local productive system is still an obstacle for the increment of the industrial cluster in terms of its knowledge foundation. It should be kept in mind that such problem is based mostly on the cluster’s productive character itself: it is a system oriented almost exclusively to computer assembling. The production of virtually only one product (computers) and the low complexity of the productive process restrict the industrial cluster’s possibility to create a productive network with providers and clients, as well as of adding more value to the chain.

In Santa Rita, not only the educational structure, but also the diverse productive structure itself fosters an environment to create new local companies and to add value to the production.

The comparison allows us to conclude that the social and institutional foundations of Santa Rita’s experience are qualitatively superior and project better possibilities to be sustained over time than Ilhéus’.

Firstly, because the growth seen is explained by a confluence of factors, not necessarily conceived as growth policies. The educational structure created in the city long before the industrialization spurt responded to the aspiration of the local elite that their own children and their fellow citizens had quality education in the city, thus avoiding early youth migration (a problem common to most of Brazil’s small towns). And the choices – a secondary vocational electronics school and an telecommunications engineering college – proved to be very correct. Given the role it played since its creation until today in the national telecommunications system, Inatel is an institution whose importance goes well beyond the narrow limits of the city. An important part of the technical personnel in high positions in Brazil’s telecommunications companies graduated there and then sought at Inatel the environment and the expertise to develop technological partnerships and improve their personnel. That is one of the circumstances that explain how a private, small-scale institution located in a minor city is able to remain as an important center for production and spread advanced knowledge in a country where a few large public universities, almost all of which located in state capitals, dominate all the academic and scientific scenario.

Secondly, the first experiences of creating electronics firms in Santa Rita, still in the 1970s, when large industrial investments were still directed mainly to the Greater São Paulo area, were soon perceived by local political leaders as opportunities for

economic revitalization of the city, then highly dependent on decaying agricultural and cattle activities. Lacking, at the time, significant fiscal tools, the city government resorted to simple but highly effective tools: offering land plots and urban infrastructure, organizing innovation fairs, partnerships with state and federal funding agencies, and “marketing” initiatives to promote the city as the “Electronics Valley”, usually in association with businesspeople and professors and leaders from local schools. When the Ilhéus industry cluster emerged in the mid-90s, the local government reacted to the competence by successfully demanding that the Minas Gerais state government provided similar benefits. Finally, already in the recent period, inspired by the success of Inatel’s business incubator, the city government opened its own incubator.

Thirdly, educational institutions and the dynamics of close relations that is typical of small towns provide the environment to build strong confidence and intellectual complementariness ties among students (whether or not they were born there). Such interactions later feed professional cooperation ties, within companies and among them, directly, through partnerships to develop products and through the business association, when group actions are organized.

In sum, what we are describing are social networks, which develop from professors, businesspeople, technicians, and local politicians, that have been formed around those institutions and established the proper foundation for the emergence of firms integrated to the educational and research activities, and which were encouraged in several ways by public authorities, thus creating conditions and facilitating the growth of local production.

That variety of factors was (and to a certain degree, still is) absent from the experience of Ilhéus and from many other similar attempts at development that emerged in Brazil in the same period. The “fast lane” for attracting investments, i.e. tax exemptions, in many cases created new productive agglomerations with positive effects such as high GDP growth rates, creation of new jobs, and increase in the wage mass that irrigate the local economy. However, that growth option based on a sole predominant factor (tax exemption) can be fragile if the emerging demands are not met.

In the case of Ilhéus, GDP growth came with demands that the community and the government were not ready to meet. As we have previously pointed out, firms started to pressure public authorities for better infrastructure, vocational schools to train workforce, as well as other regulatory changes. Without coordination of public and private actors and the necessary construction of common interests, the development initiative tends to be restricted to the initial tax incentives and allows to think that, once those incentives are over, the firms will leave the city. That possibility is clear in interviews made with businesspeople from Ilhéus. Public policy for development based on tax incentives as a startup is not bad in itself, but in order to be sustainable in time, other, more qualitative mechanisms must be created throughout the process.

Stylising the cases by contrasting them sometimes leads us to minimise complexities of each city. The development process has its course altered over time, and that is precisely why it is not possible to have static models as basis, such as that proposed by the literature on investment climate. Although it had weak foundations regarding its sustainability, the development process of the cluster of Ilhéus improved over time: there was more participation of local businesses in the increment of the cluster, acting collectively, demanding changes in the decree, seeking more responses by public entities to infrastructure and logistics demands, as well as the creation of a research centre more oriented to knowledge and innovation. On the other hand, let us remember that, in order to remain competitive, Santa Rita’s cluster had to seek, with the Minas Gerais state government, tax exemptions similar to those provided to Ilhéus

by the Bahia government. The difference is that cluster's start did not rely on such tax exemption.

In short, although in both cases growth indicators in economic activity are similar and very positive, the quality of social and institutional arrangements that support growth in Santa Rita is highly superior to that of Ilhéus. Therefore, we can say that a trajectory of growth such as Santa Rita's is more robust than Ilhéus'.

Identifying those qualitative elements common to different cases helps us not to yield to the temptation of seeing Santa Rita as the success case to be emulated. Generic growth recipes do not work, and copying success cases is not commendable either. On the other hand, we should not be restricted to sustain that each case is different. Analytical comparison allows us to identify the role played by interactions in configuring growth factors. Then, in analytical terms, we can say that certain types of interaction are more virtuous in building certain qualitative factors of growth.

We believe that evidence for this comparison between Santa Rita and Ilhéus bear clear lessons that are useful not only for the debate on development but also for those in charge of formulating policies with that aim.

This research is an attempt to show the centrality of stressing the elements that make up sustainability: they, rather than the cases themselves, allow generalising and comparing. Other case studies are needed both to test the typology of interactions and to underscore the qualitative factors in different cases, their similarities, and how they influence sustainability of growth.

Finally, we should underline the fact that this article is to be seen as the result of an initial stage of the research. Preliminary conclusions of this stage shall help us to reflect upon issues to be further discussed as well as new ones for a second stage of the investigation.

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APPENDIX

Taxes in Brazil and their importance for the cities studied

Brazil is a Federative Republic divided into 26 states and a Federal District, with over 5,000 municipalities. Taxation is not restricted to the federal government, but rather spread among states and municipalities. Below, we present some of those taxes and their importance for Ilhéus and Santa Rita.

Manufactured Product Tax (*Imposto sobre Produtos Industrializados, IPI*)

The IPI is a federal tax on manufactured products, both foreign and national. Its payers are importers, manufacturers, traders, buyers, or anyone legally similar to them.

IPI rates vary according to the product, from exemption to 300%. According to the Law of Informatics, companies that fit the requirements of the so-called Basic Productive Process (*Processo Produtivo Básico, PPB*) are entitled to IPI reduction, from 70% to 95%, until 2019. Companies fulfil PPB requirements when they have production stages in Brazil, that is, they develop steps of the productive process using national parts and raw materials.

In the case of computers, for instance, minimum requirements to be considered PPB-fulfilling include from board assembly (simple activities) to production of parts, such as semiconductors (more complex activity). Qualification is granted according to norms by the Ministry of Science and Technology (MCT). The aim of the law is to nationalise productive processes and encourage the production of more added value in the country.

To counterbalance IPI reduction, the company (that produces computer and automation goods and services) must invest at least 5% a year of its gross revenue in the domestic market (resulting from selling computer goods and services) in R&D activities on information technology to be conducted inside the country.

In Ilhéus, such IPI reduction is crucial for businesses' competitiveness, not only regarding the final product, but also because, as computer makers, they are the major importers of foreign parts. In 2007, according to the MCT, 40 companies qualified for the benefit in the city.

In Santa Rita, in turn, the use of PPB is lower. In 2007, 13 companies were qualified to IPI reduction benefit according to the MCT.

Companies with Basic Productive Process can use the value paid as IPI to deduct their rates at the Programme of Social Integration (*Programa de Integração Social, PIS*) and the Contribution to Fund Social Security (*Contribuição para o Financiamento da Seguridade Social* (COFINS) – federal contributions whose rate is calculated based on their gross revenue.

Tax on Circulation of Goods and Service Provision (*Imposto sobre Circulação de Mercadorias e Prestação de Serviços, ICMS*)

ICMS is a state tax and applies to operations of circulation of goods, including imported ones (a common practice in both cases studied in this research). That is, taxes are generated whenever goods are released from a firm.

Each state is autonomous to establish its ICMS rates, leading to what became known as the “tax war”: offering financial advantages through tax exemptions in order to attract firms to the state.

In the case of Ilhéus, where firms import parts to assemble computers, ICMS granted by the state government is the main incentive. Manufacturers of the electricity, electronics, electro-electronics, and telecommunications industry enjoy ICMS deferral and matching credit until 2014. ICMS payment is deferred when the company imports parts. When goods are sold, the company enters the tax value due (concerning that merchandising) as credit to deduct what has been deferred as imports (the amount deferred at entrance). That is a state benefit, but there are differences in exemption conditions for companies outside the Salvador metropolitan area, thus favouring Ilhéus and other cities out of the metropolitan area.

In Santa Rita, ICMS exemption for companies from Minas Gerais (granted by a state decree in 2003) follows the same logic as in Ilhéus. The state government grants ICMS matching credit at the sale of finished products, that is, there is ICMS deferral in importing machines and equipments (fixed assets) and parts used in the production of goods. That is agreed upon based on a simple protocol of intentions between the company and the state.

Tax on Urban Real State Property (Imposto sobre a Propriedade Predial e Territorial Urbana, IPTU)

A municipal tax, IPTU applies on propriety, dominium utile, or possession of real estate property. In Ilhéus, the municipal government grants up to ten-year exemption to companies that direct their investments to the region. In Santa Rita, in special cases, there is IPTU exemption for a certain time. Donation of land and the creation of business condos (with assignment of space) are common practice in Santa Rita.

Tax on Services (Imposto Sobre Serviços, ISS)

A municipal tax, ISS applies on service providers and its rates vary from 2% to 5%. In Ilhéus, just as IPTU, the government grants ISS exemption for up to ten years for companies that direct their investments to the region. In Santa Rita, exemptions vary according to industry sector.